The Paradox of Sustainability: Examining the Impact of AI-Powered Green Employability on Employee Well-being and Resource Consumption.

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Abstract

The adoption of green employ-ability practices has accelerated with the rapid growth of sustainable development practices aimed to encourage employees to gain , skill set oriented towards sustainability,environmental competencies and adoptive behavioral competencies to promote sustainability at organization. On the other hand, optimisation of resource utilisation, automation of business operation in facilitating the sustainiable decision making are influenced by the emergence of the AI. Although they encourages environmental sustainability, these developments may create challenges for resource consumption and employee well-being

The present study focus on the paradoxical effects of the AI-driven green employability practices among the human resource workforce.Although green employability promotes sustainability in the long run , its outcomes might increase the performance expectations and workplace pressures among the HR due to technology adaptation and surveillance of performance. These expectations might contribute to the technostress, cognitive overload and well-being challenges among the professionals. The present study exposes the latent environmental impacts of the AI architecture on the human resources. Despite the AI considered as a tool to achieve the sustainability challenges, the consumption of the resources to train and maintain the large scale AI models involves more water for cooling, electricity to power the models and computational power in the data centers. The study further attempts to examine the environmental footprint of AI models underscoring the water-dependent and energy-intensive nature, which leads to offsetting the sustainability benefits.

Based on the models such as job demand, resource theory and sustainable HRM, the current study develops a conceptual understanding that AI-enabled green employability may compromise employee well-being(SDG 3) through technostressors and increased job demands. The study is targeted to collect the data from the employees working in the green employability domains. The collected data will be analysed using Jamovi 2.6.44 using inferential statistical tools.

Keywords: Green employability, AI model, SDG goal, techno stressors, Water Footprint, Energy intensive.

Introduction:

The twin-transition: the digital automation and the environmental sustainability are some of very important UN's sustainable development goals which all the organizations all over the world are trying to achieve in order to incorporate these SDGs in their operational framework the modern corporate sectors are undergoing a noticeable structural changes, and these changes are greatly being influenced by the two major driving forces - one being the green employability and other the Artificial Intelligence based sustainability practices. Even though these SDGs are contributing in achieving sustainable development globally, yet they have a critical paradox; as the methods corporates and organizations use to incorporate these environmental sustainability are impacting the physiological and physical well-being of the employees(Josephin & Haorei, 2026) & (Alliance Manchester Business School, 2025). Whereas the consumption of energy resources are drastically increasing globally since computational tools are being used for achieving these environmental sustainability(Duan et al., 2019).

The idea of green - employability where employees are required to upskill and reskill themselves continuously to meet the needs of rapidly evolving eco-conscious organizations are the major contributor in increased human vulnerability in the workforce, which is inducing severe 'techno-stress' and professional depletion. Studies indicate that forcing employees to adapt to these rapid and complex growth in a green and automated working environment makes them lose the human-to-human interaction which in turn leads to psychological exhaustion(Vaidya & Kulkarni, 2025). This indeed is directly questioning the basic principles of UN SDG 3(Good Health and Well-being) which asks the organizations globally to incorporate strategies to create a sportive working environment and promote mental health and wellbeing of the employees.

The psychological exhaustion among employees is also being influenced due to the use of AI tools for extreme surveillance, monitoring and to track and optimize the targets set in modern corporate sectors, even though AI tools are being used to decrease the workload of human resource operations they are also acting as pervasive surveillance and introducing ambiguity in the structure. This in turn is making a greater impact on decline in overall job and life satisfaction of the employees(Fossen & Sorgner, 2023). This is also directly creating a psychological distress among the employees and in regard to fulfilling the environment performance attributes employee health is being compromised.

Along with this, the twin transition is also challenging the UNs SDG 12 (Responsible Consumption and Production) , heavily exposing the fundamental conflict between the digital technique used to solve physical waste locally and creating significant greater global carbon and material footprints. Which is identified in studies indicating the increased national energy consumption and also higher level of greenhouse gas emission due to heavy workload by the computation (OECD, 2022). Hence this twin-transition is now being questioned for the environmental justification of their usage.

Finally, this paper is majorly focusing on how this twin-transition is impacting both UNs SDG 3 and 13 where both global energy consumption and health and well-being of the workforce are being compromised to achieve the said goals.

