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# THE CHANGING LANDSCAPE OF HUMANITIES, SOCIAL SCIENCES, COMMERCE & MANAGEMENT

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**The Changing Landscape of Humanities,  
Social Sciences, Commerce & Management**

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## **PREFACE**

*The twenty-first century has ushered in an era of rapid transformation, reshaping the global landscape across disciplines. In this context, the fields of Humanities, Social Sciences, Commerce, and Management have experienced dynamic shifts in their foundations, methodologies, and real-world applications. With the emergence of digital technologies, global interconnectivity, and changing societal priorities, the traditional boundaries between these domains are becoming increasingly fluid, necessitating fresh perspectives and innovative approaches.*

*This book, *The Changing Landscape of Humanities, Social Sciences, Commerce & Management*, is an attempt to capture and explore the evolving paradigms within these interconnected disciplines. It brings together a diverse range of research articles, case studies, and theoretical explorations that reflect contemporary challenges, emerging trends, and novel strategies for addressing the complexities of modern life.*

*The contributors to this volume—academicians, researchers, and practitioners from various institutions—offer critical insights into topics such as digital transformation in education, evolving consumer behavior, inclusive economic practices, sustainable management models, and the reimagining of human identity and culture in a globalized world. By integrating interdisciplinary viewpoints, the book seeks to bridge the gap between theoretical frameworks and practical implementation, fostering a more holistic understanding of the world we live in.*

*We believe this compilation will serve as a valuable resource for students, educators, researchers, and professionals seeking to deepen their understanding of the shifting paradigms in these domains. It encourages readers to think critically, engage actively with emerging issues, and contribute meaningfully to the advancement of knowledge and societal well-being.*

*We express our sincere gratitude to all the contributors and reviewers who played a pivotal role in shaping this book. Their intellectual commitment and scholarly rigor have enriched this volume, making it a significant contribution to contemporary academic discourse.*

**- Editors**

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**ENERGY TRANSITION POLICIES:  
A COMPARATIVE STUDY OF MALAYSIA, SWEDEN AND FINLAND**

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**Abstract:**

In most cases, there has been a lack of adequate coordination and coherence among sectors and levels of government. The result is fragmentary efforts that do not fit into each country's general economic, social, and environmental goals, especially on energy transition. The present study has examined the policies on energy transition in Malaysia, Sweden, and Finland. The aim is to try casting some light on the policies, regulations, and incentives put forward by these countries to attain the goal of promoting renewable energy, reducing greenhouse gas emissions, and moving towards a low-carbon future. The different approaches Malaysia, Germany, and Finland adopted to surmount the energy transition challenges will be discussed here. This, therefore, calls for a critical analysis of their policy instruments, institutional frameworks, and strategies in describing the possible ways forward. Finally, we seek to understand the subject better, which may help construct a more integrated energy policy approach that aligns with global sustainability goals.

**Keywords:** Renewable Energy, Energy Transition Policy, Energy Transition Policy, Low-Carbon Strategies, Sustainability Goals

**Introduction:**

Today, the exhaustion of fossil fuels and the growing demand for alternative energy sources have caused the immediate transition to renewable sources. The shift is seen as a crucial step in addressing environmental challenges and defending a more sustainable future (Noraziman *et al.*, 2019). Sweden has made itself stand out in positioning itself as a global leader in renewable energy adoption and carbon reduction and is implementing its energy transition policies. Notably, Sweden has substantially increased its share of renewable energy with sources like hydropower, wind power, and biomass in total energy consumption, which plays a pivotal role (Fernández, 2024). Meanwhile, Finland's government imposed a legal obligation to achieve carbon neutrality by 2035. It has made significant progress towards reaching the target as wind energy has become dependable in Finland (IEA, 2023). Malaysia, on the other hand, embarked on numerous initiatives to enhance renewable energy utilisation and aims to reduce reliance on fossil fuels. Nonetheless, Malaysia still falls short in this endeavour (Rahmat *et al.*, 2016). Hence, this study aims to identify the factors that could contribute to the increase in the adoption

of Renewable Energy Sources (RES) in two European nations, specifically Sweden and Finland. This research also compares Malaysia's policy support mechanisms to better strategies implemented at the EU level in these two countries, successfully showing their result.

When determining the conceptual framework for this research, we will be looking through the lenses of Plato's and Aristotle's philosophies, which offer an alluring perspective on how these principles might intersect with efforts to enhance energy efficiency with its emphasis on ideal forms and the pursuit of a just society which underscores the importance of visionary and principled leadership in guiding energy transition policies. In Sweden and Finland, the alignment with Plato's ideals is apparent through their ambitious and forward-thinking policies that aim for a sustainable future. These countries have illustrated the efficacy of a cohesive vision that amalgamates environmental sustainability into societal development. The policies in these nations reflect the commitment to the common good, long-term planning, and the pursuit of excellence in environmental stewardship, which embodies Platonic ideals.

In Malaysia, implementing Platonic philosophy highlights the need for a clear and comprehensive vision for its energy transition. The challenge lies in overcoming short-term economic and political constraints to establish a sustainable and fair energy framework. By adopting a Platonic approach, Malaysia could benefit from a more unified and idealistic vision that accentuates sustainability and equity in its policies.

Aristotle's philosophy, focusing on practical wisdom (phronesis), empirical observation, and the concept of the golden mean, contributes valuable insights into the practicality of implementing energy transition policies. Aristotle's emphasis on balance and moderation resonates with the approaches seen in Sweden and Finland, where there is a balance between innovation, economic achievability, and environmental sustainability. These countries display a pragmatic approach, continuously adjusting policies based on empirical data and outcomes, reflecting Aristotelian prudence and adaptability.

An Aristotelian approach would advocate for gradual and circumstantially aware policy developments in Malaysia. By emphasising practical wisdom, Malaysia could implement equitable policies considering economic realities, technological capacities, and environmental imperatives. This approach would help Malaysia manoeuvre the complexities of its transition by promoting adaptive and evidence-based policymaking.

In short, applying the philosophical lenses of both Plato and Aristotle to energy transition policies shows the importance of visionary authority and practical wisdom in achieving energy efficiency and sustainability. Sweden and Finland successfully integrate these principles, providing models of idealism and pragmatism in policy conceptualisation and implementation. With these philosophical insights, Malaysia can enhance its energy transition strategies and balance vision with practical steps. Understanding how ancient wisdom such as these



philosophical frameworks can inform modern policy challenges, fostering sustainable and equitable energy systems globally, should be explored in future research.

In analysing and comparing the energy transition policies between Malaysia, Sweden, and Finland, this study will undergo a thorough examination of each country's policies in order to identify the significant distinction between the policies of each country in their effort to reduce their carbon footprint and shift towards sustainable energy usage. In Malaysia, Sweden, and Finland, much literature research has tackled energy transition strategies. However, it is essential to note that the research had limitations because the papers referenced were written in a language other than English.

In Malaysia, the implementation of the Hydrogen Economy and Technology Roadmap (HETR) and the National Energy Transition Roadmap (NETR) positions Malaysia to emerge as a critical player in the regional energy transition and renewable energy sector (Ministry of Economy, 2023). This initiative sets the stage for Malaysia to lead in adopting hydrogen technologies and transitioning towards cleaner energy sources. Nevertheless, Malaysia faces challenges in its energy transition due to its heavy reliance on fossil fuels and political and regulatory measures, as there is no carbon tax and matured carbon credit mechanisms in Malaysia to speed up the energy transition with clean energy resources (Fernandez *et al.*, 2024).

Sweden is a global leader in creating a low-carbon economy, with the least reliance on fossil fuels among all International Energy Agency member countries and the second-lowest carbon intensity (International Energy Agency, 2019). Credit to market-based policies, notably CO<sub>2</sub> taxation, in its success in transforming energy usage in decarbonisation across various sectors. The climate objectives align closely with the country's energy policies, including ambitious targets like achieving zero net emissions by 2045. However, despite its progress, more action is needed as total carbon emissions have remained flat since 2013 (Ministry of the Environment, 2020). Transportation emissions, though accounting for a smaller portion of energy consumption, pose a significant challenge, with Sweden's goal to reduce them by 70% by 2030 (Johansson *et al.*, 2024). In order to tackle this, the government has introduced policies to promote low-emission vehicles and strengthen biofuel use (Pyddoke *et al.*, 2021). Sweden has made strides in decarbonisation by investing in nuclear and renewable energy in their electricity sector while aiming for 100% renewable electricity by 2040. With Nordic and Baltic neighbours supporting its energy transition endeavour, Sweden's integration with regional power markets reinforces the transition towards greener energy, as recommended by the IEA (International Energy Agency, 2019).

Finland's energy and climate strategies revolve around accomplishing carbon neutrality by 2035 (Ministry of Economic Affairs and Employment, 2020). Their goal is accompanied by efforts to enhance energy security, decrease dependence on energy imports, and safeguard biodiversity. Finland has tirelessly played a significant role in international agreements such as

the Paris Agreement, regional cooperation within the European Union, and the Nordic-Baltic framework in order to advance the goals of transition and tackle environmental challenges through collective action and cooperation (Ministry of Economic Affairs and Employment, 2023). In July 2022, Finland's Climate Change Act was reformed to achieve these goals, incorporating a legal mandate to achieve carbon neutrality by 2035. This established constitutional goals for reducing greenhouse gas (GHG) emissions, excluding those from land use, land-use change, and forestry, by 60% by 2030, 80% by 2040, and 90-95% by 2050 (Finland's Integrated National Energy and Climate Plan Update, 2024) These goals illustrate the country's concern for the prosperity of present and future generations. Nevertheless, challenges arise from uncertainties surrounding emissions and carbon sinks in the land use, land-use change, and forestry (LULUCF) sector (McGlynn *et al.*, 2022).

### **Current Transition Policies on Energy**

Energy transition policies are considered to be procedural justice as these policies are interconnected to the administration of justice and legal proceedings. It is part of the energy justice concept adopted as a comprehensive realisation of energy justice (Harizal *et al.*, 2022). This policy refers to the global energy industry's shift from conventional fossil fuel-based energy generation and consumption, such as coal, oil, and gas, to renewable energy sources like solar and wind energy (S&P Global, 2020). This transition is driven by various issues, including the need to cut greenhouse gas emissions and combat climate change and the growing cost competitiveness of renewable energy technology. The shift to renewable energy sources offers substantial economic benefits to nations who engage in it and is also imperative for the world's sustainability. Nonetheless, the transition towards renewable energy still faces significant challenges, including the necessity for a substantial investment in infrastructure, the variability of specific renewable energy sources, and resistance from stakeholders within the fossil fuel industry. To assist with the energy transition and lessen the dependency on fossil fuels, nations worldwide are performing various initiatives and policies. Many nations have set assertive goals to increase the proportion of renewable energy in the mix. Incentives like tax breaks, subsidies, and feed-in tariffs are set in place to encourage the development of renewable energy projects (IRENA, 2020). These initiatives show the urgent need to switch to a more sustainable energy system to lessen the effects of climate change.

### **Findings**

Malaysia, Finland, and Sweden have set aggressive and ambitious targets in their energy transition plans with well-defined objectives behind the decision. Malaysia has set a conspicuous path towards energy transition development to lower carbon emissions and strengthen energy security. The response to the nation's increasing demands on environmental issues and international pledges to fight climate change has shifted the policies on energy transition. Malaysia's transition is due to the expectation of population growth, which will cause the

country's energy supply to increase by 60% (IRENA, 2023). On the other hand, Finland's policies respond to the high energy usage per person due to industrial output, its environmental urgency, and the necessity of a transition. The nation's long winters, high need for heating, and well-developed economy stress the criticality of switching to sustainable energy sources to satisfy energy demands while lessening environmental impact efficiently (IEA, 2023). On the other hand, Sweden's success in increasing renewable energy and energy efficiency, especially in the heating sector, drives Sweden's energy transition policy (Stockholm Environment Institute, 2024). Sweden's impressive climate mitigation outcomes may be attributed to its significant increases in energy efficiency and renewable energy shares. The country has lower greenhouse gas emissions per capita for heating than the EU average. The small percentage of people who struggle to keep their houses warm is evidence that this improvement improves energy security and lowers susceptibility to energy disasters (Stockholm Environment Institute, 2024).

Motivated by environmental concerns, Sweden, Finland, and Malaysia have pledged to reduce carbon emissions and transition to renewable energy sources to combat climate change and preserve the environment. The nations hope to improve energy security through energy source diversification and decreased reliance on imported fossil fuels. They are further inspired to achieve ambitious energy transition targets by the economic opportunities the switch to renewable energy creates, including jobs and investments in cutting-edge technology. Moreover, according to the Stockholm Environment Institute (2024), these nations have international obligations to fulfil greenhouse gas reduction goals and exhibit leadership in climate action as parties to the Paris Agreement. Therefore, all these countries have introduced laws and policies to achieve their goals in the energy transition.

The energy transition policies of Malaysia, Sweden and Finland embody distinct strategies tailored to their environmental imperatives. In Malaysia, the government introduced policies called the National Energy Policy 2022-2040 (DEN) and the National Energy Transition Roadmap (NETR) (IRENA, 2023). However, we will be focusing more on the National Energy Transition Roadmap (NETR) as this policy is introduced explicitly for the transition of energy in Malaysia and as a part of National Energy Policy 2022-2040, which comprises vast subjects of energy in Malaysia as well as the 12th Malaysia Plan. Malaysia's commitment to sustainability is underscored through an ambitious target to achieve net zero emissions by 2050. To achieve this target, Malaysia has outlined a comprehensive strategy, including a 70% increase in the installed capacity of renewable energy by 2050.

The NETR can be delineated into two sections according to the National Energy Transition Roadmap (Ministry of Economy, 2023). The first section focuses on six energy transition levers outlining ten significant projects and activities to promote Malaysia's transition to a low-carbon, clean energy economy (Ministry of Economy, 2023). These initiatives, which fall under the levers and enablers category, aim to spur growth in untapped markets. The energy

transition levers Malaysia targets include energy efficiency, renewable energy, hydrogen, bioenergy, green mobility and carbon capture, utilisation and storage (CCUS). Malaysia's energy transition plan is built around critical levers, each with specific goals and actions driven by government programs working alongside other organisations. These efforts are designed to help Malaysia advance toward its energy transition targets by tackling unique challenges and opportunities tied to each lever. These large-scale initiatives aim to cut greenhouse gas emissions by over 10,000 Gg CO<sub>2</sub>eq annually, attract investments of approximately RM25 billion, and create 23,000 jobs. The NETR outlines significant actions, such as establishing an RM2 billion National Energy Transition Facility, introducing green financial tools, implementing carbon pricing strategies, and launching supportive policies like the National Gas Roadmap and the National Biomass Action Plan. The second section outlines the energy sources and methods for lowering greenhouse gas emissions (Ministry of Economy, 2023). This section's Responsible Transition (RT) initiative attempts to reduce greenhouse gas emissions from the energy sector by 32% from 2019 levels. Malaysia's energy transition policies emphasise diversifying its energy mix, growing renewable energy deployment, and enacting regulatory frameworks to support these goals (Aziz *et al.*, 2024).

On the other hand, according to the IEA (2022), Finland's key legislative milestone in this journey is the Climate Change Act (*Laki ilmastonmuutoksen torjunnasta*), updated in July 2022, which imposes a legal obligation to reach carbon neutrality by 2035. Binding targets within this Act mandate significant reductions in greenhouse gas emissions, excluding land use, by 60% by 2030, 80% by 2040, and 90-95% by 2050, compared to 1990 levels. Nuclear energy and a robust domestic production of renewable energy, predominantly from forestry solid biomass, hydro, and wind, have positioned Finland with one of the lowest reliance levels on fossil fuels among IEA member countries. However, challenges persist, notably in reducing dependency on imported fossil fuels, which still cover over a third of Finland's energy supply. The country's high energy intensity and consumption per capita stem from its large, heavy industry sector and cold climate, necessitating substantial heating requirements (International Trade Administration, 2023). Finland's National Climate and Energy Strategy (NCES) takes a comprehensive approach to managing the country's energy and climate challenges (IEA, 2022). The strategy emphasises sustaining a significant reliance on nuclear power, increasing renewable energy sources for electricity and heat production, improving energy efficiency, and expanding electricity across various energy needs.

Bioenergy, particularly forestry biomass, plays an essential role in Finland's shift toward sustainable energy (Similä & Mäki, 2021). It supports both electricity and heat production and plays a role in transforming the transport sector. Despite progress, challenges remain, such as decreasing carbon removal from land-use sectors and a reliance on imported fossil fuels. A significant focus for Finland is boosting energy efficiency, especially within the industrial sector,

where energy efficiency agreements are expected to result in substantial savings. Shifting from fossil fuels to sustainable heating solutions, including district heating systems powered by bioenergy and waste heat, aligns with the country's sustainability objectives (Ministry of Economic Affairs and Employment, 2019). Renewable energy is a cornerstone of Finland's strategy, with ambitious plans for onshore and offshore wind, solar power, and non-combustion systems for heating and cooling. The government also prioritises innovation, aiming to commercialise new energy technologies and enhance Finland's position in the global battery supply chain by leveraging its abundant critical mineral resources.

Finland is focused on achieving carbon neutrality and significant emissions reductions within its electricity sector. This shift is driven by market-based investments, supportive policy measures, and changes to energy taxation to encourage low-carbon energy production and greater electrification (IEA, 2023). Nuclear energy remains an essential component of Finland's energy strategy, with plans for further development and a commitment to responsible nuclear waste management (IEA, 2023). The urgency to reduce reliance on fossil fuels, mainly imports from Russia, has led Finland to explore alternative energy sources, improve energy efficiency, and increase renewable energy output. Ensuring energy security is also a government priority, illustrated by securing a floating storage and regasification terminal and running awareness campaigns to help consumers manage energy price volatility.

On the other hand, according to the Ministry of Climate and Industry (2023), Sweden has presented the draft of its Integrated National Energy and Climate Plan (NECP), reflecting the country's firm commitment to sustainability and addressing climate change. The plan sets out specific strategies and targets for cutting emissions and boosting renewable energy, underscoring Sweden's proactive stance on environmental issues. According to the Ministry of the Environment and Energy (2017), built on the foundation of the Energy Bill and the current climate framework, the plan takes a diverse approach to reducing greenhouse gas emissions while steering the economy toward sustainability and achieving climate neutrality by 2045. Sweden's strategy's core is a robust framework that tackles energy security and market challenges, emphasising research, innovation, and competitiveness. The NECP outlines policies to reduce emissions across various sectors, including promoting renewable energy, enhancing energy efficiency, and encouraging sustainable practices in transportation, industry, and agriculture. By addressing emissions directly and supporting low-carbon alternatives, Sweden aims to progressively lower its carbon footprint to achieve climate neutrality (Ministry of the Environment, 2020).

Sweden's forests are crucial as significant carbon sinks, helping absorb large amounts of carbon dioxide from the atmosphere (Similä & Mäki, 2021). Sweden boosts its capacity to capture carbon and combat climate change through sustainable forestry practices such as planting new forests, restoring existing ones, and improving forest management. The forestry sector also

plays a crucial role in generating renewable energy, producing bio-based materials, and preserving biodiversity, all contributing to Sweden's broader sustainability goals. As a result, Land Use, Land Use Change, and Forestry (LULUCF) are essential components of Sweden's climate strategy, supported by its extensive forested areas (McGlynn *et al.*, 2022). These forests not only help absorb carbon dioxide but also contribute to reducing overall greenhouse gas emissions. Acknowledging the importance of LULUCF, Sweden has implemented various policies and initiatives to promote sustainable forest management and responsible land use practices (Mazziotta *et al.*, 2021).

The institutional structures in Malaysia, Sweden, and Finland also significantly drive their energy transition efforts. Regulatory solid frameworks, well-designed policy processes, and effective governance systems are essential in supporting the move towards sustainable energy and renewable sources.

In Malaysia, the policy approach to energy transition is comprehensive. The National Energy Transition Roadmap (NETR) combines regulatory measures, incentives, and investments to advance renewable energy use, enhance energy efficiency, and cut carbon emissions (Ministry of Economy, 2023). These incentives include feed-in tariffs, tax incentives, and regulatory standards set by agencies such as the Ministry of Energy and Natural Resources, the Energy Commission, and the Sustainable Energy Development Authority. The NETR also emphasises the need for collaboration between government bodies and industry stakeholders to ensure effective policy implementation, monitoring, and evaluation. The newly established National Energy Council oversees these efforts to support the roadmap's execution (Ministry of Economy, 2023). The growing energy demand in the country essentially drives this proactive approach.

Sweden's approach to energy transition reflects a solid commitment to sustainability, with a clear focus on reducing carbon emissions and increasing the use of renewable energy. Central to this effort is the draft Integrated National Energy and Climate Plan (NECP), which aims to achieve carbon neutrality by 2045 (Ministry of Climate and Industry, 2023). The NECP outlines policies designed to promote energy-efficient technologies, provide subsidies for renewable energy production, and encourage environmentally friendly practices in industries, transportation, and forest management. The Swedish Energy Agency plays a crucial role in bringing these policies to life, overseeing their implementation and tracking progress to ensure Sweden stays on course toward its energy transition goals.

Finland's energy transition policy takes a diverse approach to achieve carbon neutrality by 2035. At the core of this strategy is the National Climate and Energy Strategy, which sets critical goals such as increasing the use of renewable energy, maintaining a significant role for nuclear energy, and enhancing energy efficiency. Bioenergy also plays an essential role in generating heat and power and supporting the shift in the transportation sector (International Energy Agency Bioenergy, 2021). A robust institutional framework supports this transition,

promoting involvement from various stakeholders and ensuring effective regulatory oversight and strategic planning. The Ministry of Economic Affairs and Employment plays a pivotal role in guiding the development and execution of energy policies. Through this collaborative approach, Finland is steadily progressing toward a sustainable, low-carbon future.

### **Policy Enhancement Recommendations**

Based on the reports mentioned, there are several ways each country can enhance their energy transition policies to make their goals more attainable. Energy transition policies are essential frameworks that help guide societies toward more sustainable energy practices. These policies focus on adopting renewable energy sources, promoting energy efficiency, and reducing carbon footprints to tackle climate change effectively (IEA, 2019). However, these policies' effectiveness depends on public awareness and engagement (World Resources Institute, 2018). Without widespread understanding and support from the public, even the most carefully crafted policies might not reach their goals. It is essential for communities to be engaged and on board to truly make a difference (IPCC, 2022). This gap highlights how important it is for governments to involve the public so people understand why these policies matter and how they help reach energy transition goals. When citizens are well-informed, they are more likely to back policies that encourage energy efficiency and renewable energy use (European Commission, 2022). This public support can encourage the policymakers that they need in order to create and enforce robust transition laws. Therefore, a successful energy transition program should focus on supporting and running effective public awareness campaigns.

Furthermore, promoting electric vehicles (EVs) is a great way to improve further energy transition policies in Sweden, Finland, and Malaysia (IEA, 2021). This is significant as transport in vehicles is one of the most common activities, and the transport sector is one of the most significant contributors to carbon dioxide emissions (Fleck, 2023). This can be seen when cars and vans are responsible for nearly fifty per cent of carbon emissions, with 48% of caused linear transport carbon emissions in 2022. Thus, this highlights the urgent need for action to reduce carbon dioxide emissions (Fleck, 2023). Thus, policymakers should provide or increase financial support for buying electric vehicles (EVs), such as subsidies and tax incentives, which have been implemented in California and New York (IEA, 2021). These measures can lower initial costs, making EVs more cost-effective for many people and encouraging the environmentally friendly option. By lessening the financial pressure on buyers, governments can motivate more citizens to opt for EVs, which produce less carbon dioxide emissions, which ultimately helps in achieving the country's transition goals.

Other than that, electrifying public transportation systems, including buses, trams, and trains, can significantly reduce emissions from the transportation sector (Welle *et al.*, 2023). Governments should prioritise the procurement of electric buses and other public transit vehicles and support the development of related infrastructure. This transition decreases greenhouse gas

emissions and improves air quality in urban areas, benefiting public health (IEA, 2022). Encouraging the adoption of electric vehicles is a vital component of comprehensive energy transition policies. To achieve these objectives, policymakers must foster public awareness, engage in public-private partnerships, and implement robust legislative measures (World Resources Institute, 2023). This multi-faceted approach will ensure that the transition to sustainable transportation is effective and enduring, supporting broader climate and energy goals.

Malaysia can further improve their policy by promoting sustainable forestry practices, as the current policy prioritises renewable energy diversification. Therefore, integrating sustainable forestry practices shall also be enhanced (Hishamuddin, 2024). Sustainable forestry enhances carbon sequestration and supports the production of bio-based materials. Reforestation and afforestation initiatives are essential, involving large-scale projects to restore degraded lands and establish new forests, thereby increasing forest cover and carbon storage capacity (Hishamuddin, 2024). Sustainable forest management (SFM) practices should be adopted and facilitated by certification schemes such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). These schemes ensure that forest management balances ecological, economic, and social objectives. Advanced monitoring and assessment techniques, including remote sensing and regular forest inventories, are vital for maintaining forest health, detecting illegal activities, and accurately accounting for carbon stocks.

Encouraging agroforestry systems would be beneficial in integrating trees into agricultural systems, as this enhances biodiversity, conserves soil and water, and sequesters carbon (Ollinaho & Kröger, 2021). Another crucial step is to reduce the consumption and reliance on fuel and promote the manufacture of bio-based materials, especially tree biomass, for bioenergy, biofuels, and bioplastic (Ministry of Energy, Green Technology and Water, 2017). Investments in science and technology will be essential to discover "new ways" to use fewer resources. Additionally, protecting the most endangered species and guaranteeing the availability of vital resources like soil and water are two benefits of improving natural ecosystems and preserving their array of species.

Sustainable forestry entails recognising the local population, in this case, the indigenous people and their residents all over the forests (Crowe *et al.*, 2023). These are the people who help in forest management, and their interventions include relying on a lot of their knowledge because they are most effective, especially for those in their zone. Comprehensive laws and policies are also crucial in promoting sustainable activities (Crowe *et al.*, 2023). For example, incentive programs where ecosystem services payments (PES), such as illegal logging antipodes and dished out deterrent punitive fines, are enforced can impact. Moreover, environmental issues such as global warming can also be tackled through a carbon credit scheme, in which trees more resistant to climate change will be planted. This will also help improve the forests' ability to store carbon in the long run. Awareness programs should be developed and implemented to educate on



the need for sustainable forest management. In conclusion, for Malaysia to improve its forest carbon-storing capacity, production of bio-based economies, adaptation to climate change, and protection of economic and biological resources are highly needed.

Countries like Sweden and Finland are among the highly ranked countries trying to achieve sustainability. Although their geographical location is not the best, the Nordic countries are among those feeling this significant impact of climatic change. However, they have become so well-prepared in adapting to these changes. Still, there is ample room for making them even more resilient to climate change. According to the Finnish Energy 2023 report, solar energy accounts for less than 1% of the country's energy usage (Kostama, 2023). Similarly, in Sweden, solar energy contributes around 1% of the total energy generated (Swedish Institute, 2023).

