REIMAGINING HR IN THE AGE OF ARTIFICIAL INTELLIGENCE AND CLIMATE CHANGE ADAPTATION

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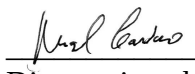

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Dedication

This thesis is dedicated to my family, for their love and endless support. It is also dedicated to all the human capital who have enormous potential regardless of the numerous changes, they just need to keep believing in themselves.

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I would like to express my gratitude to my thesis advisor, Dr. Anna Provodnikova for her editing help and endless emails with feedback and advice. Thanks, should also go to my colleagues and participants of my mock presentations for their suggestions and feedback and they affected and inspired me.

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ABSTRACT

REIMAGINING

HR IN THE AGE OF ARTIFICIAL

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Biva Joshi
2024

Dissertation Chair: Dr. Gualdino Cardoso
Co-Chair: Dr. Aleksandar Erceg

Experts' perspectives on the use of advanced artificial intelligence (AI) as well as the necessity of adaptation to climate change mitigation measures in the workplace summon human resource (HR) professionals to view their impact directly on human capital, as constituted by multiple discussions by well-known think tanks, academia, and international organizations. Yet, since HR professionals in most organizations are rarely expected to tackle the multifaceted change strategically this power rests in fact on HR professionals to be aware of the rising trend, especially in these two areas and implement organizational change management efforts.

To fully understand this dimension of the impact of AI and climate change on human capital, we must therefore understand the trending jobs and the literature behind the need for adaptation of human capital from both aspects. Reflecting on the analysis of publicly

available data and with qualitative research on both fields, this research paper suggests ways in which human resource professionals can strategically identify potential threats, and primarily, opportunities for the newer type of jobs for human capital. This research will adopt an interdisciplinary approach of providing aid for HR professionals to foresee common impacts of the two most trending topics that are already showing signs of significant impact in jobs and then, take initiatives on change management approach to help human capital smoothly transition to newer types of jobs.

Key words: artificial intelligence, climate change, human resources, change management.

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INTRODUCTION

1.1 Introduction

The need to address the impact of climate change and the development of artificial intelligence (AI) in the workplace are two of the most significant changes that organizations must implement to survive and thrive in the changing business world and stand out from the competition. There are many changes such as changes in workplaces, international competitors, changing needs of customers, etc. but AI and climate change have made a difference in the last decade (Brockbank, 1999; Harmon et al., 2010; Sroufe et al., 2010; Babenko et al., 2019; Fankhauser et al., 2011; Bertrand, 2021). Change in the organization is managed by smart change and actively investing in human capital to prepare for change (Bal and Brookes, 2022a; Santana and Valle-Cabrera, 2021).

There is a difference in the impact of HR professionals on different strategies of organizations and the expectations of organizations about their participation (Brockbank, 1999). Researchers have suggested that although board leaders view HRM as an important part of any organization, they are skeptical of any notion of HRM's contribution to the organization because it is difficult to measure their contribution (Becker, 1996; Becker et al., 2004; 2001).

Although the HR profession has evolved since its inception, the understanding of the profession can range from managerial to strategic (Brockbank, 1999). Researchers believe that HRM supports a common strategy and requires the integration and redesign of HRM functions in organizations (Bal and Brookes, 2022b).

This research aims to provide an in-depth look at why the use of AI in organizations and the increasing climate-friendly changes are important for business HR and how HR can ease human capital to adapt and adapt to unexpected changes. Next, this section focuses on advanced concepts such as human capital, skills, climate change, and change management. The following sections focus on explaining the research questions and reporting their progress. The paper then describes the evolution of human capital from the ability to predict and adapt to changes brought about by AI and climate change.

In Chapter 2, considering the interdisciplinary nature of the research, various materials, theories, and different models will be explained in relation to various products. Chapter 3 will discuss the use of mixed methods to examine both quantitative and qualitative characteristics of developing countries and the challenges of transitioning to AI and cloud computing in organizations.

It will also include the findings and limitations of the study. The following sections will present an in-depth analysis of the qualitative and quantitative research, as well as comparisons and discussions with other literature. Finally, the conclusion section will conclude the whole study.

Finally, it will provide some practical solutions that organizations can use as change management techniques and help in a smooth transition of human capital skills for changes brought by AI and climate change.

1.2 Key Details and Definitions

Although the HR profession has evolved since its inception, the understanding of the profession can range from managerial to strategic (Brockbank, 1999). Researchers believe that HRM supports a common strategy and requires the integration and redesign of HRM functions in organizations (Bal and Brookes, 2022b).

This research aims to examine the HR function from an integrated perspective; for example, in the society-wide relationship between HR and artificial intelligence, climate change and change management are often viewed as separate disciplines rather than viewed from the same perspective. Therefore, it is important to examine all aspects of human thinking. All important characteristics are briefly described below.

1.2.1 Human Capital

To examine the impact of AI and climate change on human capital, we must first understand it from a human perspective. Human capital refers to the knowledge, skills, health, and other personal characteristics that enable people to realize their potential as members of society (Becker, 1996; Becker et al., 2001; OECD, 2023). Although not known as human capital in the past, Adam Smith, the father of modern economics, defined human capital as a valuable tool for the economic development of all countries (Smith, 1776). These human capital resources are developed through investments in education, training, and health. Due to the involvement of these resources, human capital is also considered as an asset that can provide services measured in terms of income or benefits (Eide and Showalter, 2009).

Although human capital is considered an asset and assets are valuable to the organization, when the organization changes because other factors such as skills and knowledge also need to change, in the changing climate, human capital has become a role rather than an asset and has become an institution and responsibility. Studies show that such mass unemployment has both direct and indirect effects (Berge and Schmillen, 2023). The most recent layoffs occurred in early 2023, with many organizations laying off workers due to the mismatch between the supply and demand of human capital during Covid-19 (Tarki, 2023). Human capital experiencing unemployment and less unemployment may have difficulty finding another job immediately.

As the use of artificial intelligence increases and business processes change due to climate change, the emergence of imbalances in the supply and demand of skills, the use of outsourcing to repair materials and the need for human capital have also increased (Schuler, 1992). HR professionals can develop strategies by predicting the future needs of the business promptly and train human capital accordingly. There should be a natural change where the organization trains its human resources for the novel changes resulting from the above changes and human resources can continue to contribute to the organizational needs or natural changes. Therefore, examining the changes affecting human capital is an important aspect of human resource management.

1.2.2 Adaptation to Climate Change

Human activities such as cutting down trees, burning fossil fuels, and raising animals have increased the amount of carbon dioxide (CO2, but also methane, nitrous oxide, etc.) in the atmosphere (Dwivedi et al., 2022). Global warming occurs because these gases act like mirrors, blocking sunlight from returning to space, and thus

increasing global temperatures. Studies show that human-induced global warming has increased temperatures by 2 degrees Celsius compared to pre-industrial levels. Current international efforts are aimed at limiting global warming to 1.5 degrees. This creates a need for climate scientists to work on climate-related issues such as renewable energy, clean transportation, adaptation and recovery, and future climate forecasting (Bertrand, 2021). One of the 17 climate change goals (SDGs) of the United Nations is to combat climate change and protect the oceans. Many organizations are also signatories to the Climate Pledge (Amazon and others), which aims to achieve carbon emission reductions by 2040, ten years ahead of the Paris Agreement (The Climate Pledge, 2023). For an organization to achieve its long-term goals, it is necessary to have human resources with the necessary skills.

1.2.3 Workplace AI

Often referred to as AI, automation, robotics or the fourth revolution, technology can perform tasks that humans can only do once. Recently, the impact of renewable AI on human labor capital has been discussed (ILO, 2015). This technology is also faster, easier to use and cheaper to develop. This requires human capital to adopt and adapt skills in the workplace and focus on creativity. So, while machines will not be able to replace humans, the nature of work will be different as the work mix will need to change. Humans will not compete with machines, they will collaborate with machines, also known as collaborative robots (Sondh, 2021). Knowing more about the use of artificial

intelligence will enable employees to express themselves more (Innocenti & Golin, 2022).

1.2.4 Change Management

Organizations are flexible and multiple areas of change are the norm (Research and Development Institute, 2015; Kotter, 2012; Reilly, 2019). In addition, changes may occur simultaneously in other factors such as politics, society, and technology, further affecting the organization.

It is stated that moderate and predictable changes in an organization lead to satisfaction, while radical changes that occur in a brief period are seen as a threat and increase stability (Fallik, 2013). The acceptance of change in an organization tends to be hierarchical. Initially, change at the operational level is not welcomed because it leads to chaos, but at the leadership level, change is welcomed because it prepares the organization for new social competition.

Resistance to change can have deep roots as change can be threatening, and this perception can create change inertia (Carter & Varney, 2019). Frontline workers have characterized the results of the change as a failure because they are left with their teams without the personnel or resources to achieve the desired results (Mitchell and Smith, 2024, p. 24). Furthermore, those who respond positively to the change will be supportive, while those who respond negatively will oppose the change.

According to all of the above researches, the increased use of skills in the workplace and the transformation of organizations towards safety will have a direct

impact on human capital. Not all human capital will view this change in the same way. Therefore, HR professionals can develop strategies by expecting these problems and planning human capital development accordingly.

1.3 Research Problem

Although the adoption of AI and climate change has been gradually incorporated into long-term business strategies, it is currently unclear how HR departments will respond to these business-related changes. Existing research examines the specific impact of AI and climate change on human capital alone (Carter and Varney, 2019; Fankhauser et al., 2011a; Holzer, 2022). There is a gap in research discussing the impact of AI-induced changes and the changing workplace climate. It is unclear how these two factors affect each other in terms of human capital and how to effectively cope with these changes.

Researchers believe that HR professionals who understand business needs recognize these needs by designing human capital to meet these needs of the business (Schuler, 1992). To help manage talent, HR develops strategies for training, promotion, and workplace development. HR departments can often be strategic partners if they feel they cannot change jobs due to the impact of skills and climate change.

As most organizations need to adapt and cope with the use of intelligence in organizations due to AI and climate change and their impact on organizations, there is a need to manage human capital in these discussions to respond to these changes (Becker, 1996; Brockbank, 1999; Dwivedi et al., 2022; Harmon et al., 2022; Robertson and

Barling, 2013). While reactive HR processes in the past met the needs of the organization, initiative-taking HR strategies will benefit current and future organizations in a changing environment. meet and satisfy the needs of all stakeholders.

Generative AI encompasses advances in machine learning and natural language processing that can generate content, create insights from multiple pieces of information, interpret human realities and can make tough decisions (Lv, 2023). The effectiveness and efficiency of these technologies could have a significant impact on the future of work and employment. Integrating AI into the workplace is therefore like walking on knives edge and requires a balance between seizing opportunities and managing distractions.

The daily and predictable tasks that managers and employees perform, such as reading and accessing information and conversations, will come to life with the introduction of the large language model (Dwivedi, et al., 2023). The aim of this research paper is to empower HR professionals to be strategic partners and to drive change in the organization in a supportive way about the twin challenges of AI and climate change.

When it comes to climate change, organizations have updated the foundations of their communication strategies and delivered satisfactory results for the organization's strategies (United Nations, n.d.). However, many important capabilities that will help organizations adapt to climate change, as well as the development and facilitation of change management systems that will ease the adoption of human capital and change, are also missing. With the emergence of international agreements to reduce greenhouse gas emissions, financial institutions must now consider climate risk and international trade

resulting from natural disasters (Wittneben and Kiyar, 2009). Climate change risks and opportunities must be incorporated into financial priorities. In addition, the general public is also demanding answers from organization and business leaders on climate change, which means that these companies are subject to public scrutiny. For example, supervisors may need more skills to deal with customers, coworkers, vendors, and train employees. Therefore, innovation in human resources will require more skills, flexibility, and freedom. Human resources are the largest expense in many organizations, and companies are turning to artificial intelligence to increase employee productivity and reduce labor costs (Goodwin-Sak as et al., 2019).

This study focuses on the current importance of human capital understanding in the increased use of AI and climate assessment in the workplace, and the ways organizations can implement these changes in the workplace.

1.4 Significance of the Study

Although there is no connection between them, the need to address the impacts of climate change and artificial intelligence is already felt at a great level in organizations (Global Partnership on AI Report, 2021). HR can be the agent or advocate for the changes required for human capital to improve and enhance the reliability of measurement. Researchers believe that talent management, which provides a strong business data connection that provides credibility for recruitment, retention, engagement, and development of key elements with the atmosphere of the AI revolution and the cloud

revolution for HR managers and professionals, will be the next best thing (Harmon et al., 2010).

Some academics have suggested that from a business perspective, HR should solve real problems of people, use good measures, and contribute to general health (Bal and Brookes, 2022a). Advised on the transformation of the organization through climate change and the impact of skills will make HR an important part of the organization given the unprecedented changes caused by climate change (Howard-Grenville et al., 2014). So now is the time for HR to tackle climate change and AI as external factors affecting internal factors, and therefore plan to address this issue by not only reducing external pressures but also working on these challenges as part of HR strategy.

Researchers say it is important for humanitarian workers to monitor and respond to early warning signs to identify potential problems and opportunities for change (Fallik, 2013). There is no one-size-fits-all policy, and just as a job that someone finds their career in may not be as exciting for another, a program that works well in one organization may not work well in another.

Now that each topic has been analyzed independently, the next section focuses on bringing these topics together and evaluating the differences between them. The following paragraphs describe the results of this study, considering the synergy between HR and climate change and the relationship between HR and automation. Following this, the chapter considers change management and its relationship to climate change and skills, concluding with how human resources (HR) healthcare professionals can use

change in their organizations to tackle climate change through two key components to adapt to climate change and how they can use skills to adapt to climate change in the workplace.

In organizations where there are significant changes in external and internal forces in delivery, distribution, private sector and public-private partnerships, human resources need to be managed as resources (Bruns, 2014). This innovative approach seems to have changed the traditional method of viewing human capital as an asset and achieving a higher value through the development and preservation of human capital to realize the benefits of human capital and basic resources (Bach and Kessler, 2007; Llorens and Battaglio, 2010). In one study, researchers examined overtime and certain characteristics of human resources performance (Becker, 1996; Becker and Gerhart, 1962). When the business is in the operating period, the focus of HR professionals is continuous improvement, efficiency and cost effectiveness and their activities are based on this. Various practices such as outsourcing, restructuring, changing the jobs of line managers and developing HR metrics to measure efficiency are considered as HR activities aimed at improving performance of human capital. Researchers noted that currently, the study of organizational development (OD) is a study that focuses on the entire organization in the context of responding to the increasing pressure on work and change processes and linking OD initiatives to organizational outcomes. The goals of both HR and OD are still functional, but both measure the best value for the business. It

soon became clear that HR professionals needed extensive business knowledge to ensure that various HR decisions were made effectively.

Then we entered the era of strategic human services, and many organizations realized that human capital was a significant competitive advantage. Among the many challenges facing organizations, such as globalization and the need to manage growth while reducing costs, the two challenges in this research paper are the rapid change driven by climate change and intelligence (Ulrich et al., 2017).

Thus, the management of human capital and work methods appears essential for organizations to achieve sustained competitive advantage (Pfeffer, 1995). Interestingly, while the main goal is to provide better basic information, the focus is on improving the culture and the ability to support full-action strategies that drive long-term strategy (Brockbank, 1999, p. 342).

The focus on strategy became the new status quo of HR in the early 1990s, with HR professionals playing a significant role. The new key role of HR professionals is to manage the development of human resource strategies that support the organization's strategy, which includes supporting HR practices such as skill assessment, total rewards, etc. to encourage leadership and creating leaders. In addition, human science experts have also begun to experiment with change management and activities that support business development efforts in the guidelines (Brockbank, 1999).

Therefore, the main goal of HR professionals is to help human capital strive to have a seat at the table, while focusing on the continuous improvement of technology,

where managers perform more HR tasks where they can add value, such as recruitment, salary determination and succession planning. Organizational leaders are increasingly turning to HR professionals to link HR strategies, organizational practices that include artificial intelligence and climate change and ultimately, improve the financial performance of the organization.

Researchers suggest that HR professionals can demonstrate this vital role by: (a) improving the organization's ability to change; (b) participating in all stages of implementing change process as needed to adjust to the external market (Brockbank, 1999). After that, HR professionals can develop and manage human capital according to the available resources, focus on developing the talent of human capital, and use the right strategy to implement strategic changes to create new jobs (Becker, 1996; Becker and Gerhart, 1962). The need for organizations to adapt to the twin shifts in AI and climate change has also led to the need for HR interventions, insights and situations created to help organizations see the future faster, learn later and follow different outcomes.

An organic approach to developing and using creative, flexible human capital can be achieved through the active role of HR professionals. This can be achieved by focusing on the learning needs of teams, departments, and the organization, changing the development of the entire organization and by specifically changing artificial intelligence and learning about climate to organizational capacity.

1.4.1 AI and HR

Research shows that automation of human work is not always new and can be traced back to the industrial revolution. The response of textile mill workers was historically known as the Luddite revolts, where workers destroyed looms out of fear that machines would take their jobs (Donnelly, 1986).

Research shows that the need to examine the impact of intelligence on work was felt at the presidential level as early as the 1960s, when President Lyndon Johnson created a panel to examine and conclude the impact of technology and skills on work. technology and intelligence are destroying jobs, but not eliminating them (Chui et al., 2015; McKinsey, 2016). Scientists predict that human jobs will eventually be replaced by artificial intelligence, and humans by machines.

This is because artificial intelligence is becoming cheaper and more dependable. As a result, countries are still looking for international income to support migration through technology (Allas et al., 2020; Treisman, 2021). While some jobs are amenable to automation, most jobs subject to AI are repetitive in nature.

Researchers use the historical change in work from agriculture to industry as the basis for their research, investigating why, how, and how people should work (Autor, 2015). They predicted many negative things such as employment, wage polarization. Their findings conclude that repetitive, physically demanding tasks are at risk of being processed automatically, but tasks that require better understanding and judgment, regret, and the need for implicit learning cannot be easily automated.

Not all studies agree on the impact of intelligence on performance. Researchers have also examined the work that automation could replace. OpenAI's latest publicly available software, a tool called ChatGPT, can generate up to 500 human-like characters in 2 minutes based on big data, creating original and simple messages that are popular all over the world (Hancock and Schaninger, 2023; Hill-Yardin et al., 2023).

The ability to engage in human-like conversations and its public accessibility make it appealing, but it also poses a threat to AI ethics, about the authenticity and authenticity of the text used, as well as legal issues. A World Economic Forum report concludes that AI will be particularly important in the transition to autonomous, connected electric vehicles (World Economic Forum, 2023). AI could pose a major challenge in reducing the need for electricity by making the most efficient use of it. If AI is to be used to combat climate change, its negative impact on the environment must be ensured to outweigh its positive impact.

Innovative technologies often face a double curse, as they are considered riskier and more expensive than existing technologies that have been dedicated to improving performance for years. The costs of new research, testing, and production will also increase. The mission of the organization *Artificial Intelligence for Climate Change* is to promote work at the intersection of climate change and AI, support the creation of discussion groups, and promote best practices in machine learning for climate change.

Explainable Artificial Intelligence (XAI) is defined as a field of machine learning that aims to solve the problem of decision-making in artificial intelligence, to have a clear

description and reasons that allow system components to understand the human decision-making process. explaining the "why" abilities (Ali, et al., 2023).

By 2030, it is expected that humans and artificial intelligence will form teams, building on each other's strengths and compensating for each other's weaknesses in human-machine teams (Fischer, 2023). This way of working is called augmented intelligence. AI is intelligent because it does not rely on its physical body, but can control different robots, combine them, and use skills it has previously learned from other AI, extract their knowledge separately to create its own copies, and access different information. connected or Internet databases.

In addition, AI will have a store of rules and knowledge that applies to every human, so that it can act on its own (from spoken language knowledge, human interaction rules, and emotional intelligence) and to perform better and adapt to the human team.

Over time, AI will learn the weaknesses of the team and help compensate for them. Therefore, by 2030, humans will expect some work to be done by machines.

With the expectation that the role of work in the lives of human beings will change from a necessary livelihood to a personal fulfillment, wisdom can help identify the magnitude of personal growth by finding and providing educational content. Therefore, AI will focus on optimizing the results of teamwork by providing technical support in daily tasks. For employees, using AI will mean easier, more efficient, and freeing up daily mental tasks.

(i) What will happen to my job?

(ii) What will happen to my knowledge? And

(iii) Do I have the skills to use them?

Therefore, when introducing AI systems to the workplace, analytical capabilities and business impact should be carefully evaluated when exploring possibilities, estimating risks, and gaining employee support.

Goal setting and impact assessment: The principles and building blocks of successful intellectual change will be explained, and the various stages of the change process change will be shown in order in the diagram.

Review performance goals and design work results to inform performance goals. There needs to be enough facts before introducing AI applications.

Evaluation and change: AI needs to be continually reviewed and evaluated to ensure application design and design refinement. It will also help drive new processes where employees are change makers.

The following will be useful in managing change:

1. Test centers and test programs to evaluate and evaluate innovative technologies and ensure readiness and acceptance of intellectual property

2. Clarify the use of AI in processing employee data and create transparent, legal, and operational agreements. Early qualifications are needed to ensure workers and managers have the necessary skills.