Review of Literature:

This study highlights that existing policies and rules devised for safeguarding the well-being of the employees or labour workforce are not playing their roll well enough as the new AI – driven monitoring and management used in modern corporate world is directly affecting the mental health of the employees making them lose their authority over planning their job schedule accordingly even restricting them from taking necessary breaks when needed. This extreme digital monitoring in the modern working environment is introducing new social and psychological risk among employees. It is creating social isolation. Hence the study suggests updating the workforce safety laws along with the changing digital monitoring(ILO, 2026).

This evaluation done among the Indian white-collar professionals[(Sharma et al., 2025), showcases that 7 in 10 highly skilled IT professionals who are made to use the AI have been hit with its psychological paradox and are facing severe job insecurities and their mental health is at risk. This study with empirical data collected using Delphi-validated analysis has given the more authentic results that 68% of the white-collared professionals are facing “anticipatory rumination” and few have felt the organizational betrayal.

A report on twin-transition and intersectional inequality done by a survey in 9 European countries highlights that social-demographic inequalities are being introduced due to the twin-transition. Further the green transition is being the mindful choice of the individual but the digital transition is being forced on the working individuals creating pressure and a feeling of left out from the group for one who don’t foster it in fast growing digital environment.it also highlights the heavy resource consumption by the materials used in digitalisation- the digital tools, services by the cloud, OTTS and of course the generative AI etc.,. this extreme fast digitalization in the workforce is creating the techno stress and individuals overloaded information and also it states that existing policies do not much work in protecting the individuals in these fields(Svenberg et al., 2026). From this report it can be seen that the twin-transition is actually distributing the workplace workloads equally across different demographics.

A primary focus of De Vries Gao's(2026) emphasis on the environmental impact of AI infrastructure. The study shows that the CO2 emission due to AI-Infrastructure will reach 32.6 to 79.7 million tons by the end of 2025, which is approximately the annual carbon emission of New York city, and also it highlights that the total freshwater consumption from these AI-Infrastructure is likely the total global bottled water intake which is 764.6 billion Liters. The article also states that this analysis done using the environmental reports from global top tech companies may not be consistent enough since these companies are not providing the environmental reports including AI-specific and non - AI consumption levels. Hence the authors suggest empowering policies so that the companies keep greater transparency in their reports regarding the AI-workload and their environmental impact.

The UNU-INWEH report[11] says that the natural resources like water and land consumption due to the rapid growth in digital automation aided by AI has been drastically increasing in recent years. Not only this, the AI-Infrastructure is also leaving a high carbon footprint into the environment. This report projects that by 2030 power requirement for AI driven automation will increase 3 times the current consumption which would be 945 TWH which is the annual electricity consumption of 650 million people. This high electricity consumption eventually leads to 399 million tonnes of CO2 into our environment. And the freshwater required to cool these AI-Infrastructure is equal to the annual water consumption for 1.3

billion people. Hence this report exposes the major paradox of "Twin-Transition", also UN requests the governments to mandate AI organizations to keep environmental reports valid and transparent.

This article is discussing majorly on the paradox of AI as a sustainable tool highlighting that to make AI a real sustainable solution good governance and policies are required to tackle the real environmental impacts these AI-Infrastructures impose (Eichentopf & Herrmann, 2026). The "Twin-Transition" being marketed as the future of climate-neutral and resource efficient society but in reality the high energy demand, change in labour and resource use, unevenly distributed ecological burden on vulnerable communities due to these Twin-Transitions are not being considered as of heist importance. Hence the article urges the governments to carefully consider the paradox of this "twin-Transition" and induce necessary policies to make AI a truly sustainable solution for the future rather than a pathway to a new toxic environment.

Research Methodology:

Objectives:

i. To examine the impact of AI-driven green employ-ability practices on employee well-being.
ii. To analyse the influence of AI-driven green employ-ability practices on employee techno stress.
iii. To investigate the impact of techno stress on employee well-being.
iv. To evaluate the mediation role of technostress between the AI-driven green employ-ability practices and Employee well-being.
v. To evaluate employee perception of resource use associated with AI-driven green employ-ability practices.

Data collected: Primary and Secondary.

Statistical tools used: Descriptive, Inferential- Regression, SEM using Jamovi semlj version 2.6

Sampling Technique: Purposive sampling by identifying the employees working either in fully work from home or on hybrid mode.

Sample Collection: Structured Questionnaire.

Target Response: 200, Response Collected:164.

Limitation of the Study: The study had collected sample from the Bengaluru City during the period between April 2026 and May 2026, hence the results of the study are limited to the city and time frame studied with the selected respondents.