To address this, the governments of both countries need to implement policies that further encourage the integration of solar energy with other renewable sources, creating a more balanced and resilient energy system. Sweden and Finland have significant solar energy potential. Even though their geological position is not as ideal as others', these nations could increase their solar energy usage through technology advancements, pro-solar government legislation, and rising public awareness. By enforcing this effort, Sweden and Finland can further advance leading environmental sustainability and be able to multiply their solar energy output yield across nations.

Energy storage is one of the main barriers to the adoption of solar energy in Nordic countries like Sweden and Finland. Several geographical, climatic, economic, and infrastructural factors contribute to relatively lower adoption than other renewable energy sources. As such, this makes it hard to rely entirely on solar energy during winter, with very few hours of daylight. However, the extended daylight hours in summer offer great potential for energy collection with solar means.

With these challenges, the government should adopt a focused policy measure that fits Nordic conditions and the environment and will significantly facilitate solar energy adoption. Governments could provide regulatory support, such as streamlined permitting processes that simplify and speed up the processing of approvals related to the installation of solar panels. The burden of bureaucratic delay will be reduced; hence, developers and homeowners will be more interested in adopting solar energy into their lives. Moreover, these policies would address the manifold problems of finance and regulation to build an overall supportive platform for the growth of solar energies. In this way, the approach will be helpful in the attainment of goals related to renewable energy, reduction in carbon emissions, and sustainable development.

### **Conclusion:**

In conclusion, the energy transition is such a complex and varied process that it needs specific measures fitted to the specific situations of each country. Drawing inspiration and benchmarking from leading countries in energy transition, such as Sweden and Finland,

Malaysia can further formulate more efficient strategies in flawlessly transitioning its energy. Eventually, this will help support Malaysia's efforts toward meeting international sustainability goals. Suppose transitions such as these are to be continuously monitored, including their policy impacts, technological development, and socioeconomic outcomes, in greater detail. In that case, further research will be needed to support efforts toward attaining sustainable energy systems worldwide.

This research has compared and contrasted the Energy Transition Policies of Sweden, Finland, and Malaysia, highlighting both differences and similarities in their approaches toward achieving sustainable energy futures. The analysis reveals that Sweden and Finland have made significant strides in integrating renewable energy sources into their energy mix, supported by comprehensive and effective policy frameworks. In contrast, Malaysia's journey has been shaped by unique challenges that require tailored solutions to address its specific national circumstances. These findings underscore the importance of context-driven strategies in energy policy, with each country's approach reflecting its distinct socioeconomic and environmental landscape.

A significant part of Swedish accomplishment in energy transitioning is due to its widespread orientation towards renewable energy sources, ecological-friendly politics, and general public acceptance. On the other hand, Finland's energy transition plan, based on technological development and inter-firm dynamics, has also made progress in the energy transition.

Unfortunately, despite promising initiatives, energy transition in Malaysia is on a different level of stages of energy transition compared to Sweden and Finland. The economic environment in which the country is heavily dependent on fossil fuel sources and possesses limited economic growth and developed infrastructure calls for a more prudent and flexible approach to transition energy systems. That being said, Malaysia can harness the geographical advantages and the growing renewable energy market to speed up the energy transition, but only if suitable policies and funding are in place.

The primary insights from Sweden and Finland indicate that adequate research and development funding is vital for technological progress in the energy transition. Active public involvement is also essential, and solid governmental guidance is crucial. A well-rounded and inclusive policy framework, regional and global partnerships, and a commitment to innovation in renewable energy technology will be essential for Malaysia's future.

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**References:**

1. Aziz, A. J. A., Baharuddin, N. A., Khalid, R. M., & Kamarudin, S. K. (2024). Review of the policies and development programs for renewable energy in Malaysia: Progress, achievements and challenges. *Energy Exploration & Exploitation*, 42(4), 1472–1501.
2. Crowe, O., Crosby, M., De La Paz, M., De La Rosa, G., Gowae, G., Gurung, H., Kumpel, N., Hani, T., Lee, E., Panopio, J., Perumal, B., Quimpo, J., Resurreccion, N., Satyal, P., Simkins, A., Thomas, J., Thomas, J., Widyanto, A., & Yeap, C. (2023). The role of Indigenous Peoples and local communities in assessing forest condition, pressures and conservation actions at key forest sites in tropical Asia and New Guinea. *The International Forestry Review*, 25(2), 147–162.
3. European Commission. (2020). *Energy - Renewable energy targets*. [https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-targets\\_en](https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-targets_en)
4. European Commission. (2020). *Finland's final updated national energy and climate plan 2021–2030*. [https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans\\_en](https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en)
5. Fernández, L. (2024, April 15). *Renewable energy in Sweden - Topic overview*. Statista. <https://www.statista.com/topics/10734/renewable-energy-in-sweden/#topicOverview>
6. Fernandez, M. I., Go, Y. I., Wong, M. L. D., & Früh, W.-G. (2024). Malaysia's energy transition and readiness towards attaining net zero: Review the potential, constraints, and enablers: *Renewable Energy Focus*, 51, Article 100640.
7. Finland's Integrated National Energy and Climate Plan Update. (2024). In R. Huttunen, M. Kinnunen, B. Lemström, P. Hirvonen, & P. Kuuva (Eds.), *Publications of the Ministry of Economic Affairs and Employment* (p. 227). Ministry of Economic Affairs and Employment of Finland.
8. Fleck, A. (2023, September 22). *Infographic: Cars cause biggest share of transportation CO<sub>2</sub> emissions*. Statista. <https://www.statista.com/chart/30890/estimated-share-of-co2-emissions-in-the-transportation-sector/>
9. Harizal, M. A. H., Noor, N. S. M., Anuar, N. I. K., & Abdul Rani, M. H. (2022). A review of renewable energy laws in Malaysia: Comparing solar energy policies in Malaysia, United States, and China. *Environment-Behaviour Proceedings Journal*, United Kingdom, 2398-4287.
10. Hishamuddin, M. S. (2024, June 6). *Promoting sustainable forestry practices for a Greener Malaysia: A Call for Action 2024*. Forum for Environmental Research & Development, UPM.

- [https://forenv.upm.edu.my/article/promoting\\_sustainable\\_forestry\\_practices\\_for\\_a\\_greener\\_malaysia\\_a\\_call\\_for\\_action\\_2024-81255](https://forenv.upm.edu.my/article/promoting_sustainable_forestry_practices_for_a_greener_malaysia_a_call_for_action_2024-81255)
11. Intergovernmental Panel on Climate Change. (2022). *Climate change mitigation report*. <https://www.ipcc.ch/report/ar6/wg3/>
  12. International Energy Agency Bioenergy. (2021). *Country report: Finland 2021 update*. IEA Bioenergy Technology Collaboration Programme. <https://www.ieabioenergy.com/country-reports/finland-2021/>
  13. International Energy Agency. (2019). *According to the latest IEA country review, Sweden is a leader in the energy transition*. IEA News. <https://www.iea.org/news/sweden-is-a-leader-in-the-energy-transition-according-to-latest-iea-country-review>
  14. International Energy Agency. (2019, April 9). *Energy policies of IEA countries: Sweden 2019 review – Analysis*. <https://www.iea.org/reports/energy-policies-of-iea-countries-sweden-2019-review>
  15. International Energy Agency. (2022, May 5). *Executive summary – Global EV outlook 2022 – Analysis*. <https://www.iea.org/reports/global-ev-outlook-2022/executive-summary>
  16. International Energy Agency. (2023). *Executive summary – Finland 2023 – Analysis*. <https://www.iea.org/reports/finland-2023/executive-summary>
  17. International Energy Agency. (2023). *Finland 2023 – Analysis*. <https://www.iea.org/reports/finland-2023>
  18. International Energy Agency. (2021). *Policies to promote electric vehicle deployment*. IEA. <https://www.iea.org/reports/global-ev-outlook-2021/policies-to-promote-electric-vehicle-deployment>
  19. International Renewable Energy Agency (IRENA). (2022). *World energy transitions outlook 2022*. <https://www.irena.org/Digital-Report/World-Energy-Transitions-Outlook-2022>
  20. International Renewable Energy Agency (IRENA). (2023). *Malaysia energy transition outlook*. International Renewable Energy Agency. [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2023/Mar/IRENA\\_Malaysia\\_energy\\_transition\\_outlook\\_2023.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2023/Mar/IRENA_Malaysia_energy_transition_outlook_2023.pdf)
  21. International Trade Administration. (2023, November 20). *Energy – Finland*. <https://www.trade.gov/country-commercial-guides/finland-energy>
  22. Johansson, M., Vierth, I., Holmgren, K., & Cullinane, K. (2024). The climate and environmental effects of policies for moving freight transport from road to other modes: The case of Sweden. *Case Studies on Transport Policy*, 15, 101151.
  23. Kostama, J. (2023). *Electricity generation*. Energiategollisuus. <https://energia.fi/en/energy-sector-in-finland/energy-production/electricity-generation/>

24. Mazziotta, A., Moen, J., Lidskog, R., & Svensson, J. (2021). *Sustainable boreal forest management: Challenges and opportunities for climate change mitigation* (Report No. 2021-11). International Institute for Applied Systems Analysis (IIASA). <https://pure.iiasa.ac.at/id/eprint/17778/1/rapport-2021-11-sustainable-boreal-forest-management-challenges-and-opportunities-for-climate-change-mitigation-002.pdf>
25. McGlynn, E., Li, S., Berger, M. F., Amend, M., & Harper, K. L. (2022). Addressing uncertainty and bias in land use, land use change, and forestry greenhouse gas inventories. *Climatic Change*, 170(1–2).
26. Ministry of Climate and Industry. (2023, July 10). *Draft updated national energy and climate plan (NECP) for Sweden*. European Commission. [https://commission.europa.eu/system/files/2023-07/EN\\_SWEDEN%20DRAFT%20UPDATED%20NECP.pdf](https://commission.europa.eu/system/files/2023-07/EN_SWEDEN%20DRAFT%20UPDATED%20NECP.pdf)
27. Ministry of Economic Affairs and Employment. (2023). Finland's Integrated National Energy And Climate Plan. In *Draft Update*. [https://commission.europa.eu/document/download/78c7f4bd-a3ca-4e83-8732-65f1e0d0baaa\\_en?filename=DRAFT%20NECP%20update\\_Finland.pdf](https://commission.europa.eu/document/download/78c7f4bd-a3ca-4e83-8732-65f1e0d0baaa_en?filename=DRAFT%20NECP%20update_Finland.pdf)
28. Ministry of Economy. (2023). *National Energy Transition Roadmap*. <https://www.ekonomi.gov.my/sites/default/files/2023-08/National%20Energy%20Transition%20Roadmap.pdf>
29. Ministry of Energy, Green Technology and Water. (2017). *Green Technology Master Plan Malaysia 2017–2030*. <https://www.mgtc.gov.my/wp-content/uploads/2020/05/Green-Technology-Master-Plan-Malaysia-2017-20301.pdf>
30. Ministry of Finance, Finland. (2022). *Carbon neutral Finland 2035 – National climate and energy strategy*. <https://shorturl.at/bYxYm>.
31. Ministry of the Environment and Energy. (2017). The Swedish climate policy framework. In *Ministry of the Environment and Energy*.
32. Ministry of the Environment. (2020). *Sweden's long-term strategy for reducing greenhouse gas emissions*. [https://unfccc.int/sites/default/files/resource/LTS1\\_Sweden.pdf](https://unfccc.int/sites/default/files/resource/LTS1_Sweden.pdf)
33. Ministry of the Environment. (2020, December). *Sweden's long-term strategy for reducing greenhouse gas*. UNFCCC. [https://unfccc.int/sites/default/files/resource/LTS1\\_Sweden.pdf](https://unfccc.int/sites/default/files/resource/LTS1_Sweden.pdf)
34. Noraziman, S. M., Rahman, M. M., Faizal, H. M., Saat, A., & Wahid, M. A. (2019). Renewable energy support policy in Malaysia: A comparative analysis with two successful countries. In *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 56-67). IEOM Society. <https://www.ieomsociety.org/gcc2019/papers/50.pdf>
35. Ollinaho, O. I., & Kröger, M. (2021). Agroforestry transitions: The good, the bad and the ugly. *Journal of Rural Studies*, 82, 210–221.

36. Pyddoke, R., Swärdh, J. E., Algers, S., Habibi, S., & Zadeh, N. S. (2021). *Distributional effects from policies for reduced CO2 emissions from car use in 2030*. Transportation Research Part D: Transport and Environment, 101, 103077.
37. Rahman, M. M., Saat, A., & Wahid, M. A. (2016). Renewable energy policy in Germany and Malaysia: Success factors. In Proceedings of the 2016 International Conference on Industrial Engineering and Operations Management, Kuala Lumpur, Malaysia, March 8-10, 2016. [https://ieomsociety.org/ieom\\_2016/pdfs/301.pdf](https://ieomsociety.org/ieom_2016/pdfs/301.pdf)
38. S&P Global. (2020). *What is energy transition*. <https://www.spglobal.com/en/research-insights/articles/what-is-energy-transition>
39. Similä, L., & Mäki, E. (2021). *Implementation of bioenergy in Finland – 2021 update*. In L. Pelkmans (Ed.), IEA Bioenergy. [https://www.ieabioenergy.com/wp-content/uploads/2021/11/CountryReport2021\\_Finland\\_final.pdf](https://www.ieabioenergy.com/wp-content/uploads/2021/11/CountryReport2021_Finland_final.pdf)
40. Stockholm Environment Institute. (2024, April 9). *Lessons from Sweden's energy crisis: Shaping equitable low-carbon policies*. SEI. <https://www.sei.org/perspectives/sweden-energy-policies/>
41. Swedish Institute. (2023, October 13). *Energy use in Sweden*. Sweden. <https://sweden.se/climate/sustainability/energy-use-in-sweden>
42. Welle, B., Kustar, A., Tun, T. H., & Albuquerque, C. (2023, December 14). *Post-pandemic, public transport must get back on track to meet global climate goals*. World Resources Institute. <https://www.wri.org/insights/current-state-of-public-transport-climate-goals>
43. World Resources Institute. (2018). *Making big ideas happen*. <https://www.wri.org/videos/wri-making-big-ideas-happen>

# **APPLYING DATA ENVELOPMENT ANALYSIS TO INVESTIGATE INTO THE EFFICIENCY OF THE INDIAN STEEL INDUSTRY DURING THE PRE AND POST RECESSION PERIOD**

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## **Abstract:**

The present paper tries to investigate the efficiency of 20 steel companies in the Indian Scenario during the post-recession period (2007-08 to 2012-13) in comparison to the pre-recession period (2001-02 to 2006-07). Data envelopment analysis (DEA) as an operation research technique has been used to measure the efficiency of the companies. Linear program has been formulated for both periods of study. For the purpose of analysis, four inputs (related to cost) and two outputs related to profit and sales have been taken into consideration for the study. Further spearman rank correlation has been utilized to understand if there were any significant changes in the rank obtained by the companies during the post-recession period when compared to the pre-recession period.

## **1. Introduction:**

DEA (Data Envelopment Analysis) approach has been used to compute the efficiency of the Indian steel companies. The entire period of study has been segregated into pre (2001-02 to 2006-07) and post (2007-08 to 2012-14) recession period. The post-recession period includes the recession period. A Linear Program has been developed for 20 steel companies (selected as per highest turnover) taking four input variables and two output variables related to sales and profitability for both the period of study. The efficiency and super efficiency (whose efficiency score = 1) scores have been computed using Lingo Software. A further analysis has been conducted to investigate if the recession did have an impact on the ranking of the companies utilizing data envelopment analysis.

One of the reasons for choosing the steel industry for my study is that it is a very important sector in the Indian scenario. India is the 2<sup>nd</sup> largest producer of crude steel in the world. It contributes more than 2% to the National GDP and employs around 2.5 million people directly or indirectly. (Source: <https://steel.gov.in/>). The global financial crisis hit the world economy at large characterized by a decline in Gross domestic product, and production as well as having a negative impact on IIP (Index for Industrial Production). In the study, an effort has been made to understand how the steel companies performed during the recession period by computing their efficiency scores during the pre and post-period of recession.

## 2. Past Literature Reviewed:

Some of the past works of scholars referred by me for conducting the present research are as follows:

*Lee et al. (2023)* have utilized data envelopment analysis to optimize the efficiency of the logistic companies that are listed on the Malaysia stock exchange by using operational risk factors. In the paper basic indicator approach has been used and improvement indicators have been identified to improve the inefficient logistics companies as per the paper.

*Choudhary and Arora (2022)* have investigated the efficiency of the twenty-one nationalized banks in India using DEA method and have also allotted ranks as per their efficiency scores. Further an effort has been made in this paper to compute the coefficient of variation in the efficiency scores obtained by the banks.

*Arasu et al. (2021)* in their paper have utilized Data Envelopment analysis to identify appropriate variables for the performance valuation of the stock. The stock selected have been segregated into 3 sets of inputs and outputs and it has been found from the study that all three sets of inputs and outputs indicate and helps in identifying efficient stocks.

*Giri et al. (2021)* in their paper have investigated the efficiency of twenty steel-producing firms during 2018-19 taking into consideration three input variables and one output variable related to sales turnover. Technical efficiency scores have been computed and it has been observed from the study that out of 20 companies, there were a total of eleven companies were placed on the efficient frontier line and the rest nine were below the efficient frontier line. A further effort was made in the paper to improve the quality of the inputs so as to increase the efficiency of the companies.

*Zoakah et al. (2020)* in their paper has analyzed the financial statements of twenty quoted manufacturing companies listed in the Nigerian Stock Exchange utilizing DEA. The study revealed that only three companies managed their liabilities and assets in an efficient manner. The paper tried to benchmark the manufacturing efficiency in Nigeria using DEA.

*Dutta et al. (2020)* in their paper has investigated the performance of NBFCs by utilizing DEA. The paper has taken the panel data for five years and then calculated the super efficiency scores and then regressed the same on exogenous factor in stage 2. The paper also states that managers should focus on profitability ratios like return on assets rather than return on equity as a significant indicator of efficiency.

*Vikas and Bansal (2019)* have tried to explore the efficiency of the twenty-two companies belonging to the gas and oil sector in India which were actually listed in NSE. They have taken 3 inputs and 2 outputs for the DEA approach. It was observed from the study that around 59% of the companies were found to be technically efficient.

*Smriti and Khan (2018)* in their paper have computed the efficiency scores of 1007 manufacturing firms in Bangladesh utilizing DEA. It was found that a total of 29 firms were



considered to be efficient and it was also observed from the study that the inefficiency was caused due to manager experience, firm size, etc.

**Debnath and Sebastian (2014)** have tried to evaluate the technical efficiency of steel companies by utilizing DEA approach. Four input variables and four output variables related to sales and profitability were considered for the study. The efficiency scores were further segregated into technical efficiency and scale efficiency which evaluated the reasons for inefficiency in the decision-making units or otherwise

Besides the above past literature, the work of Golany and Roll (1989) and Bowlin (1998) has been referred to while selecting the appropriate number of Decision-Making units for the present study. The 4 input variables selected for the present study have also been extracted from previous works like Raw Materials (Ziaee & Falahati, 2017) Fuel, water and power charges (Barnum & Gleason, 2008), Employee's Compensation (Zbranek, 2013) and Net Fixed Assets (Wang *et al.*, 2010). The 2 output variables have been extracted from previous work like Sales (Ziaee & Falahati, 2017) and PBIT (Wang *et al.*, 2010).

### **3. Objectives of the study:**

The main objective of the present study was basically to:

- To compute the efficiency and super efficiency scores (if efficiency score =1) of the selected decision-making units in the study by developing the linear program for both the pre-and post-recession period.
- After the efficiency scores have been computed these selected decision-making units are ranked as per efficiency scores for both the pre- and post-recession period.
- The present study also tries to find out the rank correlation through the Spearman rank correlation technique utilizing the ranks obtained to investigate if there was a significant difference between the ranks obtained by the decision-making units during the pre- and post-recession period.

### **4. Research Methodology:**

#### **4.1 Sources of Data and Sample selected:**

The data regarding the Indian steel companies were extracted from Prowess software. A total of five hundred steel companies were extracted. Four input variables and two output variables for these companies were extracted for the recession period (2001-02 to 2006-07) and the post-recession period (2007-08 to 2012-13). Those companies whose data were not available for any of these years were removed from the list. Then the top twenty steel companies as per their turnover were finally selected. The companies finally selected are known as Decision-making units. The list of twenty companies selected is given below in Table 1:

**Table 1: Details of Decision-Making Units**

<b>Companies</b>	<b>Decision Making Units</b>
Aarti Steels Ltd.	DMU 1
ArcelorMittal Nippon Steel India Ltd.	DMU 2
Bhushan Power & Steel Ltd.	DMU 3
J S W Ispat Steel Ltd. [Merged]	DMU 4
J S W Steel Ltd.	DMU 5
Jayaswal Neco Inds. Ltd.	DMU 6
Kalyani Steels Ltd.	DMU 7
Mahindra Intertrade Ltd.	DMU 8
Mahindra Ugine Steel Co. Ltd. [Merged]	DMU 9
National Steel & Agro Inds. Ltd.	DMU 10
Rastriya Ispat Nigam Ltd.	DMU 11
Sanvijay Rolling & Engg. Ltd.	DMU 12
Shah Alloys Ltd.	DMU 13
Steel Authority of India Ltd.	DMU 14
Sunflag Iron & Steel Co. Ltd.	DMU 15
Tata Steel B S L Ltd. [Merged]	DMU 16
Tata Steel Downstream Products Ltd.	DMU 17
Tata Steel Ltd.	DMU 18
Uttam Galva Steels Ltd.	DMU 19
Uttam Value Steels Ltd.	DMU 20

**Source: Compiled by Author**

**4.2 Statistical Tool Used and Period of Study:**

DEA (data envelopment analysis) approach has been used to compute the efficiency and super-efficiency scores of the above DMUs. SPSS 20 and Lingo 9.0 has been used for analysis purpose. The period of study is pre-recession period (2001-02 to 2006-07) and post-recession period (2007-08 to 2012-13)

**4.3 Selection of Decision-Making Units:**

The past work of Golany and Roll (1989) and Bowel (1998) has been referred to while determining the number of decision-making units to be taken for the study.

The following formula is been used as stated by their work as a thumb rule to select the number of DMUs.

$$\text{Number of DMUs}(n) \geq \text{maximum of } \{(2 * \text{Inputs} * \text{Outputs}); 3(\text{Inputs} + \text{Outputs})\}$$

$$\text{Number of DMUs}(n) \geq \text{maximum of } (2 * 4 * 2); (3(4+2))$$

$$n = \text{Max } (16) \text{ or } (18)$$

$$n \geq 18$$

As per the formula above the minimum number of decision-making units should be eighteen to get a good result from data envelopment analysis.

Hence for this study, twenty companies have been taken.

#### **4.4 Variable Selection:**

Inputs and outputs should be carefully selected to conduct Data envelopment analysis. Overall, four (4) inputs and two (2) outputs are taken into consideration for the present study. These variables are selected on the basis of past work. The details of the variables along with the past work reference are given in Table 2.

**Table 2: Details of Input and Output Variables along with reference to Past Work**

<b>Variables</b>	<b>Output/Input</b>	<b>Past related work</b>
Sales	Output	Ziaee & Falahati (2017)
Profit before Interest and Tax	Output	Wang <i>et al.</i> (2010)
Expenses on Raw Material	Input	Ziaee & Falahati (2017)
Water, power and Fuel Charges	Input	Barnum & Gleason (2008)
Employees' Compensation	Input	Zbranek (2013)
Fixed Assets (Net)	Input	Wang <i>et al.</i> (2010)

**Source: Compiled by Author**

### **5. Result and Findings**

The following steps have been utilized to compute the efficiency scores of the steel companies:

- A linear program for each company has been formulated to compute the efficiency scores of the companies during the pre-and post-recession period through Lingo 9.0.
- For those companies whose efficiency scores =1; super efficiency scores were computed.
- These companies were then ranked as per their efficiency and super efficiency scores.

The linear program developed to compute the efficiency of Arati Steel Ltd during the pre-recession period is given in Annexure 1.