The EU High Level Expert Group on Artificial Intelligence has existing recommendations and other work. However, they should not forget that there may be

equivalent tasks performed for mental skills (Holzer, 2022). These studies call for better policies for developing the necessary skills, as workers who are educated and trained in AI may be less at risk of displacement.

1.4.2 Artificial Intelligence and Change

Studies show that the number of skilled workers increased from 1940 to 1973, and especially from the mid-1980s to the mid-1990s (Bresnahan et al., 2002). Some researchers believe that the use of technologies such as AI is invisible from lower-level workers to higher-level workers. Investments in technology, innovation, and quality improvement have combined to create improvements in low-cost operations, middle- and high-wage jobs that create a need for expertise.

Technologies like AI are the most effective way to do everyday tasks efficiently, but many jobs and skills, such as executives and professional specialists, are exceedingly difficult to automate. And while ChatGPT has recently revived the discussion of intelligence and its impact on white people's work, research shows that the direct impact on real jobs is still thought to be small (Hancock and Schninger, 2023).

If people are looking for a "why fix something that ain't broken" mentality, then the willingness to adopt AI will be low (Goodwin-Sak et al., 2019). The researchers also gave an example from the personal life of an interviewee whose family believed that intellectual intelligence would be useful for his job because he could see what was needed, but he didn't see the needed role of a cell phone in his personal life. The author also believes that AI knowledge will enable employees to focus on self-learning, as

organizations that adopt AI are more likely to have employees who are critical thinkers, and the need to be able to think, analyze, and apply critical thinking to identify problems.

Some researchers suggest that AI is being adapted to Industry 4.0 and can be developed and improved to change the way HR professionals connect with human capital and organizations (Jesuthasan, 2017). Researchers believe that four changes will occur in organizations based on Industry 4.0: the adoption of modern technologies, automation, new ways of working, and the role of people.

Because the intellectual revolution or Industry 4.0 brings new innovations such as robotics, machine learning, and automation that will change the way work is done, creating skills suitable for human capital, and creating new jobs (De Ruyter et al., 2019).

Researchers also said that introducing new work arrangements, including in HR work, using automation and AI to optimize daily work can negatively affect work and agile stance if HR does not do so (Gikopoulos, 2019; Rana and Sharma, 2019). Research shows that changes in HR-based services due to an increase in skills can make the group of HR professionals much older, but also more useful (Liboni et al., 2019).

The impact of HR skills as a profession can be considered a study and beyond the scope of this research paper as this research aims to better understand the impact of intelligence and climate change. Funding for HR professionals is available to assist the organization when needed. Business 4.0 and HR strategies Business 4.0 impacts HR efforts (Liboni et al., 2019). Strategic HR professionals use operational intelligence and identify how human capital can use technology to help increase human capital efficiency.

HR strategies related to AI or Industry 4.0 may include digitalization to increase business efficiency by improving data accuracy, reducing costs, and strengthening investment in people (Liboni et al., 2019). Researchers have also said that HR professionals need to learn and use new practices to improve the performance of human resources in an organization (Rana and Sharma, 2019).

The impact of Intelligence or Business 4.0 on organizations also means that HR professionals must pay more attention to the development of human resources in their organizations. Developing human resources capacity will be especially important for organizations that are transitioning from old ways of doing business to using artificial intelligence in their daily work (Agostini and Filippini, 2019).

HR professionals need to keep up with changes in skills, manage changing market conditions, and attract, retain, and develop human capital as the organization needs it (Liboni et al., 2019). When researchers conduct good research, participants need to distinguish between current and future talent and have appropriate plans. Researchers predict that AI or Industry 4.0 will lead to disruptive changes, will require organizations to adapt quickly, and important skills needed for human capital will differ from current regulations (Eberhard et al., 2017).

In addition to maintaining relationships with all stakeholders of the organization, the organization should also invest in people through development and training. Therefore, HR professionals need to have these resources to fit important tasks. As for the quality of work, participants also suggest that focus should be on human factors such

as change agents and collaborative strategies, as suggested by Ulrich et al. (2012). The Deloitte Institute for Artificial Intelligence recognizes the enormous potential of generative AI for organizations (Deloitte Institute for Artificial Intelligence, 2023). However, he added that to use all these resources, organizations need to quickly equip their employees with new skills.

Although intelligence cannot replace human values such as emotional intelligence, positive thinking, leadership, and problem solving, leadership development Continuous learning is important just like regular training, education programs and awareness of AI developments are crucial.

While automation is a tool to simplify human efforts, the need for permanent skills and human capital support can be detrimental to HR professionals and human capital (Deloitte, Generative AI, and the Future of Work, n.d.). While automation can streamline operations, the need for ongoing improvement and renewal can create challenges for HR professionals and human capital. It is also expected that there will be frustrations that may arise due to unexpected issues but will lead to collaboration with end users throughout the resolution process to resolve the issue.

1.4.3 Climate Measures and HR

Some researchers believe that one of the challenges organizations face today in their efforts to help combat climate change is the narrowness of organizational behavior. Organizations focus on limiting the use of climate change because corporate governance tends to “ignore time, distance, and failure” (Levinthal and March 1993). This narrow-

minded organizational behavior, where the development of natural resources and the efficiency of human capital are the primary goals of the organization, reduces the organization's potential to learn processes to affect change.

Organizations face challenges and opportunities due to global efforts to directly limit carbon emissions from biophysical impacts such as climate change (Winn et al., 2011a). Researchers have emphasized that organizational learning is important for organizations to adapt to changes internally and externally (Levinthal and March 1993; Berkhout et al., 2006). This is also true for organizations facing AI and climate change today. Researchers also believe that organizational learning to change will be specific to each organization because it will depend on its history, processes, and experiences (Levinthal and March 1993). Adapting to changes related to intelligence and security means that all organizations must abandon old ways of doing business and develop and implement new processes.

In addition, research in organization theory may not reach the scale of organizational change. Researchers also called for scientific methods to develop unconventional methods in the field so that research is non-linear and focused on the future. Research shows that attention to climate change is now necessary due to the dangers of human-induced climate change (UNCCC, 2015). Policymakers around the world are looking for corrective measures to reduce risks and mitigate climate change. The Paris Agreement is an international agreement sponsored by the United Nations (UN) and 190 signatory countries to reduce greenhouse gas emissions (UNCCC, 2015;

UNFCCC, 2019). The agreement aims to limit the global average temperature increase to 1.5 degrees Celsius above pre-industrial levels. Greater preparedness for major change (MDC) will enhance organizational resilience, organizational change, and climate change management. “However, Amazon has established a climate pledge with the goal of meeting the goals of the Paris Agreement by 2040, 10 years ahead of the Paris Agreement (Climate Pledge, 2020). To date, the agreement has 426 signatories from 38 countries and 55 sectors, including 9.61 million workers.

Each country experiences climate change differently. This study uses measurements from North Macedonia as an example (Green Climate Fund, 2022). In its publications, the country describes its measures as best practices. It focuses on climate change in health, employment, healthcare, and education. This project will strengthen the country's capacity to plan and implement climate measures, including financing from the Green Climate Fund (Green Climate Fund, 2022), by providing information, knowledge, and policy advice. These activities will also contribute to sustainable development and benefit the poor and disadvantaged segments of society. Two specific activities are proposed:

Development of self-assessment tools and training tools: These tools will help new agents in the GCF collaboration, including regular staff changes in public schools. Identify gaps in knowledge and provide the necessary information and training to do their job well.

Development of tools for climate finance assessment and initiatives: This development will address gender-based capacity building in line with North Macedonia's climate change commitments and the Sustainable Development Goals (SDGs). Together, these efforts help North Macedonia improve its defenses and address climate challenges.

1.4.4 Climate Measures and Change

As mentioned earlier, the drivers of change include internal and external factors such as adaptability, innovation, competitive advantage, environmental responsibility, and stakeholder needs. Successful partnerships identify projects that meet the organization's climate change compliance and performance criteria. Businesses need to address the issues of pollution and waste at work, be more transparent on social issues and invest in modern technologies that offer innovative solutions to many of today's problems (Sanchez-Garcia, 2024). However, organizations are responsible for creating shareholder value, reducing costs, managing risk, encouraging innovation, improving the business's reputation with external stakeholders, and creating a positive future.

How to change the concept? HR professionals should ask questions about how carbon monoxide is measured; There is also increasing demand for climate change training. Therefore, one research objective could be for HR practitioners to find ways to lead the low-carbon transition. Integration can be considered successful when climate change becomes part of value creation, business units, operations, and guidelines. The interest in climate change experts and the need for climate change leaders from a variety of organizations, including international organizations, public institutions, and financial

service providers, not aid agencies, is increasing, even if these companies do not have climate change capacity. There should be a report on the value of climate change research for practitioners trained in climate change management.

Adaptation to climate change can occur at all levels, both inside and outside the organization. The report highlights the opportunities and capabilities of higher education to better understand and address real-world climate change issues as part of its ability to address climate change (Filho, et al., 2021). There should be a report on the value of climate change research for practitioners trained in climate change management. Climate change can occur at all levels, both inside and outside the organization.

Promoting opportunities to better understand and address real-world climate change issues is a potential for improving climate change education at a higher level. Becoming more resilient to climate change is the most challenging aspect of climate change management (Caruso et al., 2023; De Matos and Clegg, 2013; Robertson and Barling, 2013). The supply process can adapt to many changing climates and can be affected by actions elsewhere in the supply chain. Many organizations claim to be adapting to climate change and a greener future, but it is more like greenwashing.

Nevertheless, this study is significant as little attention has been paid to building awareness or taking necessary action to narrow the gap of the mismatch of the skills or to build the new skills needed for the jobs.

1.5 Research Objective and Questions

The purpose of this study is to reveal how important human resources can be in finding solutions to changes due to artificial intelligence and climate change. Over time, the HR field has slowly but surely transformed from a management system to a data-driven decision-making and strategic partner that can predict and suggest interventions outside the economy that directly or indirectly affect human capital. Participate in all decisions as HR will monitor the needs of the organization and suggest and manage changes when necessary.

The author explained that organizations can be considered one of the most crucial factors in climate change and that environmentally friendly behaviors such as encouraging recycling, saving and waste reduction behaviors in the workplace will make the organization greener but more protective. Disasters affect the environment and have a positive impact on the climate (Robertson and Barling, 2013). If leaders adopt good environmental behaviors in the workplace, employees will have a harmonious environment. The attitude of employees will motivate leaders more. Therefore, organizations will benefit from supporting and rewarding managers who demonstrate positive environmental behavior.

(R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change.

(R2): Can HR achieve its goal of adapting to the above (R1) by proper change. management?

There is extensive research on how organizations need to adapt to each impact. While the impact of knowledge and climate change on organizations has been well documented in the past few years, little attention has been paid to developing human capital with the knowledge and skills needed to help them adapt to both changes. Organizations will face changes due to AI and climate change, and this research would be incomplete without addressing the need for change.

Automation, which involves using technology and artificial intelligence to perform tasks previously performed by humans, can lead to job losses and changes in job requirements. Similarly, climate change will affect human capital by affecting economic and employment opportunities. It is within routine and repetitive tasks. This can lead to layoffs or workers having to move to distinct roles that require different skills. This can lead to unemployment or underemployment because workers may not have the skills to find new jobs. Climate change, natural disasters, and environmental regulations can lead to job losses or changes in employment. Human capital in affected sectors may need to be retrained or upskilled for new roles.

The value of reskilling: Reskilling, upskilling, and enhancing the value of human capital are recognized as important strategies to combat the negative impacts of automation and climate change. While training programs may be costly upfront, research shows that the long-term benefits outweigh the initial investment. Effectively learning human capital can support organizational growth, social growth, and personal growth. Therefore, a suitable method is needed to address these issues. Governments, businesses,

and institutions play a significant role in supporting, training programs and policies to promote re-employment, employment, and the employment of human capital.

The Panacea study covers the negative impacts of automation and climate change on human capital, as well as existing studies and research that shed light on these issues. Re-skilling, de-skilling and up-skilling of human capital are important strategies to reduce negative impacts and pave the way for future growth and development. While there is no comprehensive study, there is research that shows the negative impacts of changes in human capital and the strategies that can address them.

CHAPTER II:

REVIEW OF LITERATURE

According to Section 1, it is worth noting that further advances in skills and climate change have a clear impact on human capital as it will change the way of working. Therefore, communication is important for HR. The research question is that HR must be strategic for HR to survive and thrive in the changing and evolving world of work. The research questions are:

(R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change?

(R2): Can HR achieve its goal of adapting to the above (R1) by proper change management?

Specifically, this paper takes the first step to close this gap in the study of the dichotomy of AI and climate change by reviewing the current literature available in the field of strategic HR as HR model and framework, human capital, AI, climate change, and change management independently and bring them all together.

2.1 Theoretical Framework and Discussion for Strategic HR

Scholars believe that human resource management can be effective if it understands the needs of the business and meets these needs by creating human resources that will meet these needs of the business (Schuler, 1992). Although the HR function has changed significantly since its inception, the understanding of the function can still be developed from management to consulting and requires the successful integration and

redevelopment of HR management in organizations (Bal and Brookes, 2022a). Researchers indicate that managers both inside and outside HR do not see HR as a good architect (Harmon et al., 2010). Leading HR managers can transform trends and needs into investment HR strategies.

2.2. Human Capital Theory

Although it was not called human capital, the father of modern economics, Adam Smith, defined that an individual can be a valuable tool for the success of any country (Smith, 1776). American economist Gary S. Becker developed the concept of people and capital and pointed out that people can be productive through education and better education (Becker, 1996; Becker and Gerhart, 1962).

Researchers believe that the basic principle of human capital theory is that human education can equal the value produced by other goods and services if capital is provided. This effective, cost-effective approach has significant benefits for individuals and organizations and benefiting people (Becker, 1962; 1996; Schultz and Schultz, 2021). Although human capital theory was developed by economists, researchers have shown that there is a relationship between human capital, HR professionals, and organizations, assuming that investments in education and training are necessary resources for the development of individuals, organizations, and communities. (Nafukho et al., 2004).

Academic Gary S. Becker states in Figure 1 that education is an important determinant of income and age. The horizontal axis represents age, and the vertical axis

represents the earnings generated by human capital (Becker and Gerhart, 1962; Nafukho et al., 2004). UU represents the income of untrained human capital, TT represents the earnings generated by trained and educated human capital in different age groups, and TT' represents the difference of earnings generated by educated and trained human capital. He explained that education and training is important, and that if everything remains the same, the earnings generated by uneducated human capital will also remain the same. On the other hand, the earnings generated by the educated and trained human capital, although initially small due to tuition and training fees, increases in the model as young human capital generate higher earnings on investment than older human capital.

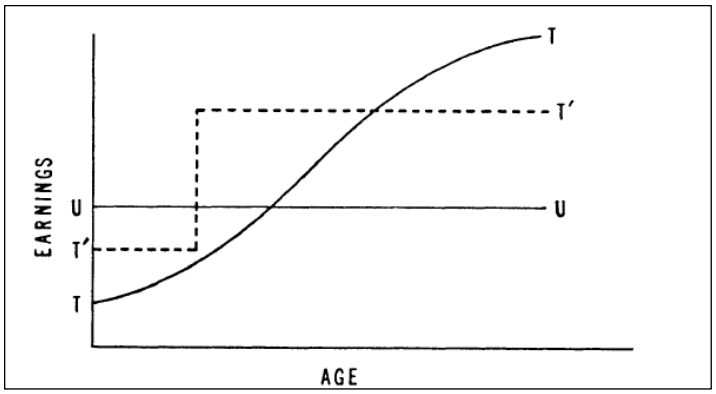


Figure 1: Human capital Theory (Source: Gary S. Becker, 1962,p. 26)

For this chapter, the figure on human capital theory shows the importance of training (instruction, pedagogy, education, etc.) human capital for individual, societal, and organizational overall growth. The next section goes with the theory of the need for human capital to be strategic.

2.3 HR Role Model

In a study conducted on more than 60 mature organizations where HR departments focused on strategic aspects of HR rather than operational processes, it was seen that the company's performance doubled in 5 years (Brockbank, 1999). HR activities considered strategic include complex processes that add long-term value, spread throughout the organization, and are prioritized. In this study examining the impact of automation and climate change on organizations, HR is considered strategic, considering that both proactivity and planning dilemmas cover the entire organization and provide long-term costs.

When academic and author David Ulrich created the HR role in the 1990s, he argued that change was one of the most important business challenges with the output of technology, and this is still true today, because changing organizations need to be able to learn quickly and adapt. Responding quickly and easily to new rules that are needed is affecting the way of working due to the use of technology, especially artificial intelligence (Ulrich, 1998).

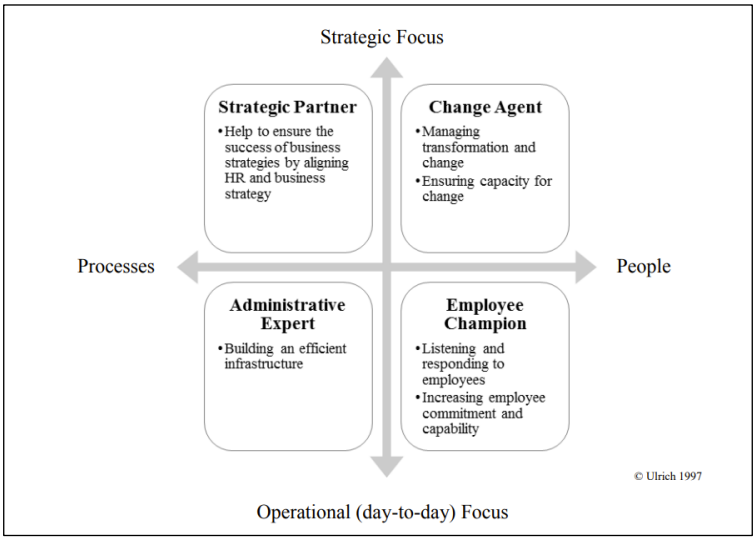


Figure 2: HR Role Model (Source: Ulrich, 1998)

Human Resources expert Professor Dave Ulrich proposed an HR model in the 1990s that divided HR functions into four areas (Ulrich, 1998). The second half is about making the organization's daily operations more efficient by eliminating unnecessary administrative processes and adding more important tasks to employees. HR can also be an advocate by managing employee engagement and holding employees accountable for their commitment to the organization.

The upper half of the box is ready for analysis. By integrating HR strategy with the organization's strategy and creating HR strategy accordingly, HR can be a good partner. HR can be the architect of the organization, defining the design and planning the design.

This will help managers identify what changes needed, which will then lead them to the next section. The ability of organizations to adapt to change will determine the winners and losers; organizations that can adapt, learn, and act quickly. HR's role as a change agent is to replace resistance with determination, planning with results and fear of change with excitement about the possibilities (Ulrich, 1998). This can be done using a well-designed transition model. The following logic provides context and meaning: HR professionals.

HR professionals who understand that their organizations need to adapt to AI and the cloud need to think and act from the outside in. First, HR professionals learn the language of the business that is tied to the job. Just like learning a foreign language, they

may not speak it like a native speaker, but understanding the language will help them get around. Second, they need to work together to develop organizational strategies that build human capital to adapt to AI and climate change.

Third, they must target and serve the organization's key stakeholders by identifying stakeholders, understanding stakeholders, and adjusting the organization's work to meet their needs. Finally, they need to have a deep understanding of the broader economic (including social, technological, economic, political, environmental, and demographic) implications of their industry and region, as this will help them understand how changes in AI and climate will impact their business.

In addition, HR professionals work well as change agents because they build trust through business intelligence. HR professionals are confident when they deliver on their promises, build personal trust, and are trustworthy (Ulrich et al., 2013). The business needs and the need for companies to adapt to intelligence and other factors, such as climate change. They learn how to influence others by communicating clearly, consistently, and with significant impact. Finally, HR professionals must be self-aware and committed to developing their careers.

Good HR professionals transform human resources into effective operations. Competence represents what the organization is good at and knows, the organizational quality of the organization, and the reputation the organization has for these values.

HR professionals must contribute to intelligence analysis to determine whether the organization has the capacity for change. These capabilities include the latest artificial

intelligence and the ability to adapt to climate change, customer service, speed, quality, efficiency, innovation, and collaboration. One potential outcome of successful organizations is to create an organization where employees find meaning and purpose in their work.

As change advocates, HR professionals need to ensure to integrate informal and independent work and support in ongoing change processes. Human resources professionals can guide the change of human capital by comparing the resources of the organization in change to the external environment. According to Ulrich et al. (2013), and personal (enablers of personal change) levels. To achieve this three-stage transformation, HR professionals play two important roles in the transformation process. As a change agent, they create a case to initiate change and demonstrate its importance by engaging with stakeholders, overcoming any resistance to change, and participating in the decision-making process.

They will also enhance change by securing organizational resources, creating organizational structures, promoting effective communication, and maintaining educational partnerships to ensure confidence in the organization that change is sustainable.

Good HR professionals understand the scientific background of HR, so they can develop and integrate HR practices in an integrated way to solve the next business problems. HR professionals can become HR experts if they understand the latest in key areas related to human capital, such as talent and development, manage performance

through evaluation and reward, and understand organizational structure and communications, such as collaboration and innovation.

But they also need to understand historical research to understand the principles. By understanding the past and current insights, HR professionals will be able to better understand the needs of their organizations and, when necessary, adopt and adapt to the AI and cloud transformation climate. Therefore, integration of new HR solutions has a positive impact on the business because HR services are customized to the needs of the organization rather than being used according to the best practices of other companies.