Analysis and Discussion:

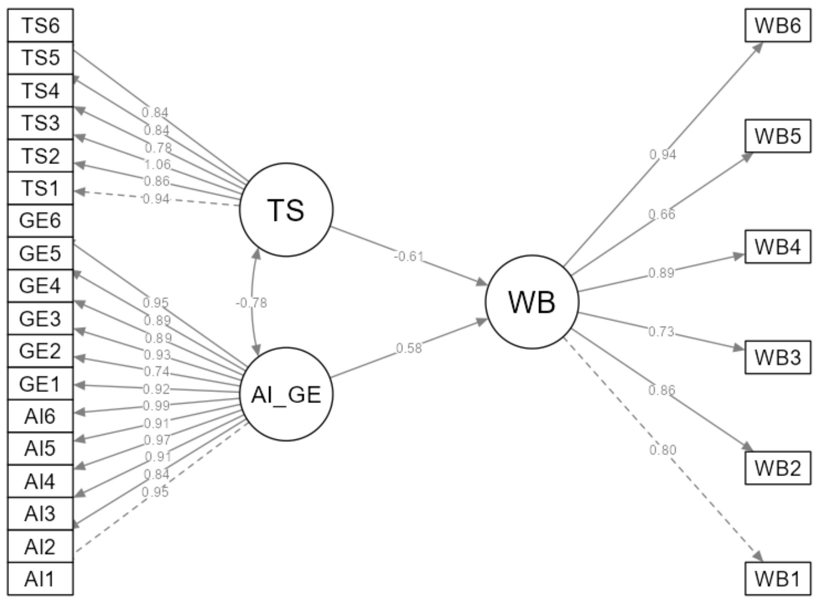
Demoghic Profile:

Demographic Variable	**Category**	**No. Of Responses**	**Percentage (%)**	**Cumulative (%)**
Gender	Male	84	51.2%	51.2%
	Female	76	46.3%	97.5%
	Prefer not to say/Other	4	2.5%	100.0%
	Total	**164**	**100%**	
Age Group	Below 25 Years	26	15.9%	15.9%
	25-34 Years	74	45.1%	61.0%
	35-44 Years	44	26.8%	87.8%
	45-54 Years	16	9.8%	97.6%
	Above 54 Years	4	2.4%	100.0%
	Total	**164**	**100.0%**	
Hightest Education	Undergraduate	48	29.3%	29.3%
	Post Graduate	96	58.5%	87.8%
	Professional/Doctorate	20	12.2%	100.0%
	Total	**164**	**100.0%**	
Industry Sector	Information Technology	66	40.2%	40.2%
	Banking and Finance Services	34	20.7%	60.9%
	Consulting	24	14.6%	75.5%
	Healthcare/ Manufacturing	18	11.0%	86.5%
	Education/ Other	22	13.5%	100.0%
	Total	**164**	**100.0%**	
Total Work Experience	Less than 2 Years	20	12.2%	12.2%
	2-5 Years	58	35.4%	47.6%
	6-10 Years	44	26.8%	74.4%
	11-15 Years	28	17.1%	91.5%
	More than 15 Years	14	8.5%	100.0%
	Total	**164**	**100.0%**	
Work Arrangement	Fully Remote(WFH)	48	29.3%	29.3%
	Hybrid	116	70.7%	100.0%
	Total	**164**	**100.0%**	
Daily Use of AI Tools	Less than 1 hour	12	7.3%	7.3%
	1-3 Hours	62	37.8%	45.1%
	4-6 Hours	56	34.1%	79.2%
	7-8 Hours / More	34	20.8%	100.0%
	Total	**164**	**100.0%**	

Scale Reliability Statistics-Constructs:

Sl. No.	Construct	No. of Items and Reference	Mean	Cronbach's α
01	AI-Driven Sustainability Practices	6 Items **Ref:** Duan et al., 2019 & Jabbour & Jabbour, 2016	4.02	0.804
02	Green Employability	6 Items **Ref:** Van der Heijde & Van der Heijden, 2006	4.09	0.811
03	Technostress	6 Items **Ref:** Tarafdar et al., 2007	3.51	0.904
04	Employee Well-being	6 Items **Ref:** Tennant et al., 2007	3.95	0.788
05	Resource Consumption Perception	6 Items Self-Constructed	4.10	0.825

SEM Model Pathways:



Source: The jamovi project (2024), R Core Team (2024) & Gallucci, M., Jentschke, S. (2021)

Overall Test Results:

Measures of Goodness-of-Fit	Model Metric(Observed)	Scaled Metric	Threshold
IFI- Incremental Fit Index	0.984	0.977	>0.90 (Good)
NFI- Normed Fit Index	0.981	0.968	>0.90 (Good)
TLI-Tucker-Lewis Index	0.982	0.975	>0.95 (Excellent)
CFI- Comparative Fit Index	0.984	0.977	>0.95 (Excellent)
SRMR	0.223	0.204	<0.08
RMSEA	0.219	0.137	<0.08

Hypothesis and Results

Sl.No.	**Objectives**	**Hypothesis Statement**	**Associated Path**	**Model Finding (β)/p**
01	To examine the impact of AI-driven green employ-ability practices on employee well-being.	H1: AI-Driven Green Capability significantly impacts Employee Well-being.	AI_GE → WB	β=0.58
02	To analyse the influence of AI-driven green employ-ability practices on employee techno stress.	H2: AI-Driven Green Capability significantly impacts employee Techno-stress.	AI_GE → TS	β=−0.78
03	To investigate the impact of techno stress on employee well-being.	H3: Techno-stress significantly impacts Employee Well-being.	TS → WB	β=−0.61
04	To evaluate the mediation role of techno-stress between the AI-driven green employ-ability practices and Employee well-being.	H4: Techno-stress significantly mediates the relationship between AI-Driven Green Capability and Employee Well-being.	AI_GE → TS → WB	βindirect =+0.48
05	To evaluate employee perception of resource use associated with AI-driven green employ-ability practices.	H5: AI-Driven Green Capability deployment significantly and positively influences corporate employee perceptions of organizational resource consumption patterns.	Simple Linear Regression	β = 0.879 t =23.01 p = <0.001

Findings and Suggestions:

Objective:1 Impact of AI-driven green employ-ability practices on employee well-being.

Finding: it is evident that the values of structural path coefficient such as β= 0.58, $p < 0.05$, which indicates that there was a positive and significant direct relationship between employee well-being and AI driven green capacity practices followed by the companies. It further ensures when a company trains the employees mindset with the AI driven green capacity practices it will boost psychological safety, operational well-being and the workplace motivation.

Objective 2: Influence of AI-Driven Green Capability on Technostress

Finding: it is clear that the values of structural path coefficient, such as $\beta = -0.78$, $p < 0.05$, which indicates that there was a negative and significant direct impact between AI-driven green capacity practices and employee techno-stress. It also states when an organisation undertakes structured and digital capacity practices, it acts as a defence mechanism in reducing the anxieties and ambiguities among employees.

Objective 3: Impact of Technostress on Employee Well-beingFinding:

Finding: The structural path coefficient values of ($\beta= -0.61$, $p < 0.05$ exhibit a statistically significant and negative effect of technostress on employee well-being. It implies when technological stresses are unchecked, they can actively drain human psychological health and can be workplace hindrances.

Objective 4: The Mediation Role of Technostress:

Finding: To understand the mediation role of techno-stress, the variable techno-stress was identified as a significant partial mediator between AI-driven green capabilities and employee well-being. The result of the structural path coefficient of AI-driven green capabilities ($\beta= 0.58$) showcases that it not only boosts the wellness but also works behind to reduce the techno-stress ($\beta = -0.78$), which will assist in preventing stress among employees by improving mental health.

Objective 5: Perceptions of Resource Use Associated with AI Initiatives

Finding: To examine employees' perceptions of resource utilisation with AI-driven green capabilities, a simple linear regression test was conducted. As a result, the statistically significant values such as $R^2= 0.808$ and $p < .001$ exhibits a strong and valid social-technological paradox: exposure to AI-driven solutions will actively transform employees into environmentally conscious realists by agreeing to the fact that it will massively enhance the footprints through electricity surges, e-waste generated by hardware and other overheads incurred in cooling the AI and other models. It also suggests an urge to support cloud infrastructure.

Suggestions

Based on the International Labour Organisation(ILO) report which emphasizes that 840000 deaths annually at global level is contributed by the psychologocal risks, which makes the enforcement of Occupational Safety and Health a fundamental right at work by calling for the necessity “Right to Disconnect”.

And other suggestions based on the findings of the study covers:

i. To Mitigate the algorithmic work intensification only to automate the administrative work and there by actively prevent the early tech panic (β =0.58)
ii. To combat the psychological risks, companies to institutionalize mediation shield to prevent systemic technostress (indirect effect β=+0.48).
iii. To acknowledge the material AI footprint usage record and publish the audited report of data center water-cooling usage, micro code energy optimization metrics and hardware e-waste.(R^2=0.879)

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