The efficiency and super efficiency scores computed during the pre-recession and post-recession period using Lingo software are given in Table 3 and 4 respectively below:

**Table 3: Efficiency and super efficiency scores of steel companies during the pre-recession period**

	<b>Name of Steel Companies</b>	<b>Efficiency</b>	<b>Super Efficiency</b>
1	Aarti Steels Ltd.	1	1.03213
2	ArcelorMittal Nippon Steel India Ltd.	1	1.05566
3	Bhushan Power & Steel Ltd.	0.980694	
4	J S W Ispat Steel Ltd. [Merged]	0.869435	
5	J S W Steel Ltd.	1	1.05747
6	Jayaswal Neco Inds. Ltd.	0.766391	

7	Kalyani Steels Ltd.	1	1.0839
8	Mahindra Intertrade Ltd.	1	1.03536
9	Mahindra Ugine Steel Co. Ltd. [Merged]	0.905652	
10	National Steel & Agro Inds. Ltd.	1	1.25402
11	Rashtriya Ispat Nigam Ltd.	1	1.00986
12	Sanvijay Rolling & Engg. Ltd.	1	1.08143
13	Shah Alloys Ltd.	0.954989	
14	Steel Authority Of India Ltd.	1	1.01112
15	Sunflag Iron & Steel Co. Ltd.	0.727923	
16	Tata Steel B S L Ltd. [Merged]	0.98763	
17	Tata Steel Downstream Products Ltd.	1	1.21204
18	Tata Steel Ltd.	1	1.08075
19	Uttam Galva Steels Ltd.	0.959191	
20	Uttam Value Steels Ltd.	0.721052	

**Source: Computed by Author**

**Table 4: Efficiency and super efficiency scores of Steel Companies during post -recession period**

	Name of the Steel Companies	Efficiency	Super Efficiency
1	Aarti Steels Ltd.	1	1.08468
2	ArcelorMittal Nippon Steel India Ltd.	0.998471	
3	Bhushan Power & Steel Ltd.	0.969661	
4	J S W Ispat Steel Ltd. [Merged]	0.89674	
5	J S W Steel Ltd.	0.97907	
6	Jayaswal Neco Inds. Ltd.	0.750199	
7	Kalyani Steels Ltd.	1	1.26759
8	Mahindra Intertrade Ltd.		1.02104
9	Mahindra Ugine Steel Co. Ltd. [Merged]	0.916662	
10	National Steel & Agro Inds. Ltd.	1	1.13289
11	Rashtriya Ispat Nigam Ltd.	0.999499	
12	Sanvijay Rolling & Engg. Ltd.	0.940015	
13	Shah Alloys Ltd.	0.9743424	
14	Steel Authority of India Ltd.	0.983822	
15	Sunflag Iron & Steel Co. Ltd.	0.711737	
16	Tata Steel B S L Ltd. [Merged]	1	1.09219
17	Tata Steel Downstream Products Ltd.	1	1.09174
18	Tata Steel Ltd.	1	1.06832

19	Uttam Galva Steels Ltd.	0.931054	
20	Uttam Value Steels Ltd.	1	1.07086

**Source: Computed by Author**

The companies were ranked as per the pre- and post-recession efficiency scores. The ranks obtained by the companies are given in Table 5 below:

**Table 5: Ranks obtained by the Steel Companies during the Pre- and Post-Recession period**

Name of Steel Companies	Pre-Rank	Post Rank
Aarti Steels Ltd.	9	5
ArcelorMittal Nippon Steel India Ltd.	7	10
Bhushan Power & Steel Ltd.	13	14
J S W Ispat Steel Ltd. [Merged]	17	18
J S W Steel Ltd.	6	12
Jayaswal Neco Inds. Ltd.	18	19
Kalyani Steels Ltd.	3	1
Mahindra Intertrade Ltd.	8	8
Mahindra UGINE Steel Co. Ltd. [Merged]	16	17
National Steel & Agro Inds. Ltd.	1	2
Rashtriya Ispat Nigam Ltd.	11	9
Sanvijay Rolling & Engg. Ltd.	4	15
Shah Alloys Ltd.	15	13
Steel Authority of India Ltd.	10	11
Sunflag Iron & Steel Co. Ltd.	19	20
Tata Steel B S L Ltd. [Merged]	12	3
Tata Steel Downstream Products Ltd.	2	4
Tata Steel Ltd.	5	7
Uttam Galva Steels Ltd.	14	16
Uttam Value Steels Ltd.	20	6

**Source: Computed by Author**

Spearman rank correlation test was conducted through SPSS to investigate if there was a significant difference in the ranks obtained by the steel companies in the pre-and post-recession period. The result of the rank correlation is given in Table 6 below:

**Table 6:** Spearman Rank Correlation

			Pre-rank	Post -rank
Spearman's rho	Prerank	Correlation Coefficient	1.000	.632
		Sig. (2-tailed)	.	.003
		N	20	20
	Post rank	Correlation Coefficient	.632	1.000
		Sig. (2-tailed)	.003	.
		N	20	20

**Source: Computed by Author**

A further endeavor has been done in this paper to investigate into the averages of the various input and output variables taken for the study. The results of the mean of the various inputs and outputs are given in table 7 below:

**Table 7: Mean of different input and output variables in the pre- and post-recession period**

Variables	N	Pre-Mean	Post- Mean	% Increase
Raw Material	20	13266.7447	38160.7333	188
Power	20	3219.0567	6386.2925	98
Compensation	20	3259.9750	6774.2042	108
Net Fixed Assets	20	22914.4683	47254.8383	106
Sale	20	38537.9692	87862.7025	128
PBIT	20	6902.9233	14535.6567	110
Valid N (listwise)	20			

**Source: Computed by Author**

## 6. Discussion and Conclusion:

It is concluded from the study that out of 20 steel companies, 9 were found to be inefficient during the pre-recession period having the efficiency score less than one (1). In the case of the post-recession period, the number of steel companies having an efficiency score of less than one has increased to twelve (12). This may be perhaps due to the fact that the post-recession period includes the recession period when the manufacturing sector was affected. When the ranking of the steel companies is investigated during the pre-recession period it is observed that National Steel and Agro Inds India Ltd has been ranked as the number one steel company followed by Tata Steel Downstream Products Ltd and Kalyani Steel Ltd. In the post-recession period, Kalyani Steel Ltd has emerged as the number one steel company in terms of efficiency followed by National Steel and Agro Inds India and Tata Steel B.S.L Ltd.

A further investigation into the mean of the input variables revealed that the total raw material cost increased by 188% followed by compensation to employees (108%) and Net Fixed Assets (106%). In fact, output variables sales and Profit before interest and tax reflect a 128%

and 110% increase in the post-recession period vis a vis the pre-recession period which indicates that the selected companies performed well from 2007-08 to 2012-13.

Spearman Rank correlation test of 0.632(>0.50) signifies that there is no significant difference between the ranks obtained by the steel companies during the pre-recession period vis a vis post-recession period. We can safely conclude from the study that the recession did not have much impact on the ranking of the selected steel companies.

One of the limitations of the study is that this study is based on four inputs and two outputs selected for the study to compute the efficiency of the companies. If the input and output change the result may also change.

The present work can also be extended to other sectors to study the efficiency of the companies related to that sector.

### **References:**

2. Arasu, B. S., Kannaiah, D., Nancy Christina, J., and Shabbir, M. S. (2021), "Selection of variables in data envelopment analysis for evaluation of stock performance", *Management and Labour Studies*, Vol 46 No 3, pp337-353.
3. Banerjee, Arindam. "Measuring the efficiency of Indian cement companies utilizing data envelopment analysis during the pre- and post-recession period." *Serbian Journal of Management* 13.2 (2018): 201-213.
4. Barnum, D. T., & Gleason, J. M. (2008). Bias and precision in the DEA two-stage method. *Applied Economics*, 40(18), 2305-2311.
5. Bowlin, W. F. (1998), "Measuring performance: An introduction to data envelopment analysis (DEA)", *The Journal of Cost Analysis*, Vol 15 No 2, pp 3-27.
6. Chaudhary, R., & Arora, H. D. (2022). Efficiency evaluation of public and nationalized Indian banks using data envelopment analysis. *International Journal of System Assurance Engineering and Management*, 13(1), 469-478.
7. Dutta, P., Jain, A., and Gupta, A. (2020), "Performance analysis of non-banking finance companies using two-stage data envelopment analysis", *Annals of Operations Research*, Vol 295 No 1, pp 91-116.
8. Giri, S., Paul, P., and Mitra, P. (2021), "Understanding the performance measurement of Indian steel Industry: A DEA approach", *Materials Today: Proceedings*.
9. Golany, B., and Roll, Y. (1989), "An application procedure for DEA", *Omega*, Vol 17 No 3, pp 237-250.
10. Lee, P. F., Lam, W. S., & Lam, W. H. (2023). Performance Evaluation of the Efficiency of Logistics Companies with Data Envelopment Analysis Model. *Mathematics*, 11(3), 718.
11. Mitra Debnath, R., & Sebastian, V. J. (2014). Efficiency in the Indian iron and steel industry—an application of data envelopment analysis. *Journal of Advances in Management Research*, 11(1), 4-19.

12. Smriti, T. N., and Khan, H. R. (2018), "Efficiency analysis of manufacturing firms using data envelopment analysis technique", *Journal of Data Science*, Vol 16 No 1, pp 69-78.
13. Vikas, V., and Bansal, R. (2019), "Efficiency evaluation of Indian oil and gas sector: data envelopment analysis", *International journal of emerging markets*.
14. Wang, Y. M., and Chin, K. S. (2010), "Some alternative models for DEA cross-efficiency evaluation", *International Journal of Production Economics*, Vol 128 No 1, pp 332-338.
15. Zbranek, P. (2013), "Data envelopment analysis as a tool for evaluation of employees' performance", *Acta Oeconomica et Informatica*, Vol 16(394-2016-24293), 12-21.
16. Ziaee, O., and Falahati, B. (2017), "A Data envelopment analysis (DEA)-based model for power interruption cost estimation for industrial companies. In 2017 IEEE Power & Energy Society Innovative Smart Grid Technologies Conference (ISGT),pp. 1-5. IEEE.
17. Zoakah, D. J., Mwuese, N. T., and Goyit, M. G. P. (2020), "A Data Envelopment Analysis Approach for Benchmarking of Manufacturing Efficiency in Nigeria.



## **MARKETING ANALYTICS IN MANAGERIAL DECISION-MAKING**

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### **1. Introduction:**

In today's rapidly evolving business landscape, the ability to harness data-driven insights has become indispensable for making informed managerial decisions, particularly in the realm of marketing. Marketing analytics, leveraging advanced technologies and methodologies, offers businesses unprecedented opportunities to obtain deep sights of consumer behavior, economic shifts and marketing campaign performance. This chapter delves into the foundational concepts, strategic applications, challenges, and practical implications of marketing analytics in managerial decision-making.

The evolution of digital technologies, coupled with the proliferation of data sources, has transformed how businesses understand and engage with their target audiences. Marketing analytics empowers managers to move beyond traditional intuition-based decision-making to evidence-based strategies grounded in quantitative analysis and predictive modeling (Wedel & Kannan, 2020). By leveraging the capabilities of big data and advanced analytics tools, organizations can optimize marketing efforts, enhance customer experiences, and drive core competence in an increasingly data-centric economy (Kaushik, 2021).

This chapter begins by exploring the evolution and significance of marketing analytics, highlighting its role in guiding strategic initiatives and resource allocation. We then delve into the key components of marketing analytics, including data collection methods, analytical techniques, and performance metrics that shape effective decision-making (Fader, 2020). Furthermore, the chapter examines the challenges inherent in deploying marketing analytics, such as data quality management, regulatory compliance, and organizational readiness. We discuss best practices for overcoming these challenges and maximizing the value of analytics investments while ensuring ethical data practices and consumer privacy protections (Cooper & Reimann, 2021).

Ultimately, this chapter aims to equip business managers, marketers, and decision-makers with the knowledge and insights needed to exploit the capabilities of big data of marketing analytics. By understanding the strategic implications, practical considerations, and transformative capabilities of analytics-driven decision-making, organizations can navigate complexities, capitalize on opportunities, and drive sustainable growth in today's competitive marketplace.

## **2. Evolution and Importance of Marketing Analytics**

Marketing analytics has evolved significantly in response to technological advancements, particularly in data science, artificial intelligence (AI), and machine learning (ML). These innovations have empowered marketers to transform vast amounts of data into actionable insights that drive strategic decisions across the marketing spectrum (Davenport *et al.*, 2020). Initially rooted in basic data analysis, marketing analytics has matured into a sophisticated discipline capable of predictive modeling, customer segmentation, and real-time optimization. Its evolution parallels the increasing availability of data sources and the development of computational tools that can process and interpret complex datasets (Wedel & Kannan, 2020).

## **3. Data Collection and Management**

### **Types of Marketing Data**

Marketing data encompasses primary and secondary sources, including customer interactions, sales transactions, social media engagements, and market research studies (Erevelles *et al.*, 2020). These data sources provide critical insights into consumer preferences, purchasing conduct, and shifts in market pattern, enabling marketers to tailor strategies effectively.

### **Data Collection Methods**

Effective data collection methods include surveys, web analytics, customer relationship management (CRM) systems, and social listening tools. Surveys gather direct feedback from consumers, offering qualitative insights into preferences and satisfaction levels (Blanchard, 2021). Web analytics track online user behavior, providing quantitative data on website traffic, conversion rates, and engagement metrics (Chaffey & Ellis-Chadwick, 2022).

CRM systems centralize customer information, facilitating personalized marketing initiatives and improving customer relationship management strategies (Fader, 2020). Social listening tools monitor social media platforms for brand mentions, sentiment analysis, and competitive intelligence, enhancing brand perception and customer engagement strategies (Blanchard, 2021).

### **Data Management Practices**

Effective data management practices are crucial to ensure the accuracy, accessibility, and security of marketing data. Data cleaning processes identify and rectify inaccuracies or inconsistencies within datasets, ensuring data quality for analysis (Lee, 2020). Data integration consolidates information from disparate sources into a unified database, enabling comprehensive analysis and holistic knowledge of consumer buying habits and changing market conditions (Wedel & Kannan, 2020).

#### **4. Key Metrics and KPIs in Marketing Analytics**

##### **Customer Acquisition Cost (CAC)**

The total expenses invested in acquiring a new customer is called Customer Acquisition Cost (CAC) measures the total cost incurred to acquire a new customer, encompassing expenses related to marketing campaigns, sales activities, and lead generation efforts (Fader, 2020). Calculating CAC offers understanding into the efficiency of customer acquisition approaches and methodologies. It also informs decisions regarding resource allocation and budget optimization (Kaushik, 2021).

##### **Customer Lifetime Value (CLV)**

The total revenue expected from a customer throughout their relationship with the company is estimated by Customer Lifetime Value (CLV) (Dholakia, 2021). By predicting future revenue streams, CLV guides long-term marketing strategies focused on maximizing customer retention, enhancing loyalty programs, and fostering profitable customer relationships (Wedel & Kannan, 2020).

##### **Return on Marketing Investment (ROMI)**

Return on Marketing Investment (ROMI) evaluates the profitability of marketing campaigns by comparing the revenue generated to the cost of marketing expenditures (Winer & Neslin, 2022). ROMI analysis quantifies the financial impact of marketing activities, facilitating performance measurement, and guiding strategic decisions regarding campaign effectiveness and optimization (Chaffey & Ellis-Chadwick, 2022).

##### **Conversion Rates and Funnel Analysis**

Conversion rates gauge the proportion of visitors who achieve specified objectives, such as completing a purchase or subscribing to a newsletter, within a designated timeframe (Grigsby, 2020). Funnel analysis visualizes the customer journey from initial awareness to conversion, identifying potential drop-off points and optimizing marketing touchpoints to improve conversion rates (Chaffey & Ellis-Chadwick, 2022).

#### **5. Tools and Techniques for Marketing Analytics**

##### **Statistical Analysis**

Statistical analysis techniques, including regression analysis, correlation analysis, and hypothesis testing, uncover patterns and relationships within marketing data (Wedel & Kannan, 2020). Regression analysis identifies variables that significantly impact marketing outcomes, facilitating data-driven decision-making and predictive modeling (Sen & Bandyopadhyay, 2020).

##### **Predictive Analytics and Machine Learning**

Future trends, patterns in consumer behavior, and changes in the market are forecasted using past data through predictive analytics (Kaushik, 2021). Algorithms in machine learning, including tree decision mode; ls and neural networks, analyze large datasets to generate

predictive models that optimize marketing strategies, personalize customer interactions, and anticipate market shifts (Sen & Bandyopadhyay, 2020).

### **A/B Testing and Experimentation**

A/B testing, also known as split testing, compares variations of marketing elements, such as ad copy, email subject lines, or website designs, to determine the most effective approach based on empirical data (Grigsby, 2020). By testing hypotheses in controlled environments, marketers optimize campaign performance, improve conversion rates, and enhance overall marketing effectiveness (Chaffey & Ellis-Chadwick, 2022).

### **Marketing Mix Modeling**

Marketing mix modeling assesses the impact of various marketing activities, such as advertising, promotions, and pricing strategies, on sales and brand performance (Cooper & Reimann, 2021). By quantifying the contribution of each marketing component to overall business outcomes, marketers optimize resource allocation, allocate budgets effectively, and maximize return on investment (Winer & Neslin, 2022).

## **6. Segmentation, Targeting, and Positioning (STP)**

### **Market Segmentation Strategies**

Market segmentation categorizes heterogeneous consumer markets into distinct groups based on demographics, psychographics, behavioral patterns, and geographic locations (Johnson *et al.*, 2022). Segmentation strategies enable targeted marketing efforts that resonate with specific consumer segments, enhancing message relevance and campaign effectiveness (Dholakia, 2021).

### **Target Market Selection**

High-potential consumer segments most likely to respond positively to marketing initiatives and generate profitable outcomes are identified through target market selection (Fader, 2020). By focusing resources on these promising market segments, customer acquisition efforts are optimized, conversion rates are increased, and overall marketing ROI is enhanced (Harvard Business Review, 2021).

### **Positioning and Differentiation**

In the minds of consumers, brands are differentiated from competitors through strategic positioning (Cooper & Reimann, 2021). Effective positioning strategies influence consumer perceptions, shape brand identity, and drive purchase decisions, fostering long-term competitive advantage and market leadership (Blanchard, 2021).

## **7. Customer Relationship Management (CRM) and Analytics**

### **Importance of CRM in Marketing**

Customer Relationship Management (CRM) systems centralize customer data, enabling businesses to analyze customer interactions, preferences, and purchase histories (Fader, 2020).

CRM analytics leverage data-driven insights to personalize marketing communications, tailor product recommendations, and improve customer retention strategies (Winer & Neslin, 2022).

### **CRM Data Analysis Techniques**

Analytical techniques such as segmentation, predictive modeling, and sentiment analysis extract actionable insights from CRM data, informing targeted marketing campaigns and enhancing customer experiences (Wedel & Kannan, 2020). By understanding customer behavior and preferences, businesses can optimize cross-selling opportunities, mitigate churn risks, and foster long-term loyalty (Johnson *et al.*, 2022).

### **Personalization and Customer Experience**

Personalization strategies utilize CRM insights to deliver relevant content, promotions, and recommendations tailored to individual customer preferences (Blanchard, 2021). Enhanced personalization drives customer engagement, increases conversion rates, and cultivates positive brand perceptions, ultimately boosting customer satisfaction and lifetime value (Davenport *et al.*, 2020).

### **Digital Marketing Analytics**

#### **Web Analytics**

Web analytics platforms track and analyze website traffic, user interactions, and conversion metrics to optimize digital marketing strategies (Chaffey & Ellis-Chadwick, 2022). By measuring key performance indicators such as bounce rates, click-through rates, and average session duration, marketers identify website strengths and weaknesses, refine user experiences, and enhance online conversions (Grigsby, 2020).

#### **Social Media Analytics**

Social media analytics monitor brand mentions, audience engagement, and sentiment across social media platforms to gauge brand perception and campaign effectiveness (Blanchard, 2021). By analyzing metrics such as likes, shares, and comments, marketers assess social media ROI, refine content strategies, and strengthen brand relationships with online communities (Chaffey & Ellis-Chadwick, 2022).

#### **Email Marketing Analytics**

Email marketing analytics measure the performance of email campaigns through metrics such as open rates, click-through rates, and conversion rates (Chaffey & Ellis-Chadwick, 2022). By analyzing subscriber behavior and engagement metrics, marketers optimize email content, timing, and segmentation strategies to deliver personalized messages that resonate with recipients and drive desired actions (Grigsby, 2020).

## **8. Ethics and Privacy in Marketing Analytics**

### **Ethical Considerations**

Ethical marketing analytics prioritize consumer privacy, data security, and transparency in data collection and usage practices (Cooper & Reimann, 2021). Marketers must adhere to

ethical guidelines and regulatory frameworks, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA), to safeguard consumer rights and build trust (Davenport *et al.*, 2020).

### **Privacy Laws and Regulations**

Compliance with global data protection privacy laws and regulations govern how organizations collect, use, and protect consumer data. Compliance with these laws is essential to maintaining consumer trust and avoiding legal repercussions. The GDPR, implemented in the European Union (EU), mandates stringent requirements for data protection, including explicit consent for data processing, data minimization, and the right to erasure (Davenport *et al.*, 2020). Similarly, the CCPA in California grants consumers rights over their personal information, such as the right to access, delete, and opt-out of the sale of their data (Cooper & Reimann, 2021). These regulations necessitate transparent data practices, robust security measures, and proactive measures to ensure compliance and uphold consumer privacy rights (Johnson *et al.*, 2022).

## **9. Challenges in Using Marketing Analytics**

Despite its potential benefits, the application of marketing analytics in managerial decision-making is accompanied by several challenges that organizations must navigate effectively.

### **Data Quality and Integration**

One of the primary challenges is ensuring the quality and integration of data from diverse sources. Marketing data often originates from various platforms and systems, each with its format and structure (Lee, 2020). Poor data quality, including inaccuracies, inconsistencies, and incomplete datasets, can compromise the reliability and validity of analytical insights (Wedel & Kannan, 2020).

Integrating data from disparate sources presents technical challenges, requiring robust data management systems and processes to consolidate information effectively (Sen & Bandyopadhyay, 2020). Data integration issues can lead to fragmented insights and hinder the ability to derive comprehensive views of consumer behavior and market dynamics (Kaushik, 2021).

### **Privacy and Regulatory Compliance**

Privacy concerns and regulatory compliance pose significant challenges in the use of marketing analytics. Stringent data protection laws, such as the GDPR and CCPA, mandate transparent data practices, explicit consent for data processing, and stringent security measures (Davenport *et al.*, 2020). Non-compliance can result in legal penalties, reputational damage, and loss of consumer trust (Cooper & Reimann, 2021).

Balancing data-driven insights with consumer privacy rights requires organizations to adopt ethical data practices and robust compliance frameworks (Johnson *et al.*, 2022). Ensuring

data anonymization, minimizing data collection, and implementing secure data storage measures are essential to mitigate privacy risks and uphold regulatory requirements (Blanchard, 2021).

### **Talent and Skills Gap**

Effective utilization of marketing analytics relies on skilled professionals capable of interpreting complex data and deriving actionable insights. The demand for data scientists, analysts, and AI specialists often outpaces the supply, creating a talent and skills gap within organizations (Grigsby, 2020). Recruiting and retaining qualified personnel with expertise in data analytics, statistical modeling, and machine learning is crucial for maximizing the value of marketing analytics investments (Chaffey & Ellis-Chadwick, 2022).

### **Technology Infrastructure**

Implementing robust technology infrastructure capable of supporting advanced analytics is essential but can be costly and resource-intensive. Organizations must invest in scalable cloud computing platforms, data warehouses, and analytical tools to process large volumes of data efficiently (Wedel & Kannan, 2020). Maintaining and upgrading infrastructure to accommodate evolving technological requirements is a continuous challenge for many businesses (Kaushik, 2021).

### **Cultural and Organizational Change**

Embracing a data-driven culture and integrating analytics into decision-making processes requires organizational change and stakeholder buy-in. Resistance to change, lack of collaboration between departments, and siloed data practices can hinder the adoption and effectiveness of marketing analytics initiatives (Sen & Bandyopadhyay, 2020). Cultivating a culture that values data-driven insights and promotes cross-functional collaboration is essential for maximizing the impact of marketing analytics on business outcomes (Dholakia, 2021).

### **Addressing Challenges and Enhancing Effectiveness**

Overcoming these challenges requires a strategic approach that combines technological investments, talent development, ethical practices, and organizational alignment. By prioritizing data quality, ensuring regulatory compliance, fostering a skilled workforce, and fostering a supportive organizational culture, businesses can harness the full potential of marketing analytics to drive innovation, enhance customer experiences, and achieve sustainable growth in a competitive market environment.

## **10. Future Trends in Marketing Analytics**

The future of marketing analytics promises further advancements driven by emerging technologies and evolving consumer behaviors. These trends are poised to reshape the landscape of managerial decision-making in marketing.

**Advancements in AI and ML:** Artificial Intelligence (AI) and Machine Learning (ML) will continue to enhance predictive analytics capabilities, enabling marketers to anticipate consumer needs and behaviors with greater accuracy (Kaushik, 2021). AI-powered algorithms will

automate data analysis processes, uncovering actionable insights from vast datasets in real-time and facilitating proactive marketing strategies (Sen & Bandyopadhyay, 2020).

**IoT and Big Data Integration:** The integration of Internet of Things (IoT) devices will generate unprecedented volumes of real-time consumer data, providing marketers with deeper insights into consumer interactions and preferences (Sen & Bandyopadhyay, 2020). Big data analytics will enable dynamic segmentation and personalized marketing campaigns, driving higher engagement and conversion rates (Wedel & Kannan, 2020).

## **11. Implications**

### **Managerial Implications of Marketing Analytics**

#### **Strategic Decision-Making**

Marketing analytics provides business managers with actionable insights that inform strategic decision-making processes. By analyzing customer behavior, market trends, and campaign performance, managers can identify growth opportunities, allocate resources effectively, and optimize marketing strategies to achieve business objectives (Wedel & Kannan, 2020). Data-driven decisions enable managers to respond swiftly to market changes and competitive dynamics, gaining a competitive edge in the marketplace (Kaushik, 2021).

#### **Resource Allocation and ROI Optimization**

Effective use of marketing analytics enables managers to allocate resources based on data-driven insights and priorities. By evaluating the return on marketing investment (ROMI) and customer lifetime value (CLV), managers can optimize budget allocation, prioritize high-value segments, and allocate resources to initiatives with the highest potential for ROI (Fader, 2020). This approach ensures that marketing efforts are aligned with business goals and contribute to sustainable growth and profitability (Winer & Neslin, 2022).

#### **Customer Experience Enhancement**

Marketing analytics facilitates personalized marketing efforts that enhance customer experiences and foster long-term relationships. By segmenting customers based on demographics, behavior, and preferences, managers can deliver targeted messages, personalized offers, and tailored experiences that resonate with individual customer needs (Blanchard, 2021). Enhancing customer satisfaction and loyalty through personalized interactions strengthens brand reputation and drives repeat business (Chaffey & Ellis-Chadwick, 2022).

#### **Risk Management and Compliance**

Managers must navigate privacy regulations and mitigate risks associated with data handling and analytics. By implementing robust data governance practices, ensuring compliance with GDPR, CCPA, and other regulatory frameworks, managers safeguard consumer privacy and mitigate legal and reputational risks (Cooper & Reimann, 2021). Proactively addressing privacy concerns and maintaining ethical data practices build trust with customers and stakeholders, reinforcing brand integrity and loyalty (Johnson *et al.*, 2022).



## **Innovation and Competitive Advantage**

Marketing analytics fosters a culture of innovation by providing insights into emerging trends, consumer preferences, and market opportunities. Managers can leverage predictive analytics and market intelligence to anticipate shifts in consumer behavior, identify untapped market segments, and innovate products or services that meet evolving customer demands (Sen & Bandyopadhyay, 2020). By staying ahead of competitors and adapting swiftly to market changes, businesses can sustain a competitive advantage and drive growth in dynamic market environments (Harvard Business Review, 2021).

## **Practical Implications of Marketing Analytics Implementation**

### **Integration of Analytics into Business Processes**

Implementing marketing analytics involves integrating analytical insights into everyday business operations and decision-making processes. Business managers must ensure that analytics tools and platforms are seamlessly integrated with existing systems, such as CRM systems and marketing automation platforms (Blanchard, 2021). This integration facilitates real-time data access, enhances collaboration across departments, and enables timely decision-making based on up-to-date insights (Wedel & Kannan, 2020).

### **Training and Development**

Successful adoption of marketing analytics requires investment in training and development programs for employees. Managers should equip teams with the skills and knowledge needed to interpret data, use analytics tools effectively, and apply insights to strategic initiatives (Chaffey & Ellis-Chadwick, 2022). Training programs can range from basic data literacy to advanced analytics techniques, empowering employees to leverage analytics for informed decision-making and innovation (Grigsby, 2020).

### **Continuous Improvement and Optimization**

Marketing analytics is a dynamic field that requires continuous improvement and optimization of analytical processes and strategies. Managers should establish metrics to measure the effectiveness of analytics initiatives, such as ROI on analytics investments and accuracy of predictive models (Kaushik, 2021). Regular evaluation and refinement of analytics methodologies ensure relevance and alignment with business goals, driving continuous improvement in marketing performance and outcomes (Fader, 2020).

### **Scalability and Flexibility**

Scalability and flexibility are essential considerations in deploying marketing analytics solutions. Managers should select scalable analytics platforms that can accommodate growing data volumes and evolving business needs (Sen & Bandyopadhyay, 2020). Cloud-based analytics solutions offer scalability, enabling businesses to expand capabilities and adapt to changing market dynamics without significant infrastructure investments (Lee, 2020). Flexibility in

analytics tools allows managers to customize dashboards, reports, and analytical models to meet specific business requirements and strategic objectives (Johnson *et al.*, 2022).

### **Collaboration and Cross-Functional Alignment**

Effective implementation of marketing analytics requires collaboration and alignment across departments and functions within the organization. Managers should foster a culture of data-driven decision-making, promoting collaboration between marketing, sales, IT, and finance teams (Cooper & Reimann, 2021). Cross-functional alignment ensures that insights from marketing analytics are effectively communicated and utilized across the organization, driving cohesive strategies and unified customer experiences (Dholakia, 2021).