Finally, in recent years, AI and climate change have changed the way HR professionals think, manage, and do business. Fundamentally, HR professionals should be able to help HR adapt to HR management more effectively. Also, to assist human resources today, HR professionals need to acquire artificial intelligence and climate change.

This means that AI and climate change play a key role in supporting the organization's knowledge base in the new day, in changing for better performance, and in connecting the same investors and external customers. HR professionals who understand AI and the cloud will create a better organization outside the company and improve relationships within the company. As advocates of AI and climate change, HR professionals must identify changes, suggest the best ways for the organization, and ensure that human capital is directed externally to improve performance and relationships. This is where HR professionals must most importantly demonstrate their

potential. organizational capacity, which significantly impacts organizational performance. Research shows that HR professionals must develop their skills to adapt to AI and climate change to be successful in business. While strategy-based HR professionals play the most key role in integrating the organization's business processes, determining human capital expectations ahead of AI and climate change seems to have the greatest impact on the market. Treating resources as human capital, leveraging the organization by adapting to the necessary AI and climate change in a timely manner, and creating effective work for human capital will impact the organization's performance, but will often require changes in the organization's ideas, culture, attitudes, and practices. The head of HR professionals, even if they have a lower level of work, has a secondary impact on the organization's performance.

2.4 Kotter's Change Management Model

Organizations are flexible and multiple areas of change are the norm (Institute for Research and Practice, 2015; Reilly, 2019). Additionally, changes in other factors such as political, social, and technological developments are occurring simultaneously and affecting additional organizations (Kotter, 2012, 1995). Previous research suggests that AI and climate change together will lead to irreversible changes for many organizations (Fankhauser et al., 2011b). Short-term change is seen as a threat by comparison and increases stability (Fallik, 2013).

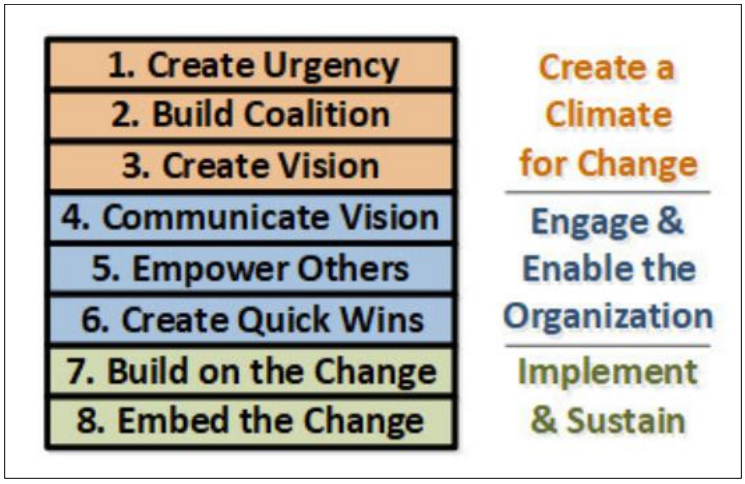


Figure 3: Kotter's 8 Steps Change Management Model (Source: John Reiling; 1996)

Change expert John Kotter has developed eight steps to change that are divided into three main stages. The first three steps are the first step to creating successful change by creating rapid change, creating peers who will support the change, and creating an unobstructed vision for the change (Kotter, 1995).

The middle three steps, levels four, five, and six, are the success levels; they communicate the change vision, support others, and remove obstacles and barriers so that teams can achieve the changing goals. In the last two stages, power is created, changed, and results are promoted before the new way of working is finally institutionalized in leadership. If Kotter's model is not the best fit for the organization, there are other alternatives that the organization can look at.

2.5 PROSCI Change Management Model:

The PROSCI change management model was developed by Jeff Hyatt (Hiatt, n.d.) based on his recognition of the business reasons for change. The core motivation for

the PROSCI model is the belief that change occurs at the individual level. For a group or organization to change, everyone in the group or organization must change. This means that to affect change in our organizations, businesses, and communities, we must first understand how to change one person. The PROSCI ADKAR model is a framework for understanding and managing personal change. Provides models and best practices for leaders who want to inspire change in others.

ADKAR is an acronym for the five values a person must attain for successful change: Knowledge, Imagination, Information, Skills, and Development. The results or goals set by the ADKAR model are continuous and cumulative. They must obey the commands.

- To implement and sustain change, individuals must progress from awareness to any type of change. Knowledge is the goal or outcome of early communication that affects organizational change.
- Desire to be part of the change. Desire is the goal or outcome of motivation and control.
- Know how to change. Knowledge is the goal or outcome of training and coaching.
- The ability to achieve or implement changes in performance levels. Mastery is the goal or outcome of additional training, practice, and time.
- Promote sustainable change.

Reinforcement is a goal or outcome that uses measurement, adjustment, and acceptance of change. Change occurs at two levels: the organizational or project aspect of change and the people aspect of change. Effective change is the result of two major simultaneous changes. Project and change management are complementary disciplines that aim to create results and outcomes. Only researchers or policymakers should do these studies.

However, researchers say that HR professionals should do HR work to influence strategies, considering the direct impact (Brockbank, 1999). The HR model shows how HR becomes an expert in the day-to-day operations and in the long-term goals of the organization's strategy through a change agent. Here John Kotter's 8-step change model describes the end-to-end process from creating a crisis to embedding and institutionalizing change in the organizational culture.

2.6.1. Concept design

Based on the research conducted so far in Chapter 1 and the literature review of this chapter, the development of changes and increased efforts in climate-friendly measures can affect human endeavor.

The Workforce of the Future: Artificial intelligence, climate change and human capital is an approach to managing human capital that integrates intelligence, environment, health and business into an organization’s policies, practices, and strategies (Mariappanadar, 2019). The main objective of this approach is to balance the needs of the organization with its resources, human capital and environment in a way that creates

long-term benefits for all participants. This approach is increasingly being used by HR professionals who embrace the impact of talent and the changing climate of organizations of all sizes worldwide.

Experts say it is increasingly recognized that organizations have a responsibility to use AI and promote sustainable development, not only to maximize profits and protect the environment, but also to create long-term benefits for everyone involved (Vinuesa, 2020). There are many reasons why HR professionals are adopting this approach.

First, using future-oriented applications can increase efficiency, reduce human resources, and improve the organization's reputation, which means competing for advantage and making money for the organization. Second, future-oriented applications can improve employee health, work-life balance, and job satisfaction, thereby increasing employee motivation, engagement, and retention. Third, future orientation often improves the morale of human capital. Future applications will help solve intellectual and environmental problems such as rework, high work, and changing employee climate-based human resources and expectations.

Fourth, future preparation can be useful for those interested in developing artificial intelligence and cloud computing. Governments and regulatory bodies have increased the use of intelligence and environmental and social management, requiring organizations to adhere to ethical and cultural practices that achieve Voluntary success with future applications. In general, future preparation can be especially useful and effective because it aligns with the values and expectations of stakeholders, helps solve

social problems, and brings satisfactory results to the organization. The direction of the future is different from one to another.

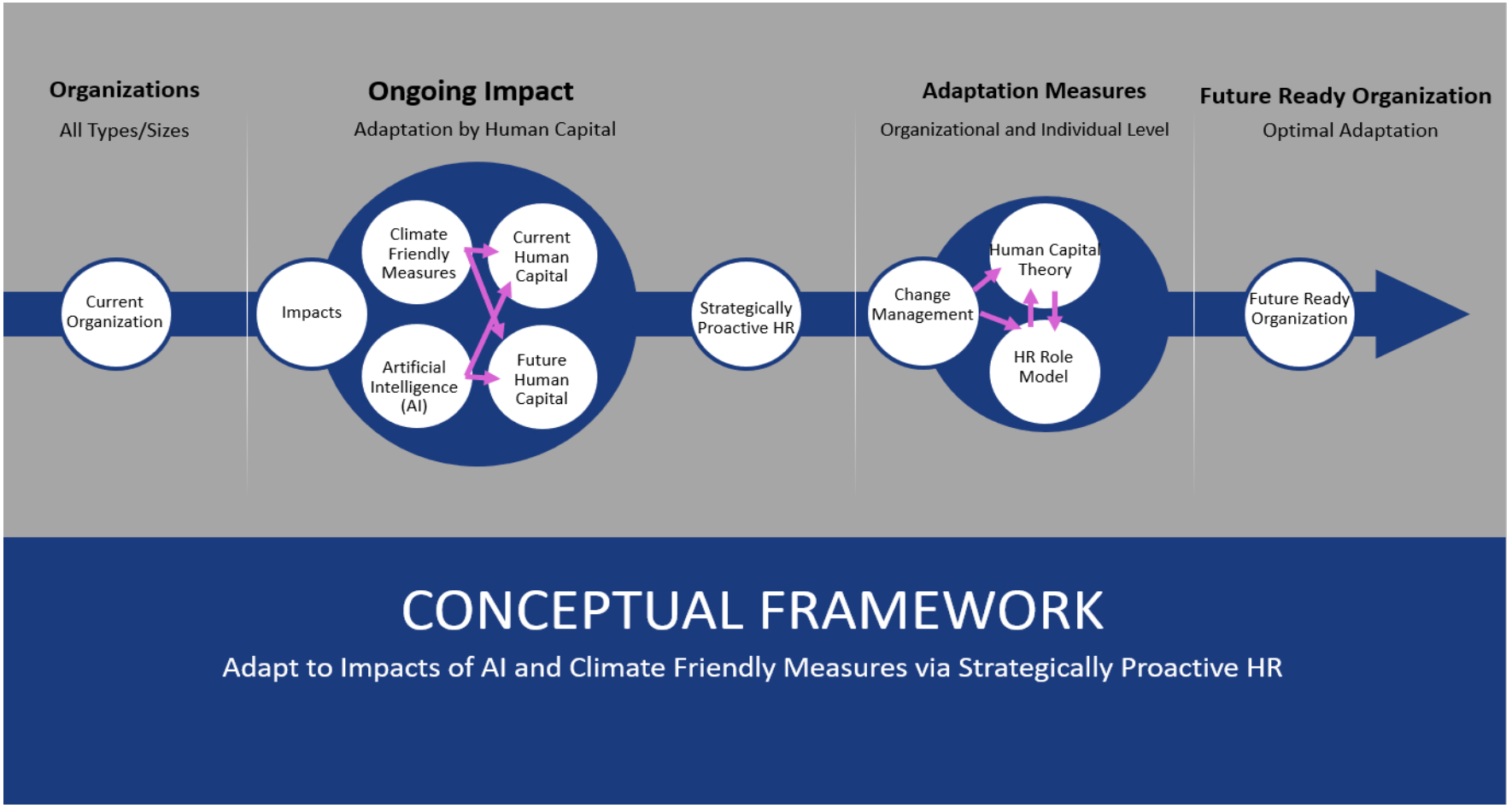


Figure 4: Conceptual Framework - Adapt to Impacts of AI and Climate-Friendly Measures via Strategically Proactive HR

Independent variables are the ones that cannot be changed by any other variables whereas dependent variables are changed by independent variables. In the conceptual framework, the independent as well as the dependent variables are covered in the first half of the framework under the "Ongoing Impact" section whereas the theories and models used in this framework will be discussed in the second half under the "Adaptation Measures" section. In addition to the dependent and independent variables, there are two other variables in the conceptual framework: the moderator and the mediator variable.

The details of these variables will be discussed in the next section.

2.6.2. Independent Variables

In this conceptual framework, climate-friendly measures and AI are independent variables as the impact of these variables will remain the same as the development of these variables is beyond the influence. To study the impact of these independent variables, a quantitative study will be done in the next chapter to understand the trend of job increase in the US in these fields in the past five years.

2.6.3 Dependent Variables

In the conceptual framework, the dependent variables are human capital that are impacted by both, the changes brought by AI and climate change and the pace at which the organization can adjust to such changes. The human capital would cover both populations, the ones that currently work in the organization, or the human capital that join in the future. Both populations of human capital will be impacted by changes due to the extent to which the organization adapts to changes brought by AI and climate-friendly measures. As the organizational adaptation capability is out of the control of human capital, they are the dependent variables.

2.6.4 Moderator Variables

In addition to dependent and independent variables, the moderator variable, which is change management, has been used to study (Athota, 2021). In the later section of the conceptual framework, this moderator variable, change management, will be used to explain how the relation between the independent variables (AI and climate) and dependent variables (human capital) can change. Because of the use of this change management as the moderator variable, the goal is to show how this variable can affect the strength between the dependent and independent variables.

2.6.5 Mediator Variable

In the conceptual framework, strategically proactive HR would be a mediator variable as an intermediary by preparing human capital to adjust and prepare for the impact of AI and climate change. Based on this conceptual framework, without a strategic human resource practitioner as a mediator, it will be difficult for organizations to help current and future human capital prepare for AI and climate-related changes (Nawaz, 2024). Strategically proactive HR can influence human capital by making them aware and educating and training them. In the next chapters, the influence that strategic HR can have on high-impact human capital will be reviewed.

Humans, AI, and climate change

Experts say that human capital's role will be important in trusting the AI and will be crucial during the AI lifecycle; thus, investing in a future-ready workforce is the key (Business Roundtable, n.d.). It will be good to explain beforehand where the AI systems

will result in a high impact on human capital such as deployers of AI, the users, and the regulators.

2.7 What does it mean by 'strategic HR'?

For this study, HR is a concept that means that HR professionals in an organization can predict the jobs or tasks (jobs) that will be added, changed, eliminated, artificial intelligence or climate change. It will be important to support employees whose roles and responsibilities will change.

This can be done by conducting skill development studies to rapidly develop skills in the field of intelligence and climate change. In addition, investments in talent acquisition, retraining and intelligence can be increased to make the most of integrated AI and cloud-related efforts in organizations. According to HR expert Josh Bersin, it is important to measure and verify even the best performance because these skills can add value to solving business problems (Bersin, 2024). Administrative burdens must be reduced, and duplicative regulations eliminated. For example, the United States is the world's largest economy, the world's second-largest energy consumer, and the world's second-largest emitter of greenhouse gases (GHGs). Therefore, countries like the United States need to adopt a sustainable and secure strategy that not only reduces emissions, but also reduces emissions and increases energy.

This includes leading the world in low energy consumption and high efficiency, not only in developing countries but also in emerging economies. For low-income countries, this will help them achieve economic growth while controlling energy consumption. As organizations focus on a skills-first approach, human capital acquires skills rather than degrees to perform new tasks (Microsoft, 2023).

To cope with the AI work environment, human capital must possess AI skills. The most important skills required for future AI are decision-making, adaptability, emotional intelligence, curiosity, bias, and achievement, and motivation AI.

AI has the potential to address human capital skills such as communication, critical thinking, and emotional intelligence. One way to ask good questions about intellectual intelligence is to be specific, practice, and research the facts. Similarly, the AI illusion implies that AI relies on false answers. This scheme uses sophisticated methods to determine how humans' piece together the Internet during tasks such as email, reports, and search engines, but does not determine whether it is real.

Be an AI whisperer, which means using AI models to your advantage, or an expert, which means being able to extract the most vital details from AI design. People who can hack the system to achieve the desired results. are becoming increasingly difficult and unpredictable (ILO, 2015; ILO News, 2021). The center identifies and evaluates innovative ideas and solutions to solve critical intellectual challenges of today and tomorrow. They call on global innovators to rethink skills development and lifelong learning.

Unilever is calling on people to prepare for the future of work because many ways of working – roles, locations, time, and skills – are now changing rapidly (Unilever, 2023). The organisation will pioneer a new working model that allows people to choose how they want to work, through flexible contracts that include full-time benefits, learning or leave to re-employ. The organization will also work with organizations such as LevelUp to help 10 million young people get ready for work by 2030.

A document from the World Business Forum and researched by science says green projects are key to achieving environmental change (WEF, 2023). The 'Jobs for Tomorrow' white paper look at how investing in job creation and training for those jobs can help build a sustainable global economy, with 10 of the biggest businesses looking at how it can help build a sustainable global economy.

2.8 How can HR be Change Agents?

For HR professionals to function as change agents, they need to be positive collaborators who can see what is going on and successfully integrate with the organization (Ulrich et al., 2013). To integrate change, HR professionals need to lead the change, adapt to the change, and implement the change strategy. HR professionals will be able to develop human resources by making them efficient and effective and develop their capabilities according to the needs of the organization.

Therefore, researchers have called on HR professionals to play a leadership role in transforming change through knowledge and climate (El-Khoury, 2017). Researchers also believe that this will help human resource managers monitor the development of skills and abilities of human capital in organizations and ensure that they have the skills necessary for future success (Bakuwa, 2013). In addition, the organization's adaptation to AI and security means a direct impact on human capital; HR professionals often must innovate and keep up with modern technologies (Burmeister et al., 2016).

Researchers say that HR professionals need to be able to establish and build relationships that will help them become effective managers and human capital managers (Ulrich et al., 2013). Because of the trust and confidence between HR professionals and

human capital, change will be embraced by human capital with the idea that it is needed to adjust in the changing times.

Academics even predict that HR professionals will move into more roles, which will allow them to focus on the broader impact of AI and security on organizations rather than just management (Dhanpat et al., 2020). As AI and climate change bring, HR professionals also need to be good partners for organizations and implement and support changes that suit the needs of the organization by implementing effective human resources management (Ulrich et al., 2013).

2.9 Novelty of this Research

The main purpose of this article is to find out how HR professionals can help human resources adapt to AI and climate change. Although researchers have published articles on the impact of intelligence on human capital, few have examined the impact of climate change on human capital. The use of AI in the workplace and the increase in climate measurement will affect the current business. This study considered three variables, namely skills, climate change and human resources, and found that human capital can withstand change through effective change management.

2.10 Significance of the Study

In organizations, it is important to pay attention to the impact of skills in preparing human capital to meet the requirements. In turn, it is a well-known fact that the impact of climate change on human endeavors is recognized (United Nations, n.d.). There is increasing pressure on organizations to adapt to constant change to meet the needs of their partners and competitors.

This research article is important because it looks at the two crucial factors (intelligence and climate change) and how they affect human capital. This study examines current concerns from a future perspective, i.e., the impact expected to have on the functioning and functioning of the appropriate change management process.

Effectively using change management can have a significant impact on how well an organization adapts to the impact of changes like AI and cloud computing. Organizations need to act urgently as technical expertise and enact awareness of what needs to be done to prevent the rising temperatures that are causing climate change increase. There is also a new need for operational flexibility in response to climate change.

It is important to examine both aspects of human capital to understand the impact of these changes because these two issues occur simultaneously. This will help you find a solution. Managing these changes will be especially beneficial for organizations to be more efficient, as investments in human resources such as education and continuing education can help address both issues.

It will also help prepare human capital for change from both sides. Planning for the transition to artificial intelligence and the changing climate in the workplace has become an urgent issue, as studies have shown that both can have direct impact on human capital. Other variables may not affect human capital or organizational structure.

2.10.1 Describing the Status Quo

Previous studies have shown that both the intellectual and scientific impacts of climate change will affect the workforce and human capital. However, the best way to investigate this question is to examine the impacts of AI and climate change. Until

recently, the impact of AI was prominent due to the perception that it would operate far from humans. The current belief is that AI will create more jobs than it will take, but human capital needs to be prepared for the change (Deloitte, 2023).

In contrast, the impacts of climate change have been known for decades. But organizations are still working hard to take steps to prevent climate change and integrate these measures into their daily work. While this decision to combat climate change is often made at the policy level, its impact on human capital is overlooked (United Nations, n.d.).

New research on AI and climate change questions the ability of human capital to adapt to these changes. Several research projects show organizations opening AI innovation labs to study the use of AI in the workplace. Similarly, other studies show organizations partnering with solar, wind, and other organizations to combat climate change. Now more than ever, people must deal with both changes.

2.10.2 Identifying a 'Gap'

As discussed in this article, both intelligence and climate change will impact employment. While current research on AI and climate change is promising, it does not address research on their impact on human capital and ways to address both simultaneous changes. Many studies show that AI will impact employment.

Furthermore, due to climate change and stakeholder pressures to move toward climate metrics, organizations are now using carbon offsets as a stopgap, but to achieve a net zero plan, organizations need to change their business models. Away from carbon-producing materials. These results raise new questions to explore, such as future changes and human capital prepared for both types of changes.

When we consider looking at these changes through the lens of intelligence or climate change respectively, finding ways to prepare human capital for both changes are the same thing, but time is not working. Therefore, intelligence is developing faster, while the goal of net zero emissions is in the distant future. However, the result was not good because I was aware of both changes at the same time. Therefore, human capital needs to be prepared for both types of changes at the same time.

This article shows some of the limitations of examining the two major changes separately, showing the change of the concept of the idea, the focus and the increase in work, and the impact of intelligence and climate change on the existing ones. The impact of career development and determining the change management techniques that organizations can use to plan their human resources.

2.10.3 Filling the Gap

This research describes a solution to prepare human capital for both AI and climate change hand-in-hand, based on new and simple solutions that HR professionals can enact to manage change and prepare human capital. Here, we explore how HR professionals use change management techniques to prepare human capital for the transition to AI and climate change in the workplace, which has not been studied before.