### **Conclusion:**

Marketing analytics has become indispensable for modern managerial decision-making, empowering marketers to harness data-driven insights that optimize marketing performance, enhance customer relationships, and drive organizational growth. By integrating advanced analytics tools with ethical data practices, businesses can navigate complexities and capitalize on opportunities in today's digital economy.

As technologies continue to evolve, the role of marketing analytics will expand, enabling organizations to anticipate market trends, personalize customer interactions, and innovate strategies that resonate with target audiences. By embracing these advancements and adhering to ethical standards, marketers can establish sustainable competitive advantages and achieve long-term success in the competitive global marketplace.

### **References:**

1. Blanchard, O. (2021). *Social media ROI: Managing and measuring social media efforts in your organization* (2nd ed.). Pearson FT Press.
2. Chaffey, D., & Ellis-Chadwick, F. (2022). *Digital marketing: Strategy, implementation and practice* (8th ed.). Pearson.
3. Cooper, P., & Reimann, M. (2021). *Emotion, decision-making, and marketing: Understanding consumer choices*. Cambridge University Press.
4. Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48, 24-42.
5. Dholakia, U. M. (2021). *How to price effectively: A guide for managers and entrepreneurs*. Springer.
6. Erevelles, S., Fukawa, N., & Swayne, L. (2020). Big data consumer analytics and the transformation of marketing. *Journal of Business Research*, 69(2), 897-904.
7. Fader, P. S. (2020). *Customer centricity: Focus on the right customers for strategic advantage* (2nd ed.). Wharton Digital Press.

8. Grigsby, M. (2020). *Advanced customer analytics: Targeting, valuing, segmenting and loyalty techniques*. Kogan Page.
9. Harvard Business Review. (2021). *HBR's 10 must reads on AI, analytics, and the new machine age*. Harvard Business Review Press.
10. Johnson, G. A., Lewis, R. A., & Nubbemeyer, E. I. (2022). The impact of artificial intelligence on marketing. *Journal of Marketing*, 86(1), 1-23.
11. Kaushik, A. (2021). *AI for marketing and product innovation: Powerful new tools for predicting trends, connecting with customers, and closing sales*. Wiley.
12. Lee, I. (2020). *Big data: Dimensions, evolution, impacts, and challenges*. Springer.
13. Sen, S., & Bandyopadhyay, S. (2020). *Applications of AI in marketing: Contemporary trends and new directions*. Springer.
14. Wedel, M., & Kannan, P. K. (2020). *Marketing analytics for data-rich environments*. Springer.
15. Winer, R. S., & Neslin, S. A. (2022). *The history of marketing science: Advanced insights and the future of marketing analytics*. Springer.

## **PARADIGM SHIFT IN INDIAN BUSINESS MANAGEMENT: POLITY-DRIVEN GREEN SOCIAL INNOVATIONS**

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### **Abstract:**

Today the paradigm shifts in India around its business management, totally with the advent of green social innovations, complements the proliferation of sustainable development goals with Indian polity. Due to the increase in environmental challenges, the role of business has changed from being a profit-seeking institution to one which aims at a social and ecological sustainability framework. It is, thus, the major development for Indian polity in push-the-drive that promotes enabling policies, laws, and governance mechanism which encourages enterprises to adopt green innovations. This is attributed by the strong force of stringent environmental regulations, incentives on sustainability practices and high consumerism demanding greenness in products consumption. Factors like the national green policy framework, the RE initiatives, and national programs on sustainability from under NITI Aayog add to it significantly. Companies thus use these latitudes to infuse green technology, resource-efficient processes, and socially impacting strategies. The social ventures, at the end of the day, sit in a limbo of profit and purpose, seeking solutions to social problems while putting forth efforts towards environmental sustainability. This chapter examines the political factors in India which are responsible for fulfilling the requirements of green social innovation so that such business models go in sync with the global climate agenda. It cites successful examples of Indian business houses and social ventures in adopting green practices through government initiatives. Besides analyzing challenges like regulatory hurdles, financial constraints and limited access to technology, the critique proposes solutions to mitigate the obstacles. So, this shift in paradigm states the transformative potential of aligning business management with polity-driven green innovations. The ecosystem by which collaborative working could be developed among policymakers, businesses and communities would facilitate India's rightful leadership in establishing sustainable social ventures for economic growth and regeneration with ecological and social well-being balances.

**Keywords:** Green Social Innovations, Sustainable Development Goals, Indian Polity, Environmental Sustainability, Collaborative Ecosystem

**Introduction:**

India is experiencing a phase of remarkable change in the business management system because of the convergence of policy initiatives and sustainability. With the rising global challenges in respect to climate change, environmental degradation, and social-economic inequalities, the world is moving toward a different paradigm shift through green social innovations. Indian businesses, bound by the government policies and societal demands, have started adopting the green element within them for the purpose of achieving not only environmental risks management but also inclusive growth. Green social innovations as a result of politics would include policy frameworks integrated into strategic innovative business solutions that meet ecological and social issues. They go beyond compliance measures for involving active participation through the adoption of renewable energy sources, reduced carbon footprints, effective waste management techniques and socially inclusive community development models. There is no doubt that it is a truly crucial initiative since it promotes the integration of the adaptability of business with government regulation. International collaborations such as Paris Agreement and Sustainable Development Goals (SDGs) have further accelerated India's sustainable growth towards green practices. Major national initiatives (e.g. National Solar Mission, Plastic Waste Management Rules, the National Electric Mobility Mission Plan etc.) denote government's commitment to its pursuit of sustainable development. Businesses integrated Environmental, Social, and Governance (ESG) principles into their core strategy which hence resulted in green innovations for profit and sustainability. This paradigm shift is typically in line and compatibility with the growing demands of the consumer, an eco-aware buyer wanting only the best environment-friendly or sustainable product and service. Innovation is pouring to meet the changes in demand and supply from agriculture to production and even emerging trades like e-commerce and mobility, . This includes technologies like block chain for supply chain transparency, solar-powered operations, and waste-to-energy solutions, among many others. Green social innovations are also empowered by collaborations between public and private sectors. Startups, global corporations, and local businesses are cooperating with policy makers to bring ultimate solutions of critical environmental and social issues. These partnerships are changing not only the structure of markets but also creating green jobs, bridging the rural-urban divide, and positioning India as one among the global leaders in sustainable business. Thus, the paradigm shift in Indian business management driven by polity-led green innovations brings to fore the fact that goals of economy and purposes of the environment as well as society must go hand in hand. It is a reflection of India's capacity to be a leader in sustainable, inclusive future building. [1, 2]

### Year-Wise Laws Supporting Polity-Driven Green Social Innovations in Indian Business Management (Year 2000 Onward)

Since 2000, India has enacted several key laws to promote green social innovations in business management, reflecting a paradigm shift towards sustainability. Notable legislations include the **Environmental Protection Act Amendments** (2006) for stricter environmental compliance, the **National Action Plan on Climate Change** (2008) encouraging green business practices, and the **Companies Act** (2013) mandating corporate social responsibility (CSR) with an emphasis on environmental initiatives. These laws have created a framework for integrating sustainability into Indian business strategies. [3, 4, 5]

Year	Law/Policy	Description	Impact
2001	Energy Conservation Act	Established the Bureau of Energy Efficiency (BEE) to promote energy efficiency and conservation.	Reduced energy intensity and promoted sustainable business practices.
2002	Biological Diversity Act	Aimed at conserving biodiversity and promoting sustainable use of biological resources.	Encouraged businesses to adopt eco-friendly practices in biodiversity-rich areas.
2003	Electricity Act	Emphasized renewable energy adoption and open access to promote competition in the power sector.	Accelerated renewable energy integration in business operations.
2006	Forest Rights Act	Recognized community rights over forest resources, supporting sustainable livelihoods.	Empowered local communities and promoted eco-tourism and forest-based industries.
2006	National Environment Policy	Framework for integrating environmental concerns into business and governance.	Fostered sustainable resource management across industries.
2008	National Action Plan on Climate Change (NAPCC)	Comprehensive plan to address climate change through missions like solar, water, and agriculture.	Catalyzed green innovations across multiple sectors.
2010	National Solar Mission	Aimed to increase solar energy capacity and promote clean energy technologies.	Transformed the solar energy market and reduced dependency on fossil fuels.

<b>2013</b>	Companies Act, Section 135	Mandated CSR, encouraging businesses to invest in sustainability and social development.	Fostered green and community-focused initiatives in corporate strategies.
<b>2015</b>	Plastic Waste Management Rules	Strengthened regulations for plastic recycling and sustainable alternatives.	Reduced plastic waste and encouraged eco-friendly business practices.
<b>2016</b>	Solid Waste Management Rules	Updated rules to include waste segregation and processing at the source.	Boosted innovations in waste management and waste-to-energy projects.
<b>2016</b>	Perform, Achieve, and Trade (PAT) Scheme	Market-based mechanism to improve energy efficiency in large industries.	Promoted energy-efficient technologies and reduced industrial emissions.
<b>2017</b>	Goods and Services Tax (GST) on Renewables	Reduced tax rates for renewable energy components.	Lowered costs for renewable energy projects, boosting adoption.
<b>2019</b>	National Electric Mobility Mission Plan	Aimed to promote electric vehicles and reduce fossil fuel dependency.	Increased EV manufacturing and adoption across industries.
<b>2021</b>	Vehicle Scrappage Policy	Encouraged recycling of old vehicles to curb pollution.	Strengthened green manufacturing and reduced vehicular emissions.
<b>2022</b>	Single-Use Plastic Ban	Prohibited specific single-use plastic products nationwide.	Accelerated the transition to sustainable packaging solutions.
<b>2023</b>	Green Credit Program	Introduced incentives for businesses engaging in environmental conservation efforts.	Boosted corporate involvement in sustainability projects.
<b>2024</b>	National Circular Economy Policy	Promoted recycling, reuse, and efficient resource utilization in businesses.	Fostered sustainable production and reduced waste across sectors.

### Case Studies

The cases of the paradigm shift in Indian business management testify to the phenomenal capacity of polity-driven green social innovations. For instance, the National Solar Mission has opened the doors to renewable energy adoption by the masses, propelling the country to great

heights in solar energy capability. The Plastic Waste Management Rules should be mentioned for applying the pressure on businesses to bring in sustainable packaging systems that minimize environmental footprint. Such activities include ITC not only for water conservation but also afforestation programs which naturally balance their environmental equation. Electric mobility initiatives such as Ola Electric redefine transportation with zero-emission solutions, essentially demonstrating the electorate-innovation linkage. Such case studies tell how businesses are aligning their initiatives to government frameworks to address sustainability and inclusion.[6, 7]

<b>Case Study</b>	<b>Sector</b>	<b>Description</b>	<b>Impact</b>
<b>National Solar Mission</b>	Renewable Energy	Promotes solar energy adoption under NAPCC.	Increased solar capacity, reduced carbon emissions.
<b>UJALA Scheme</b>	Energy Efficiency	Distributed affordable LED bulbs nationwide.	Lowered energy consumption, reduced greenhouse gases.
<b>Green Highways Policy</b>	Infrastructure	Mandates tree plantation along highways.	Boosted carbon sequestration, created rural jobs.
<b>Amul's Biogas Plants</b>	Dairy Industry	Converts cattle dung into energy and organic manure.	Reduced waste, supported rural energy demands.
<b>ITC e-Choupal</b>	Agriculture	Implements water conservation and soil health practices.	Improved productivity, resource-efficient farming.
<b>Delhi Metro Green Practices</b>	Urban Transport	Uses solar power and energy-efficient systems.	Reduced emissions, achieved carbon neutrality.
<b>Eco-Tourism in Sikkim</b>	Tourism	Promotes eco-tourism aligned with green policies.	Preserved biodiversity, boosted local economy.
<b>Ola Electric</b>	Mobility	Developed affordable electric scooters for urban markets.	Popularized EVs, reduced dependence on fossil fuels.
<b>Solar-Powered Cold Storage</b>	Agriculture	Enables off-grid food storage using solar technology.	Minimized food wastage, enhanced rural livelihoods.
<b>Tata Steel's Green Initiatives</b>	Manufacturing	Adopts carbon capture and efficient energy use.	Reduced emissions, pioneered green manufacturing.



<b>Zomato's Sustainability Drive</b>	Food Delivery	Introduced eco-friendly packaging, electric delivery bikes.	Lowered environmental impact, encouraged green logistics.
<b>Adani's Renewable Investments</b>	Energy	Major investments in solar and wind projects.	Accelerated renewable energy growth in India.
<b>HUL's Water Stewardship Program</b>	FMCG	Promotes water conservation in manufacturing units.	Improved water efficiency, reduced industrial footprint.
<b>Biocon's Green Pharma Approach</b>	Pharmaceuticals	Uses renewable energy in production facilities.	Reduced carbon emissions, enhanced sustainability.
<b>Rajasthan Wind Energy Project</b>	Renewable Energy	Develops large-scale wind power generation projects.	Increased wind capacity, lowered reliance on coal.
<b>Plastic Ban Enforcement</b>	Governance	Implements strict plastic usage bans in urban areas.	Reduced plastic waste, improved urban cleanliness.

### Challenges and Opportunities in Green Business

Establishing green business practices comes with obstacles likewise high initial cost, less technological progress along with resistance from traditional business ecosystem. They also offer many opportunities like global green markets, brand reputation, and long-term savings through resource efficiency. In India, polity-driven green social innovations such as subsidies for renewable energy and waste management policies create a conducive environment for businesses to go green. Barriers such as shortage of infrastructure and regulatory complexities pose challenges those hinder the ideal emergence of green business. It requires the joint venture of policymakers, business practitioners and communities to create scale for such innovations. [5,8,9,10]

<b>Aspect</b>	<b>Challenges</b>	<b>Opportunities</b>
<b>Cost and Investment</b>	High upfront investment costs for green technologies and infrastructure.	Access to government subsidies, tax incentives, and green financing options.
<b>Technology</b>	Limited access to advanced green technologies in certain sectors.	Opportunity to invest in R&D and leverage indigenous innovations for competitive advantage.
<b>Policy Compliance</b>	Complexity in navigating evolving regulatory frameworks.	Clearer policies and incentives encourage proactive adoption of sustainability practices.

<b>Market Dynamics</b>	Consumer demand for eco-friendly products still growing in niche markets.	Expanding global markets for sustainable and ethically sourced products.
<b>Infrastructure</b>	Inadequate infrastructure for waste management and renewable energy.	Scope to develop robust green infrastructure and create new business ecosystems.
<b>Awareness and Education</b>	Lack of awareness among stakeholders, including employees and consumers.	Educating consumers creates demand for green products; training employees enhances productivity.
<b>Supply Chain Integration</b>	Challenges in greening entire supply chains.	Opportunity to innovate in logistics, packaging, and sourcing to build sustainable supply chains.
<b>Global Pressures</b>	Competition from international firms with advanced sustainability models.	Positioning Indian businesses as global leaders in sustainable practices through local solutions.
<b>Community Engagement</b>	Limited collaboration with communities for sustainable practices.	Engaging communities leads to stronger social capital and co-created green initiatives.
<b>Economic and Social Equity</b>	Balancing profitability with social and environmental objectives.	Inclusive growth through green jobs and rural-urban linkages.

### Effective Recommendations

Through policy-driven green social innovations, a paradigm shift can be created in Indian business management, where policies are required that provide funding and create clear regulations for the implementation of sustainability in business ecosystem. Adequate grants for research and development in eco-friendly technologies and new green business models are truly required. Public-private collaborations must be encouraged to co-create innovative solutions for the most pressing environmental problems. Training programs must equip businesses and communities with the required skills to adopt and implement sustainable practices. Moreover, startup incubation centers can contribute towards stimulating an innovation culture that would accelerate the fast track setting up of green enterprises. There should be potent mechanisms for inter-regional knowledge sharing to facilitate the better dissemination of these best practices. Policymakers must also consider bringing these initiatives into alignment with international sustainability frameworks to strengthen India's global leadership in green innovations. [11, 12]

**Recommended Sustainable Business Models from Developed Countries [12, 13, 14]**

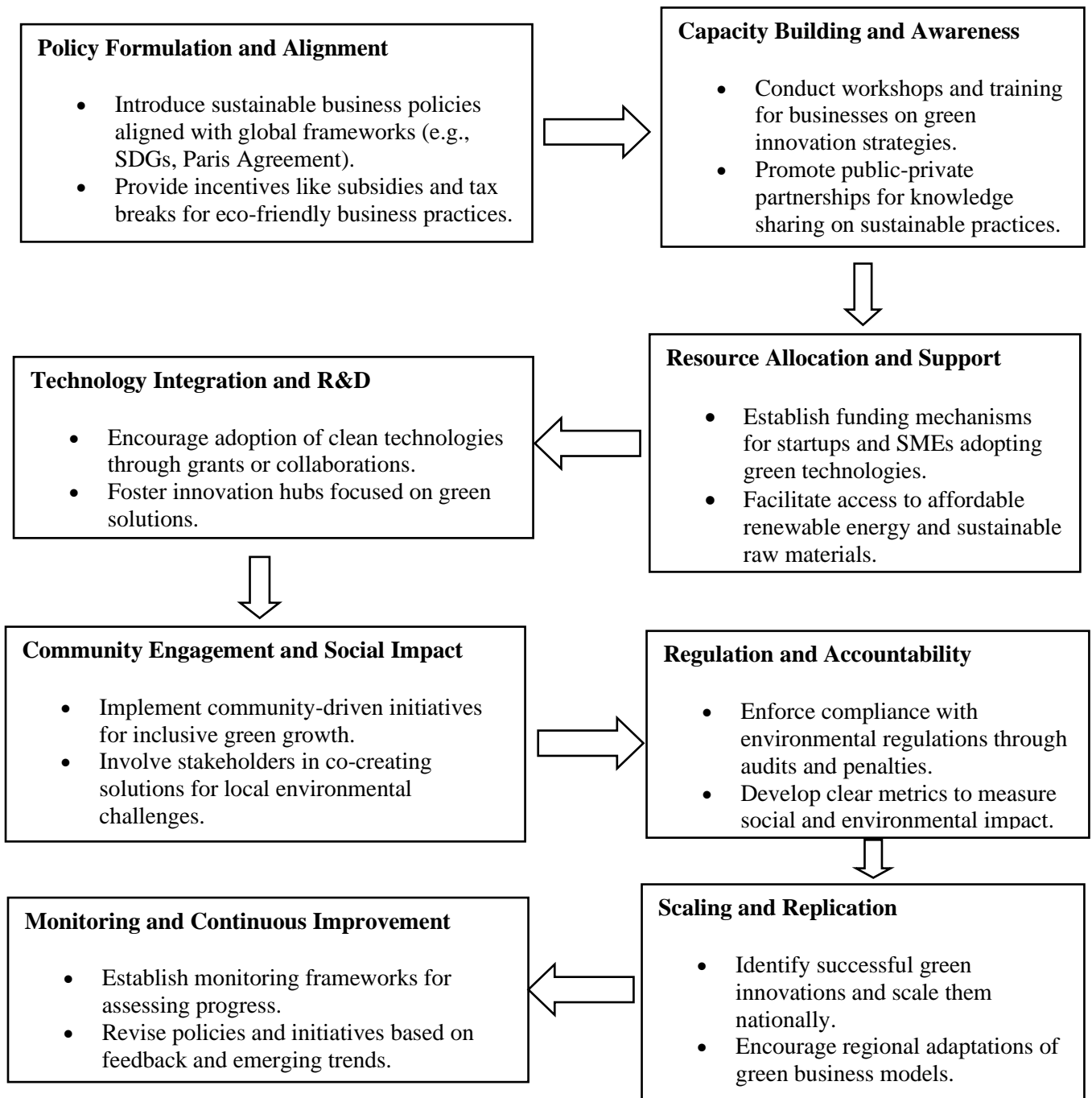
<b>Model Name</b>	<b>Country</b>	<b>Core Concept</b>	<b>Key Features</b>	<b>Impact on Green Social Innovations</b>
<b>Triple Bottom Line (TBL)</b>	United States	Balances profit, people, and planet for sustainable growth.	Focus on environmental, social, and economic performance; sustainability reporting.	Encourages companies to prioritize social equity and environmental responsibility alongside profits.
<b>Circular Economy Model</b>	Netherlands	Emphasizes resource reuse and waste elimination.	Waste-to-resource strategies, product life-cycle extension, closed-loop supply chains.	Reduces resource dependency and environmental impact while fostering green innovation.
<b>Cradle-to-Cradle (C2C)</b>	Germany	Designs products that are fully recyclable or biodegradable.	Products designed for infinite recycling; use of safe, sustainable materials.	Promotes eco-friendly product development and reduces waste.
<b>Low-Carbon Economy Model</b>	United Kingdom	Focuses on reducing carbon emissions in business operations.	Carbon pricing, renewable energy adoption, energy efficiency programs.	Accelerates transition to renewable energy and supports global climate goals.
<b>B Corporation Certification</b>	Canada	Certifies companies meeting high standards of social and environmental impact.	Transparent ESG practices, stakeholder accountability, impact-driven business models.	Creates a global standard for sustainable and ethical business practices.
<b>Shared Value Model</b>	Australia	Aligns business success with social progress.	Collaboration with communities, addressing social issues as business opportunities.	Enhances community development while driving profitability.

<b>Green Technology Innovation</b>	Japan	Focuses on integrating advanced technology for sustainability.	Development of energy-efficient products, AI, and IoT for environmental monitoring.	Positions businesses as leaders in green innovation and reduces environmental footprints.
<b>Sustainability Standards</b>	Sweden	Establishes benchmarks for environmental and social governance.	ISO certifications, eco-labeling and green procurement practices.	Encourages businesses to adopt globally recognized sustainable practices.
<b>Corporate Sustainability Leadership (CSL)</b>	Denmark	Advocates for sustainability in leadership and organizational culture.	Incorporation of sustainability in decision-making, long-term ESG goals.	Promotes leadership-driven sustainability transformations.
<b>Zero Waste Business Model</b>	Switzerland	Eliminates waste generation in operations.	Zero waste strategies, resource optimization, recycling initiatives.	Minimizes environmental impact while reducing operational costs.

**Sustainable Business Innovation Model (SBIM): A Unique Framework for Polity-Driven Green Social Innovations**

The Sustainable Business Innovation Model (SBIM) refers to a transformative framework that is capable to integrate green social innovation with supportive political and regulatory environment. It promotes collaboration among government agencies, private entrepreneurs, and local community voices to jointly combat environmental challenges in their pursuit of economic growth. In fact, it incorporates requirements from circular economy principles of resource efficiency and renewable energy use from which business operations align with Sustainable Development Goals (SDGs). It intends to foster management practices via technology such as AI and IoT for intelligent resource management and a reduced environmental footprint. The inclusion of such policies is in the form of incentives that include tax benefits and subsidies playing a crucial role in bringing about a shift towards engagement of green innovations in business management practice. The scheme involves measurable sustainability metrics with which performance can be audited along with ensured accountability. So the SBIM is actually a

scalable blueprint for sustainability in Indian business management through balancing economic viability and environmental stewardship. [15, 16]



Here's a table that outlines the paradigm shift in Indian business management with a focus on policy-driven green social innovations, specifically from the perspective of social enterprise. [17, 18]

<b>Key Aspect</b>	<b>Before 2000</b>	<b>After 2000 (Post Paradigm Shift)</b>
<b>Business Focus</b>	Primarily profit-driven, limited focus on sustainability	Shift towards inclusive, sustainable development with a focus on environmental and social outcomes
<b>Government Policies</b>	Minimal policy support for green innovations	Introduction of green policies, CSR mandates, and environmental laws supporting sustainable practices in businesses
<b>Role of Social Enterprises</b>	Limited recognition and support for social enterprises	Growth of social enterprises addressing environmental and societal issues with government incentives and support
<b>Regulatory Framework</b>	Lacked comprehensive laws for sustainable business	Implementation of the Companies Act (2013), Environment Protection Act, and CSR guidelines supporting green innovations
<b>Green Innovation Adoption</b>	Slow uptake of environmental and social innovations	Accelerated adoption of green innovations, such as renewable energy and waste management solutions, by social enterprises
<b>Impact on Rural Areas</b>	Limited reach in rural development	Significant increase in rural development initiatives focusing on sustainability through social enterprises
<b>Private Sector Involvement</b>	Private sector involvement was largely profit-driven	Private enterprises engage in sustainable practices, with a focus on social responsibility and innovation for community welfare

**Conclusion:**

Significantly deterministic polity-induced green social innovations herald a new dawn in Indian business management. This country has framed a broad policy context for inclusive and environmentally sustainable economic growth through aligning policy frameworks with sustainability goals. Initiatives such as the National Green Hydrogen Mission, Make in India, Start-Up India, etc. have sparked initiatives to create a green environment ecosystem in which the government would serve as the regulatory partner. These have catalyzed the role of

businesses in addressing environmental challenges. And this shift in paradigm reveals the interaction or relationship between governance and enterprise-the healthy relationship between them encourages businesses to put into place appropriate policies that can propel the adoption of sustainable practices and social equity and reduction of ecological footprints. Under varied sectors of industry, businesses are increasingly integrating the Environmental, Social, and Governance (ESG) issues into their strategies, thanks to consumer demand and regulatory compliance for green solutions. Hence it brings in collection changes, which indicates how both system and firm complete, robust governmental policies promoting the activeness of businesses in practicing very sustainable actions and equalities of the society as well as low ecological footprints. Therefore businesses are now starting to integrate Environmental, Social and Governance (ESG) principles into their strategies across various sectors primarily due to mandates set by regulations and consumer demands for green solutions. Again, adapting green technologies, waste-to-wealth models, and renewable energy solutions is an exercise in resilience an adaptation for Indian business houses. Much of this has taken place through collaborative efforts among the government, industries, and civil society in changing the market dynamics, creating green jobs, and taking the rural-urban divide closer to each other. But it all hangs on continuous policy backing, inter-sectoral partnership, and building up capacities. Consistent policy frameworks and innovation incentives are primly required for industrial growth. Besides industries should invest in sustainable infrastructure development practices. Thus, polity-led green social innovations are truly crucial for achieving sustainable development in India. Though this business management model hints a new paradigm, it strengthens in policy, innovativeness, and social impact towards co-creating a greener, sustainable future. As much as the efforts continue and align strategically, the fate of India would be secured to become a world leader in sustainable business practices, re-establishing a new path for balancing economic growth and environmental stewardship.

**References:**

1. Sharma, S. (2016). *Sustainable Business Practices in Emerging Markets*. Springer Nature.
2. Banerjee, A., & Roy, P. (2020). "Green Innovations in Indian Business Management: An Overview." *Indian Journal of Business Studies*, 18(3), 45-62.
3. Prakash, A. (2019). *Environmental Governance and Sustainable Business Policies in India*. Routledge India.
4. Mehta, K. (2021). "Indian Environmental Laws and Green Business Innovation: 2000-2020." *Environmental Policy Review*, 12(4), 78-89.
5. Ministry of Environment, Forest and Climate Change, Government of India. "Environmental Laws and Policies." <https://moef.gov.in>
6. Gupta, R. (2022). *Green Social Innovations in Indian Industries: Case Studies*. SAGE Publications.

7. India CSR Network. "Case Studies on Green Business Innovations." <https://indiacsr.in>
8. Kumar, S. (2021). *Green Business Challenges and Future Prospects in India*. Tata McGraw Hill.
9. Verma, P. (2022). "Challenges in Adopting Green Innovations in Indian Enterprises." *Sustainable Business Review*, 14(1), 89-102.
10. International Labour Organization. "Green Business: Opportunities and Challenges." <https://www.ilo.org>
11. Choudhary, P. (2017). *Policy Recommendations for Sustainable Business Growth*. Oxford University Press.
12. Jha, R., & Basu, K. (2021). "Policy Directions for Green Social Innovation in Indian Businesses." *Economic and Political Weekly*, 56(14), 95-108.
13. Robinson, M., & Lee, J. (2020). *Global Sustainable Business Models: Lessons from Developed Economies*. Springer Nature.
14. Patel, V. (2021). "Comparative Analysis of Sustainable Business Models: Developed vs. Developing Economies." *International Journal of Business Innovation*, 9(3), 42-58.
15. Narayan, R. (2022). *The Sustainable Business Innovation Model: A Green Framework*. Pearson Education.
16. UN Global Compact. "Sustainable Business Models and Practices." <https://www.unglobalcompact.org>
17. Gupta, R. (2020). *Social Enterprises and Sustainability in India*. Springer.
18. Singh, R. (2018). *Green Social Innovations in Emerging Economies*. SAGE Publications.



## **PRINCIPLES AND FUNCTIONS OF MANAGEMENT**

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### **Abstract:**

In this chapter, we offers a comprehensive overview of the essential concepts, features, functions, and levels of management, as well as the scientific principles and criticisms that shape contemporary management practices.

**Keywords:** Goals, Group Activity, Financial Resources, Plans & Policies, Work Culture, Positive Work Environment, Industry, Community, Wages, Decision Making, Scientific Management.

### **Introduction:**

This chapter, which is essentially a brief chapter, is meant to provide with the concept of management and their Principles and functions. It gives background information about the various levels, skills of manager and taylors objectives and criticism of scientific management.

### **Management Meaning & Definition:**

**Meaning:** Management is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively. Management comprises planning, organizing, staffing, leading, coordinating and controlling an organization (a group of one or more people or entities) or effort for the purpose of accomplishing a goal

### **Definition:**

**According to Harold Koontz,** "Management is the art of getting things done through and with people in formally organized groups".

**According to Henry Fayol,** "To manage is to forecast and to plan, to organise, to command, to coordinate and to control".

**According to Peter Drucker,** "Management is a multi-purpose organ that manages business and manages managers and manages workers and work".

**Features or Characteristics of Management:** The characteristics or features of management include:

**1. Continuous Process:** Management is a continuous process. It means that the process of business management goes on until the company exists, as it helps in achieving the organizational goals. Every manager of an organization has to perform the different functions of management in a series (planning, organising, staffing, directing, and controlling).

**2. Goal-Oriented:** Every organization has a set of predetermined goals or objectives that it aims to accomplish during its existence. Every organization has different goals. Hence, management

helps these organizations in fulfilling their goals by utilizing the given limited resources in the best optimum manner. For example, if the objective of Airtel is to add a billion Airtel Xtreme customers in a year, then all of its managerial activities will be directed toward the achievement of this objective.

**3. All Pervasive:** The process of business management is universal in nature. Every organization, whether small scale, large scales, economic, social, etc., uses the process of management at every level or stage. Besides, the activities involved in the management of an organization are common for all whether it is a social, political, or economic enterprise.

**4. Multidimensional:** Management is a multidimensional process as it does not involve only one activity. The three main activities involved in management are Management of Work, Management of People, and Management of Operations.

**5. Management of Work:** Every organization is set up to perform some work or goal, and the management aims at achieving these goals or tasks. The work of an organization depends upon the nature of Business; for example, work to be fulfilled in a hospital is treating patients, in a university is educating students, etc.

**6. Management of People:** People are the most essential assets of an organization and refer to human resources. It is the duty of the management to get the work completed through human resources/people by making their strengths effective and weaknesses irrelevant. Managing people have two dimensions; viz., Taking care of a group of people and Taking care of employees' individual needs.

**7. Management of Operations:** Operations are the activities of an organization's production cycle, like purchasing inputs, converting them into semi-finished goods, and finished goods. Simply put, Management of operations consists of a mix of Management of Work and Management of People, and decides what work has to be done, how it has to be done, and who will do it.

**8. Dynamic Function:** There are different internal and external factors that affect the working of an organization. An organization has to change and adapt itself on the basis of changing environment to accomplish the organizational goals and objectives. Hence, management is a dynamic function.

**9. Management is a Group Activity:** Management involves a group of people performing managerial activities. The functions of management can be executed only when every individual performs his/her role their respective status and department. And as the result of management affects every individual and every department of an organization, it always refers to a group effort.

**10. Management is an Intangible Force:** Management is a function that cannot be physically seen but its presence can be felt by watching the orderliness and coordination in work environment and happy faces of the employees when the task is completed.

### **Fourteen Principles of Management by Henri Fayol:**

Henry Fayol, also known as the Father of Modern Management Theory, gave a new perception on the concept of management. He introduced a general theory that can be applied to all levels of management and every department. He envisioned maximizing managerial efficiency. Today, Fayol's theory is practiced by the management to organise and regulate the internal activities of an organization.

#### **The fourteen principles of management created by Henri Fayol are explained below:**

1. **Division of Work:** Henri believed that segregating work in the workforce amongst the worker will enhance the quality of the product. Similarly, he also concluded that the division of work improves the productivity, efficiency, accuracy and speed of the workers. This principle is appropriate for both the managerial as well as a technical work level.
2. **Authority and Responsibility-** These are the two key aspects of management. Authority facilitates the management to work efficiently, and responsibility makes them responsible for the work done under their guidance or leadership.
3. **Discipline:** Without discipline, nothing can be accomplished. It is the core value for any project or any management. Good performance and sensible interrelation make the management job easy and comprehensive. Employee's good behaviour also helps them smoothly build and progress in their professional careers.
4. **Unity of Command:** This means an employee should have only one boss and follow his command. If an employee has to follow more than one boss, there begins a conflict of interest and can create confusion.
5. **Unity of Direction:** Whoever is engaged in the same activity should have a unified goal. This means all the person working in a company should have one goal and motive which will make the work easier and achieve the set goal easily.
6. **Subordination of Individual Interest:** This indicates a company should work united towards the interest of a company rather than personal interest. Be subordinate to the purposes of an organization. This refers to the whole chain of command in a company.
7. **Remuneration:** This plays an important role in motivating the workers of a company. Remuneration can be monetary or nonmonetary. However, it should be according to an individual's efforts they have made.
8. **Centralization:** In any company, the management or any authority responsible for the decision-making process should be neutral. However, this depends on the size of an organization. Henri Fayol stressed on the point that there should be a balance between the hierarchy and division of power.
9. **Scalar Chain:** Fayol on this principle highlights that the hierarchy steps should be from the top to the lowest. This is necessary so that every employee knows their immediate senior also they should be able to contact any, if needed.

10. **Order:** A company should maintain a well-defined work order to have a favorable work culture. The positive atmosphere in the workplace will boost more positive productivity.
11. **Equity:** All employees should be treated equally and respectfully. It's the responsibility of a manager that no employees face discrimination.
12. **Stability:** An employee delivers the best if they feel secure in their job. It is the duty of the management to offer job security to their employees.
13. **Initiative:** The management should support and encourage the employees to take initiatives in an organization. It will help them to increase their interest and make then worth.
14. **Esprit de Corps-** It is the responsibility of the management to motivate their employees and be supportive of each other regularly. Developing trust and mutual understanding will lead to a positive outcome and work environment.

### **Functions of Management:**

Management is playing a vital role in the progress and prosperity of a business enterprise. The main purpose of management is to run the enterprise smoothly. Basically management functions are those groups of activities, which constitute the core of basic responsibilities of a manager's job. A brief explanation of the basic functions of management is given below:

1. **Planning:** It is the basic function of management. Planning is determination of courses of action to achieve desired goals. Thus, planning is a systematic thinking about ways & means for accomplishment of predetermined goals. Planning is necessary to ensure proper utilization of human & non-human resources. It is all pervasive, it is an intellectual activity and it also helps in avoiding confusion, uncertainties, risks, wastages etc.
2. **Organizing:** It is the process of bringing together physical, financial and human resources and developing productive relationship amongst them for achievement of organizational goals. According to Henry Fayol, "To organize a business is to provide it with everything useful or its functioning i.e. raw material, tools, capital and personnel's". To organize a business involves determining & providing human and nonhuman resources to the organizational structure. Organizing as a process involves:
  - a) Identification of activities.
  - b) Classification of grouping of activities.
  - c) Assignment of duties.
  - d) Delegation of authority and creation of responsibility.
  - e) Coordinating authority and responsibility relationships
3. **Staffing:** The main purpose of staffing is to put right man on right job. According to Kootz & O'Donnell, "Managerial function of staffing involves manning the organization structure through proper and effective selection; appraisal & development of personnel to fill the roles designed under the structure". Staffing involves:

- a) Manpower Planning (estimating man power in terms of searching, choose the person and giving the right place).
  - b) Recruitment, Selection & Placement.
  - c) Training & Development.
  - d) Remuneration.
  - e) Performance Appraisal.
  - f) Promotions & Transfer.
- 4. Directing:** It is that part of managerial function which actuates the organizational methods to work efficiently for achievement of organizational purposes. Direction is that inert-personnel aspect of management which deals directly with influencing, guiding, supervising, motivating sub-ordinate for the achievement of organizational goals. Direction has following elements: 1. Supervision 2. Motivation 3. Leadership 4. Communication
- 5. Controlling:** It implies measurement of accomplishment against the standards and correction of deviation if any to ensure achievement of organizational goals. The purpose of controlling is to ensure that everything occurs in conformities with the standards. An efficient system of control helps to predict deviations before they actually occur. According to Koontz & O'Donnell "Controlling is the measurement & correction of performance activities of subordinates in order to make sure that the enterprise objectives and plans desired to obtain them as being accomplished". Therefore controlling has following steps:
- a. Establishment of standard performance.
  - b. Measurement of actual performance.
  - c. Comparison of actual performance with the standards and finding out deviation if any.
  - d. Corrective action.

### **Levels of Management:**

The term Levels of Management refers to a line of demarcation between various managerial positions in an organization. The number of levels in management increases when the size of the business and work force increases and vice versa. The level of management determines a chain of command, the amount of authority & status enjoyed by any managerial position. The levels of management can be classified in three broad categories:

#### **1. Top Level of Management:**

It consists of board of directors, chief executive or managing director. The top management is the ultimate source of authority and it manages goals and policies for an enterprise. It devotes more time on planning and coordinating functions. The role of the top management can be summarized as follows –

- a. Top management lays down the objectives and broad policies of the enterprise.

- b. It issues necessary instructions for preparation of department budgets, procedures, schedules etc.
- c. It prepares strategic plans & policies for the enterprise.
- d. It appoints the executive for middle level i.e. departmental managers.
- e. It controls & coordinates the activities of all the departments.
- f. It is also responsible for maintaining a contact with the outside world.
- g. It provides guidance and direction.
- h. The top management is also responsible towards the shareholders for the performance of the enterprise.

## **2. Middle Level of Management:**

The branch managers and departmental managers constitute middle level. They are responsible to the top management for the functioning of their department. They devote more time to organizational and directional functions. In small organization, there is only one layer of middle level of management but in big enterprises, there may be senior and junior middle level management. Their role can be emphasized as –

- a) They execute the plans of the organization in accordance with the policies and directives of the top management.
- b) They make plans for the sub-units of the organization.
- c) They participate in employment & training of lower level management.
- d) They interpret and explain policies from top level management to lower level.
- e) They are responsible for coordinating the activities within the division or department.
- f) It also sends important reports and other important data to top level management.
- g) They evaluate performance of junior managers.
- h) They are also responsible for inspiring lower level managers towards better performance

## **3. Lower Level Management**

Lower level Management: Lower level is also known as supervisory / operative level of management. It consists of supervisors, foreman, section officers, superintendent etc. Their activities include –

- a) Assigning of jobs and tasks to various workers.
- b) They guide and instruct workers for day to day activities.
- c) They are responsible for the quality as well as quantity of production.
- d) They are also entrusted with the responsibility of maintaining good relation in the organization.
- e) They communicate workers problems, suggestions, and recommendatory appeals etc to the higher level and higher level goals and objectives to the workers.
- f) They help to solve the grievances of the workers.
- g) They supervise & guide the sub-ordinates.
- h) They are responsible for providing training to the workers.
- i) They arrange necessary materials, machines, tools etc for getting the things done.

- j) They prepare periodical reports about the performance of the workers.
- k) They ensure discipline in the enterprise. l. They motivate workers. m. They are the image builders of the enterprise because they are in direct contact with the workers.

**Skills of manager:**

**Managerial Skills:**

**There are four skills of managers are expected to have ability of:**

1. Technical skills: Technical skills that reflect both an understanding of and a proficiency in a specialized field. For example, a manager may have technical skills in accounting, finance, engineering, manufacturing, or computer science.
2. Human Skills: Human skills are skills associated with manager's ability to work well with others, both as a member of a group and as a leader who gets things done through other.
3. Concept Skills: Conceptual skills related to the ability to visualize the organization as a whole, discern interrelationships among organizational parts, and understand how the organization fits into the wider context of the industry, community, and world.
4. Conceptual skills, coupled with technical skills, human skills and knowledge base, are important ingredients in organizational performance.

**Taylor's Scientific Management Theory:**

Scientific management, also known as Taylorism, is a management theory that aims to improve efficiency in the workplace by applying scientific methods to analyze and improve workflows.

**Objectives of Scientific Management:**

The broad objectives of Scientific Management can be outlined as follows:

1. To increase the rate of production with the help of standardized tools, equipment and methods.
2. To improve the quality of production by effective inspection and quality control through scientific research.
3. Systemic planning and regulation of cost control mechanism will reduce the cost of production.
4. To eradicate waste of time and resources, and to implement effective methods of production.
5. To recruit right person for the job through scientific selection and training which in turn will control employee turnover.
6. Establishing a sound system of wage payment so that efficiency of output is maximum.

**There are many criticisms of scientific management, including:**

**1. Treating workers as machines**

Scientific management reduces workers to cogs in a machine, and treats them as a means of production. This approach ignores the workers' emotional and psychological well-being, and doesn't value their knowledge or initiative.

## **2. Focusing on individual tasks**

Scientific management focuses on individual tasks, and doesn't emphasize teamwork. Critics believe that the overall goal should be the efficiency of the organization, not the productivity of each individual.

## **3. Ignoring workers' ideas**

Scientific management doesn't incorporate the mental contribution of workers through ideas. Critics believe that workers' ideas could play a critical role in enhancing the organization's efficiency.

## **4. Unrealistic**

Scientific management theory focuses mainly on the financial and physical needs of workers, while ignoring their ego needs and social status.

## **5. Requires huge capital**

Setting up work study, planning departments, and training workers involves a considerable amount of investment.

## **6. Ill-defined idea of a "fair day's work"**

Scholars argue that the idea of a "fair day's work" is ill-defined. In reality, a "fair day's work" was the maximum amount of work a person could do without collapsing

### **References:**

1. Robbins, S. P., & Coulter, M. (2019). *Management* (14th ed.). Prentice Hall (India) Pvt. Ltd.
2. Gunaseelan, R., & Kulandaiswamy, V. (2016). *Principles and practices of management*. S. Chand and Company Limited.
3. Kreitner, R. (2017). *Principles of management*. Cengage.
4. Mithra, J. K. (2017). *Principles of management*. Oxford University Press.
5. Kaul, V. K. (2012). *Business organization and management: Text and cases*. Pearson Education.
6. Koontz, H., & Weihrich, H. (2015). *Essentials of management: An international perspective*. McGraw-Hill Education.
7. Prasad, L. M. (2019). *Principles and practice of management*. Sultan Chand & Co. Ltd.
8. Robbins, S. P., & Coulter, M. (2018). *Management* (14th ed.). Pearson.
9. Daft, R. L. (2016). *Management*. Cengage Learning.
10. Fayol, H. (1949). *General and industrial management*. Pitman Publishing.



## **UNDERSTANDING STAKEHOLDER ANALYSIS: CONCEPTS, METHODS, AND APPLICATIONS**

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### **Abstract:**

Stakeholder analysis is a systematic approach to identifying, classifying, and understanding stakeholder relationships across various fields. This chapter explores key approaches to stakeholder theory, including descriptive, normative, and instrumental perspectives. The stakeholder analysis process consists of three main steps: identification, classification, and relationship analysis, utilizing methods such as brainstorming, expert consultation, actor-linkage matrices, and social network analysis. Stakeholder theory is widely applied in corporate governance, supply chain management, environmental conservation, healthcare, education, and public policy. Effective stakeholder engagement enhances decision-making, improves efficiency, and fosters sustainable practices.

### **Introduction:**

Before defining a stakeholder, it is essential to grasp the concept of a “stake”. A stake extends beyond mere ownership, encompassing any individual’s or group’s general interest or involvement in a socially structured environment. Carroll and Buchholtz (2000) define a stake as an interest, a right, or ownership.

- **Interest** refers to situations where a person or group is affected by a decision and, therefore, has a vested concern in its outcome.
- **Right** can be legal, where an individual or group has a lawful claim to be treated in a specific manner, or moral, based on ethical considerations.
- **Ownership** arises when an individual or entity holds a legal title to an asset or property.

Anyone with a personal stake in a specific organization, institution, or system can be considered a stakeholder. A widely accepted definition was introduced by Freeman (1984), stating that a stakeholder is “any group or individual who can affect or is affected by the achievement of the organization’s objectives”. However, this broad definition suggests that virtually anyone could be considered a stakeholder (Tiller *et al.*, 2015).

On the other hand, Clarkson (1995) provided a more focused definition by associating stakeholders with risk. He categorized them into:

- **Voluntary Stakeholders**, who take on risk by investing capital (financial or human) or any valuable resource in an organization.

- **Involuntary Stakeholders**, who are exposed to risk due to the organization’s activities, even without actively participating.

Other scholars, such as Freeman and Evan (1990), Hill and Jones (1992), and Cornell and Shapiro (1987), describe stakeholders as contractors or participants in exchange relationships. These relationships involve mutual transactions of goods, services, money, or information, ensuring benefits for all involved parties. Expanding on this idea, Freeman (1994) introduced stakeholders as “participants in the human process of joint value creation”. This perspective highlights that stakeholders do not merely engage in transactional exchanges but actively contribute to economic, social, or strategic value through collaboration and mutual growth. There are two primary perspectives on defining stakeholders:

**Narrow View:** This focuses on stakeholders directly linked to a firm’s core economic interests, emphasizing contractual obligations, ownership, legal rights, or risk-bearing status.

**Broad View:** This considers a wider range of actors who can influence or be influenced by a firm, regardless of formal contracts. It highlights the power of influence rather than solely the legitimacy of claims.

While the narrow approach prioritizes structured relationships such as contracts and legal rights, the broad approach recognizes that businesses and organizations operate within a broader societal framework where various actors directly or indirectly affect their operations and decision-making.

### Different Approaches to Stakeholder Theory

There are multiple approaches to stakeholder analysis, with the most notable being descriptive, normative, and instrumental approaches (Donaldson and Preston, 1995). The selection of an approach depends on the objectives and rationale of a given study. The key distinctions among these three approaches are outlined in the Table 1.

**Table 1: Key differences between approaches to stakeholder analysis**

Aspect	Descriptive Approach	Normative Approach	Instrumental Approach
Purpose	Seeks to describe and explain real-world stakeholder relationships as they currently exist.	Establishes ethical and moral obligations of firms towards stakeholders.	Analyzes how effective stakeholder management contributes to a firm's success.
Key Question	“How do businesses interact with stakeholders in practice?”	"Why should organizations consider stakeholders beyond financial interests?"	“What impact does stakeholder management have on business performance?”
Focus	Observes, classifies, and interprets stakeholder interactions and behaviors.	Emphasizes ethical considerations, fairness, and the inherent rights of stakeholders.	Examines stakeholder engagement as a strategy to enhance business outcomes.

Underlying Assumption	Stakeholder relationships can be objectively analyzed based on real-world interactions.	Businesses have an ethical responsibility to consider stakeholders, even if it does not result in profit.	Strategic stakeholder management leads to financial and operational advantages.
Approach to Stakeholder Interests	Documents how firms interact with stakeholders without making value judgments.	Advocates that businesses should act responsibly and fairly towards all stakeholders.	Recommends that firms engage with stakeholders strategically to maximize business benefits.
View of Stakeholders	Neutral-stakeholders are part of the firm's operational reality.	Intrinsic-stakeholders possess rights that must be respected.	Instrumental-stakeholders are valuable when they contribute to achieving business objectives.
Examples of Research Questions	<ul style="list-style-type: none"> <li>- Who are the key stakeholders in a company's supply chain?</li> <li>- How do businesses engage with various stakeholders?</li> <li>- What factors shape stakeholder relationships?</li> </ul>	<ul style="list-style-type: none"> <li>- What ethical duties does a company have toward employees, communities, and the environment?</li> <li>- Should businesses prioritize certain stakeholders based on moral considerations?</li> </ul>	<ul style="list-style-type: none"> <li>- How does strong stakeholder management lead to higher profitability?</li> <li>- What stakeholder strategies promote long-term business sustainability?</li> </ul>

### **Stakeholder Analysis**

Stakeholder analysis is a structured method used to identify, categorize, and examine the relationships among different stakeholders. The process involves three key steps: selecting an appropriate analytical approach, defining a classification framework, and applying specific methods to analyze stakeholder interactions.

#### **Step 1: Identifying Stakeholders**

Determining who holds a stake in a project depends on its objectives. Various methods are commonly employed to identify stakeholders, including brainstorming, focus groups, expert consultations, semi-structured interviews, snowball sampling, and surveys. Despite these efforts, some stakeholders may still be overlooked. To mitigate this risk, defining the study boundaries is crucial. For instance, if the goal is to assess the fair distribution of costs and benefits in a project, all relevant stakeholders must be included (Grimble *et al.*, 1995). Conversely, if the focus is on project efficiency, only those with direct influence over its success should be considered. In conservation studies, this might involve identifying resource users and managers interacting with

natural resources. Given that stakeholder identification often follows a top-down approach, personal biases may influence the selection process. To enhance validity, iterative identification methods, including literature reviews, expert consultations, and stakeholder engagement, are recommended.

**Step 2: Classification of Stakeholders**

Stakeholders can be classified using generic or relative frameworks.

**a. Generic Classifications:** These classifications, widely used across disciplines, are based on foundational research. Various such classifications is shown in Table 2.

**Table 2: Different generic stakeholder classification schemes**

Author	Classification
Freeman (1984)	Internal and External Stakeholders
Clarkson (1995)	Primary and Secondary Stakeholders
Savage <i>et al.</i> (1991)	Supportive, Marginal, Non-supportive, and Mixed Blessing Stakeholders
Goodpaster (1991)	Fiduciary and Non-fiduciary Stakeholders
Rowley (1997)	Compromiser, Solitarian, Subordinate, and Commander
Mitchell <i>et al.</i> (1997)	Latent, Expectant, Definitive, and Non-Stakeholders

- Internal stakeholders drive changes within an organization, while external stakeholders influence it from outside (Freeman, 1984).
- Primary stakeholders are essential for an organization's survival, whereas secondary stakeholders can impact it but do not engage in direct transactions (Clarkson, 1995).
- Other classifications (Mitchell *et al.*, 1997) assess stakeholder influence based on power, legitimacy, and urgency.

**b. Relative Classifications:** These are tailored to specific research contexts. Researchers define their classification schemes based on study objectives and stakeholder dynamics.

Another approach divides stakeholder classification into analytical and reconstructive categorizations:

**1. Analytical Categorization (Top-down approach):** Researchers categorize stakeholders based on predefined frameworks, often using matrices or Venn diagrams. Examples include:

Influence and interest levels (Lindenberg & Crosby, 1981)

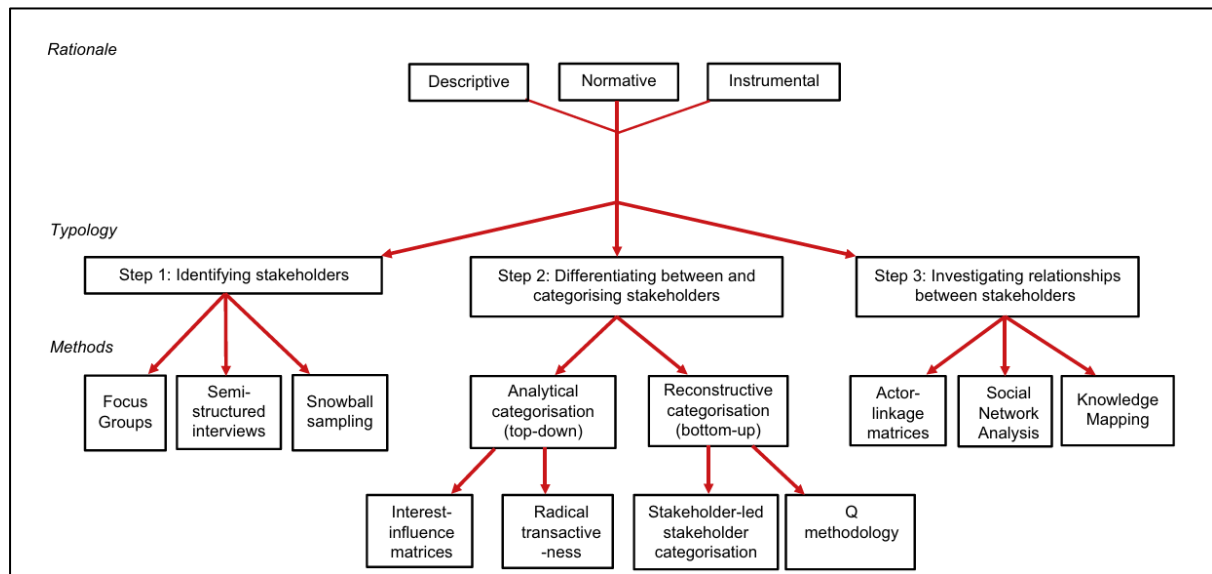
Cooperation vs. competition (Freeman, 1984)

Cooperation vs. threat (Savage *et al.*, 1991)

Urgency, legitimacy, and influence (Mitchell *et al.*, 1997)

**2. Reconstructive Categorization (Bottom-up approach):** Stakeholders define classifications based on their perspectives, ensuring the analysis reflects their concerns (Hare & Pahl-Wostl,

2002). While this method allows stakeholders to shape the research, it may also shift the study's original focus.