Unlike current methods that address workplace changes separately through skills and climate change, this study proposes a holistic change piecemeal. This research will reveal a way to solve the gap in current education to facilitate the necessary change from the perspective of HR professionals. It proposes a new concept as a solution to create a seamless AI network from climate change management to the necessary design change with the help of human experts. Unlike other reform agendas that address one issue at a

time, this strategy addresses AI and climate change in human capital today and in the future.

This framework will help HR professionals support and prepare human capital to deal with talent and climate change. Based on current system, as not human capital prepared for the change, human capital ends up becoming liability rather than asset as organization undergoes major changes and transformations.

We propose a framework that can reduce HR training and save personnel costs by focusing on both changes simultaneously. Using this simple yet effective process, the report synchronizes human capital planning with the organization's transition to intelligence and climate change, using fewer resources than HR professionals currently direct to rework.

Organizational reform and organizational change management planning for AI and climate change should occur simultaneously. Because both reform and change management require significant effort. Assessing the current state of the organization will help inform how AI and climate change will impact the organization, thus informing management changes across the organization.

HR professionals should focus on human capital, cultural leadership skills, and climate change management. If an organization decides it needs to adapt to AI and climate change, HR professionals will need a change management plan that specifically addresses specific responses resulting from AI and climate change.

2.11 Change Management Plan

Some of the work organizations can do is engage local schools, including community groups, in collaborative research to improve accuracy, timeliness, demand,

interpretive language, and use of intelligence, weather information, and early warnings. Organizations can partner with local universities to support AI, security, and business development research to support the construction of security-smart and AI-friendly adaptation and technology planning.

Provide training on forecasting and information about long-term climate change and AI development and communicate risks and impacts to inform cloud and AI operational impact and preparedness for cloud and AI reform planning and implementation. Identify and emphasize the importance of research and diverse data to inform planning and decision-making at organizational, departmental, line manager, and individual/base levels.

Promote the use of best practices in operations, management, and long-term monitoring and modeling financial support to continuously inform intelligence and climate change. Work with accelerators, readiness organizations, co-investors, perspectives, and donors to make agreements and identify financial intermediaries that can engage local actors at scale and explore new partners for resilience goals.

The job changes need to be divided into short, medium, and long-term. The impact will be difficult to measure in the short and medium term, but the real impact will be in the long term, with jobs lost in affected industries and jobs created to replace jobs in the short term (Fankhauser et al., 2012, 2011b). In the medium term, value chains will be affected.

In the long term, AI and climate change policies will drive innovation, creation, and development, thus creating disruption. While there is much research on the fossil fuel

industry and renewable energy, there is less research on the effectiveness of specific climate change policies.

The short-term direct impact of climate change on human capital will be created in low-carbon sectors such as wind farms, which will have a direct impact on employment and human capital due to climate policy (Caruso, Marco, and Noy, 2023). The medium-term impact will be behavioral changes and price changes. For example, reducing electricity production will cause unemployment in the mining and rail transport sectors. Similarly, the demand for rotor blades, silicones and low-carbon materials among more polluting materials will also increase.

In the long term, the technological change of intelligence will lead to economic growth in both developing economies. The need to adopt modern technologies will lead to a second wave of innovation as industry adapts technology to its specific needs. The greatest impact in the long term is to be expected where technological change and innovation threaten to cause significant economic change. Early experiences with flexible transfer systems have shown that they can be a powerful engine for job creation, productivity, and growth. This is generating much debate about employment and education policy. These stories are solicited by trade associations, private companies, and independent organizations. The real question is who is responsible for the skill level of human capital.

The traditional practice of assessing the talents of job applicants, training employees for their current jobs and developing them internally for future roles means that organizations take responsibility for ensuring they have the skills they need. But these reports suggest that academics and employers themselves must be responsible for

creating the necessary skills organizations that have a significant impact on people and are worth considering.

2.12 What is a skills problem?

Under skilled and inconsistent skills may seem like the same thing, but they have different meanings. While skill deficiencies imply that future workers lack skills, skill shortages imply that there are shortages of jobs related to a particular occupation; for example, there were no engineers or IT professionals in the United States in the early 2000s (World Economic Forum, 2023). A skills mismatch implies that the supply and demand for skills may not match. The combination of these questions is skills question.

The concept of cognitive problems is not currently in the research process. In the 1980s, skills issues were identified as several studies showed that productivity growth was dependent on increases in the workforce (U.S. Department of Education, 1983). In the 1990s, a group of people emerged who viewed human capital as an investment rather than a cost and who assessed future human capital needs at a higher level (Skills and Employment: US SCANS Report, 1999). These SCAN skills were at the center of policy discussions in the 1990s.

2.12.1 School to Work Opportunities (STWO) Act

More interestingly, as defined in section 802 of the Act (School Work Program 1994) the workplace in the United States changed in response to heightened international competition and new technologies, and such forces, which were ultimately beneficial to the nation, were shrinking the demand and undermining the earning power of unskilled labor. The idea of the Act was to help students understand the value impact of lessons in

the classroom by using examples from business and the workplace, and then to see how those examples could apply at work, to bring positive change and make the transition from university education to actual workplace smooth. A small fee was charged to academic institutions to provide financial support and help make these connections. The policy ended in 1999, shortly after the 2001 recession caused the economy to tighten.

Other studies claimed that the retirement of the baby boomer generation would lead to a decline in the workforce. Research shows that in 2003, the Society for Human Resource Management (SHRM) reported that organizations were anticipating staff shortages. However, a conflicting report suggests that the increase in the workforce should be slower than the decline (Report on Public Policy and Aging, 2004).

2.12.2 Reasons for Focus on STEM Skills Focus

It is claimed that the skills gap shifted from SCANS (i.e., high-level skills to leverage human capital) to science, technology, engineering, and mathematics (STEM) education in four years of university education in the 2000s (School Work Program Act, 1994). However, research shows that the report is not good because the results are inaccurate - for example, those with a university degree can only do this job in one place, meaning that only graduates with an IT degree can work in IT and rely on the evidence obtained by technical staff (Cappelli, 2015).

The cost and availability of skilled workers in STEM differentiates companies in their decision-making about where to work, increasing the supply of STEM graduates and allowing more people to take foreign STEM jobs and foreign STEM students to enter and live in the United States, a study shows (Cappelli, 2015). However, there may be more engineers because most engineers who enter the job were not held by STEM

graduates. For example, a computer programmer with a bachelor's degree in computer science will not be hired to work in computer programming. Human resources are resources with appropriate resources.

Skill classification also known as skills taxonomy will help organizations find what you are looking for (World Economic Forum, 2023). Similarly, a skills taxonomy connects skills from role to role. As more organizations become digital and as technology in business changes, human capital will need new skills.

An organization could use AI that may be in the spectrum of easy to hard but regardless of the system embraced, the success or failure of an organization depends on its human capital. AI should enhance activities and be useful in areas of society. Its application promises to solve particularly complex problems beyond our current human capacities.

Similarly, climate change is a complex issue that requires significant changes in our transportation, agriculture, housing, and energy systems (Stein, 2020). This research supports the use of human capital through change management to solve the skills problem that could potentially arise due to adaptation of AI and climate change and shows its prospects. The research then identifies key return on investments (ROI) and trade-offs that can be associated with organizational change efforts. It then, advocates for rigorous implementation to minimize the loss of skilled workers by investing in human capital while the organizations reap benefits AI and reduced carbon emissions. AI has permeated many areas of society, from the mundane use of Google search to criminal justice, driverless cars, digital advertising, and medicine (Dwivedi, et al., 2023).

However, global living is not successful in the current economy, but organizations are permanently using measures, such as remote work, because it helps reduce carbon monoxide emissions during travel.

2.13 A Common Problem of AI and climate on jobs?

Depending upon he organizational outputs, the type of human capital in terms of skills and knowledge will be different. This research only discusses the category of human capital who work desk jobs or are regarded as white collar workers. Although factory workers and blue-collar workers are also the major components of the workforce, the purpose of this study is not to provide a comprehensive assessment of the use of skills and climate change for human resources. However, this research provides some examples of the potential impacts of AI and climate change on factories and workers of color, and where some discretionary changes could be applied to these activities as well.

2.14 AI

HR professionals should support the leadership in managing change by being effective and transformational leadership (Musaigwa, 2023) . To lead through a massive wave of change in all sectors due to digital transformation and climate change. HR professionals should be able to predict the negative impact of organizational change and prevent it from happening. At the same time express a sense of urgency with a vital message during change that includes explaining:

Before considering implementing any change, it is important to consider three criteria (Ulrich, 1998). 1. Current contribution of HR professionals to the organization; 2. Given the external trends such as AI and climate, the contribution that HR professionals

will need to deliver; and 3. The value that will be generated by closing the gap in opportunity, performance, and risk management.

Their research shows that while general job competency models are important, they are not specific enough to help HR professionals identify the specific needs of an organization in real time in a crisis. In addition, through their research, they have learned repeatedly that the hope for human capital performance is to continue to meet new challenges.

This research aims to fill this gap by providing a unique framework for AI and climate change that is science-based, global, available in the marketplace, and that responds appropriately to changes over time.

This research provides a useful tool for assessing human capital readiness for recent changes and strategies for implementing those changes. By assessing human capital readiness, HR professionals will see the difference more easily, meaning they can invest in areas where they can see the biggest impact. Research capabilities will help HR professionals adapt, work, and invest in development of AI and climate change in their organizations. This model will facilitate change in the organization.

If there is any change in an organization and human capital is prepared accordingly, then organizational investment on human capital will be paid. This strategy will provide HR professionals a roadmap for the changes that are necessary in human capital. Organizations can use this competency model to help organization leaders understand what they want from HR professionals and how well HR professionals are performing in these areas.

Researchers have noted that in the last two years, human resources have become more efficient and effective, there are many signs of progress, and there is room for further development of the job (Boudreau and Ziskin, 2011). This conceptual model will provide a clear and detailed explanation of what HR professionals need to do to be effective.

This research is designed to provide a better understanding of HR's strengths, where improvements is needed, and the importance of adapting AI and climate change. It also focuses on developing HR professionals' communication skills, which should play a key role in organizations adapting to AI and climate change. and the worker, the goal, and the alternatives and resources available to the human capital. HR professionals could act as transformational leaders to encourage human capital take risks and foster creativity and innovation.

CHAPTER III:

METHODOLOGY

3. Overview of the Research Problem

This chapter includes the elaboration of the research design.

3.1 Mixed method

As this research spans different disciplines with the full span of impact yet to be determined, based on the availability of qualitative and quantitative data, mixed methods of research is used to delve into a research question.

The research questions are:

(R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change?

The R2 used for this study is: that HR professionals can achieve their goal to adapt to the above (R1) by proper change management.

3.2 Research Design

This study will use a mixed methods design that combines qualitative and quantitative data to better understand the research question. The research question is: Can HR help human resources adapt to a changing workplace due to skills and the impact of climate change? Both qualitative and quantitative data is used to ensure the accuracy, reliability, and reproducibility of the methodology to answer the research questions.

The overall impact of technology and climate change, data for reliable and accurate research comes from the U.S. Bureau of Labor and Statistics (US BLS, nd).

The data is provided by the Occupational Employment and Wages Survey (OEWS), which annually estimates industry-specific employment and wages for approximately 830 occupations in 580 fields in all 50 states and Washington, DC (OEWS Database, 2023). In the United States, the survey provides a two-year estimate of national employment and wages.

The survey is a joint project funded and conducted by the Bureau of Labor Statistics and state labor agencies that collects data from a sample of approximately 180,000 factories twice a year, in May and November. Responses are collected electronically, by mail, e-mail, telephone, or in person.

This model is the most appropriate for the study because all models pay larger employers (defined as organizations in the study) to provide the highest level of service, including part-time and full-time employees, sole proprietors and partners, partners in unincorporated firms, home workers, or unpaid workers.

The criteria used for data selection are listed below:

(i) The time constraint of five years of employment and wages data from May 2018 till May 2022 and

(ii) Selecting six niche industries each that are in close connection with the topic of research within short duration; longer time was not used to avoid change in occupational classification.

	Mean Salary (U.S. Dollars)					
Occupations	**2018**	**2019**	**2020**	**2021**	**2022**	**5 Yrs. Ave**
Computer and Information Research Scientists	123,850	127,460	130,890	142,650	155,880	161,274
Computer Network Architects	111,130	115,110	119,230	120,650	129,490	250,030
Database Architects				121,840	136,540	74,261
Programmers, and Testers	104,480	106,980	109,950	113,720	124,940	1,610,033
Computer Programmers	89,580	92,610	95,640	96,650	102,790	228,065
Software Developers	114,000	111,620	114,270	120,990	132,930	1,275,315

Table 1. Five-year average salary data in the occupation in the U.S. related to AI (Source: Bureau of Labor and Statistics, 2023)

From the 35 occupations in the 6-code Standard Occupational Classification (occ_code) of Computer and Mathematics, Table 1 selects the 6 occupations that are closest to Computer and Software Development. According to a study by the consulting firm McKinsey (McKinsey, 2016), these positions are classified as difficult to fill. The average salaries of these occupations have been included in the study for ease in comparison.

3.3 Quantitative Research Design Limitation

Although AI could have other occupations, due to the lack of proper categorization in a reliable database, the categories used in this research encompass only the categories that are available with full dataset. In addition, only the U.S. data is used for research since the available database (for example, the World Bank, OECD) includes metadata and not raw data.

Upon collecting the data, the mean salary for 5 years (X_1, X_2, X_3,…) was added, and it was divided by the number of years(Y) to get the yearly average (Z). Notably, in the dataset, the profession of database architect occupation was a separate category in 2020 only but based on a recent study conducted till 2030, the same profession is predicted to be one of the fastest-growing occupations in the U.S.

Similarly, jobs and climate change were examined on the same basis as AI and jobs were analyzed and five types of climate-related work were selected. Since the data could be in terms of salary and the growth rate of each selected job group is not the same, we look at the performance of each group. It also includes the percentage increase of employees in this category in 2022 compared to 2018.

Experts warn that the COVID-19 pandemic has affected the climate sector, as employment in the climate sector was expected to decrease by 8% in 2020 (Ministry of Environment and Energy, September 21, 2021). Therefore, jobs in this category are affected. During the COVID-19 pandemic, the pain has increased exponentially in the last 5 years as the disease has gradually spread (including environmental scientists and earth scientists). The gross growth far exceeds negative growth.

	Employment						
Occupations	2018	2019	2020	2021	2022	Employment Trend	% Increase since 2018
Environmental Scientists and Geoscientists	116,020	119,920	118,660	106,910	108,780		-6
Geoscientists, Except Hydrologists and Geographers	29,260	29,200	27,890	23,620	25,230		-14
Hydrologists	6,290	6,440	6,170	6,390	6,270		0
Solar Photovoltaic Installers	8,950	11,080	11,490	16,420	27,760		210
Wind Turbine Service Technicians	5,580	5,960	5,860	10,100	9,830		76

Table 2: Five-year Employment Data in the field of Climate Change in the U.S (Source: Bureau of Labor and Statistics, 2023)

3.4 Results

The conclusion of many studies is that intelligence and climate change related jobs have increased significantly in the United States in the last five years. While the employment data on climate change is accurate, the average salary increase that experts propose for AI jobs is related to the skill demand and sufficient employer compensation for skilled groups (Mishel and Eisenbrey, 2015).

3.5 Qualitative Methods

Since the qualitative approach of this study focused more on data from the United States and the impact of jobs and climate change was considered globally. The contents such as books, peer-reviewed journals, web pages, and press releases were analyzed to find out if the impacts of intelligence and climate change were felt not only in the United States but also in other parts of the world. Initially, our AI, HR, and climate change systems were all investigated together. Previous studies suggest that AI and climate change together will lead to irreversible changes in significant organizations (Dwivedi et al., 2022; Vona et al., 2018).

3.7 Research Design

Given that both AI and climate change are newly emerging topics, only few reliable sources address their impact on human capital in the same study. Therefore, to find the targeted research areas, AI and human capital are studied first. In this process, many international journals, books, and web pages have been updated, and progress has started since the early 2010s. The prominent ones are listed in Table 3 in chronological order and then by type of service.

Investment and higher education are seen as important to insulate workers from the negative effects of the current wave of automation, especially for workers who are making advances in technology (Cappelli, 2015). This discussion is a new topic that has developed in the last decade. Guidance on the impact of AI and human capital is have mixed reviews. While some studies suggest that HR is responsible for addressing human capital concerns about AI and adapting to changes in AI, other studies emphasize human capital is the responsible party to adapt to cause perpetual change in jobs due to AI.

Similarly, qualitative research on the relationship between HR and climate change was conducted accordingly. Several types of publications such as journals, newspapers, web pages, news, and other media were examined. Like the relationship between AI and human capital, research on the relationship between climate change and human capital seems to have commenced in the 2010s. While some studies point to the role of HR in addressing and adapting to climate change concerns that human capital can be affected by their work and adapt to changes, other studies point to the impact of climate change on the performance of human capital.

Type	Date	Topic	Blurb
Book	2012	Race Against the Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy	As technology races ahead, it can leave many people behind. **Workers whose skills have been mastered by computers have less to offer the job market, and see their wages and prospects shrink.** Entrepreneurial business models, new organizational structures and different institutions are needed to ensure that the average worker is not left behind by cutting-edge machines.
Journal	2013	The Future of Employment: How Susceptible are jobs to computerization	According to our estimates, about 47 percent of total us employment is at risk. **We further provide evidence that wages and educational attainment exhibit a strong negative relationship with an occupation's probability of computerization.**
Journal	2016	Holistic approach for human resource management in Industry 4.0	In order to fulfill those expectations, smart production systems are put in place to create the required flexibility and capacity. **Simple and monotonous processes are being automated, while other processes become more complex and intertwined.** Therefore, qualification strategies for the current workforce are required. **Employees need to become enabled to take on more strategic, coordinating and creative activities.**
International Institution: OECD	2017	OECD Better Use of Skill in the Workplace	The Innovative Workplaces program was a regional pilot initiative in 2009-10, funded by the East Midlands Development Agency. While initially the East Midlands Development Agency did not include **workplace innovation as a means of achieving its strategic goals relating to competitiveness and skills**, matters began to change when the focus of national policy began to embrace skills utilization as well as skills supply.
Journal	2020	The future and the role of human resource management in South Africa during the Fourth Industrial Revolution	**The pace of transformation in the business landscape has made it mandatory for the human resource (HR) role within the organization to evolve, adapt and adjust to the demands of the Fourth Industrial Revolution** (4IR) (Thomas, Karshi, Suggala, and Mendonca, 2020). This is also relevant within the South African organisational context (Bothma, 2019; Patel, 2019).
Journal	2021	Analysis of the Impact of Human–Cobot Collaborative Manufacturing Implementation on the Occupational Health and Safety and the Quality Requirements	The likelihood of **automating and robotization of repetitive work affects not only the future of occupations [18] but can also widen the gender pay gap, especially in areas where there are more significant differences between the pay of men and women** [19]. This applies in particular to professions where women are employed mainly in professions, where they perform simpler manual work.

Type	Date	Topic	Blurb
Journal	2021	OSH in the future: where next?	According to **a survey of senior executives in a number of sectors and industries around the world, more than seven out of 10 think that it will be common to use AI to evaluate workers' performance and set (continued)… Rewards in the next 10 years.** Interestingly, however, four out of five would not want an intelligent machine managing them.
Journal	2021	Artificial intelligence and human workers interaction at team level: a conceptual assessment of the challenges and potential HRM strategies	We highlight that interaction and collaboration between human workers and robots is visible in a range of industries and organizational functions, where both are working as team members. **This gives rise to unique challenges for HRM function in contemporary organizations where they need to address workers' fear of working with AI, especially in relation to future job loss and difficult dynamics associated with building trust between human workers and AI-enabled robots as team members.**
Journal	2022	Human capital investment and perceived automation risks: Evidence from 16 countries	National governments and international organizations alike aim to facilitate continuous, lifelong investment in education to make sure that workers' skills remain up to date, firms continue to be competitive, and inequality does not increase. **Investment in human capital and higher educational attainment are thought to be key to shelter workers from the adverse effects of the current wave of automation,** especially for those in jobs where technological improvements are common (Bessen, 2020).
Think Tank: Brookings	2022	Understanding the impact of automation on workers, jobs, and wages	Very importantly, **workers who can gain more education and training, either on the job or elsewhere, can learn new tasks and become more complementary with machines.** For instance, while robots have displaced unskilled workers on assembly lines, they have also created new jobs for machinists, advanced welders, and other technicians who maintain the machines or use them top performer new tasks.
International Institution: OECD	2023	OECD Employment Outlook 2023: Artificial Intelligence and Labor Market	**Urgent action is required to make sure AI is used responsibly and in a trustworthy way in the workplace**. On the one hand, there is a need to enable workers and employers in reaping the benefits of AI while adapting to it, notably through training and social dialogue.
International Institution: ILO	2023	Podcast: Artificial Intelligence and the world of work -should we be scared?	How will AI really affect the world of work? Can it help to address any of the big problems we currently face such as inequality, stagnant productivity and inadequate fundamental rights? **And how can businesses and workers prepare to avoid the pitfalls of AI and make the most of the benefits it offers?**

Table 3: Qualitative Research- List of AI and HR studies

Researchers explore the differences between climate change and human capital and emphasize that more research is needed to understand the impact, adaptation, and mitigation of climate change (Caruso, Marcos and Noy. "Generative Artificial Intelligence and the Future of Work. Deloitte, 2024).

Current evidence shows how climate change impacts human capital across the lifespan. For example, industries that rely heavily on carbon, such as coal mining, could face job losses due to climate hazards. Adapting to climate change involves changing systems to increase efficiency or prevent damage. At the same time, climate change mitigation efforts to reduce greenhouse gas emissions also impact human capital.

The transition to sustainable energy could lead to job losses, disruption of income, and new jobs in the coal mining sector. In addition, older workers, faced with economic hardship and high tuition fees, may be discouraged from working in renewable energy (Saraji, Streimikiene, 2023). Preventive human rights policies and investments in change can create positive feedback that benefits climate change and human capital.

Type	Date	Topic	Blurb
Journal	2014	Climate Change and Management	Employees might find their skills exercised in new patterns of time and space, and may also find that new skills are in demand—from "hard" skills to develop technologies and infrastructures to "soft" skills that enable them to communicate and collaborate under new circumstances, akin to but undoubtedly altered from those required in the digital age. These issues are often described as relevant only to developed economy employees. However, t**he vast number of people who live and work in developing nations, where, increasingly, pressures will be placed on development using clean energy technologies and greater resource efficiency may require a radical rethink of employment practices,** human resource management, coordination of distributed work, and location choices for businesses.
News	2017	News: How will climate change transform business and workforce	Hiring climate: R**ight now, the top 10 most-desired skills for getting hired, according to LinkedIn's data analysis, all have to do with tech: think cloud computing,** SEO marketing and web architecture. In the same way tech has transformed today's workforce; some say that climate change could transform tomorrow. **One industry that already shows some of that evolution is energy.** According to data provided by job listings search engine Indeed, in the first quarter of 2014 in the UK, job postings in the renewable energy sector – made up of bioenergy, geothermal, hydroelectric, solar, and wind – accounted for a third (32.9%) of all energy-sector job postings in the first quarter of 2014. In 2017, that had risen to over half of all energy sector job postings, or 51.5%.
Journal	2018	The Phenomenon of Climate Change in Organization and HR-related Literature: A Conceptual Brief Analysis	Climate change has been defined by Saba et al. (2013) as any change in climate over time that occurs as a result of human activity or natural variability. Despite the importance of climate change in deciding on current and future choices for organizations, there is a scarcity of research addressing the relationship between the changing climate and organizational aspects (e.g., organizational commitment, organizational engagement, organizational involvement etc.). **Upon elaborating the importance of this phenomenon and touching upon its potential risks for many industries and business fields, the author of this paper urges HR and organizational scholars to pay more attention to this topic/phenomenon and devote considerable space to examining its effect on employee trust, work stress, job satisfaction, turnover, intentions to leave, absenteeism, job-roles and others.**

Type	Date	Topic	Blurb
International Institution: ILO	2020	ILO-Climate Action 4 Jobs: How can we leverage collective knowledge	United Nations Secretary-General António Guterres launched the Climate Action for Jobs Initiative, spearheaded by the ILO, to help foster concrete measures. The initiative brings together governments, workers' and employers' organizations, international institutions, academia, and civil society to deliver change. Knowledge and learning are vital to understanding and shaping change. They are also instrumental for building on successful practices and avoiding mistakes of the past. **The initiative will pioneer knowledge on the nexus of climate change and the world of work, develop tools and resources to help policy makers design effective policy instruments, and offer platforms** to share findings and understand what works.
International Institution: EU-OSHA	2020	Workers' safety and health in green jobs	The speed at which the green economy is expected to expand could lead to skills gaps, with inexperienced workers involved in processes that they have not been trained for, and who therefore put their safety and health at risk. There may also be a stronger polarization of the workforce towards skills, with low-skilled workers pushed to accept poorer working conditions. Last but not least, economic and political pressure could lead to OSH concerns being overlooked. **If green jobs are to be truly sustainable, we need to make sure that they benefit workers' safety and health, as well as the environment.** In the green economy, as elsewhere, good OSH plays a vital role in increasing competitiveness and productivity. In this fast-developing area, we need to ensure that what is good for the environment is good for workers too.
International Institution: EESI	2021	Fact Sheet: Climate Jobs	Responding to the climate crisis provides an immense opportunity for job creation. **Those jobs—jobs that help mitigate and adapt to climate change—are climate jobs.** In recent years, climate jobs have been on the rise in the United States.1 However, the economy-wide impacts of the COVID-19 pandemic affected climate employment: eight percent of climate jobs were shed in 2020
International Institution: Insurance	2023	Green jobs: How will climate change impact employment trends?	"The transition to a net-zero future will create new industries, new jobs and revitalize local economies," says Linda Freiner, Group Head of Sustainability at Zurich Insurance Group. "Approached in the right way, it can forge a path to a more resilient future encompassing new growth opportunities for businesses, which leads to new

Type	Date	Topic	Blurb
			jobs being created. But what excites me, is that t**hese new careers will be truly fulfilling as they will help to protect both our planet and our futures**."

Table 4: Qualitative Research- List of Climate and HR studies

3.8 Research Design Limitations

Although best research methods using intelligence to find information in libraries and databases are used, it is not possible to write everything that is found on Google Scholar, lens.org, EBSCOhost, website. Therefore, links to peer-reviewed journals, articles, and international publications (such as reports, news, or podcasts) were given more emphasis when making selection of research papers. This may ignore situations in markets where reporting is not possible.

Type	Date	Topic	Blurb
International Institution: ILO	2019	Three scenarios for the future of work	**Since the start of the 2010s, warnings have abounded that automation is about to do away with many existing jobs and revolutionize work. Such warnings have now come to be taken at face value**, as confirmed by the report presented in Davos in 2016, The future of jobs (World Economic Forum, 2016). In a more general sense, this denial extends to the environmental transition that our societies will have to undertake as soon as possible if we pay heed to the warnings sounded by scientific studies regarding the scale of the threat to the environment – especially in terms of climate. **This is all the more urgent if we adopt the aim of reducing global warming to 2 °C (if not 1.5 °C) by the end of the century, as recommended by the twenty-first and twenty-fourth sessions of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21 and COP24)**.
International Institution: WEF	2023	WEF Future of jobs	**Green jobs, and a workforce with the skills to fill them, are essential for meeting climate targets**. Drawing on data provided by LinkedIn, this year's Future of Jobs Report assesses how employers and employees are responding to the green transition. Employers have increased green job hiring rates, with year-on-year green job growth exceeding the overall hiring rate growth every year since 2019, as shown in Figure B3.1. Demand for AI and Machine Learning Specialists is expected to grow by 40%, or 1 million jobs, as the usage of AI and machine learning drives continued industry transformation. **Recent research on Generative AI indicates it may affect a significant proportion of total worker tasks.**
News	2023	News: The future of work will be disruptive, but it need not be dystopian	Investment in the green transition, as well as increasing consumer awareness of sustainability issues, will create new opportunities. **Roles from renewable energy engineers, solar energy installation and systems engineers to sustainability specialists and environmental protection professionals will be in high demand**, translating to the growth of approximately 1 million jobs. **Technology will create structural churn, with a quarter of companies seeing job decline from new technology adoption and more than half seeing job growth.** But the human-machine frontier is shifting to new terrain. While expectations of the displacement of physical and manual work by machines has decreased, tasks requiring reasoning, communicating, and coordinating — all traits with a comparative advantage for humans — are expected to be more automatable in the future.

Table 5: Recent study on AI, HR, and CC

3.9 Conclusion

This study is based on a mixed methods approach consisting of quantitative research based on data from the United States and qualitative research based on content analysis. The available data show that AI and climate change are causing unemployment in these areas and affecting others. Similarly, qualitative research shows that research on HR and AI and HR and CC has been increasing in the last decade, indicating that they have a direct impact on the human capital layer.

When trying to find a combination of human resources, artificial intelligence and climate change, the study of the relationship between these three elements is narrow because only two organizations in the world have talked about this issue. No peer reviewed research paper addresses the issues of climate change and artificial intelligence simultaneously from a HR professionals perspective. This research article aims to address this gap.

While the impact of all changes in the business world cannot be calculated, the data and the data collected provide HR professionals with some valuable information on supporting AI and climate change. Future empirical studies will examine the scope of these concepts and their relationship to gender, demographics, and economic research. And there are only a few studies that have examined AI and weather simultaneously from a human perspective.

CHAPTER IV:

RESULTS

4.1 Research Question

This section discusses the results of the research conducted in the previous section. This section discusses the results of the study on how HR strategy can help human capital adapt to the impacts of automation and climate change in the workplace. In response to research question (R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change?, HR professionals can focus on the strategic adaptation of human capital with organizational strategy in the face of climate and AI changes. This section discusses the role of strategic human resources (HR) professionals in helping organizations adapt to changes in the workplace through AI and climate change. It draws on intelligence and research that shows that employment increases in the field of AI and climate change sectors. Many studies on the impacts of climate change show that jobs have increased in both sectors over the last five years. This development has been going on for 10 years for AI, but for climate change it is a new development and only in the last five years.

4.2 Strategic HR Professional

Numerous research shows that jobs in AI and climate change have increased in the last five years, AI jobs have grown for ten consecutive years, and jobs related to climate change have increased in the last five years. In the previous section, there was a call for HR to be creative (Brockbank, 1999; Carter and Varney, 2019; Schuler, 1992). Therefore, if HR is strategic, they will be able to see the synergy between AI and climate change and the need for organizations to act in a timely manner. As the human capital with right skills will be able

to provide best ROI to the organizations, proactive strategic HR professional will be able make human capital ready on time.

Good research supports this finding, including articles and reports from international organizations and think tanks that predict the impact of AI and technology on changing the workplace atmosphere. The goal is to solve organizational problem by managing change.

This now takes to the response of the second research question (R2): Can HR achieve its goal of adapting to the above (R1) by proper change management? Strategic HR professionals can help change human capital through a suitable change process guided by human capital theory and the HR model guided by appropriate change management models based on needs of the organization.

The research found that HR professionals can help human capital adapt to the organizational impact through change management. Both qualitative and quantitative studies show that some existing jobs will disappear due to skills and climate change, but new types of jobs that require human capital will emerge business or enterprise, means that an organization will have this change.

New types of jobs will emerge as existing jobs disappear. Therefore, more human capital will need to keep up with the changes. Given that the impact of AI and climate change is not limited to a specific business or sector, such changes can occur in any organization.

4.3 Summary of Findings

To monitor impact and create real impact, HR professionals need to become strategic partners and change agents (Ulrich, 1998). To ensure that organizational changes are accepted by human capital in the longer term, HR professionals also need to be change advocates. As they directly affect human capital, HR professionals could quickly create understanding, communicate vision, and change.

4.4 Conclusion

The previous sections highlighted the importance of strategic HR professionals in anticipating and mitigating the impacts of AI and climate change. Strategic HR professionals can maximize an organization's return on investment by managing skills inventory and providing adequate training to ensure that human capital remain effective during changing needs of AI and climate change adaptation.

By being effective and creative, strategic HR professionals can help organizations and their human resources adapt to the changing business environment and ensure sustainability and growth through international change. Key points include:

Growth Trends: Jobs in AI and climate change sectors have increased, with AI jobs growing for a decade and climate change jobs for the past five years.

Strategic HR's Role: Strategic HR can foresee the effects of AI and climate change on jobs and help organizations act timely. This involves ensuring employees feel secure and are well-trained, thereby maximizing organizational return on investment (ROI).

Strategic HR professionals can adapt to changes through proper change management, as the impact of AI and climate change spans across all job levels and sectors.

The core message emphasizes the importance of strategic HR in navigating and mitigating the impacts of automation and climate change on the workforce, ensuring organizations and their human capital remain resilient and competitive.

CHAPTER V:

DISCUSSION

5.1 Discussion of Results

The purpose of this research paper is to determine how human resources can help people in the face of unpredictable changes caused by technology and climate change and their impact on performance. This section discusses key findings from the literature on workplace performance, climate change, and change and what implications this may have for HR professionals in the workplace. It also discusses connections to this research, human capital theory, HR models, and change models. The section concludes with a discussion of the study's limitations, areas for future research, and implications.

This chapter contains discussion and future research possibilities to help answer the research question:

(R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change?

(R2): HR can achieve its goal of adapting to the above (R1) by proper change management.

Although the study of the impact of human capital from a multi-dimensional approach in terms of the latest climate change and AI, these topics have not been studied conjointly. Furthermore, these topics are studied separately, and the result comprised several factors. All these factors help contribute to an environment where the changes in the current nature of jobs are challenged and the changes can only continuously grow.

5.2 Interpretation of the Findings

Both qualitative and quantitative studies show that despite many changes in the external environment, it is necessary to adapt to the inevitable changes of AI and climate change, and that together, increasing the pace of job change can only help human capital to change and adapt. This topic is dynamic because change and change factors are different between size of organizations and nature of human capital. The results of this study are based on qualitative and quantitative research.

Strategic HR professionals can help direct the organization and human resources on the right track by predicting supply and demand. Strategic HR treats human resources as intangible assets and tries to motivate them to maximize efficiency.

Therefore, the role of strategic HR in helping human capital with the right skills on the job is important. Researchers have concluded from their research that strategic HR professionals need to focus on strategic ideas and are less concerned with operational processes, which leads to better performance (Brockbank, 1999). The entire organization is considered to add long-term value. The concept strategic HR helping organizations change is not new in HR studies, as one of the pioneers of the HR model concept assumes that there will be rapid changes affecting the business and that organizations will have expectations for HR strategies (Ulrich, 1998).

According to good literature, although the role of HR has changed a lot since the model was created, the role that HR can play in dealing with the fear and difficulty of building trust with employees is a recurring theme. Follow the collaboration between intellectual skills and human capital, let them work together (Arslan et al., 2021).

Even in the current situation, what is important is the ability to ask good questions that will allow them to consider various management ideas and choose the right one

regarding business strategy, needs and interests of human capital, best practices and government policy alignment with management standards and benefits (Poole, n.d.). Creating a culture of creativity and innovation that leads to internal capabilities that are constantly monitored and aligned with external goods, to maximize human resources (Brockbank, 1999).

According to quantitative data, jobs in climate change increased significantly from 2018 to 2022, while salaries for jobs related to skills increased rapidly, indicating the demand for such jobs (US Bureau of Labor Statistics, n.d.). Strategy of HR professionals in the current context means understanding the context, thinking about the changes, and taking initiatives that will direct the organization to prepare for changes in human resources and important skills.

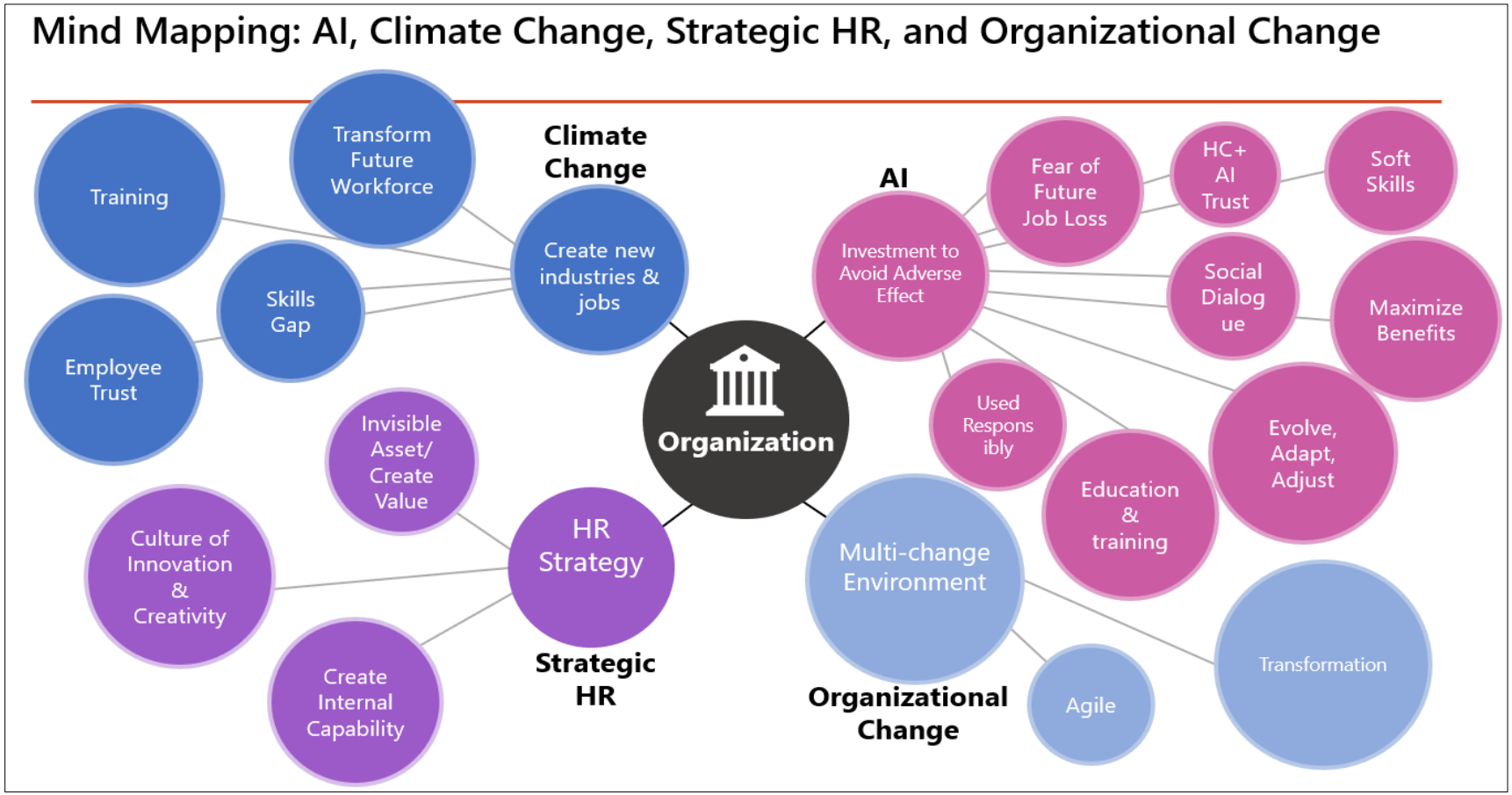


Figure 5: Mind Mapping: AI, Climate Change, Strategic HR, and Organizational Change

5.3 Implications for Theory and Research

The literature review chapter included descriptions of models and a theory. These included human capital theory, the HR role model, and Kotter's change management model. How a combination of these three areas fits in this study is discussed in the following sections.

5.3.1 Human Capital Theory

Human capital theory includes suggestions regarding the importance of education (education, training, education, etc.) for the personal, social, and professional development of the organization (Becker and Gerhart, 1962). In this study, human capital needs to be trained to increase and improve their productivity to keep up with the changes in jobs caused by AI and climate change.

The findings are consistent with the human capital theory, which suggests that education in the functioning of HR professionals is important in transitioning to future human capital. In studies on the impact of AI and climate change on jobs, it is seen that many aspects of AI that complement adaptation to climate change are repeated, such as progress, repetition, skill, and intelligence (Deranti and Corbin, 2024). Understanding the importance of continuous learning is an important part of developing human capital that can help them find ways to improve, adopt, and adapt to changes in their work until they reach the end of their abilities.

5.3.2 HR Role Model

According to the HR model, HR values are divided into four groups (Ulrich et al., 2013). The first quadrant is professional management. Ensure that human capital education and training on artificial intelligence and climate change planning are delivered to as many people as possible.

The second quadrant is to be a successful employee where most work is consistent. HR professionals can gain the trust of employees by engaging in discussions about positive and negative impacts. This can be done by listening to employees' fears and explaining to them how the organization and HR professionals can be strategic by helping human capital improve their performance.

The upper left corner is about being a strategic partner. Strategic HR professionals can achieve business success through the coordination of HR and business strategies. Given that human capital is an asset that cannot be created by human opinion, the role of human capital will be to be a promoter of human capital to prepare them for new jobs and employment and to prepare employees for the future. This can be done by creating an innovation culture that will help alleviate employees' fear of unemployment, increase employee confidence, and increase productivity by closing the skills gap and increasing the organization's productivity. It is also better for organizations to have human resources prepared for many changing environments.

Since these changes are collaborative, HR, as a good partner, also plays the role of change agent in capacity building; the overall goal is to transform the organization from the status quo to an agile and flexible transition state.

5.3.3 Change Management

The impact of AI and climate change is very compelling as the data shows that the number of jobs for both have increased in both sectors in the past and scholars believe that there are more changes to come. The two change management models as described earlier are explained below.

Using Kotter's Change Management Model

Considering all the realities of job change and the fact that human capital anticipates unemployment and job change, creating a crisis is the first step in Kotter's change model, which draws from his main vision of creating positive energy for human capital in the future (Kotter, 1995). This can be done by identifying the current problems and opportunities of the organization (e.g., the organization's ability to respond to change). An open discussion should be held on why change is needed, and support should be sought from stakeholders and experts.

The second step would be to create unity among believers. Creating communities of practice can be one way to achieve this goal. It will be important to have buy-in from human capital at all levels. Given that these are organizational changes, human capital needs to understand the need for change and have a clear understanding of each other's roles and responsibilities. Similarly, they should have an understanding of the risks and challenges and have open lines of communication. Identify the organization's core values and change initiatives and ensure they are communicated and understood.