**Figure 1: Detailed structure of stakeholder analysis (Source: Reed *et al.*, 2009)**

### **Mitchell *et al.* (1997) Framework for Stakeholder Identification and Classification**

Mitchell *et al.* (1997) introduced a widely recognized framework for stakeholder identification based on three key attributes: power, legitimacy, and urgency. This model helps classify stakeholders based on their influence and the necessity of addressing their concerns.

#### **1. Power**

Power refers to a stakeholder's ability to influence an organization's actions, compelling it to act in ways it might not have otherwise. Power can be categorized into three types:

**Coercive Power** → Involves force, threats, or penalties to enforce compliance (e.g., government authorities imposing regulatory restrictions on aquaculture practices).

**Utilitarian Power** → Uses financial or material incentives to influence actions (e.g., feed suppliers offering credit terms that impact farmer decisions).

**Normative Power** → Leverages moral, social, or cultural influence (e.g., consumers demanding sustainably farmed seafood, leading companies to adopt eco-friendly practices).

#### **2. Legitimacy**

Legitimacy pertains to the recognition and justification of a stakeholder's role within a business or supply chain. Unlike power, legitimacy is based on societal acceptance and institutional norms. A stakeholder is considered legitimate if its claims and involvement align with industry standards, ethical principles, or legal frameworks. For example, certification bodies enforcing aquaculture sustainability guidelines hold legitimacy in the industry.

#### **3. Urgency**

Urgency determines how quickly an organization must address a stakeholder's concerns. It consists of two dimensions:

**Time Sensitivity** → The immediacy of an issue requiring action (e.g., farmers needing urgent feed supply to prevent stock losses).

**Criticality** → The significance of the issue to the stakeholder (e.g., traders requiring timely payments to sustain business operations).

### **Implications of the Framework**

By analyzing stakeholders based on these three attributes, organizations can prioritize engagement strategies. The combination of power, legitimacy, and urgency determines how much attention a stakeholder should receive. For example:

- Definitive Stakeholders (possessing all three attributes) require immediate and strategic attention.
- Dominant Stakeholders (power + legitimacy) are influential but not necessarily urgent.
- Dependent Stakeholders (legitimacy + urgency) rely on other entities to exert influence on their behalf.

### **Step 3: Investigating stakeholders' relationships**

The final step in stakeholder analysis involves examining interactions and relationships among stakeholders within a social system. These relationships are crucial as they facilitate the flow of information, financial resources, demand, supply, and other critical elements within the system. Stakeholder relationships can be analyzed using three principal methods:

#### **1. Actor-Linkage Matrices**

Actor-linkage matrices provide a structured way to document and analyze stakeholder interactions. This method involves listing stakeholders in both the rows and columns of a table, creating a grid where interrelations can be described using keywords (e.g., "collaboration," "conflict," "support"). This approach is simple, flexible, and effective for visually mapping stakeholder connections.

#### **2. Social Network Analysis (SNA)**

Social Network Analysis (SNA) extends actor-linkage matrices by representing stakeholder relationships numerically. Instead of using descriptive keywords, SNA uses numbers to indicate:

- The presence or absence of a connection between stakeholders.
- The relative strength of the connection (e.g., frequency of communication, level of influence).

SNA captures various types of stakeholder interactions, such as communication, trust, advice-sharing, conflicts, and collaborations. This approach not only identifies existing relationships but also quantifies their strength, allowing for deeper analysis and pattern recognition within stakeholder networks.

### **3. Knowledge Mapping**

Knowledge mapping is a method of organizing and visually representing knowledge within an organization or stakeholder group. It identifies expertise, knowledge assets, and connections between different areas of knowledge. When combined with SNA, knowledge mapping offers several advantages:

- **Enhancing Stakeholder Networks** → Extends the “who knows who” aspect of SNA to “who knows what” (Wexler, 2001).
- **Identifying Knowledge Flows** → Helps trace dominant flows of information and expertise (Eppler, 2001).
- **Recognizing Knowledge Bottlenecks** → Identifies gaps or blockages in knowledge transfer.
- **Tracking Knowledge Loss** → Detects knowledge seepage due to stakeholder turnover or migration.
- **Facilitating Stakeholder Collaboration** → Helps stakeholders understand the expertise of others, fostering better coordination.
- **Optimizing Stakeholder Grouping** → Assists researchers in grouping stakeholders effectively for knowledge-sharing and learning initiatives.

#### **Application of stakeholder theory in different fields**

##### **1. Business and Corporate Governance**

In corporate governance, stakeholder theory helps businesses identify and manage relationships with various stakeholders, including shareholders, employees, customers, suppliers, and regulatory bodies. It emphasizes ethical decision-making, corporate social responsibility (CSR), and long-term value creation by addressing the interests of all parties involved rather than focusing solely on profits.

##### **2. Supply Chain and Value Chain Management**

Stakeholder theory is used to map and analyze interactions among producers, suppliers, processors, distributors, retailers, and consumers. It helps in designing efficient and sustainable supply chains by considering the needs of multiple actors, optimizing resource allocation, and ensuring fair trade practices.

##### **3. Environmental and Natural Resource Management**

In environmental governance, stakeholder theory guides policymakers and organizations in balancing the interests of different groups such as government agencies, businesses, local communities, conservation groups, and indigenous populations. It supports participatory decision-making in areas like climate change mitigation, sustainable fisheries, and deforestation control.

#### **4. Conservation and Biodiversity Management**

In conservation efforts, stakeholder theory is used to engage local communities, governments, scientists, and non-governmental organizations (NGOs) in species protection and habitat restoration. It helps resolve conflicts between conservation goals and local livelihoods by integrating diverse interests into sustainable management strategies.

#### **5. Healthcare and Public Health**

Healthcare systems use stakeholder theory to balance the interests of patients, healthcare providers, insurance companies, pharmaceutical firms, and policymakers. It helps design policies that ensure equitable access to healthcare services while maintaining financial sustainability and improving patient outcomes.

#### **6. Education and Research**

In the education sector, stakeholder theory is applied to manage relationships between students, educators, administrators, policymakers, and funding bodies. It aids in curriculum development, policy implementation, and university governance by incorporating the perspectives of all stakeholders involved.

#### **7. Public Policy and Governance**

Governments use stakeholder theory to ensure participatory decision-making by involving citizens, businesses, civil society organizations, and international bodies in policy formulation and implementation. It is particularly relevant in democratic governance, urban planning, and economic development strategies.

#### **8. Agriculture and Rural Development**

In agricultural supply chains, stakeholder theory helps in designing inclusive policies that consider the needs of farmers, input suppliers, agribusinesses, consumers, and policymakers. It supports rural development programs by fostering cooperation among different actors to enhance productivity, sustainability, and income distribution.

#### **9. Technology and Innovation Management**

In the technology sector, stakeholder theory is applied in product development, regulatory compliance, and ethical AI design. It ensures that innovations align with societal needs by involving software developers, regulators, end-users, and advocacy groups in decision-making.

#### **10. Social Enterprises and Non-Profit Organizations**

Social enterprises and NGOs use stakeholder theory to balance the interests of donors, beneficiaries, employees, and government agencies. It helps them achieve their social missions while ensuring financial sustainability and accountability.

#### **11. Construction project management:**

The Project Management Institute extended the stakeholder concept to the project management (Institute, 1987). Stakeholders of a construction project include both the project



members (i.e., owner, consultant, contractor, and suppliers) and also members from the project environments. (i.e. government, local community, public media). Construction projects are full of uncertainties due to their long-term duration (De Meyer, Loch & Pich, 2002), which requires stakeholder collaboration continuously (Shen, Brandon & Baldwin, 2009). Construction projects are prone to safety accidents and community protests resulting in cost overruns and time delays. This could be linked indirectly to poor management of project stakeholders (Liu *et al.*, 2015). Therefore, stakeholder management is important for better project performance.

**References:**

1. Carroll, A. B., & Buchholtz, A. K. (1996). Ethics and stakeholder management. *Cincinnati, OH: South-western Publishing.*
2. Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of management review*, 20(1), 92-117.
3. Cornell, B., & Shapiro, A. C. (1987). Corporate stakeholders and corporate finance. *Financial management*, 5-14.
4. De Meyer, A., Loch, C. H., & Pich, M. T. (2002). Managing project uncertainty: from variation to chaos. *MIT Sloan management review*, 43(2), 60.
5. Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, 20(1), 65-91.
6. Eppler, M. J. (2001, January). Making knowledge visible through intranet knowledge maps: concepts, elements, cases. In *Proceedings of the 34th annual Hawaii international conference on system sciences* (pp. 9-pp). IEEE.
7. Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge university press.
8. Freeman, R. E. 1994. The politics of stakeholder theory: Some future directions. *Business Ethics Quarterly* 4: 409-421.
9. Freeman, R. E., & Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *Journal of behavioral economics*, 19(4), 337-359.
10. Goodpaster, K. E. (1991). Business ethics and stakeholder analysis. *Business ethics quarterly*, 53-73.
11. Grimble, R., Chan, M. K., Aglionby, J., & Quan, J. (1995). Trees and trade-offs: a stakeholder approach to natural resource management.
12. Hare, M., & Pahl-Wostl, C. (2002). Stakeholder categorisation in participatory integrated assessment processes. *Integrated Assessment*, 3(1), 50-62.
13. Hill, C. W., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of management studies*, 29(2), 131-154.
14. Institute, P. M. (1987). Project management body of knowledge (PMBOK). Project Management Institute.

15. Lindenberg, M., & Crosby, B. (1981). *Managing development: the political dimension*.
16. Liu, B., Huo, T., Meng, J., Gong, J., Shen, Q., & Sun, T. (2016). Identification of key contractor characteristic factors that affect project success under different project delivery systems: Empirical analysis based on a group of data from China. *Journal of Management in Engineering*, 32(1), 05015003.
17. Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of management review*, 22(4), 853-886.
18. Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., ... & Stringer, L. C. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *Journal of environmental management*, 90(5), 1933-1949.
19. Rowley, T. J. (1997). Moving beyond dyadic ties: A network theory of stakeholder influences. *Academy of management Review*, 22(4), 887-910.
20. Savage, G. T., Nix, T. W., Whitehead, C. J., & Blair, J. D. (1991). Strategies for assessing and managing organizational stakeholders. *Academy of management perspectives*, 5(2), 61-75.
21. Shen, G., Brandon, P., & Baldwin, A. (Eds.). (2009). *Collaborative construction information management*. Routledge.
22. Tiller, R. G., Mork, J., Liu, Y., Borgersen, Å. L., & Richards, R. (2015). To adapt or not adapt: assessing the adaptive capacity of artisanal fishers in the Trondheimsfjord (Norway) to jellyfish (*Periphylla periphylla*) bloom and purse seiners. *Marine and Coastal Fisheries*, 7(1), 260-273.
23. Wexler, M. N. (2001). The who, what and why of knowledge mapping. *Journal of knowledge management*, 5(3), 249-264.

## **THE GIG ECONOMY IN INDIA: CHANGING THE FUTURE OF WORK**

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### **Abstract:**

The gig economy is challenging the old meaning of work in India. Generally, short-term contracts, task-based work, and flexible hours are increasingly accepted as fundamental components of the Indian labor market. Consequently, gig work can no longer be restricted to a few chosen sectors. This chapter traces the development of gig work in India, beginning with transportation and food delivery and now encompassing digital services, education, healthcare, and creative fields.

India, with more than 15 million gig workers, claims one of the largest gig economies in the world. This chapter discusses how, through digital platforms and better smartphone penetration, gig work has become more accessible to these societies, especially the youth, women, and semi-skilled workers from both rural and urban backgrounds. It elaborates on key sectors driving this growth and future opportunities arising from new trends in technology, wellness, green jobs, and content creation.

Flexibility, independence, and income opportunities characterize gig work, yet it comes with challenges. These include income instability, lack of legal protection, social security, algorithmic control, and social isolation. The chapter reflects critically on these issues while stressing the need for an inclusive worker-centered policy to provide social protection, fair remuneration, and sustainable employment.

The gig economy can be a game changer for India's future of work. Workers, policymakers, and society have to collude and create a fairer and more resilient ecosystem for all gig workers to get their complete benefits.

### **Introduction:**

The gig economy refers to the labor market with short time horizons, flexible arrangements, and freelancer jobs on a project-to-project basis. The term gig derives from the music industry, where musicians would employ "gigs" for paid performances. Today, this term has evolved to incorporate mainstream economics, signifying a new model of employment that is radically opposed to the contract of traditional long-term jobs.

At its core, the gig economy is about flexibility for workers and employers. Powered by digital platforms and mobile applications, such gig work allows individuals to earn income by offering various services, from ride-hailing to food delivery and online tutoring to software development, graphic design, and many more. The interface of digital technology to labor demand redefines how work is accessed, performed, and paid for.

## **Evolution in India: From Niche to Norm**

India has turned the soil for the gig economy into a fertile ground lifestyle this country has adopted, vast populations, shifting-born of-and rapidly digitizing economies. Growths like smartphones, internet penetration, and tech-based platforms like Ola, Uber, Swiggy, Zomato, UrbanClap, and Upwork have been catalysts primarily to the growth of gig work in urban and semi-urban areas. According to the latest estimates, India could have as many as 15 million gig workers, ranking it among the largest gig economies in the world.

This shift is not merely urban, youth-oriented, or tech-savvy freelancers. Gig work penetrates demography into rural or semi-rural areas. Jobs are thus available to a population who has been historically denied employment opportunities that were directed toward cities. Platforms have brought down the entry barrier to work and help women, students, retirees, and part-time hunters earn supplementary earnings.

India's labor market has long suffered from underemployment with a burgeoning informal sector and barriers to formal job creation. The gig economy arose as a pragmatic solution to these challenges by providing low-entry barriers to jobs, particularly during economic stress.

For instance, during the COVID-19 pandemic, gig platforms kept the lifeline of essential services flowing, such as the delivery of food and medicine. As a survival tactic, gig platforms became a means for many who lost their traditional jobs.

With the recognition of the growing impact of gig work, the Indian government made the watershed decision in the Union Budget of 2021-22 to announce for the first time the provision of social security measures for gig and platform workers. A major departure toward formalizing a sector that continues to be, for the most part, informal was implemented. Concurrent efforts are underway to bring gig workers under the provisions of labor codes guaranteeing them minimum wage, insurance, and dispute settlement mechanisms.

## **Top Sectors Driving the Gig Economy in India**

The Indian gig economy is no longer a niche segment; it is fast becoming a major pillar of the modern labor market. From opportunities never before offered in a classic work setting with flexibility, autonomy, and accessibility, this transformation has quite fascinatingly incorporated a variety of sectors depending upon gig workforces. Ranging beyond the typical online freelancing, Indian gig work covers ride-hailing, delivery services, digital work, teaching, logistics, and even home repairs. Each sector develops its dynamic and contributes to India's economy differently.

### **Ride Sharing**

One of the earliest and most visible fields of gig work in India is ride-sharing. Ola and Uber have transformed urban transportation by allowing taxi booking through mobile apps. In

essence, this smooth user experience has been made possible by an army of gig workers who do not work for companies but offer their services on the platform to make a living.

The model has thus provided ample employment opportunities to many who otherwise would not have accessed formal jobs. The semi-urban and rural residents comprise the majority of gig drivers attracted by inherent flexibility and daily earnings. They either operate their vehicle or hire it under lease to join the platform. The ride-sharing model makes each driver an entrepreneur by enabling them to set their working schedule.

### **Food and Grocery Delivery**

The widespread use of platforms for the delivery of food and groceries has added yet another major battleground within the pillars of the gig economy. Swiggy, Zomato, Blinkit, Zepto, and Dunzo primarily operate with a model that relies heavily on deploying a large fleet of delivery partners, most of whom are gig workers. These individuals deliver food, groceries, medicine, and day-to-day essential commodities while braving city traffic to make timely deliveries.

The COVID-19 pandemic had major relevance during this period, wherein lockdowns and safety fears made consumers more dependent than ever on home delivery services, further exacerbating the demands for delivery workers. This gig work served as a lifeline for many surviving the economic downturn, offering work with little qualification and immediate payout for people with minimal educational backgrounds.

### **Freelancing and Online Digital Services**

The digital field of freelancing forms the white-collar arm of India's gig economy. This economy encompasses many sectors: software development, graphic design, content writing, data entry, digital marketing, translations, and virtual assistance. Platforms like Upwork, Freelancer, Fiverr, and Toptal link Indian professionals to clients far and wide across the globe, allowing them to work remotely and independently.

India stands among the largest providers of online freelancers in the world. Blessed with a huge English-speaking population, an ever-increasing tech-savvy young crowd, and access to the Internet, this trend has gained momentum. Freelancing is beneficial for many. It allows educated applicants to work from home, avoiding the constraints of a 9-to-5 job and the ability to take on several projects simultaneously.

### **E-commerce Logistics and Last-Mile Delivery**

The boom in e-commerce has further underscored logistics and last-mile delivery as another crucial sector for gig work. Major e-commerce platforms like Amazon, Flipkart, and Myntra depend primarily on the workforce comprising gig workers for delivery in far-flung or densely populated areas. These workers are critical for maintaining the promise that the packages will reach the customers in the stipulated time frame.

Last-mile delivery jobs are typically about collecting parcels from a warehouse or fulfillment center and delivering these to customer addresses. Many of these jobs are short-term and seasonal, mostly during festivals like Diwali or significant sales events. Workers are compensated based on the number of packages delivered and distance covered and are sometimes rewarded with performance-related incentives.

### **Home Services and Repair**

With the emergence of UrbanClap (now Urban Company), the skilled and semi-skilled service sector became rife with the gig economy. These platforms connect consumers to service professionals providing at-home services, including plumbing, electrical work, cleaning, beauty, and appliance servicing.

The uniqueness of this sector lies in its focus on skill-based gig work. Many professionals, particularly electricians, carpenters, beauticians, and massage therapists, who have recently worked mostly on local reputation, now have wide-reaching access to customers through these digital platforms. This has greatly enhanced the visibility and income potential.

### **Online Education and Tutoring**

Online education saw phenomenal growth in India, especially in the post-pandemic years. Platforms such as BYJU, Vedantu, Unacademy, and Chegg have generated a new genre of gig work centered around knowledge dissemination. There is a huge demand for tutors, doubt-clearers, academic writers, and content developers to support competitive exams and higher education students.

For many postgraduates, university students, and subject-matter experts, online tutoring provides the opportunity for a flexible and respectable source of income. Such personnel can work from home, choose their teaching slots, and cater to a diverse array of students.

### **Health and Wellness Services**

The health and wellness services sector is one of India's younger yet faster-growing sectors of the gig economy. The demand for on-demand professionals such as trainers, yoga instructors, nutritionists, and therapists has increased appreciably. Most of these professionals conduct online or offline one-on-one sessions and manage their clientele independently or utilize platforms like Cure. Fit or HealthifyMe.

Another feature that sets it apart is that this field focuses on holistic preventive health as opposed to emergency treatments. The professionals usually also set their prices, timelines, and formats, whether offering one-on-one consultations or group workshops. However, such work remains difficult to scale due to the need for personal branding and maintaining a relationship

### **Future Opportunities in the GIG Economy**

As the workforce in India transitions over the years, the gig economy starts to be seen not just as a stopgap occupation for the unemployed and a side business for the ambitious; it is gradually getting entrenched into the fabric of mainstream professions. While the earlier impetus

for the gig economy's growth came from transportation and food delivery, the future promises a much wider and diversified array of avenues. This is propelled not just by the advent of technology but also by changing societal norms, increasing entrepreneurial mindset, and digitalization of everyday life.

### **Expanding Beyond the Traditional Gigs**

Traditionally, gig work in India meant a low-to-medium skilled job: ride-sharing, delivery, domestic help, etc. But the very essence of the gig, as perceived in light of future trends, is about to change, focusing on knowledge-based and tech-enabled jobs, the services of which can be scaled up, offered flexible hours, and be digitally accessed.

Digital infrastructures improve, and remote work becomes more normalized. Gig opportunities will overpass the blue-collar services and increasingly penetrate white-collar and creative sectors under the gig work marker. The aspect of freelance platforms for consultants, educators, and health practitioners shows that soon, the gig would entail working with more than manual labor and encroach into the area of intellectual labor.

### **Freelance Digital Services and Remote Professional Work**

Among the important growth parameters, freelance professional services are set to rank among the paramount. India is already almost a global hub for freelance work in software development, digital marketing, web designing, and content writing. In the time to come, this will burgeon, with even more subtle roles anticipated to come up-AI trainers, virtual customer service agents, UX testers, data annotators, and blockchain consultants.

Platforms such as Upwork, Fiverr, and India's own Truelancer are evolving to include these specialized services, allowing skilled professionals to connect with clients across geographies. AI and automation are also generating entirely new jobs that, for now, require human intelligence to do providing several streams of micro-jobs.

This is especially attractive for young graduates and students from Tier 2 and Tier 3 cities who are now empowered hugely through income opportunities that were otherwise restricted to metros. Besides, freelancers are now forming cooperatives and collectives, which open avenues for collaborative work and shared entrepreneurship.

### **Digital Education and Edtech Opportunities**

Online education, which grew rapidly during the pandemic, catalyzes a structural overhaul of the education industry, converting everyone from teachers to tutors to subject-matter experts into gig workers. With a structured ecosystem already in place through platforms like Unacademy, BYJU'S, Chegg, and Vedantu, anyone can teach, solve doubts, assess assignments, or create educational content in part-time or full-time gig roles.

In the future, growth is only anticipated from here. With students in India and abroad insisting on flexible and personalized learning, teachers, particularly those with domain expertise in science, technology, and competitive exams, will see many opportunities in this field. In fact,

in addition to huge income potential, language teaching, coding for kids, and test preparations have become emerging niches.

### **Health and Wellness Gig Economy in the World Post-COVID**

Gone are the days when healthfulness would mean visiting the hospital or clinic. Post-COVID, fitness, preventive healthcare, and mental wellness are now on people's radar as healthcare paradigms. This shift has opened up new gig potential for wellness services. With platforms such as Cure, demand is on the rise for freelance yoga instructors, nutritionists, psychologists, and personal trainers. Fit, HealthifyMe, Instagram, and YouTube serve as marketplaces for personal branding and monetization.

Gig works empowering women, especially in the beauty, wellness, and mental health industries. As these services are digitized, distinguishing between proper employment and freelance practice becomes more blurred, creating hybrid models whereby professionals contract multiple clients across multiple platforms on their terms.

### **Creative Economy and Independent Content Creation**

The youth demographic of India is exploring the creative gig economy. This includes photography, music production, video editing, blogs, voiceover artistry, and social-media influencing. Creators can monetize via ad revenues, brand collaborations, affiliate marketing, and fan subscriptions on platforms like YouTube, Instagram, Ko-fi, and Patreon.

Branding is essential in this economy. Individuals no longer need traditional gatekeepers like publishers or media houses to showcase their talent, with algorithms and audiences deciding their worth today. This generation is a Gen Z-millennial mix, and the present shows toward a future artist-entrepreneur hybrid: people creating their commercial activities through virtual digital platforms.

With ongoing support for the creative community from government and private institutions through training programs, incubators, and grants, the National Education Policy (NEP 2020) promotes creativity, skill-building, and interdisciplinary education, thereby strengthening the role of the creative gig economy in India's future.

### **Platform Cooperatives and Worker-Owned Models**

One different and socially inclusive opportunity that will develop in India's gig economy's future is platform cooperatives. These are digital platforms owned and operated by the very gig workers using them instead of a tech company controlling the algorithms, taking commissions, and holding customer data. Instead, such worker-led cooperatives will be rightful owners who will have their knowledge enshrined in law, make decisions democratically, and make sure that the workers are paid well and that transparency in governance is assured.

### **Green Fleets and auxiliary employment opportunities**

Emerging gig jobs sans direct employment are being invented in environmental services with India's move towards a greener economy and intensified focus on renewable energy, waste



management, and sustainable urban development. Examples include skills like waste segregation technicians, solar panel installers, and eco-tourism guides.

### **Challenges Faced by Gig Workers in India**

The Indian gig economy, on the one hand, allows flexible employment and income generation opportunities. Still, on the other hand, it is fraught with a whole range of structural, financial, social, and legal problems. It is a double-edged sword for most of the millions of Indians who rely on it as their primary livelihood or as a supplemental activity because of its precariousness and absence of institutional safeguards.

According to most definitions of employment, only work subject to a formal contract that offers assurances of remunerations and benefits and incorporates legal provisions will be considered employment. Gig work, on the other hand, exists primarily in an unregulated and informal space. The following sections will elaborate on some challenges gig workers face in India. If left unaddressed, these challenges could compromise the sustainability and fairness of the gig economy itself.

### **Unstable Income and Unpredictable Earnings**

In fact, among all concerns, one of the most immediate and urgent problems facing gig workers today is income instability. While salaried employees receive regular monthly income, a part-timer or gig worker receives income only based on task completion, delivery, ride, or project.

So whether it rains or shines, in the high-flying days such as those of festival seasons or events in the line, a worker can expect to ride the pricey current wave, while an otherwise lean season or strange anomaly, such as that brought by COVID-19 lockdown, may reward the worker with almost nil earnings.

### **Absence of Social Security and Legal Protections**

Gig workers in India do not have any benefits from the labor laws or social protections currently relevant in the country. These gig workers are viewed as “independent contractors” in “unemployment insurance”-defined terms limiting access to health insurance, maternity benefits, paid leaves, provident funds, and pensions.

It drove a welcome announcement in the Union Budget 2021-2022, which covered gig and platform labor under design. Implementation is often at its birth stages, and most workers suffer without any formal safety net. This leads them to exposure to significant vulnerability arising from sickness, injury, or financial distress.

### **Control and its Absence of Autonomy**

Gig work is often glamorized with promo words like “flexible” and “empowering,” but the bitter reality says otherwise; in concrete terms, most gig workers are put under algorithms’ control. Workers are controlled through obscure rating systems, performance metrics, and automated task assignments by platform companies. One has to face deactivation from the

platform with little chance of employing appeal if a client gives a low rating, fair or unfair. Thus, there is constant surveillance. These digital bridle autonomies are meant to be expected from gig work.

### **No Minimum Wage or Standardized Payment**

They rely on wages based on work done. Therefore, gig workers are almost never going to be earning at least a wage, which is often less than the eligibility levels after the deduction of costs such as fuel, maintenance, mobile data, and platform commissions.

Judgment is a big deal in the absence of a pay standard framework, and there is no way for workers to measure the fairness of their earnings. Yet, there are some apps through which delivery workers earn ₹20-₹30 per delivery, which is not the best if long distances have to be traveled or if traffic annoyances come into play. Workers may travel to incur costs should there be cancellations. A gender aspect also comes into play as women gig workers mostly earn less than their male counterparts as a result of fewer working hours, security issues, and societal parameters.

### **Occupational Hazards and Lack of Safety Measures**

Many gig roles, especially those involving physical labor, mobility, or interaction with strangers, have inherently hazardous situations. Delivery partners and ride-hailing drivers, for example, have their own dangers, which include road accidents, theft, harassment, or even assault. Yet, such workers are hardly covered by insurance or safety training on the platforms.

The issue is aggravated for female gig workers, who have to contend not only with physical risks associated with their jobs but also with deep-rooted gender-based discrimination. Emergency buttons in apps or “safety kits” may be offered as safety measures on some platforms, but these rarely constitute meaningful interventions as they appear to be mostly cosmetic. Workers are still expected to shoulder the responsibility of safety on an individual level.