The first three steps are to create a change climate in the organization. The next three steps are actual implementation. The fourth step is communicating the change and continuing the conversation. Employees at all levels of the organization need to take the necessary steps. Another way to move forward is to eliminate the obstacles that are holding the organization back from developing. Another step is to set short-term goals to achieve them. It is important to break the project into smaller pieces.

The next step is to control the energy by constantly changing it. You need to focus on what works and what does not to get quick wins. If there are any flaws in the program, they need to be fixed.

The last step is to ask for the change. Identifying and recognizing the key factors that drive change can be one way to achieve this. This can also mean eliminating organizational processes that are incompatible with the new culture.

PROSCI Change Management Perspective

The PROSCI change management model, developed by Jeff Hiatt, emphasizes the importance of individual-level change as the foundation for team or organizational change (Hiatt, n.d.). The core idea of this model is that for any meaningful change to occur in a group or organization, the transformation of each member of the group or organization (referred to in this research as human capital) must precede the transformation of the individual.

This approach emphasizes the need to understand and facilitate change in people individually, providing opportunities for leaders who want to support change in others.

The PROSCI ADKAR Model introduces a framework designed to comprehend and manage individual change. It is structured around five sequential and cumulative outcomes necessary for successful change: Awareness, Desire, Knowledge, Ability, and Reinforcement (ADKAR). These outcomes serve as benchmarks for individuals to progress through to implement and sustain change effectively:

- **Awareness:** Recognizing the need for change, usually initiated through initial communications about an organizational change.
- **Desire:** Create motivation to support and participate in change through effective support and resistance management.
- **Knowledge:** Understanding how to change, achieved through training and coaching.
- **Ability:** Being capable of implementing the change at the required performance level, developed through further coaching, practice, and time.

- **Reinforcement:** Ensuring the change is maintained over time, supported by measures such as adoption tracking, corrective actions, and acknowledging successful change.

The model highlights that change manifests across two dimensions: the organizational or project side, and the human capital side. For change to be tremendously successful, these two dimensions need to evolve simultaneously, suggesting that project management and change management are complementary disciplines aimed at achieving effective results and outcomes. This dual focus underscores the importance of both managing the technical aspects of change and supporting the human capital affected by it.

5.4 Discussion of Research Questions

Being able to anticipate the impact of AI and climate change on business and human capital is one of the HR strategies. Adhering to policies related to human capital that solve organizational problems and promote strategic plans will create value and enhance the capabilities of the company (Becker and Gerhart, 1962). Similar to the impact of AI on business development, the impact of climate change will affects all industries (Howard-Grenville et al., 2014). In addition, the concept of business-related AI has emerged in the last decade and the impact of work on climate change is still in its infancy.

The main point of these two impacts is that both AI and climate change will create new jobs, eliminate some jobs or complement jobs that already exist.

Employment is important for organizations and human capital because it is how organizations are produced and how human capital is acquired. If the effects of AI and climate change lead to a change in employment that has the potential to increase unemployment and the intellectual ceiling, if capital by its nature will replace workers in the future, then human capital will always be concerned about this negative. Many studies show that the number of jobs to combat climate change has increased exponentially in the last five

years and wages reflect the need (World Economic Forum, 2023). This type of human capital will not work at its best.

5.5 Discussion of the R2

Change is inevitable. To adapt to the many changing environments and to create and maximize value from intangible assets (human capital), HR strategies need to create a culture of innovation and creativity. The key to rapid change in any organizational environment is the need for the HR function to constantly adopt, adapt, and adjust to changing needs (Bresnahan et al., 2002; Schultz and Schultz, 2021). We must build employee confidence, strengthen the human base, and create internal capacity with the appropriate human resources to adapt to future changes.

This will protect human capital from negative impacts and increase the organization's return on investment (ROI). Strategic proactive HR will focus on the right choices to build human capital (Brockbank, 1999). This can be done by developing smart skills by creating a conversation about future employee turnover, addressing employee fears about future unemployment, and providing appropriate training and investment to help employees develop, adapt, and repair.

5.6 Leadership Mindset Needed to Adapt to AI

Researchers have shown that leaders create a sense of purpose by demonstrating positive attitudes and skills associated with their development (Athota, 2021). Self-transformation has been shown to help create a state of mind that leads to cognitive and behavioral outcomes associated with cognitive and functional well-being (Caprara, Alessandri, & Eisenberg, 2012, p. 1291).

Although the human mind has created powerful machines, scientists believe that the "artificial" in production is still real and that it is important to separate it from human

intelligence through AI. This is especially important for organizations because AI has a major impact on the flow of human capital, and organizations cannot do their daily work without the direct influence of AI. Tasks such as thinking, creativity, and problem solving in the workplace appear emotional (Agar, 2019; Tambe et al., 2019, p. 17). For example, Siri, Google Home, and Alexa seem to exhibit most of the human abilities, but they lack imagination or imagination. Therefore, in the digital age, where the quality of intelligence and the special power of human capital are important for decent work, the relationship between these variables needs to be preserved (Boyatzis et al., 2000).

Likewise, climate scientists believe that organizations play a key role in choosing and shaping the society's response to the climate change context. Therefore, in the field of climate change, there is a deep debate in organizational research about whether change is the result of internal adaptation or external selection. Change that affects plans and activities will lead to increasingly negative effects on beliefs and activities (Berkhout, 2012).

CHAPTER VI:

SUMMARY, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

This chapter is represented in four sections. The first section contributes to an overall summary of the study followed by a summary of the findings and their conclusions. After these are the implications of the study followed by recommendations for future research.

6.1 Summary of the Study

The objective of this study was to explore and find out of HR could strategically help in addressing the impact of AI and climate change on jobs through the two research questions listed as follows.

(R1): How can strategic HR help human capital adapt to the impact on jobs due to changes brought by automation and climate change?

(R2): Can HR achieve its goal of adapting to the above (R1) by proper change management?

Answer to (R1): This study has answered the first research question (R1) above. Strategic HR can help human capital to adapt to the impact on their jobs due to changes brought by automation and climate change. By being strategic in terms of proactively identifying the areas of transformation for human capital, HR can foresee changes in jobs. Based on research and Figure 4., both will impact current/existing organizations—climate friendly measures and AI—as both areas are touching the organizations directly and indirectly. To make the organization and current and future human capital ready, the HR professionals will need to take proper and timely actions as it is crucial to survive and thrive to tackle AI and climate related changes.

The quantitative study on Table 1 and Table 2 shows that there has been significant increase on the number of jobs in the field of AI and climate in the past five years. Also, the

qualitative studies have studies separately, in Table 3 and Table 4 that other researchers have also underpinned the need of deeper study by the HR professionals on these two fields.

Thus, based on this research if the organizational HR proactively focuses in these two areas, keeps it updated, then it will be making the organization ready for the most probable changes at the organizations. To understand the future changes by being proactive and looking for change measures as described below.

Answer to (R2): If the HR of the organization is strategically proactive, based on various change management model like Kotter's or PROSCI as described by Figure 3, they can implement studies like the human capital theory as in Figure 1 and HR role model in Figure 2 in the organization for the benefit of human capital. Given that the impact of these transformations is expected to be huge and touch every level of organization and majority of professions, (R2) examined and consolidated the values HR professionals played in ensuring smooth change management in both AI and climate change-related impacts in jobs.

Thus, based on (R1) and (R2), HR plays a critical role to make organization agile and ready to embrace any changes that AI and climate may bring in future.

6.2 Summary of the Findings

The findings showed a distinct tendency for both impacts of AI and climate change to use similar words and phrases in their communication in academic journals as well as in publications of policy makers and think tanks.

(i) The words and phrases exclusively used are as follows:

AI Impact at Workplace	**Climate Change Impact at Workplace**
This gives rise to unique challenges for HRM function in contemporary organizations where they need to address workers' fear of working with AI, especially concerning future job loss and difficult dynamics associated with building trust between human workers and AI-enabled robots as team members.	The vast number of people who live and work in developing nations, where, increasingly, pressures will be placed on development using clean energy technologies and greater resource efficiency may require a radical rethink of employment practices, human resource management, coordination of distributed work, and location choices for businesses.
Investment in human capital and higher educational attainment are thought to be key to sheltering workers from the adverse effects of the current wave of automation, especially for those in jobs where technological improvements are common.	Upon elaborating on the importance of this phenomenon (climate change) and touching upon its potential risks for many industries and business fields, the author of this paper urges HR and organizational scholars to pay more attention to this topic/phenomenon and devote considerable space to examining its effect on employee trust, work stress, job satisfaction, turnover, intentions to leave, absenteeism, job-roles, and others.
Urgent action is required to make sure AI is used responsibly and in a trustworthy way in the workplace.	If green jobs are to be truly sustainable, we need to make sure that they benefit workers' safety and health, as well as the environment.

Table 6. Similar Issues That HR Could Conjointly Resolve Through Proper Change

(ii) Although the real impact of AI and job changes have been felt in the industries, based on quantitative, it showed that the demand for AI-related jobs was higher in the job market, more than climate change. Also, it was noted that the jobs related to climate were impacted due to the COVID-19 pandemic in the US (Bertrand, 2021).

(iii) Studies show that employee training, employee reskilling, and education came as a common factor between both changes. While for climate change, human capital trust came as one of the factors for climate change, for AI change, having AI trust for human capital came as a key factor.

Despite intensive research by many policy makers and researchers, only a few have published integrated studies on the main effects of these two changes. Reports from major organizations such as the ILO and the World Economic Forum have revealed that the impact of these two changes is a major change in the future of work (Cockburn, 2021; ILO, 2015; ILO News, 2021). To help organizations adapt to skills related to climate changes, HR professionals can focus on the change and development of human capital by making the job easier and faster; building domain expertise in climate change. External consultants who are experts in the field can be hired to appropriately instill the desired behavior in the organization in order to make a small impact on daily work. This will help increase human capital and hold them accountable.

The next period will start working on a new basis and will try, learn, and improve. This will help organizations manage the organization effectively and maintain elevated levels of engagement. It will help organizations create and sustain a culture of excellence and a sense of well-being for their human capital. This will foster a culture where human resources are accountable for the choices and outcomes they lead. Improving human resource skills and behaviors is also part of creating a successful culture. Organizations need to adapt training and leadership at all levels.

Another important aspect is to change the compensation system to create direct rewards for employees in response to job changes in the organization. People's rewards can be tied to their contribution to the organizational subcategory and to their performance in the subcategory. These ideas will help organizations and human resources to be future-ready for the changes in business skills and climate change, as they are adapted to many roles in our organizations.

To prepare for AI and climate change in organizations, human capital needs to focus on new ways of working on three different pillars. The first pillar is to find the best solutions for the renewal and employment of human resources, especially those not at the management level, in the transition from AI and climate change. The need for innovation and expertise should be driven by data showing how many people have achieved their goals and how many have not at a given time.

Human capital is used for diverse types of jobs and skills in any organization. Therefore, education and training on AI and climate change should also be provided in courses and certifications. Organizations also need to develop a variety of learning opportunities that are suitable for all types of human capital.

To ensure that AI and climate change affect businesses, HR professionals must first be aware of current trends in both areas and keep up with competitors (Murugesan, et. al., 2023). This will also help HR professionals inform management and stakeholders about changes that will affect the organization and the steps that need to be taken. For example, if it is a publishing company and the first model will be created with some form of electronic technology (such as a GPT session), then the human capital that created the first model will need to carefully examine the output and identify subtle changes or illusions.

Similarly, if human capital is involved in the production of physical products and the process can now be run, human capital can be involved in product auditing. In both cases, understanding climate impacts will enable people to make informed decisions about how to avoid climate damage. Understanding job security will enable HR to identify where automation is more beneficial.

If an organization needs to adapt to climate change through production, human capital will be aware of the many options available. They will also understand why organizations are changing their production patterns.

The second pillar is to strengthen compensation and link it to the level of change in all types of human capital that contribute to the knowledge area of AI and climate change. This will help the organization achieve its transformation goals at lower levels. This requires leadership to actively engage with human capital to understand their needs and expectations to drive change. Education, training, volunteering, and employment provide the basic job skills for new human capital.

To make sure people understand the organization's needs, the organization needs to work with schools and understand the importance of education. This way, organizations can focus on the most important work when hiring and maximize the experience of potential candidates.

In addition, human capital should have direct access to the board. Regular meetings where human capital has access to the organization's culture (like town hall meetings or Q&A sessions) will help people feel included.

For organizations to understand all the new skills required by AI and climate change, it is important to work with a combination of roles, skills, responsibilities, and job information. To keep up with the new skills related to intelligence and climate change, it is important to collaborate with organizations like Lightcast (Lightcast, n.d.). Data providers with a skills library of 32,000 skills collected from millions of job postings, resumes and online profiles. There are more than 30 skill and expert groups that determine the needs in the market.

Data from shared data sources will help organizations as they have the data behind all job applications and job postings and have advance knowledge of employment changes. According to the information currently available, with the development of AI and machine learning, technology has become important for the development of the organization. The demand for green jobs in the United States has increased by more than 50% since 2019 (Lightcast and Revelio Labs, 2023).

Jobs related to climate is increasing worldwide and these resources will continue to spread internationally. Net climate job increase includes energy production and use, as well as new needs for clean energy. Likewise, AI is creating triple-digit new jobs in the US, UK, and Canada. (Deloitte, 2023). AI has evolved to create new needs for machine learning and at least two of the ten key roles in security.

HR professionals should support the training of current and future human capitals, local leaders and experts in the development and use of climate information, including supporting decision-makers' skills in identifying and working with service providers to improve data and information needs by providing data quality that is valid and relevant. Change is happening faster than before because it affects the global economy and the economy is increasingly affected by change (Miko Åajczyk, 2022). Researchers also believe that education and skills training is one of the reasons for major changes in all areas of AI (Kaputa, Loučanová, & Tejerina-Gaite, 2022). The survival of an organization depends on how quickly it can learn and adapt in a dynamic environment.

Modern technologies such as artificial intelligence and the changing measurement landscape are forcing organizations to change the way they do business, including changing their business models to be more efficient and effective.

Different organizations adopt different methods to adapt to various external changes. This study takes the approach adopted by international organizations as an example. Unilever's Compass organization was established in 2022 to promote a culture of purpose and responsibility when it comes to high performance (Unilever, 2022). The company is aware of the need to adapt its business and human resources to future workplace changes, including automation and technological advances.

To achieve this, Unilever has focused on the development of employees below senior management and has already equipped 15% of its workforce with future-proof skills. The "Future of Work" plan at Unilever revolves around three main pillars:

Changing the Way We Change: This includes moving to new ways of working, emphasizing integration and creating value for individuals and organizations. These services are tailored to the employee's goals, health, and culture.

Igniting Lifelong Learning: This includes progression in existing roles, re-employment in diverse roles and preparation for opportunities outside.

Redefining the Unilever System of Work: Unilever has also created a company-wide skills development program for office workers.

Other initiatives that could be included are listed below.

- **Agile:** Unilever has appointed agile coaches and trained Scrum Masters for all its business units.
- **Manufacturing Skills for Future:** As automation increases at Unilever's Taicang, China, factory, production teams are shifting from routine tasks to a more autonomous role focused on problem solving and improvement.

Unilever's proactive approach to skill development ensures that its workforce remains adaptable and ready for the challenges of the future.

As described previously, in the introduction section, the role of the HR professional as a change agent is to replace resistance with resolve, plan with results, and turn fear of change into excitement about possibilities. Similarly, there are diverse ways of managing change in organizations.

For this research, two change management models are being used. Based on best practices used by other researchers and other organizations, each of the change management models is described in brief below.

6.3 How to implement change?

In Kotter's 8-step transformation model, the first step, creating a sense of urgency, is critical to setting the tone and momentum of AI and security initiatives from the very beginning (Kotter, 1995). According to J.F. Kotter, the leader of this transformation model, more than 50% of companies fail at this stage. Interestingly, research suggests that the change process is easier in times of crisis than in normal times. Also, if the change is not managed correctly, it will be difficult to support it by human capital, resulting in a morale that is difficult to overcome. Organizations that are taking advantage of the change in AI and the cloud, involve stakeholders in the change because they do not receive any support. But for an organization struggling with low margins, it is not surprising that someone calls for change, and this will be an opportunity for them to demonstrate their wisdom and climate change.

The second step is to build unity, which means that change management and change must come not only from top management but also from other parts of the organization for it to be successful. These scholars believe that leadership must be developed over time.

These people will have enormous influence in the organization and their ideas will be respected by the people. Given that intelligence and security are two concepts along with

strong people and rebellion, having a strong leadership team is essential to combat rebellion and people referring to the situation. Create a guide. This is important to provide direction and guidance to employees and managers. Like all visions, this one evolves as it evolves. Therefore, HR professionals need to stay alert, adapt, and improve as issues become clear. Although this is a crucial step, many of these steps are overlooked. For HR professionals, there is a need to add AI and cloud content to the organization's mission and vision. A scholar suggests asking soul-searching questions by adding AI and climate to the organization:

- What is the organization hoping to achieve?
- What is the future of human capital who are delivering the traditional business?
- Which human capital will fall under the key retention plan or key incentive plan?
- What will be the organizational target for AI and climate adoption?

This will allow leaders to open and share their thoughts. It will give good advice to the leaders of the larger organization. If the leaders in the organization are digitally guided, they will not be interested and will find more otherwise they will not believe it. Sometimes people trust their colleagues and follow their advice and guidance before they are accepted by the leadership. Therefore, it will be more effective to get to know them and communicate the change to them.

The fifth step is to decide by eliminating the problem to be changed. This can be done by regular communication and eliminating obstacles. In this step, changers who believe in change will move forward when they encounter people or things that stand in their way.

The limitations are not only human but also structural, cultural, and legal. In this step, change workers and managers have the power to eliminate the problems. Sometimes something as simple as learning to overcome theoretical issues is enough. So, the temptation will be difficult. However, this can be a crucial step because the return on investment will be

clearer, and it will provide leadership along the way. These are the human resources already present in the organization who can advise and convince other human resources who have already accepted the change and who may have fears or misconceptions about what the change will mean for them or their group.

The next step will be step 6 and will be created in a brief time because the change process is not easy. For those who lead the way and model the behavior expected of others, this can require emotional and personal sacrifice. For leaders and change makers, this can be emotionally and physically exhausting.

These steps are important not only to encourage spirits and inspire believers to change, but also to show non-believers and non-believers that progress and results are possible. Think about it, if the road is long, the winners really support the team and motivate them for the next one.

Step Seven is to accelerate. After a moment of celebration (Step Six), it is easy to get caught up in the desire to do it all. At this point, your foot on the gas pedal gradually eases and you must press it faster and faster, and you do not see the results. In this step, you may want to hire more people to expand your network.

The eighth and last step is to implement changes, and HR professionals are advised to not only implement changes, but to implement those changes in line with their tradition of focusing on what matters. A good place to start is to align your organization’s compensation and reward systems with behaviors that support innovative ideas. Changes are made regularly.

The core competencies called “Company Core Competencies” include leadership, collaboration and cooperation, decision-making, integrity and leadership fairness, and ownership and responsibility (Unilever, 2022). In addition, personal goals are created each year, provided by the institution's major and vision. These changes in our assessment have a direct impact on performance and wages. At this time, human capital must be able to see the reality of change and its impact on them. Quality and scale the state of the organization and

how much it leads to artificial intelligence and climate change. HR professionals should use a change model that best suits the needs of the organization and can be adjusted to the needs of the organization and human capital.

Kotter 8-Step Change Model outlines the necessary steps for permanent change. Another variation, the PROSCI ADKAR model, focuses on personal change, as described in the introduction. This will help change the underlying culture. Other examples of organizational change include involving human capital at all levels who are themselves agents of change, who understand and appreciate what the organization is achieving, and who are committed to following through.

6.4 How to handle human capital who are against change?

In some cases, the only way to achieve the transition to intelligence and climate change will be to kill off the people who remain weak. This will help convey the message that the organization needs to change and that the human capital that is not participating will not follow the participation process. When the change is initiated, some human resources will follow past practices and values that may not be suitable for adapting to the demands of AI and the climate of change.

These human resources can be noisy and will require a lot of discussion and guidance as HR professionals and people change. This can also mean that a high-performing player may also be threatened based on chip competition. If this is needed, it is best to communicate directly with employees and make decisions based on their personal and family needs. This will help send a clear message that this type of behavior will not be tolerated.

The best policy during the transition is to be honest, transparent, and fair to human capital at all levels. Transparency also means that some information may be difficult for employees to access. This message, while difficult for employees at first, will help build trust. Changes from AI and climate change will affect human capital, but most of the changes will affect human capital to begin with.

HR professionals are therefore at the forefront and center of change and search. HR professionals may also need to understand where the organization stands in the change process. And not all conversations with stakeholders will be the same. The role of HR professionals is to listen and work in dialogue. To do this, HR professionals need to meet and communicate with human capital.

This will also be an opportunity to understand what people's interest budget is. One study indicated that decreased communication during transitions can be problematic. The merger model does not work in a transition where a boutique organization acquires another organization. The manager is not concerned with managing the day-to-day business and is focused on creating new customers and products.

Yes, as an outsider, the easiest solution would be to fire the person or move them to another business unit. However, HR professionals who work to change and lead the organization often focus on the problem at hand and how it affects the trust of the group, which is not necessary for the use of AI. Poor business processes today can lead to a loss of ability to change managers due to stress.

HR professionals can be ignored or fired. However, boldly proposing solutions and speaking truth to power is the right thing to do as the organization changes with AI and the cloud. Therefore, communication should be taught not only to human capital but also to the leaders of the organization. So be candid and creative when communicating. Honest and consistent communication builds trust and increases human capital, but it can also mean that HR professionals must step out of their comfort zones and train and re-communicate in a personal, patient way, which makes change harder.

The impact on human capital will be even greater as organizations leverage AI and climate change. Organizational leaders and managers need to meet with HR professionals to ensure that information is consistent across the organization. Frequent meetings between key transfer personnel mean everyone has two eyes on every important topic. Recommendations: Including which AI technologies are best for organizations and their human capital, and how

climate change organizations can accelerate their work. This exercise, done regularly, will help coordinate and communicate human capital communication at all levels of the organization.

It is important to ensure that senior management in an organization is aware of the issues that need to be addressed, especially when implementing significant changes such as artificial intelligence and climate change. The researchers believe that while there are times when HR professionals need to deliver sad news, this is also an opportunity for solutions and discussions.

An HR professional may plan things a certain way because thinking about what is best for the human capital in the organization, with the aim that senior managers in the organization may prefer something different. Or the situation that HR professionals see at the beginning of the change process in the organization will not be possible.

Some researchers have given the example that while the initial plan during the transition was to sell part of the company after facing financial and intellectual problems, the decision pressure to determine whether it would be beneficial to sell the entire company required a different approach. communication.

As a human services professional, how do you balance your brain and emotions during times of change? In times of change, HR professionals will need trusted people. However, finding people who believe in AI and climate change may not be easy because people may not want to be honest and direct with HR professionals. The relationship should go both ways because this trusted person should also be someone HR can open to.

It is understood that confidential information about this organization should not be shared. HR professionals also need to have a good balance even with trust to ensure that the person is not recorded as a disgruntled person. The most trusted contacts may be people from outside the organization who understand the organization and the changes it is going through, and who understand the roles and responsibilities of HR professionals. Given that change can be stressful, this confidant will help maintain emotional and mental stability.

What should a communication plan be?

In terms of communication plan,

- At the beginning of the change process, HR professionals should identify key skills that may be at risk.
- The retention plan is then developed, reviewed, and approved by the highest levels of the organization, such as the compensation team and the board of directors.
- Ensure senior management support for effective communication.
- Next, refine the message to human capital and create a communication plan and voice for AI and climate change question.

What could be done after the change process to measure the success of the change plan after completion?

Once the change process is complete, it is a clever idea to send out a survey to all those involved in the change, change managers, senior managers, and human capital, asking for the following details.

(i) What is the change process?

(ii) How do you see the changes it will bring to organizations in terms of intelligence and security? Finally,

(iii) How do HR professionals work?

As already mentioned in the introduction, although the role of HR professionals is determined by organizations, the focus on the relationship between HR management as a function and the change in intelligence in the workplace and climate change has been limited. In the context of change, the authors argue that Dave Ulrich's HR model can be directly applied to understand the contribution of the HR function to AI and climate change (Jamali et al., 2015).

Because the author believes that this model can be effective and integrated in the creation and use of AI and climate-related ideas. Academic Jamali et al. (2015) refers to the research of Ulrich and Brockbank (2013), in which the authors later changed the role of change agents to strategic partners, and employees compete for the responsibility of intelligence and security to be developed, revised and to adapt to the changes coming from human resources to management professionals to operational professionals.

These changes will transform human capital in a way that reassesses its role in the need to deliver value in the context of change (Brockbank, 1999; Ulrich et al., 2013). Although this change in role may seem minor, the model will guide HR professionals in developing human resources from the initial stages of AI and cloud development to success, and the responsible role and area in this process will be clearly defined. is among the announced grants.

From this perspective, the roles mentioned by Ulrich and Brockbank can also be used to understand how HR professionals can help human capital integrate with AI and climate change. For example, as a strategic partner, HR professionals can help identify people's goals and limitations when considering AI and climate change, goals, and metrics.

As the workforce changes, HR professionals can work with AI, cloud experts and management consultants to help managers and employees stay informed and plan. As a challenge for employees, Human Capital can increase engagement by encouraging employees' participation in AI and cloud management and enabling two-way communication. As a management professional, Human Capital has significant AI and cloud computing capabilities in recruitment and selection, training and development, and performance appraisal. Authors Maon, Lindgreen, and Swaen (2010) call for in-depth research on the development of practice-based skills and climate change.

Therefore, this study helps refine our original research question by adding R2. Further research has confirmed how HR professionals' engagement with AI and climate is affected by these factors (Fenwick and Bierema, 2008). and the relationship between climate and HRM as a profession, particularly the level of AI and climate development in various 'scopes' of external and internal AI and how thinking about climate and AI is interpreted by stakeholders and climate change in different contexts (Gond et al., 2011).

The authors also explain the positive and legitimate effects of AI and corporate climate change, depending on the level of organizational culture, by refusing to accept AI and climate, then recognizing AI and climate change, and finally embedding AI and climate change (Maon et al., 2010).

Furthermore, the authors Wirtenberg et al. (2007) found that in organizations that aim to implement many changes (e.g., skills and security), HR professionals are more involved in the overall process than in companies that use multiple methods.

All changes will create uncertainty and have different impacts on human capital. Therefore, retaining key human resources during major changes should be front and center of HR professionals' goals (Alaimo, 2022). However, there are some points that cannot be ignored regarding the changes related to intelligence and climate change. As HR professionals, they have the responsibility to lead the change and even announce the change of artificial intelligence and cloud, and this change directly or indirectly affects their work.

If the message is not sent correctly, some of the human capital will move on its own and may leave the organization. Focusing equally on both needs can make a difference in people's investment goals. This will be even more difficult for HR employees in organizations where there is no production or physical assets, human capital is lost, and especially essential elements can be exposed to serious losses.

While HR professionals work to manage human resources, the scope of this work extends beyond HR professionals. The senior leaders or executives need to have critical discussion and investment in progress, innovation, and human capitalization for AI and climate change. It may also require close and continuous collaboration with external stakeholders such as universities and institutions. As HR professionals begin to make changes in the organization, the question is whether a human resources program is needed. It is also important to diversify the knowledge workers who need to be retained or promoted. Retention plan or (ii) primary incentive. It is important to be clear about these two differences because other stakeholders need to know whether they will accept the plan.

While most of the human capital in the organization will be devoted to core services, such as AI and climate change preparations, the main support will be used to support the valuable resources of people and reward them for all their achievements.

These human resources are linked to the importance of the change process as change leaders. These human resources will be part of the organization's efforts, especially the top executives who need to adapt to AI and cloud computing.

This change will be more difficult for human capital that has grown up in the company and has no experience working elsewhere. Despite communication beliefs about contemporary trends, competitive movements, etc., human capital may not feel the need to change. As a result, the transfer agent must have many one-on-one meetings.

The best information from other organizations will not work and human capital will feel like a strategy to kill human capital that the organization does not need. Therefore, accurate and transparent communication is especially important. Change management will also be an important part of the effective development, teaching, dissemination and use of AI and climate change. This means that having a proper change management process will be

important. There are many diverse types of change management, but depending on the pain point, it may be important to implement a change management process.

6.5 How to know if employees are ready for the change?

Although these measures are taken by organizational leaders to encourage and guide change, it is worth noting that the implementation of change is carried out by all organizational human capital at all levels (Appelbaum et al., 2015). Changes in intelligence and security are major changes that can affect all aspects of human endeavor. Elements are placed in the background. When human capital is seen as someone who accepts behaviors and plans change, it is considered ready for change. Detailed and clear communication is essential to achieve this state. To increase people's ability to follow the organization, the important messages that need to be conveyed to them during the change are:

(i) explaining how the change will affect the current situation,

(ii) supporting the company's core values and how the change will benefit the company and the human capital layer,

(iii) important goals for employees along with other means and resources (Man, Neill, & Yue, 2020).

Realizing intelligence in organizations is challenging due to meaningful change (Booz Allen Hamilton, 2021). While there is great excitement about the future of AI, it is common for some to feel skeptical or anxious.

Changes can result in lost productivity, lost revenue, and even project failure. Therefore, effective change management is essential to cope with major changes. Organizations can facilitate this transition by partnering with stakeholders, providing training, and emphasizing long-term success. The reasons for change are important as the understanding will help HR professionals guide leaders in making necessary changes in their

change programs by removing barriers and motivating employees to accept change (Damawan & Aziza, 2020).

6.6 Implementation of Change in the Organization

Change work is a complex task that can have many stages. As discussed earlier, if quality is not addressed from the beginning, there is a risk of employee opposition that will disrupt the process. Research shows that effective leadership plays a key role in overcoming these challenges, strengthening human resources, creating change, establishing effective communication, and solving personnel problems (Khan et al., 2016). While communicating changes in human capital is important, positive attitudes are equally important.

Although some types of leadership influence followers through service and help them develop service knowledge and behaviors, leaders are better at influencing creative employees as a key role in change, as leaders do, and their leadership is essential for the organization that has undergone change. wind of artificial intelligence and cloud transformation (Bauer, Perrot, Liden, & Erdoğan, 2019; Shafi, Lei, Song, & Sarker, 2020).

Having the right leader for the changes caused by skills and climate change is important because the goal of organizations and HR professionals should be to help human capital adapt to changes and survive through intelligence and security. change Survive and thrive.

This is because change managers help identify new opportunities and develop the capabilities of the company. Researchers have found that transformational leaders encourage and motivate employees to take risks and take responsibility for their outcomes, which helps motivate employees to innovate and encourage ownership (Shafi et al., 2020). Scholars believe that cultural change can lead to collective efforts to sustain strong organizations, institutions, and countries (Lewa, Mburu, & Murigi, 2022). Using corporate rewards to

engage employees and improve their performance (Baig et al., 2021). Therefore, an appropriate leadership style should be developed that will ensure employee engagement. Given the positive impact of change theory on followers, leadership needs to focus on identifying and meeting human capital needs.

While other elements such as planning and implementation are important, communication of human capital changes at all levels plays a significant role in reducing resistance and ensuring people buy into the business. Researchers have noted that effective leaders can anticipate the negative aspects of organizational change and prevent them from occurring (Jacobs et al., 2013). Despite the success in providing effective leadership during times of change, it is recommended that leaders in organizations consider using modern technologies to communicate during times of change.

Implementing change management to resolve AI and climate change issues may also potentially be cost saving to the organization in the long run although it could be an investment at the beginning. The Human Capital theory earlier indicated that the trained human capital at the beginning may produce less earning to the organization at the beginning but in the long run they will be productive and make more earning to the organizations. First of all, the HR professionals driving the effort will be aiming to achieve two change on one hand and on the other, if successful, the change will achieve the goal for both of the changes.

6.7 Development of mindset of human capital

Understanding the leadership of an organization in the context of sustainability and growth can be beneficial to the organization. Human emotions play a key role in the use of time and adapt to changes due to artificial intelligence and climate change. Especially those with a fixed mindset may have difficulty adapting to organizational change and the new opportunities presented by technology and climate change. For example, in developmental

theory, characteristics such as intelligence and personality affect development and have a positive effect on individual and family life (Dweck, 2006).

When improving human resource management performance, this article also focuses on improving human capital, because the human heart has a good power to make our work meaningful and purposeful. Understanding the behavior of each human resource can help HR professionals develop strategic plans for human resources, recruitment, and performance.

Human resources with a positive attitude are motivated by work and initiative because they are typically happy to achieve goals in themselves and in the work environment (Crant, 1995; Caniñls, Semeijn, & Renders, 2018). Although this may seem like an important goal, understanding the behavior of human capital can help us create a plan for its development. These attitudes play a key role not only in leadership, but also in understanding new opportunities in the age of intelligence and climate change.

A culture where the original rigid culture is transformed into a culture that encourages collaboration, learning, and empathy through growth mindset mechanisms, thus creating a law of empowerment culture. When he became CEO in 2014, he actively supported the development of the mindset by changing the company. Microsoft's mission is to "help every person and every organization in the world achieve more" (Microsoft, 2023). As mentioned earlier, Satya Nadella's leadership can be an example of transformational leadership because he turns the mission statement into reality and creates a culture of rules that support many skills such as interaction, communication and connection that are not only unique to people. Strengthening capital, but significant organizational performance. Therefore, Microsoft is a prime example of the importance of having a culture change and supporting the growth of the organization.

6.8 Stakeholder Management

Stakeholder management involves identifying and monitoring stakeholders, understanding their interests and concerns, and working to build long-term relationships with them (Caruso et al., 2023; Tavanti, 2023). Stakeholder management is the practice of engaging with stakeholders in a responsible, ethical, and sustainable manner (Galati et al., 2019; OâRiordan, 2017). Building relationships among all stakeholders and HR professionals is vital to adapting to the changes brought about by AI and climate change. Some of the stakeholders who can help organizations embrace AI and climate change include the organization's senior management, human capital, customers, AI activists, climate activists, and educational institutions.

Establishing good relationships with stakeholders will make it easier to understand what the organization's mitigation measures, customer needs, and business needs are. According to the researchers' research, stakeholder groups vary from organization to organization (Tavanti, 2023). For example, Patagonia works with stakeholders such as employees, customers, suppliers, environmental and social justice organizations to ensure its responsibility and sustainable employment (Patagonia, 2023). Similarly, Starbucks works with stakeholders including coffee farmers, consumers, and local communities to ensure its responsibility and sustainability. It has a sustainable coffee program and works with suppliers to reduce environmental impact.

In addition, Body Works collaborates with stakeholders such as customers, employees, and suppliers to ensure it operates efficiently and sustainably. Some companies advertise but do not respond to customers, but The Body uses social media to provide real, timely, and honest responses. Some useful research in stakeholder management lists new and effective practices.

The core elements of stakeholder management that the researcher, Tavanti (2023) listed, include:

a. **Identifying and prioritizing stakeholders:** The first crucial step in stakeholder management is identifying and prioritizing key stakeholders; this will help HR professionals understand who their stakeholders are, what their interests are, and their level of influence. Since the goal of HR professionals is to help prepare human capital for two changes: skills change and climate change, the number of people with influence will be greater than usual.

b. **Stakeholder Communication and Transparency:** This involves engaging with stakeholders in meaningful ways, understanding their concerns and interests, and building relationships based on trust and respect. This involves regular discussions and consultations with stakeholders and may include coordination of AI preparedness and security plans.

   Other researchers also refer to this step as collaboration, which involves working with partners to create solutions. This approach ensures that solutions are developed according to the needs and expectations of stakeholders (Galati et al., 2019). HR professionals should engage stakeholders throughout the design process, from problem identification to solution.

c. **Stakeholder Collaboration:** Stakeholder engagement: This involves working with stakeholders to identify and implement sustainability measures. This will involve solving problems together, creating plans together, and sharing knowledge and skills. Researchers Galati et al. (2019) emphasize the importance of developing long-term partnerships based on trust and mutual support.

d. **Stakeholder Reporting:** Some researchers have presented the importance of stakeholder reporting and many ways of keeping stakeholders engaged (Manetti and Bellucci, 2018).

Some examples of effective practices and innovative strategies that HR professionals can use include:

(i) Integration involves working with stakeholders to create a narrative that conveys the company's AI and performance. Discussions can help build trust and understanding among stakeholders through transparency and accountability.

(ii) Crowdsourcing involves leveraging stakeholders' knowledge and skills to identify AI, challenges, and solutions. Crowdsourcing can help stakeholders engage in change management efforts to leverage their climate change skills and experience. By making this information more accessible and transparent, companies can increase trust and engagement with their stakeholders, while these tools can help companies create.

(iii) Virtual Reality (VR) and Augmented Reality (AR) technologies provide a cohesive environment. Experiences that allow participants to explore the company's practices for success. This approach can help engage stakeholders by using infographics, videos, and interactive graphics to deliver interactive and powerful information that is more reflective of your performance.

f. **Stakeholder Monitoring and Evaluation:** This step involves monitoring and evaluating the effectiveness of engagement with stakeholders, as well as the impact of sustainability initiatives. This enables organizations to identify areas for improvement and to continually refine their stakeholder engagement and sustainability strategies.

g. **Integration of Stakeholder Interests into Business Decisions:** This step involves integrating stakeholder interests into business decisions. This means considering the social, human, and environmental impacts of business decisions, and balancing the interests of different stakeholders to ensure AI-friendly and sustainable outcomes. HR professionals need to encourage participatory decision-making by ensuring decisions made are transparent and equitable and provide stakeholders with the necessary information and resources to make informed decisions (Galati, et al, 2019).

6.8 Stakeholder Engagement

HR professionals can collaborate with stakeholders such as employees, customers, suppliers, and communities to understand their needs and views and incorporate their feedback into HR policies and practices.

HR professionals need to take a strategic approach to managing human resources, recognizing the interaction of AI and cloud in the business, and working to create value for all long-term stakeholders.

HR professionals can do this by: (i) ensuring that HR policies support the long-term health of the organization while also enabling growth and development in terms of fair compensation, benefits, and AI and security for human resources (ii) integrating sustainability into human policies by incorporating environmental practices such as reducing waste, increasing energy efficiency, and using green products to solve problems.

Here are some examples of well-known companies that are promoting safety in the workplace, along with some examples based on researcher Tamanti's writings.

Categories	**Organizations**

paid time off for environmental activism	Patagonia
training and development opportunities for its employees	Interface; Starbucks; The Nature Conservancy; The Amnesty International; The Charity Water; Teach for America
using renewable energy sources in its operations	Ikea; Unilever; The Amnesty International; Teach for America
Flexible work arrangement/Work-life balance	Patagonia; Unilever; The Charity Water
Diversity and Inclusion	Ikea; Unilever; Interface; Starbucks; The Amnesty International; Teach for America
Competitive benefit package	The Amnesty International; Teach for America

Table 7. Prepared based on Marco Tavanti's research on SHRM.

6.9 AI and Climate Strategy

AI and Climate Strategy in Change Management is a program that shows HR professionals how to integrate AI and climate thinking into their business and decision-making processes. The goal of AI and cloud strategies is to create long-term value for the organization while contributing to the development of human capital. The AI and cloud concept usually includes the following steps:

1. **Assessment:** The first step in developing an AI and cloud concept is to assess the current performance of the same stakeholders. This includes determining the costs and return

on investment, as well as employment, promotion, and renewal opportunities for the organization.

2. **Goal setting:** Based on the assessment, HR professionals set goals and objectives to improve AI and cloud performance. These goals include supporting human resources to prepare for skills and safety in the workplace.

3. **Integration:** HR professionals integrate AI and climate measurement into core business processes, including decision-making, risk management, and advertising. This includes supporting and training human capital on the organization's leadership, values, and performance.

4. **Use of matrices:** HR professionals use metrics and tasks to address AI and climate change goals. This could include investing in renewable energy, reducing waste and water use, using responsible purchasing, and engaging with stakeholders on sustainability issues.

5. **Monitoring and reporting:** HR professionals monitor and report on their performance, including progress against AI and security goals. This information is used to improve intelligence and climate practices, identify areas for improvement, and communicate with stakeholders.

Negotiation in AI and climate practices change management by HR professionals typically involves the following steps:

1**. Identify stakeholders**: The first step in the discussion is to identify the stakeholders in the decision. This will include customers, suppliers, governments, NGOs, and communities, but the most direct stakeholders will be human capital.

2. **Identify the emerging problems:** The second step is to identify the problem to be solved. This may involve adapting AI and cloud applications to ensure the organization

survives and stays ahead of the competition, but more often it involves improving people's ability to recognize the changes in business ideas, business changes that are occurring and where to prepare. The organization may need to take Adaptation measures. This will lead to changes in the business and human resources that are mentally prepared, motivated, and equipped with the necessary skills to adapt to new jobs and several types of jobs.

3. **Identifying common interests:** The third step is to identify common interests in human capital. This will involve identifying the AI strategies that will work best in the organization and assessing the climate that will have the greatest impact. Search for solutions: The fourth step is to look for smart technologies and cloud applications to solve the problem. This will involve proposing and evaluating different solutions that meet the needs of the business, human capital, and the interests of all stakeholders.

5**. Negotiate an Agreement:** The last step is to negotiate an agreement that meets the needs of the organization regarding AI and climate issues, satisfies the human capital layers on the way it works, and satisfies everyone involved. This may involve compromise and finding a common solution to the problem.

While HR experts evaluate AI strategy and discussion, AI and alert environment are important for organizations to demonstrate their performance and collaboration to evaluate the success of AI-based technology and anti-aircraft counter measures.

6.10 AI and climate reporting

The need for AI and cloud advertising will depend on many of the criteria for stakeholder expectations, environmental management, business needs, reputation management, and human resources development. These reports help HR professionals meet the needs of human resources, address transition issues, and comply with stricter laws and regulations.

In other words, AI and weather forecasting will become a key factor in people's ability to adapt to change, meet stakeholder needs, give examples of AI and climate change, and expect a revolution in intelligence and climate applications.

Studies show that voluntary participation in climate reporting is rapidly increasing (Business Roundtable, n.d.). For example, in the European Union, companies with more than 500 employees are required to report on environmental, social, and governance (ESG) issues. Similarly, in the United States, the Securities and Exchange Commission (SEC) has issued guidelines requiring companies to disclose climate-related risks.