### **High Workload and Burnout**

Another largely ignored challenge is that gig work is extremely demanding. To earn decent money, many gig workers put in 12 to 14 hours a day, often without any breaks or holidays. Burnout, physical exhaustion, mental fatigue: you name it. Since pay is closely related to tasks completed, each day taken off equates to lost wages.

In many instances, there is growing pressure to take on every job on offer. Consistent refusal and cancellation bring about a drop in visibility or a suspension of accounts. This cancels out the chance for any rest to take place and creates a toxic hustle culture whereby gig workers are constantly on edge.

### **Lack of Collective Bargaining and Representation**

Workers in traditional industries are protected by trade unions or other employee welfare associations. Gig workers, by contrast, hardly command any bargaining power. Such a

decentralized and fragmented structure hinders workers from organizing themselves to negotiate better pay and conditions.

Although some informal networks and advocacy groups are emerging, e.g., the Indian Federation of App-based Transport Workers (IFAT), most workers remain isolated, unaware of their rights, and dependent upon the very platforms that provide them with their livelihood. This wide discrepancy of power between the platforms and the workers is one of the fundamental structural hindrances to justice in the gig economy.

Never has Earth witnessed such an epoch when technology has become so intrinsic to one's daily functioning. Gig working is practically technology-dependent for tasks like working with GPS, apps, smartphones, and digital payments. Inauspiciously, for workers coming predominantly from low-income groups or rural backgrounds, this dependence brings with itself newer exclusion. Not everyone can afford high-end phones or fast Internet. When apps malfunction, or devices are either lost or damaged for any cause, workers stand to lose income moments for work-holding access, often within several hours or days.

### **Psychological Stress and Isolation**

The line between gig work and social isolation is formed by the perception that gig work is physically mobile but socially isolating. With workers not only disconnected from peers but with few to no social supports, they are left agitated with loneliness and stress. This performance- and customer-pleasing pressure, which at times can take the shape of negative ratings or stressful interactions, has the potential to exert a serious toll on a worker's mental health.

Workers are also burdened by the stigma of informality; many regard gig work as subservient to formal employment, tainting their self-image and motivation. Such emotionally damaging experiences of gig work are seldom discussed, yet they have long-term consequences on worker welfare.

### **Future of Work in India: Role of the Gig Economy in Employment and Innovation**

The moment might have come because it could redefine the way work is envisioned and executed. India, which has a demographic advantage and an expanding digital infrastructure, is undergoing this transformation. The disruption left by the traditional employment mode in response to technology, economic, and lifestyle changes did not prevent the gig economy from being the anticipatory engine of future work in India. It is no longer a marginal phenomenon; it is gradually coming to form a central part of India's labor market, generating both employment and innovation across sectors.

The future of work in India is being shaped by a confluence of forces: automation, urbanization, digitization, and aspiration for flexible work. If any aspect can be termed functional and transformational, the gig economy has this. It changes the employer-employee relationship, disrupts traditional hierarchies in labor, and cultivates a more decentralized, agile workforce.

## **Gig Work-Strategic Asset Management Answering Employment Challenges**

The labor market in India bears an adverse implication, consisting of a really large area of informal nature, with almost all youth being unemployed and failing to create a very good volume of formal jobs. The gig economy partly fulfills this gap by offering task-based digitally mediated jobs with lower entry barriers yet relatively rapid returns.

For instance, ride-sharing, food delivery, and freelance tutoring offer immediate earning potential for individuals who might otherwise be excluded from the formal economy. The gig economy absorbs redundant labor from rural areas, the semi-skilled workforce employs work-from-home women, and students fund their education.

### **Catalyst Ignition in Job Creation and Entrepreneurship**

The true idea of a gig economy does not speak much of mere employment but redefines work itself. It propounds a culture of micro-entrepreneurship, where a person operates like an independent business unit, managing his time, effort, and resources. This is evident in their success within platforms such as Upwork, Fiverr, and Freelancer.com, where individuals offer services in graphic design, software development, content creation, and digital marketing.

### **Technology as a Future-Ready Work Enablement**

Amid numerous factors driving the gig economy, by extension, the future of work technology has become one of the foremost. Mobile applications, real-time tracking, digital payments, AI-based task matching, platform-based rating systems, and the rest of the processes have allowed the easy birth of work ecosystems that are digital-first and data-driven.

This technology-led evolution holds promise for rural India, where internet infiltration is on the rise. With the right kind of digital literacy and tools, gig platforms can extend an employment horizon to millions disconnected from urban job markets. That will be advanced by new AI and automation openings for micro-tasking jobs such as content moderation, data labeling, and training chatbots.

### **The New World of Work: Inclusion and Diversity**

One of the significant promises of the gig economy in India is the possibility of inclusive employment. Traditional workplaces have always excluded women, people with disabilities, senior citizens, and citizens of rejected communities. This is where gig work has offerings to balance situations.

For example, women have been granted the privilege to work from home and offer online classes, customer support, or remote consultations; these fortunate women might've had mobility challenges or taken care of other family obligations. Persons with disabilities can join projects as freelance workers from their homes. The democratization of work is directly compatible with a more egalitarian vision for India's workforce.

A structural support mechanism must back this opportunity to secure a working environment for women in gig jobs (delivery and ride-sharing), algorithms against

discrimination, and targeted training. If inclusivity remains a dream and it is not supported by concrete action and results, then it will lose its meaning.

### **A Move Towards Hybrid Work Models and Portfolio Careers**

The future of work in India may not be a binary situation anymore, with gig work being the opposite of formal work. Instead, hybrid models will evolve, wherein individuals pursue portfolio careers, work part-time in a formal job, and engage in freelance gigs, consulting, or passion projects.

Such a layered work model responds to the desires of a new generation that puts a premium on experience diversity, independence, and financial flexibility rather than rigid hierarchies and single-employer dependence. The enabling infrastructure is called the gig economy.

This shift is now recognized by educational institutions, policymakers, and employers. Some companies are adopting internal gig platforms to accomplish their short-term projects, while universities include gig-style internships in their curricula. These innovations indicate that the gig economy is not a threat to formal employment; on the contrary, it is a complementary evolution offering dynamic, adaptive ways of working.

### **Policy Innovation for Resilience of the Gig Workforce**

For a positive momentum to be sustained for prosperous gig work within the Indian economy, there is a pressing need for the concerted initiation of progressive policies regarding the matter. The inclusion of the gig worker in India's social security code provides a good basis for further policies that function in tandem with portable benefits, grievance redressal mechanisms, minimum wages, and insurance coverage.

The work of the future will require a fresh social contract in which gig workers are viewed as equal contributors rather than expendable labor. The state, platforms, and civil society should come together to create platform cooperatives, financial literacy programs, and legal structures that ensure that gig work remains not just viable but empowering.

It is essential that gig-relevant skills such as digital communication, online reputation management, and cross-platform multitasking find their way into the revised corpus of focus by NSDC and similar organizations.

### **References:**

1. B.K., S., Devkota, N., & Bista, S. (2024). From traditional employment to gig work: Analyzing labor dynamics in Nepal's emerging gig economy. *The Journal of Development and Administrative Studies*, 32(1–2), 31–42. <https://doi.org/10.3126/jodas.v32i1-2.75848>
2. Govindharaj, Y., & Kalaivani, M. (2024). Challenges and opportunities for women in India's gig economy: Future innovations, infrastructure, and strategies for informal workers. *JuniKhyat*, 14(12), 57–66. <https://www.researchgate.net/publication/386384481>

3. Samad, P., Wiquar, R., & Ciddikie, M. D. (2023). Gig economy: Past, present and future in India. *Senhri Journal of Multidisciplinary Studies*, 7(1), 36–41. <https://doi.org/10.36110/sjms.2022.07.01.005>
4. Tug, M. A., & Basar, P. (2023). Future of the gig economy. *PressAcademia Procedia*, 17, 230–231. <https://doi.org/10.17261/Pressacademia.2023.1796>
5. Mimi, A., & Mani, L. (2024). Gravitating the gig economy for reshaping the careers using technological platform in the digital age in an emerging economy. *Journal of Information Systems and Informatics*, 6(4), 3129–3139. <https://doi.org/10.51519/journalisi.v6i4.966>
6. Barasa, L., & Kiiru, J. M. (2023). The digital economy and youth employment in Africa. In G. Onyango (Ed.), *Public Policy and Technological Transformations in Africa* (Chapter 7). Springer. [https://doi.org/10.1007/978-3-031-18704-9\\_7](https://doi.org/10.1007/978-3-031-18704-9_7)
7. Mironova, S. M., Kozhemyakin, D. V., & Ponomarchenko, A. E. (2022). Adaptation of the legal regulation of labor, civil, and tax relations to the gig economy. *Law Enforcement Review*, 6(4), 314–329. [https://doi.org/10.52468/2542-1514.2022.6\(4\).314-329](https://doi.org/10.52468/2542-1514.2022.6(4).314-329)
8. Chowdhury, M. I., Hossain, M. R., & Arefin, M. S. (2024). An assessment on the prospect of gig economy to create employment opportunity. *International Journal of Management and Accounting*, 6(2), 22–39. <https://doi.org/10.34104/ijma.024.022039>
9. Kumar, J. S., & Shobana, D. (2024). A study on the impact of gig economy platforms on employment opportunities in India's urban and rural areas. In M. V. Sathiyabama *et al.* (Eds.), *Empowering India through Digital Transformation – A Sustainable Approach* (Vol. 1, pp. 12–20). ISBN: 978-93-340-6921-1
10. Joshi, A., Jain, S., & Gupta, P. K. (2024). Challenges and impact of the gig economy. *Sustainable Economies*, 2(2), 96. <https://doi.org/10.62617/se.v2i2.96>
11. Damoska Sekuloska, J., & Erceg, A. (2023). Rise of the online gig economy – an opportunity for the development of the developing economies. In A. Zdravković (Ed.), *European economies after COVID-19: Challenges and implications for the macroeconomic policy* (pp. 7–19). Institute of Economic Sciences. <https://www.researchgate.net/publication/376173957>
12. Mwakatumbula, H., & Moshi, G. C. (2020). Digital skills for gig workers in digital platforms. *Digital Skills Insights 2020*, International Telecommunication Union. <https://www.researchgate.net/publication/344927745>
13. Suryavanshi, P., & Soni, H. (2023). Emerging trends of the gig economy towards employment generation in India: Opportunities & challenges. *TIJER - International Research Journal*, 10(7), 637–645. <https://www.researchgate.net/publication/380360945>
14. Dong, Z., Peng, J., & Liu, S. (2024). Gender pay gap in the gig economy. *China Finance and Economic Review*, 2024(1), 3–9. <https://www.degruyter.com/document/doi/10.1515/sb-2024-0001/html>

15. Haja Mohideen, A. J., Khatoon, S., Shwetha, G. Y., Singh, S., & Rafee, B. M. (2025). GIG economy: Emerging trends and challenges after globalisation. *Journal of Neonatal Surgery*, 14(8s), 377–383. <https://www.jneonatalurg.com>
16. Suryavanshi, P. (2022). Gig economy. *IFPRI Discussion Paper 00963*. <https://www.researchgate.net/publication/365035315>
17. Singh, H. (2024). Gig workers: A comprehensive analysis of the rise, challenges, and future of the gig economy. *International Journal for Multidisciplinary Research*, 6(5). <https://doi.org/10.36948/ijfmr.2024.v06i05.29525>
18. Ghosh, A., Zaidi, M., & Ramachandran, R. (2022). Locating women workers in the platform economy in India – Old wine in a new bottle? *Gender & Development*, 30(3), 765–784. <https://doi.org/10.1080/13552074.2022.2131258>
19. Muhyiddin, M., Annazah, N. S., Tobing, H., Habibi, N., Fauziyah, F., & Harsiwi, R. I. P. (2024). The ambiguity of employment relationship in Indonesia’s gig economy: A study of online motorcycle taxi drivers. *Jurnal Ketenagakerjaan*, 19(3), 263–273. <https://doi.org/10.47198/naker.v19i3.416>
20. Anan, K. (2024). *The evolution of employment law in the gig economy*. *Journal of Modern Law and Policy*, 4(2), 29–41. <https://doi.org/10.47941/jmlp.2160>
21. Gill, J., & Gupta, S. (2024). *The gig economy and its implications on contract labor laws*. *NUJS Journal of Regulatory Studies*, 9(2), 78–85.

## VITILIGO A BODY SHAMING: SUDHA MURTHY'S MAHASHWETA

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### Abstract:

Sudha Murthy is one of the prominent Indian women writer who is well known as Indian social worker & philanthropist. Through Infosys foundation and Gates Foundation, Murthy is working for the public education and health care. In her writing career also, she focuses on the issues of education and health. In the novel *Mahashweta* she deals with the health problem of the protagonist Anupama.

This research paper emphasis how body shaming impact on mental health of the individual person. Stollznow says, "The act of insulting a person's physical appearance, including body shape, size, or skin colour, is referred to as body shaming." (*On The Offensive: Prejudice in Language Past and Present*) The protagonist of the novel *Mahashweta* is suffering from the vitiligo. Murthy examines how a white patch on Anupama's foot demolished her marriage in this orthodox society. Indian people are prejudice and believe that if a person is suffering from vitiligo, it means he or she is having "Guru Droh" or because of karma they suffer in life. But the diseased suffered lot of psychological pressure due to such mean mentality of the society.

**Keywords:** Body Shaming, Stereotypes, Vitiligo, Ostracism, Self-Loathing, Self-Esteem.

### Introduction:

Sudha Murthy is one of the leading feminist writers in India. She is a writer as well as well know entrepreneur. Her journey from the engineer graduate to owner of the most famous Infosys Company inspires man as well as women of our country. In her writing she deals with women and women's issues in her novels. She believes that in the present scenario women's are educating and becoming economically independent but still they are bounded with emotional and social dependence. In her writing career she is dealing with so many overwhelming issues related to women in modern India and authored 40 books.

The present research paper explores the idea of Vitiligo a body shaming in Sudha Murthy's *Mahashweta*. Body shaming means when you criticize someone for the way they look. According to Cowie Helen & Carrie Myers "Body shaming is a form of bullying that mainly targets someone's physical parts." (*Bullying Among University Students: Cross-national perspectives.*) Body shaming lowers the confidence and self-esteem of the human being, which affect the individual's way of thinking negative about their look. Hanson says, "... The feeling of body shame is therefore in conversation with societal expectation of how a body should be or look, arising when people consider their body as lying outside the constructed definition of the acceptable body." (Borsboom) We are living in a stereotypes society. These stereotypes people



are having preconceived ideas about society, cast, religion, age, occupation, skin colour, gender, sex, disease etc. Stereotypes have a negative influence against the infectious person. Their outlook, interaction & treatment are bias. People are prejudice in certain health problems or diseases like mental illnesses HIV/AIDS, tuberculosis, leprosy & Vitiligo. It's ok about the illiterate people but so called educated people also behave in the same manner.

In the novel *Mahashweta*, Sudha Murthy deals with the health problem of her protagonist, Anupama. Anupama is a beautiful girl who attracted Dr. Anand very much. Dr. Anand has very rich family background even though his mothers accept the marriage of Anand & Anupama because Dr. Anand falls in love with Anupama. These indicate that though Radhakka is rich and orthodox she has given consent for their marriage. After marriage when Anupama realizes that her skin colour change suddenly and there is a white patch in her body. "She noticed something very old. There was a small white patch on her foot where she had got burnt." (Murthy, *Mahashweta* 46). This white patch disturbs her & she did not dare to discuss this issue with her mother-in-law. She visited doctor secretly because of fear. When doctor declare that it's a Vitiligo. She lost her senses and feels numb because of the shame. Vitiligo is a common, autoimmune acquired disorder of the skin, which causes milky white depigmented macula's on various parts of the body. In the Indian society vitiligo patients have to face significant psychological hurt and social neglect. The severity of the stigma is related to the society's attitude and knowledge about it. Actually vitiligo is not the stigma and it does not spread when you come in contact with that affected person. But Indian society makes it a stigma and unnecessarily create problem to people in our surrounding.

Through Anupama, Sudha Murthy expresses the mentality of disease person, "She asked God what sin she had committed to be punished so." (Murthy, *Mahashweta* 47) Anupama believes that suffering from this kind of disease means punishment from God. "In some Indian religious texts where reincarnation is believed, it is said that a person who did "Guru Droh" in his previous life suffers from vitiligo in this life." (*The Blue Man and Other Stories of the Skin.*) Because of this attitude of people, Indian patients suffer with psychiatric morbidity manifesting as anxiety, depression and sleep disturbance.

In the novel *Mahashweta* Murthy explores how vitiligo affects Anupama's self-perception, leading to feeling of shame, low self-esteem and social isolation. As Murthy writes, Anupama's thought "Was she suffering now because of her karma, because of something she had done in her previous birth?" (Murthy, *Mahashweta* 51) In Indian philosophy, particularly Hinduism believes in karma and whatever good or bad happens in our life, it is the fruits of our pervious life. This thought emerges in the mind of well-educated Anupama because of the impact of the society and surrounding. She was not allowed to enter in the puja room. The servant Narayana informed Radhakka, "This is a bad disease. She cannot perform any puja now. It must be the result of a sin from her previous life." (Murthy, *Mahashweta* 54) Its highlight the intense social stigma associated with vitiligo, which can lead to women feeling like they are somehow flawed or defectives. Even her house maids also ill-treat her. In India women are judged and

rejected on the basis of their physical appearance. Anupama's skin condition becomes a source of shame and self-loathing, making her feel like she is defined by her appearance.

Anupama's condition is bitter than the servants of her house. After finishing their work they can go to their respective home, but Lakshmi Nivas is now alien for her. Murthy says, "A home, after all, is not made up of just the four walls- there must be affection and love, as well. So where was the place she could call home? Where would she find kindness and trust?" (Murthy, Mahashweta 56) She feels suffocated and humiliated in Lakshmi Nivas because of the attitude of her mother-in-law and neighbors. The entire town is talking about a white patch for them physical appearance is more important and no one bothers about the inner qualities of Anupama like kindness, compassion and strength.

Radhakka informed Anupama's father Shamanna and scolded him for concealing a white patch of her daughter. Radhakka ordered Shamanna, "Take your daughter back with you; she need not come back until she's completely cured and my son returns and ends for her." (Murthy, Mahashweta 58) Being orthodox women she did not understand the mental condition of her daughter-in-law. In India women are woman's worst enemy and will backstab whenever got the opportunity. In Anupama's life she was experiencing this from her childhood because she lived with her stepmother Sabakka. Her stepmother and sister disdain her because they believed that white patches brought bad luck and were contagious. Because of this life in the village was very hard for Anupama. Her family faces a lot of problems due to the disease. In the marriage market of the women, they are judged by their physical appearance and family background. The news of Anupama's white patch spread and her sister Nanda's marriage cancelled and Anupama was blamed for all this. Shamanna has to leave his old village and settle down in the new village with his family because of shame. Because of all this misfortune Anupama wished, "the ground beneath her feet would split open and swallow her." (Murthy, Mahashweta 72)

Anupama's last hope was her husband Dr. Anand but their relation does not reach at such a level that she can freely talk about her problem. In Indian society or culture women have a lot of faith on her husband. Likewise, Anupama expects that Anand should take her side in such a critical situation. Accordingly, she writes to Dr. Anand, "You know I did not have the patch when we got married. Please tell your mother that I have not deceived you. I am staying with my father in the village. But how long can I stay here as an additional burden on my father?" (Murthy, Mahashweta 63) But Anupama hurts a lot when her husband Dr. Anand refuses to accept her because of those white patches. Though she was his own choice, he was attracted towards her beauty but when some beauty gets patches on her body, he rejected. Anand stops replying her letters, at the same time denies opposing his mother. She feels lonely, isolated and desolated which make her think to end her life and she decides to kill herself. Anupama gazed at the ledge, "it was only a few steps away, and death was waiting." (Murthy, Mahashweta 77) Because of this small white patch she had parted from her husband and thought of suicide emerged.

While living in Bombay with her friend Sumitra, her husband Hari tried to molest her because he knows the weakness of Anupama. Hari said, "Anu, you do remember that you have

leukoderma, don't you? Anand will never come back to you, nor will anyone else want to marry you." (Murthy, Mahashweta 88) In our society people like Hari takes advantage of health condition of other people and tried to exploit and sexually assault them. Sudha Murthy emphasis that in India having a vitiligo is a shame and the diseased where ill treated by their own family members as well as the society.

**Conclusion:**

In the novel *Mahashweta*, Sudha Murthy explores the outlook, belief and misconception of Indian society about the Vitiligo patient. How the protagonist Anupama became the victim of society, when a white patch developed in her body. Anupama experienced ostracism when her mother-in-law comes to know about the disease. Though her husband was doctor by profession he rejected her due to shame and family pressure. Anupama feels that her skin was her enemy and the reminder of her ugliness. It's indicating that body shaming can lead to internalized self-hatred and low self-esteem. Matteo Aloixamines "Body shaming could bring several risks and implications on the victim's mental, physical and social well-being." (*Psychosocial Risk Factors in the Development, Maintenance and Treatment Outcome of Eating Disorders*) Author expresses the psycho-social impact on Anupama after the diagnosis of Vitiligo. She was crying, avoiding company and had suicidal thoughts after the diagnosis. She lost faith on love, relationship and marriage because our society did not understand the inner qualities and beauty of the heart. Anupama could not accept the proposal of Vasant because she knew that the patients like her have had to face many misconceptions about vitiligo were prevalent amongst people of all social strata. At the same psychologically and emotionally, she feel shame to get married with Vasant.

**References:**

1. Aloï, M., et al. (2024). *Psychosocial risk factors in the development, maintenance and treatment outcome of eating disorders*. Frontiers Media SA.
2. Borsboom, D., et al. (2018). Brain disorders? Not really: Why network structures block reductionism in psychopathology research. *Behavioral and Brain Sciences*, 42. <https://doi.org/10.1017/s0140525x17002266>
3. Cowie, H., & Myers, C. A. (2015). *Bullying among university students: Cross-national perspectives*. Routledge.
4. Murty, S. (2007). *Mahashweta*. Penguin Books India.
5. Norman, R. A. (2014). *The blue man and other stories of the skin*. University of California Press.
6. Stollznow, K. (2020). *On the offensive: Prejudice in language past and present*. Cambridge University Press.

## **MYTH AND LEGEND IN AMITA KANEKAR'S 'A SPOKE IN THE WHEEL'**

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The chapter is devoted to myth and legend in Amita Kanekar's 'A Spoke in the Wheel'. Abrams in 'A Glossary of Literary Terms' explains that in classical Greek, *mythos* signified any story plot any story or plot, whether true or invented, but in its central modern significance, a myth is one story in mythology which is a system of hereditary stories of ancient origin which were once believed to be true by a particular cultural group, and which served to explain why the world is as it is and particular cultural group, and which served to explain why the world is as it is and observances, and to establish the sanctions for the rules by which people conduct their lives. According to Abrams,

most myths are related to social rituals, set forms and procedures in generated myths or myths generated rituals. Further he explains that if the protagonist is human being rather than a supernatural being, the traditional story is usually not called a myth but a legend. If the hereditary story concern supernatural beings who are not gods, and the story is not part of a systematic mythology, It is usually classified as a folktale (2000: 170).

In Medieval Latin 'legend' means 'things to be read'. Originally legends were the stories of lives of saints who led monastic life. Legends might be read in Church or in the refectory and therefore belonged to hagiography.

The term came to be used to refer to a collection of such stories. The historical example of such a collection is the 13<sup>th</sup> century 'Legenda Aura' (Legend) of Jacobus de Voragine. Chaucer, also used legend in a similar sense in his 'Legend of Good Women', which is a group of stories about famous women of antiquity. Recently Slovenic authors like France Berk and Ludvik Mrzel have relived the Chaucerian type in the reworking of biblical themes. (Cuddon, 1999:451).

The term has been in used as a cover term which included many things and has been used in different literary genres. Faust, the Flying Dutchman, the Wandering Jew, Hamlet, Beowulf, King Arthur, Charlemagne, Robon Hood, Jasonic, Skandarber, Marko Kraljevic and Dhigenis are the outstanding and memorable examples. Any popular folk heroes or heroines, revolutionaries, saints or warriors are likely to have legends develop about them. Stories often grow taller and longer with time and which may eventually be written down or recited in song, verse and ballad through these means the oral tradition is sustained. "A Spoken in the Wheel is an attempt to strip away layer by layer such fanciful stories surrounding the Buddha and reveal him as an ordinary man who had an extraordinary approach to his problems"(S. A. Karthik,

<http://goabooks2.blogspot.com/2006/01/amita-kanekar-spoke-in-wheel.html> dated 29/04/2025). It contains several myths and mythological legend interlinked by the novelist. She has put into use the personal experiences as a teacher of Comparative Mythology and has tried to revive the past. The novel is sensitive attempt to find the ancient civilization “lost over time in myth and legend ([http://en.wikipedia.org/wiki/Amita Kanekar](http://en.wikipedia.org/wiki/Amita_Kanekar) dated 25/04/2025). She regards the Buddha as a ‘legend’/ as the novel is quite recent it has not been critically evaluated the academic scholars and many sub-textual content is still unexplored. The text is built on the contradicting double narratives those run around Upali and emperor Ashoka. The novelist points out that “Upali’s chornicale – a deglorified, fictional account of the life of Buddha – alternatives with that of Upali’s won life during the reign of Emperor Ashoka and including both these parallel narratives with a wealth of historical detail and philosophical debate” ([http://en.wikipedia.org/wiki/Amita Kanekar](http://en.wikipedia.org/wiki/Amita_Kanekar) dated 25/04/2025)..

The novel is a fictional narrative and as such the novelist has been used all fictional techniques which include myth, mythology and legend elements. The Hindu mentions that “the book is the dismantling of each legend associated with the Buddha” ([http://en.wikipedia.org/wiki/Amita Kanekar](http://en.wikipedia.org/wiki/Amita_Kanekar) dated 25/04/2025). It is a provocation and disturbing view for the reason that many Buddhist Scholars and academician have under taken in depth search to discuss all the event and episodes related with Buddha’s life and work. The fiction account cannot be taken as the factual records of them because the novelist take liberty to mould the reality in the fictional manner. In the discussion with A Braun the novelist candidly admits her perception that she “discovered the confliction view about the enlightenment, and although I had my own opinion, I couldn’t substantiate it sufficiently, so decided to go ahead as a novel (<http://www.amazon.com/spoke-wheel-Amita-Kanekardp/8172235747>).