Best practices for AI and weather forecasting can be developed from some of the current best practices and trends in weather reporting.

1. **Materiality assessment**: This can conduct a critical assessment to identify the intelligence and climate issues that are most important to organizations, their partners, and their businesses. This helps focus submissions on the most critical issues and demonstrates progress in addressing them.

2. **Integrated reporting**: Integrated reporting combines financial and non-financial information in a single report to provide a complete view of an organization's performance. This helps demonstrate the link between sustainability and financial performance and conveys the organization's long-term value. This also applies to intelligence and weather forecasting.

3. **Integration of AI and cloud analytics:** HR professionals can connect AI and cloud strategies to HR performance, identify HR impacting their organization, and set rewards for contributors. This helps demonstrate HR professionals' and HR's commitment to AI and climate measurement development and their contributions to the organization's overall goals.

4. **Data quality and consistency:** To ensure the reliability of AI and cloud alerts, HR professionals must ensure that their data is accurate and consistent over time. This requires strong data governance, clear data points, and reporting processes.

5. **Stakeholder engagement:** Stakeholder engagement is a best practice in AI and weather forecasting. It helps identify the issues that matter most to stakeholders, builds trust, and demonstrates the organization's commitment to sustainability.

6**. Continuous improvement:** AI and cloud advertising should be viewed as continuous improvement. HR professionals should regularly review their reporting processes, seek feedback from stakeholders, and make changes as needed to ensure their reporting is transparent, reliable, and relevant. Together, these best practices help organizations securely and transparently communicate their AI and cloud operations and partnerships and demonstrate their commitment to human capital development.

Monitor other organizations for past and future trends, challenges, and emerging intelligence and climate control solutions.

Some useful tools to regularly review to understand this topic include international research articles. McKinsey, for example, has been conducting international research since the 1990s, surveying thousands of senior executives and business leaders from around the world over the years (Hancock & Schninger, 2023). The survey is one of the most comprehensive sources of information and insight into global markets and challenges.

McKinsey focuses on AI and content reduction in its research and consulting efforts, emphasizing the importance of these topics to businesses and investors (McKinsey Global Institute, 2017). For example, its 2020 global research report includes insights into key organizations during the pandemic and their plans to address climate challenges, while the

2021 survey includes data on corporate climate and AI decision-making incorporated into operational strategies.

The report itself can provide valuable insight into security standards and best practices, as well as the challenges and opportunities HR professionals face in terms of human capital transformation. A number of other studies and publications also look at the future of AI and climate change. These include:

1. The World Economic Forum's Global Risks Report, published annually, provides insight into emerging trends and future challenges in climate intelligence and governance, and identifies global risks, including environmental, social and governance risks that could impact business, government, and society (World Economic Forum 2023).

2. KPMG Sustainability Reporting Survey provides an overview of companies' climate reporting practices, trends, and emerging issues (Eversheds Sutherlands KPMG, 2021).

3. Deloitte Global ESG Monitor evaluates climate reporting by companies worldwide, analyzes trends and provides insight into how companies can improve their climate performance and advertising (Deloitte Insights, 2022).

4. S&P Global ESG Research and Insights provides a wide range of research and insights on climate issues, including trends, risks, and opportunities for sustainable governance (S&P Global, 2023).

These studies and reports will help departmental companies, investors and policymakers make good decisions and implement strategies by providing insight into future AI and climate-related events, including ESG and competitive governance.

6.11 Implications of the study

The findings of this research paper have contributed to the understanding that HR professionals can be AI and climate change first respondents by clearly defining AI and climate change vision that is linked with business value. This study has yielded findings that the impact of AI is being felt and will alter jobs of human capital. The findings concur with and provide theoretical and practical implications for human capital, and especially for HR professionals.

The implications are described in the section hereafter.

6.11.1 For Human Capitals

This research shows that job changes due to automation and climate change will have a significant impact on human capital. According to human capital theory (Becker and Gerhart, 1962), the cost of retraining, de-skilling and up-skilling human capital may be expensive initially, but overall, training human capital will benefit the organization; society provides more. return. capital.

6.11.2 For HR Professionals

The study establishes that HR can be the architects by aligning HR strategy with organizational strategy and helping managers identify the components that need change. These are the premises of the HR Role model (Ulrich, 1998), as it points to the segments of HR professionals from focusing on the operational aspect from being administrative experts to employee champions to strategic partners to final change agents.

The results of this research show that HR professionals being a change agent can help organizations and human capital change, considering all the changes that human capital will go through. This is because both AI and climate change affect human capital and HR professionals need to spend more time as change agents to prepare human capital in the organization in a timely manner.

The development of the main topic as a study that emerged with the impact of AI and climate change reveals many important points that reveal that the common share and role of the new HR professional in the twenty-first year to contribute to the success of the organization depends on being strategic. This can be achieved on the basis of human capital, focusing on all processes and integrated solutions instead of a single-solution approach to every change in strategy and impact.

The aim now of HR professionals is to create a real impact, that is, to offer changing processes and interventions based on the ideas and plans, to offer clear, unique, and appropriate value for both the organization and human capital. The measure will be the level of organizational and human capital success.

The research has also highlighted the need to reverse the roles of HR professionals as leaders, catalysts, and collaborators because this initiative affects and changes the human capital context rather than emphasing the role as it exists in traditional organizational structure (Becker, Huselid, Pickus, & Spratt, 1997). This is because due to the change in AI and climate, it is difficult to predict changes in jobs that may be beyond the domain of organizations to change or discover new jobs (Prisecaru, 2016). Also, human capital could be resistant to the changes needed to adapt to because they may be worried about losing the job.

Therefore, strategic planning by HR professionals will help to gain competitive advantage in the transition to AI and climate change. It will help organizations create plans and contribute quickly by explaining to human capital and learn the problems if not responding appropriately in the light of rapid changes brought by AI and climate change and take the timely action as needed (Gupta, 2018).

HR professionals should be creative and innovative in trying to adapt to changes in terms of technical and security, because this will lead to the ability to think new ways and

create projects, thus creating more opportunities in organizations (Jesuthasan, 2017). Anticipating and adapting to changes caused by AI and climate will improve the work of HR professionals because it will provide new, stable, and improved repair work processes.

It will also provide management skills that will facilitate the fulfillment of HR functions, provided that the recruitment, development, and retention of human resources are according to the needs of the organization.

Adapting to changes brought by intelligence and security will help integrate different organizational disciplines and create new development opportunities (Xu, David, & Kim, 2018). In response to change, HR professionals need to develop effective and efficient strategies that can be transformative.

This can be done by reviewing existing strategies, improving existing strategies, and using technical strategies that encourage investment in employee training (Deloitte Insights, 2024). This approach will ensure that the strategy meets the organization's goals. As the organization's needs and the need to meet stakeholders continue to evolve, technical skills will lead to better delivery of work according to the organization's needs.

It is also important for HR professionals to ensure that HR policies change from one environment to another. Researchers emphasize the need to link strategic thinking to decisions made by HR professionals about AI and leadership climate, rather than using a "one-size-fits-all" method for best practices such as careful recruitment and selection, comprehensive training, rewards, performance and knowledge-based approach and collaborations that are essential in all situations (Huselid, 1995).

HR professionals will also need to change the implementation of organizational culture. This means that HR professionals should think primarily about the context in which

the organization operates, rather than prescriptive practices such as considering AI or cloud intelligence when hiring employees or considering AI and security in performance reviews.

HR professionals can also research skills and climate change, as well as public opinion, in different contexts. It would also be beneficial for human capital if HR professionals encouraged the creation of AI and green (climate friendly) teams, supported human capital in creative activities for AI transformation, and reduced activities that contribute to climate change.

In addition, HR professionals can ensure the integration of decision-making by discussing and selecting the best strategies to use AI and contribute to environmental sustainability, where environmental incentives, including financial and non-financial support, are possible. Some of the resources are listed below.

- HR professionals can use awards that recognize AI and green practices and workplace leaders to encourage greater involvement of people in the organization in managing AI and measurement climate.
- Human can can encourage organizations to adopt skills across roles to reduce the impact of their activities on the climate and thus increase efficiency.
- HR professionals should hire people who are willing to adapt to AI and climate change so that they can be more creative without fear of failure.
- HR professionals should encourage organizations to develop and provide training for new employees and existing employees to work in a pristine environment and develop skills for the job together.
- HR professionals also need to prepare strategies for the long-term success and effectiveness of AI and behavioral climate in their organizations.

This technology not only increases the efficiency and effectiveness of organizations, but also increases human resources, allowing HR professionals to identify ways and means to solve AI and climate issues by reducing variability.

6.12 Limits and Downsides of AI and climate management

The best outcome of this research would be to "kill two birds with one stone," but the research will fail. Key considerations include the fact that AI and climate control involve human resources as stakeholders in decision-making and management processes and may not deliver the desired results or benefits to stakeholders or society.

While research on the impacts of intelligence and job security is important, it risks being misrepresented and the project receiving more attention and funding than elsewhere, and therefore at a lower level compared to other areas of finance and injustice.

The popular concept of "creating shared value" is important in managing change, but it also has some limitations, such as unequal power among stakeholders, lack of oversight and accountability, and deficiencies that hinder participation in decision-making (Kramer and Pfizer, 2016). The benefits of leadership across diverse groups limit the benefits of leadership. Some of the limitations are listed below.

1. **Conflicting stakeholder interests:** Stakeholder interests can be difficult because they may have different interests, making it difficult to create an AI strategy and atmosphere that is satisfactory for all parties. For example, HR professionals may focus on the perspective of human resource development while other stakeholders may prioritize profit.

2. **Accountability issues:** Since AI and cloud require a focus on multiple areas, decisions may be shared with multiple stakeholders, leading to a lack of accountability and responsibility for desired outcomes.

3. **Prioritizing conflict:** Focusing on stakeholders can lead to poor decision-making because the organization may prioritize stakeholders over cost of ownership or overall profit. Even among HR professionals, some may be smarter than the weather or otherwise.

4. **Potential conflict of interest:** Stakeholder management can create conflicts among different stakeholders, especially if there is a conflict of interest between the stakeholders and the human capital.

5. **Competing incentives:** Management stakeholders cannot provide sufficient incentives for organizations to pursue the goals of HR professionals because stakeholders may not be willing to pay the costs associated with developing human resources.

6.4 Recommendations for Further Studies

This research helps understand the increasing impact of AI and climate change on human resources and how HR professionals can take ownership to provide better ROI to the organization. As the research was conducted, several areas that needed further research emerged as outlined below. The recommendations are as follows:

This study is based on the general organization where human capital plays a role in the organizational environment. It is recommended that similar studies be conducted on human capital working independently or as partners in a company to examine whether these effects still reflect the effects described in this study or whether the change affects other outcomes. Most of the results of this research emerged in positive research rather than quantitative research. International information on countries is not available in online forums. Thesis advisors can play a key role in updating online materials to facilitate further learning.

This study is based in the secondary literature rather than the scholarly literature, as the content of the intervention has been widely discussed in various forums. However, this study is limited to reporting a generalization on the impact of human capital efforts.

Therefore, there are only a few exceptions. Research on human resources in organizations of varied sizes and functions is necessary as it will include a general overview of the human resource process.

Academics have also called on organizations to address other human issues such as work-life balance, improved mobility, and workforce diversity (Rana and Sharma, 2019). While these issues are equally important, researchers also warn that there are two major challenges that organizations need to address to adapt to modern technologies such as AI and adapt to the climate of change: Agility, Unique and interactive human capital (Rana and Sharma, 2019).

Therefore, it is necessary to create a strong organization for human capital training and promotion to keep up with the changing business and ensure that human capital has the intelligence and climate change-based rights and skills to survive and thrive in the workplace. Furthermore, technological changes such as AI and climate change will change the way organizations do business, even in areas such as intelligence and technology learning and development.

HR professionals ensure that the organization has the right human resources with the right skills and abilities at the right time to get the job done. This investment in human capital will be beneficial to the organization because it will enable managers and leaders to benefit from increased productivity and performance (Joseph, 2018).

6.13 Conclusions

The conclusions of this research paper for the two research questions on the impact of AI and climate change in jobs of human capital are based on the findings on the motivations for longer-term strategic and operational use of them by HR professionals in the organizational setting. The conclusions are stated below:

The impact of AI and climate change on human capital jobs depicted the need to train and reskill human capital for longer-term organizational growth. The quantitative research showed growth in AI-related jobs in the past five years representing the need for immediate action of HR to act in this field.

In contrast, the data on climate change had limited professions that were impacted but the quantitative aspect was there was a significant increase of these limited jobs. Thus, providing a contrasting focal point but with the same results.

The motivations or rationale for qualitative results showed a vital role in determining the significance of the impact of both changes happening simultaneously at the workplace and the necessity to act. That value that emerged from the impacts emerged from HR professionals to strategically see the changes and to work as a change agent.

Moreover, the values like training, reskilling, and upskilling of human capital that emerged in this research represented those that were advocated by (Schallock et al., 2018) for a strategic focus.

The findings revealed that the necessity for change is present even if mentioned by different outlets. When one speaks of strategic human capital, the basic approach would be to partner with senior leaders of the organizations and brace the changes and their impact on human capital, rather than it is now visualized by many others as being too operational.

It is abstract and not obvious of what is considered as strategic. AI and climate change could have multiple impacts on jobs and these changes could be managed differently. Since human capital is the focal point of attention for HR professionals, focusing on the proper management of change for this human capital will be the key. However, the culture of innovation and creativity also emerged, and they contributed to the communicative process.

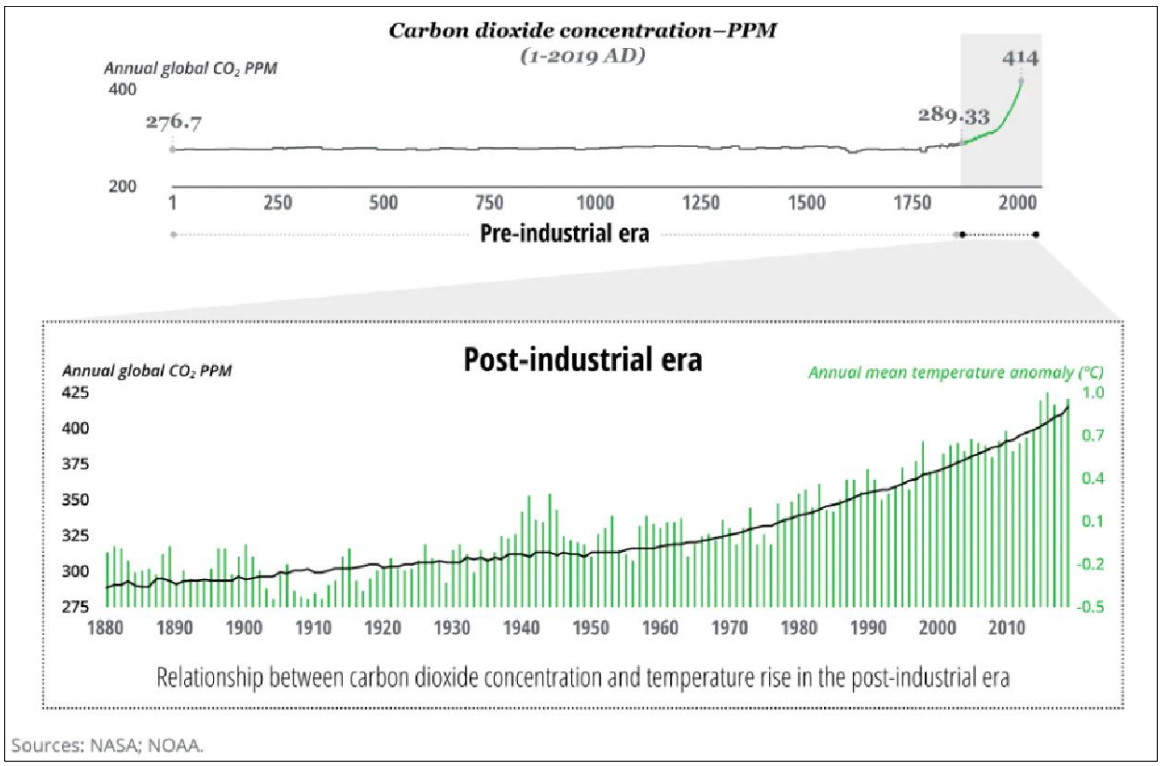
This study not only provides new knowledge in studying the impacts of AI and climate change but also serves as a foundation for HR professionals as strategic change management champions upon which future studies in this area are possible.

Based on the key learnings by a human capital consulting firm, to prepare for the future of work (Future Skills Pilot report, Accenture, 2021) the key themes of getting human capital ready would be:

1. Skilling as a smart organization: Investing in upskilling and reskilling existing employees for AI and climate-related changes is not only cost-effective but also ensures a smoother transition to new roles.
2. Empowering talent mobility: HR departments can leverage AI tools and climate information to empower human capital in shaping their careers. By providing personalized learning paths and opportunities, companies can foster growth and adaptability.
3. Cultural shift: Upskilling should be seen as a competitive advantage and a business imperative. Cultivating a learning culture within the organization encourages continuous improvement and agility.
4. Collaboration across industries: Preparing human capital for the future of work requires collective effort. Cross-industry collaboration will allow organizations to share insights, best practices, and innovative solutions.

APPENDIX A

OVERTIME INCREASE OF CO2 CONCENTRATION LEADING TO RISING TEMPERATURES

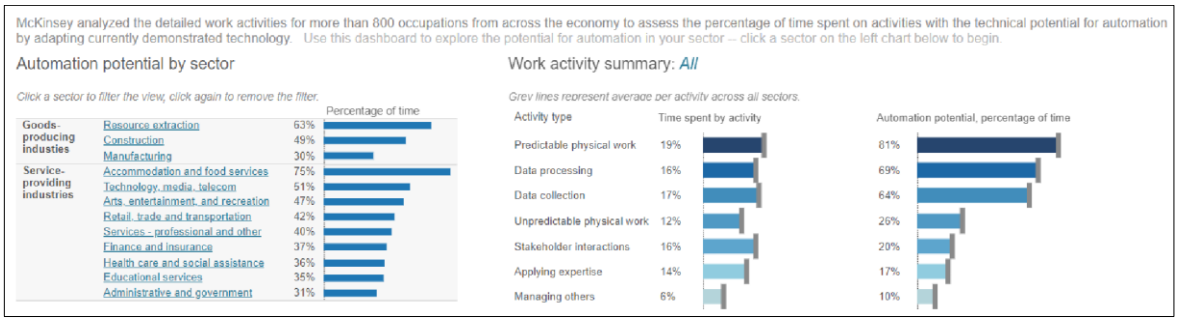


SECONDARY SOURCE: CLIMATE CHANGE 101 FOR BUSINESS LEADERS.

DELOITTE.COM/INSIGHTS

APPENDIX B

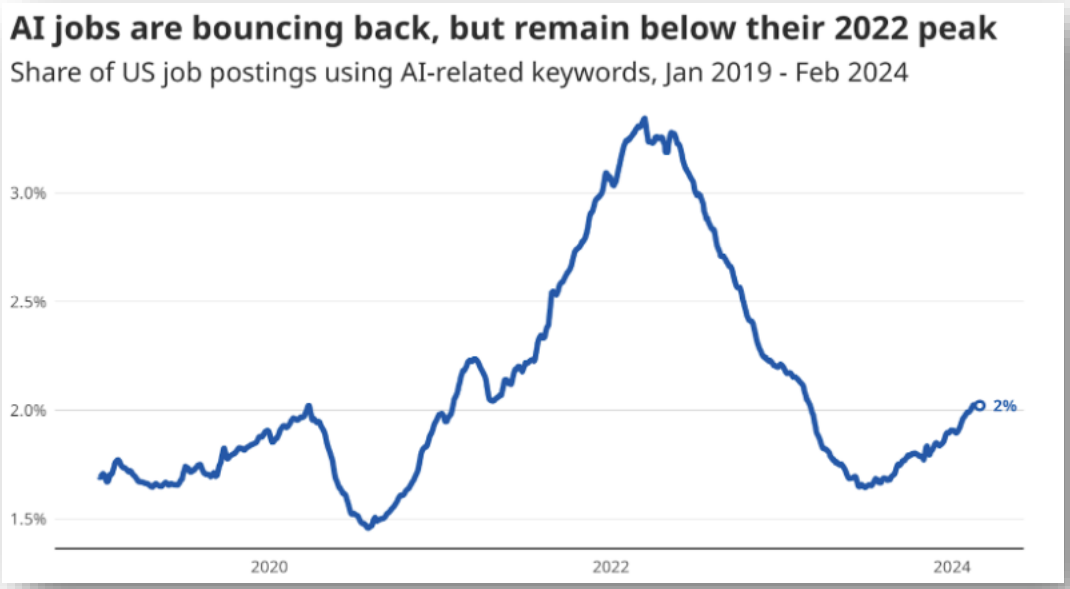
POTENTIAL AUTOMATION OF DIFFERENT PROFESSIONS



Source: Automation by Sector by McKinsey Global Institute

APPENDIX C

RISE OF AI JOBS



Source: AI Jobs by Indeed

APPENDIX D

RISE OF CLIMATE/GREEN JOBS

Source: Green Jobs by LinkedIn

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