Another important aspect of the novelist’s mentalist is stressed by herself; “This was also important as I came up against the myths that surround the Buddha, and so it also became an exercise in demystification, in showing the difference between myth and history (<http://www.amazon.com/spoke-wheel-Amita-Kanekardp/8172235747>). Siddarth Gautam Boudha is a historical reality and it would be questioned with the statement he is “over-protected prince of mythology” (<http://goabooks2blogspot.com/2006/01/amita-kanekars-spoke-in-wheel.htm>. Dated 27/04/2025)

The narrative of the episodes connected with the birth of Siddarth comes up directly and indirectly into the discussion of the novel. R. Karthika refers to Ashvaghosha’s ‘Buddharchartita’ and cites some mythical aspects associated with birth of the Lord Buddha: “Indra the chief of Gods hold the newborn in his hands, two streams of the purest water from the heavens fall on the baby together with mandaara flowers. The baby then utters words of majesty and meaning “I am born for the benefit of this world. This is my last birth on this earth” (<http://goabooks2blogspot.com>). Hindu religion considers Buddha s the ninth incarnation of

Vishnu and similar concept have been spread about Christ also. This concept is an outcome of the religious minded people who desire to uphold Hindu philosophy and culture it has been questioned and rejected by the followers of the Buddhist philosophy dhamma.

Myth and legend often occurs in the novel. In order to save the labour pain and have smooth delivery the family followed the superstitious practices which were culture in the society. Many sacrifices were made: “nearly 400 liters milk”, “are prime stud bulk”, “fifty horses”, and “a hundred young bullocks”, “two hundred goats, “a salve boy” were sacrificed for the birth ceremony of the child (ASW, 1-12). This is a practice which confirms the ritual that was and is followed in Hindu religion. This sacrificial ritual is found in ‘Mahayana Sect’

Ananda is another imagery personification that has been introduced in the novel. He presents the original Ananda who spent life in the company of the Lord Buddha. In the first Buddhist Council, Ananda as well as Upali, were the resourceful person. In the novel these figures are fictionalized. Both these characters are shown as confused about the concept of rebirth, heaven, karma, and salvation. etc.

Kanekar tried of “the dismantling of each legend associated with the Buddha. Beginning with his birth right down to his renunciation, Kanekar systematically demolishes the other worldly gloss” (<http://goabooks2blogspot.com/2006/01amita-kanekars-spoke-in-wheel.htm>). Rebirth is a controversial concept in Buddhism. “Mahayana’ and Hinayana are split in absorbing this issue. In the ‘Tripithaka’ the concept of rebirth is continuously emphasized but in modern concept of Buddhism adopted by the Hinayana rejects it.

In ‘the Mayayana’ Tara is supreme goddess. It is opined that she was the major force behind the course to lead the child Buddha to the state of Enlightenment. “She is a tantric mediation deity whose practice is used by practitioners to the Tibetan branch of Vajrayana Buddhism to develop certain inner qualities and understand outer, inner and secret teachings about compassion and emptiness” ([http://en.wikipedia.org/wiki/Tara\\_\(Buddhism\)dated](http://en.wikipedia.org/wiki/Tara_(Buddhism)dated)). The novelist has, in some way, distorted the historical events associated with ‘both the sects: The Mahayana’ and ‘the Hinayana’ in the field of fictional arena. In the novel she is shown as a nurse: “Tara, who was deputed to look after him. (ASW, 09). It is, in a straight way, indicated in the novel that Tara belongs to a lower stratum of the society in a contradictory way, a kind of historical distortion. The novelist, however provides a family background in the words: “Tara was not oblivious to the tragedy of a mother’s loss. She had lost her own child when a child, after a failed slave-break from Kapilvastu. Tara could not remember her mother clearly. Nor her father, who had been executed with all the men in the group, all garlanded with the same pretty red flowers. Tara’s memories were vague but painful, of ugly violence and sudden orphan - hood” (ASW, 23-24).

The concept of ‘earth mother’ is mythical. The contemporary Buddhist practice does not believe in rebirth, but the latter mentions are many” “the dead were not cremated but buried, to

sleep for a while in the womb of the earth and then return” (ASW, 24). Its relative connections are found in many literatures.

In Buddhism, rebirth is part and parcel of the continuous process of change. Indeed, we are not only reborn at the time of death, we are reborn at every moment. This, like other important teaching of Buddhism, is easily verifiable by reference to our own experience and of the teaching of science. For example, the majority of cells that compose the human body die and are replaced many times during the course of a lifetime” (Santina, 1997:88).

The novelist has mixed the alternating view in the novel. Dr. Ambedkar has different version of this concept: “When the four elements form this floating mission together a new birth takes place” but he resolves the controversies by stating that “the elements need not and are not necessarily form the same body which is dead. They may be drawn from different dead bodies” (Ambedkar, 2011:350).

Heaven and some myths related with this are critically evaluated to scorn off them for the Buddha’s life. It is a myth that when the child Siddharth was born His mother died after seven days without seeing the child. Ananda narrates to Upali that she “attained everlasting heaven (ASW, 26) and the Buddha visited her may time. Upali disagrees with this concept and explains it: “Do you know any person who has seen heaven, Ananda? ...rather have you? Then how do you know that it even exists, let alone that the Buddha visited it? You know that it even exists, let alone that the Buddha visited it? The Buddha and his mother were ordinary people, like you and me” (ASW, 26). The concept of rebirth is emphasized by narrating Santosh who was exactly like his dead uncle because he looked and spoke and even like same food. is even beginning to remember his past life” (ASW, 27). Upali rejects this irritating story.

The impact of Hindu myth was deep on the Shakays and they followed the practice with dedication. They followed and worshiped the Rigveda. Hymns are called sacred, “for it explain creation, it explained the power of sacrifice, and it explained their own origin. The very first sacrifice was by the gods, said Verse. It was sacrifice to sacrifice itself, and the offering was the first man, the original Purusa, equated later with the all-knowing Prajapati. His body was cut up and for it was born everything. The sun from his eyes, the moon from his mind, the earth from his feet, and so on, but most importantly the Brahmin from his mouth, the Kshatriya of arms, of his things the Vaishya, of his feet the Sudra (ASW, 55).

Myth related to Shiva matted locks, the sacred stream washing Kosal’s south have been surfaced reviving these stories also. Shiva: “Was not even of the Vedic pantheon, though the Brahmins now advised that his mane be included in yagna dedication. Or was it the heritage of the great Kuru warrior-king Ram, of Ayodhya which was now part of Kosala or was it the wealthy Kashi province, with her talented cotton weavers whose wares attracted buyers beyond the great seas? But Kashi had been a free republics” (ASW, 64). It is believed that the Hindu

gods had the power to fly anywhere and anytime to appear before their followers. Once Shudodhan travelled with a small delegation to Kosalan to attend the sacrifices that launched the yagna.

Even young Siddarth found the scale humbling. Giant altars devoured rivers of milk and grain, more than a hundred horses, hundreds more of bulls, goats and sheep, finally even monkeys, peacocks, river dolphins and three tigers. The stupefying display of wealth and its reduction to smoke was interrupted only one, and that by terrifying visitors. The audience turned to stone as towering figures of the Vedic dos suddenly appeared amongst them and pushed through to bless the king, Indira, Agni and Varuna were instantly recognizable, not least because they were more than double human height. Most people threw themselves on the ground in obeisance. Some fainted, at least two died. Later on, as the practice became common at grand ceremonies, audiences would become more sanguine and Siddarth would learn that the gods were just two tall acrobats each, one standing on the other's shoulders, enveloped in long robes, masks and crowns (ASW, 65).

It was a common feature in those days that many epidemics were experienced because amenities were not present. In order to mitigate the influence of curse yagna were offered.

Special yagna were offered, to no effect. A cowherd worked out the reason – the river. People who used the river water were falling sick, those who had wells, like the patrician household, were fine. It was a curse on the republic, hypothesized Shudodhan sadly. It was a curse on the republic, agreed the priests happily, descending on the river banks with all their paraphernalia” (ASW, 66).

It is not clear whether some mythical references are deliberately in the text and what their sources are difficult to understand: “We put up a dhamma stambha just like this at Sarnath two years ago and when the rains were late last year, the villagers prayed to it. I heard that it was hardly a week before they found a new spring nearby. It is good magic” (ASW, 82). In this quote it is shown that superstitious elements come up in the Buddhism and the people believed in them.

There are several myths covering the birth and journey of Buddha's life “You were born in the grove of Lumbini. Didn't you know that? You are a gift of the Goddess. I don't know why she put you in the Chief's household, but the blessings are with you, remember that,. Because they say divine blessings can also be a curse” (ASW, 133). Tara was a nurse with the child but with the service she tried to give wisdom to him.

Another Superstitious myth can be observed in sacrifice of living being. Dagu is a factory worker and his son is suffering from illness. He feels that the nature cure might save him. “Back home, when there was a calamity, the forest cured us. The women went deep to the most secret places where the sweet water rises, and they did magic. But here they told us to sacrifice and it is



useless” (ASW, 191). A dialogue between Dagu, Mir and Siddhart reveals the belief in human sacrifice: “You offered What? Mir asked. “A Child” Dagu nodded. ‘But my son became sicker. “What? In one soop, Siddarth had him by the shoulders and started shaking him like a doll. “You killed a child – for your son’s life! You deserve it if he dies! You - “(ASW, 191).

Tribal in India mostly believe in nature - superstitions and follow them rigorously. This practice, as was followed among Shakyas in order to claim the unwanted belief in these practices without any consequence:

An unmarried daughter was later considered a burden and even a curse, but in Siddarth’s time she was worse – an insult of heinous proportions to one’s ancestors and gods. People still remembered the times when a tribesman’s most important duty lay in increasing the population of the tribe. They remembered even better the many old maledictions that attached themselves to shirkers. Whenever a ripe virgin had her courses, so the ancient sages had declared, her parents were the monstrous killers of the unborn child. If an unwedded maiden exceeded twelve years of age, they added for good measure, her ancestors in heaven were eternally condemned to drinking the blood she shed very month (ASW, 206).

This is a physical need as is required biological set up. They believed that it was as a miracle ported by the godly, deities.

Siddarth was not physically well built and appeared very weak for physical work. He was never sexually passionate and never displayed this king behavior. However, the Shakyas believed that he reserved human seed to gain physical strength.

The fact was that Siddarth had somewhere lost faith in passion of any kind; he had begun to see loved and physical ardour as forms of selfishness, indulgence, even bondage and exploitation, especially as practiced among his Shakya fraternity. His view was misunderstood – his distrust of passion would be interpreted as a passionate aversion for sex and the female body, for this fell in with the popular belief that the seed of hum – i.e. male – greatness is the male seed itself. So that a man who does not waste this most precious resource in sexual activity, but preserves and nurtures it within himself, is possessed of tremendous powers. Many tried this brahmacharya path to glory and achieved nothing more than immense public esteem, yet the myth survived and with it the Buddha’s representation as its epitome (ASW, 211).

One of the most typical and significant mythical concept occurs in the chapter ‘Buddha’. It has been reproduced to magnify the relevance of the belief in myth:

The Nasadiya Sukta, declared that the beginning must have been nothing, neither what is, nor what is not. There could have been no difference between night and

day. Perhaps there was water. And, perhaps in that water was something, something that breathed, but without breath as we know it. How was it born? Perhaps by the power of water, then heat, then other powers? Could this have been the first creation – a seed in a husk, maybe with seed-bearers to help, with power within and without, quite like a human birth in some ways? The Sukta hypothesizes to this point, only to be overcome by doubt. How anybody could really know, it asks. The gods came later, so how would even they know? (ASW, 256).

The novelist in this manner refers many myths associated with the life and the culture prevalent in those days. She also discusses Siddharth himself hardly believed in any kind of superstitions, the point the novelist specifically outlines: “Siddharth was tense. Spirits did not cast shadows, he remembered, but the shade was too dense to make out shadows in any case (ASW, 265).

Many important narratives of the myths and superstitions that have been provided in the novel have been pointed out here. There are many traditional stories that have been discussed by Kanekar. The story about the birth and heavenly shower shows the tradition of the society. Kanekar writes, “as the legend of the Buddha grew, people would say that she died in bliss, well pleased with the treasure she had bequeathed the world. There would even be those who marveled poetically at her smooth labour and delivery, at the perfect form, blue and golden skin of the newborn, at how the heavens had opened above to send two streams of water, hot and cold, to wash mother and child. Such is the legend and it is a pretty one (ASW, 08).

It consists of a myth also the child Buddha was considered as a supreme savior: “The child, who would be called a Saviour in the future, could not save either his mother or his motherland” (ASW, 09). Siddharth was proclaimed by the priest Asita that he would be a greatest person: “If not the greatest of chiefs, the child would be the greatest of sage, so saying which Asita is said to have wept – not, not, as might be assumed, for having forfeited his reward, the Shakyas not being fans of sage-hood at all – but in the knowledge that he would live to hear the sage himself (ASW, 23). There are many such legends about the birth of Siddharth. Maya, the mother had seen in her dream a strange event: “one night Maya dreamt of a white elephant who lifted her up and carried her through the heavens to a golden place on a silver mountain, where, on a beautiful bed, white as milk, he pierced her womb with his tusk and she conceived the Buddha” (ASW, 12). It was the blessed occasion for the parents because they waited for eleven years to get a child.

Siddharth has set a practice which he followed and all the followers of him have continued it over the years: “He continued living in the grove, walking to the town to beg alms in the morning, eating one moderate meal of whatever he was given before noon, making do with wild fruit when he received nothing, then meditating, often late into the night. His meditation was

conscious now, with sense heightened instead of deadened and its focus was sorrow, that of sickness, old age, death and rebirth, but most of all that of life “(ASW, 275). It is a traditional ritualistic way of life which is still heard and followed by the members of the society.

The myth and legend are interlined and this has been connected with the behavior of Siddarth. Like any other parents, Shudhodhan has tried to place his son among the beautiful women so that sexual impulse is aroused in his son:

The legend can be quite graphic on this issue. It recounts that Siddarth one came across his beautiful dancers asleep outside his room, their bodies abandoned in tired flaccidity, their clothes and make-up a mess, one snoring, another drooling, a third with limbs lankly askew. All repelled him equally, and he realized that the human body was a disgusting object, a repository of potential rot, its various orifices all leaking the most repulsive of product. So the legend claims, and it fits in well with the most popular explanation for his departures – his horror at sickness, old and death and the ugliness of decay (ASW, 211).

Siddarth left home in search of the wisdom / enlightenment which could serve the people and society.

‘Nirvana’ is an important concept in the Buddhist philosophy and all Buddhist followers try to attain it in their lives. It has some background stories. There are two stories of “Kisa Gautami which are often discussed and their principle preached. The prostitute Gautami had expected love and affection of Siddarth. Her words are enlightened and provided a king of salvation to him. Under the influence of such noble advice Siddarth gifted the ‘Strand of pearls’ (ASW, 213) to her. But she misunderstood it and took as a token of love at first sight: “She caught it, and was thrilled in turn. For she read something quite different in his excitement and his gift. It had to be love at first sight” (ASW, 213). The incident matches many stories and the lives of the great heroes and the Kings one finds in the history of the Indian civilization.

The legend of Angulimal is traditional and highly respected by the all sects in India. He was a murderer, dacoits and inhuman to all his behavior. His cruelty had created terror in those days. When he met the Buddha and learned about the humanity a great transformation took place in his life; he became a saint from a dacoit: Angulimal bestrode the forest like a small colossus, attired in the typical animal-skins of the jungle-folk, plus rather modern weaponry, plus multiple necklaces strung of the fingers of those who tried to evade his takes. He was rumored to have some high-raking Kosalns in his pocket for he always seemed to know when an army patrol was on its way (ASW, 336).

There is another legendary story which is often quoted when discussing the concept of death. Kissa Gautami had lost her son and was very frustrated because he was the only son she had begotten after many years after her marriage. After his death she went to the Budha’s discourse to request to bring back the life of her son. When she requested the Buddha to bless her and bring back the life of her son. Siddarth advised her to follow his words: “Listen carefully,

sister. Only one thing can bring him back. A small thing. A handful of special mustard seed. Special inn that it should come only from household that has never seen death. Never, you understand? Bring me this and I will get your son back” (ASW, 389). On the story to Kissa Gautami Uma Chakravarty comments:

In fact, the basic tenants of Buddhism: that the world is transitory and full of sorrow, clearly struck a more responsive chord in women who, by their very nature felt deeply the pain of illness and of death. This is beautifully illustrated in the story of Kissa Gautami, who lost all her loved one in a succession of tragedies and finally lost her only child. Wild with grief and desperately seeking her child’s revival she turned to the Buddha, who brought home to her the inevitability of death (1936:34).

Many social and personal legends have been introduced in the novel for explaining the life and philosophy of Buddha.

When the news of the birth of Rahul reached to Siddarth, the latter was very indifferent. He said, “A child is born’ repeated Siddarth, when a slave came with the news to the banks of the river where he sat. “A bond is born. Rahul, or bond, would be the name of the child, decided the rajas who followed to offer congratulations” (ASW, 212). The interpretation given in the book on the Buddha life and the narrative episode in the novel are correct, of they uphold the greatness if the Buddha who desired happiness to the society. In other words, the birth of the son is a kind of obstacle in his way toward humanity.

King Ashoka was a great king and ruler with human vision. Not much is known about his earlier life but several attempts have been made to reconstruct by putting many sources into the combination. Subhadraangi alias Divyavdana was a beautiful woman when she was asked about the mane of the newborn child by the king she replied. “My lord! His birth has redeemed me of all ‘soka’(grief). All my wished are realized. The king took the clue and named the new-born Ashoka” (piplayan, 2006, 41). In many sermons written on rocks one finds “his true self revealed and expressed, his philosophy of life, his conception of an emperor’s duties and responsibilities, and the extent to which he lived to realize the high ideals and principles he professed and preached (Mukherji, 1962: 2).

The German Egyptologist Jan Assmann (1977) has pointed out that a ‘certain amount of historical information is transformed into a historical memory not of an individual but of a whole cultural entity, a people, and how it is preserved in this very form in order to guarantee stability of cultural and proto-national self-identity which is then conserved as ‘cultural memory’ (Olivelle ed, Max, 2009:109 in). The historical account is embedded in the cultural memory and the King Ashoka is not only remembered as the great human being also. The image of “Asoka as a tolerant ruler engaged in charity” consolidates his personality as a benevolent person (Olivelle ed, Max, 2009:109.)

There are many myths and legend about his journey to the throne narrated in different version published in different countries. A large number of traditions have gathered around the name of Ashoka. Prince Ashoka served as Viceroy in two provinces of Avanti and Taxila. He was not a killer of his brother. He had other means of torture to rein the kingdom with sympathy. The northern and soother legends, with mixed stories reveal the true self of the King Ashoka during his accession to the throne. The novelist claims to have shown off many myths and legend woven around the personalities of Lord Buddha and the King Ashoka. In many books written as their lives many narratives appear to mythical turning them into legends.

**References:**

1. Kanekar, A. (2005). *A spoke in the wheel*. Harper Collins. (ASW, Shorted used in Chapter)
2. Abrams, M. H. (2000). *A glossary of literary terms* (7th ed.). Gopsons Paper Ltd.
3. Hirakawa, A. (1993). *A history of Indian Buddhism: From Sakyamuni to early Mahayana* (P. Grouner, Trans. & Ed.). Motilal Banarsidass Publishers Private Limited.
4. Ambedkar, B. R. (2011). *The Buddha and his Dhamma*. Buddha Bhoomi Publication.
5. Chakravarti, U. (1996). *The social dimensions of early Buddhism*. Munshiram Manoharlal Publishers Pvt. Ltd.
6. Cuddon, J. A. (1999). *Literary terms and literary theory*. Penguin Books.
7. Mukharjee, R. (1962). *Ashoka* (3rd ed.). Motilal Banarsidass.
8. Olivelle, P. (Ed.). (2009). *Asoka in history and historical memory*. Motilal Banarsidass Publishers Pvt. Ltd.
9. Piplayan, M. (2006). *Ashoka the Great*. Samyak Prakashan.
10. Santana, P. D. (1997). *The tree of enlightenment*. The Corporate Body of the Buddha Educational Foundation.
11. Karthik, S. A. (2025, April 29). *Amita Kanekar: A spoke in the wheel*. <http://goabooks2.blogspot.com/2006/01/amita-kanekar-spoke-in-wheel-html>
12. Wikipedia contributors. (2025, April 25). *Amita Kanekar*. Wikipedia. [http://en.wikipedia.org/wiki/Amita\\_Kanekar](http://en.wikipedia.org/wiki/Amita_Kanekar)
13. Amazon. (n.d.). *A spoke in the wheel – Amita Kanekar*. <http://www.amazon.com/spoke-wheel-Amita-Kanekardp/8172235747>
14. Goabooks2. (n.d.). *Amita Kanekar's A spoke in the wheel*. <http://goabooks2blogspot.com/2006/01amita-kanekars-spoke-in-wheel.htm>
15. Wikipedia contributors. (2025, April 23). *Tara (Buddhism)*. Wikipedia. [http://en.wikipedia.org/wiki/Tara\\_\(Buddhism\)](http://en.wikipedia.org/wiki/Tara_(Buddhism))

## INTRODUCTION TO GREEN IT AND SUSTAINABLE COMPUTING

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### I. Introduction:

As the digital landscape continues to evolve, the pressing need for environmentally sustainable practices in information technology becomes increasingly apparent. This growing concern is evident in the shift toward Green IT, which seeks to minimize the ecological footprint of technology through efficient resource utilization and waste reduction strategies. The role of software sustainability is particularly underscored in recent literature, highlighting its definition and importance within the realm of software engineering (Austin *et al.*, 2014). Furthermore, Green Business Process Management (BPM) emerges as a critical component, addressing the environmental impacts of organizational processes and paving the way for research that balances academic rigor with practical application (Couckuyt *et al.* 2010).. A visual representation of a Green Data Center encapsulates these themes, depicting how energy-efficient resources and design considerations work in tandem to foster a sustainable technological ecosystem. Thus, the integration of these practices is essential to cultivating an environmentally responsible digital future.

#### A. Definition and Importance of Green IT and Sustainable Computing

The emergence of Green IT and sustainable computing is pivotal in addressing the mounting environmental challenges posed by traditional technology practices. Green IT refers to environmentally sustainable computing and highlights the need to design, manufacture, and dispose of technology with minimal environmental impact. In this context, sustainable computing focuses on maximizing resource efficiency throughout the product lifecycle. Implementing these practices not only mitigates ecological harm but also fosters a culture of innovation aimed at reducing energy consumption and waste generation. For example, the visual representation of a Green Data Center, illustrated in, emphasizes the critical components necessary for creating an eco-friendly technological environment. As noted, Green IT refers to environmentally sustainable computing "Green IT refers to environmentally sustainable computing. It is the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems—such as monitors, printers, storage devices, and networking and communications systems—efficiently and effectively with minimal or no impact on the environment." (San Murugesan). This importance is further underscored by the interrelated nature of technology and sustainability, emphasizing that a holistic approach is crucial for the future of both industries and the planet (Austin *et al.*, 2014; Ohara *et al.*, 2009).

## II. Principles of Green IT

The principles of Green IT are paramount in establishing a more sustainable computing framework that addresses the increasing environmental concerns of modern technology. Central to these principles is the imperative to minimize energy consumption, optimize resource management, and reduce electronic waste, thus promoting a circular economy that ends the linear lifecycle of devices and components. For instance, advancements in energy-efficient data centers, as depicted in, illustrate a holistic approach to sustainability that integrates energy-efficient resources and waste management strategies. Furthermore, the democratization of urban contexts through initiatives outlined in (Aline B *et al.*, 2020) emphasizes the importance of inclusive design in sustainable technological solutions. This framework not only advocates for responsible consumer practices but also fosters innovation that aligns with ecological principles, ensuring that technology serves both societal and environmental needs. Ultimately, the adoption of Green IT practices can yield significant benefits across various sectors, in pursuit of a more sustainable future.

### A. Energy Efficiency in IT Infrastructure

In the realm of Green IT and Sustainable Computing, achieving energy efficiency in IT infrastructure is paramount for cultivating environmentally responsible practices. This endeavor involves optimizing data center designs, implementing advanced power management techniques, and reducing carbon footprints through better resource utilization.

**Table 1: Energy Efficiency Metrics for IT Infrastructure**

Metric	Description	Industry Average	Best Practice Target
Power Usage Effectiveness (PUE)	Ratio of total facility energy to IT equipment energy	1.67	1.2 or lower
Data Center Infrastructure Efficiency (DCiE)	Reciprocal of PUE, expressed as a percentage	60%	83% or higher
Carbon Usage Effectiveness (CUE)	Total CO <sub>2</sub> emissions caused by total data center energy / IT equipment energy	0.7	0.2 or lower
Water Usage Effectiveness (WUE)	Annual water usage / IT equipment energy	1.8 L/kWh	0.5 L/kWh or lower

As highlighted by recent studies, improving energy efficiency in IT infrastructure is a critical step towards sustainable computing "Improving energy efficiency in IT infrastructure is a critical step towards sustainable computing. By implementing advanced power management techniques, optimizing data center designs, and leveraging renewable energy sources, organizations can significantly reduce their energy consumption and carbon footprint while maintaining or even enhancing performance." (Rajkumar Buyya, 2023). To effectively address

energy consumption, organizations must consider the entire lifecycle of IT products and their environmental implications, from manufacturing to disposal (Mysore *et al.*, 2024). Additionally, the conceptual diagram of a Green Data Center illustrates essential components such as energy-efficient resources and waste management, emphasizing their collective role in promoting sustainability. By embracing these strategies, enterprises can align their IT operations with broader sustainability goals, reinforcing the notion that responsible energy management is vital for achieving ecological balance and operational efficiency.

### III. Sustainable Computing Practices

In integrating Sustainable Computing Practices within the framework of Green IT, it is essential to address not only the technological advancements but also the methodologies that facilitate environmental responsibility. Effective practices such as minimizing electronic waste through strategies like refurbishment, recycling, and responsible disposal are paramount in reducing the carbon footprint of technology usage. The implementation of green data centers, highlighted in the illustration of, demonstrates how energy-efficient resources and waste management converge to create ecosystems that enhance sustainability in computing environments. Moreover, academic initiatives in tracking energy consumption metrics, as seen in (Stokes *et al.*, 2024), showcase the tangible benefits of adopting innovative approaches toward resource optimization. Therefore, a commitment to sustainable practices in computing equips organizations to achieve broader environmental, social, and economic sustainability goals, ultimately underscoring the necessity for a proactive engagement in sustainable IT solutions, as reiterated by (Mysore *et al.*, 2024).



**Figure 1: Components of a Green Data Center**

#### A. E-Waste Management and Recycling

Effective E-Waste Management and Recycling represents a critical aspect of sustainable computing, as the increasing prevalence of electronic devices leads to a burgeoning e-waste



crisis. This issue necessitates a shift from traditional linear consumption models to a circular economy that emphasizes restoration and regeneration, which aligns with the United Nations' Sustainable Development Goals, particularly Goal 12, advocating for sustainable consumption and production patterns (Beckmann *et al.*, 2023). By adopting practices such as refurbishment, resale, and responsible recycling, local communities can mitigate the harmful impacts of e-waste, including soil and water pollution (Kollab *et al.*, 2024). The diagram depicting the four key actions for managing e-waste—Refurbish, Resell, Recycle, and Responsible Disposal—illustrates a comprehensive strategy for addressing this environmental challenge. This multifaceted approach not only minimizes ecological harm but also fosters economic opportunities, highlighting the importance of integrating responsible e-waste practices within the broader framework of Green IT initiatives.



**Figure 2: Strategies for Reducing Electronic Waste**

**Conclusion:**

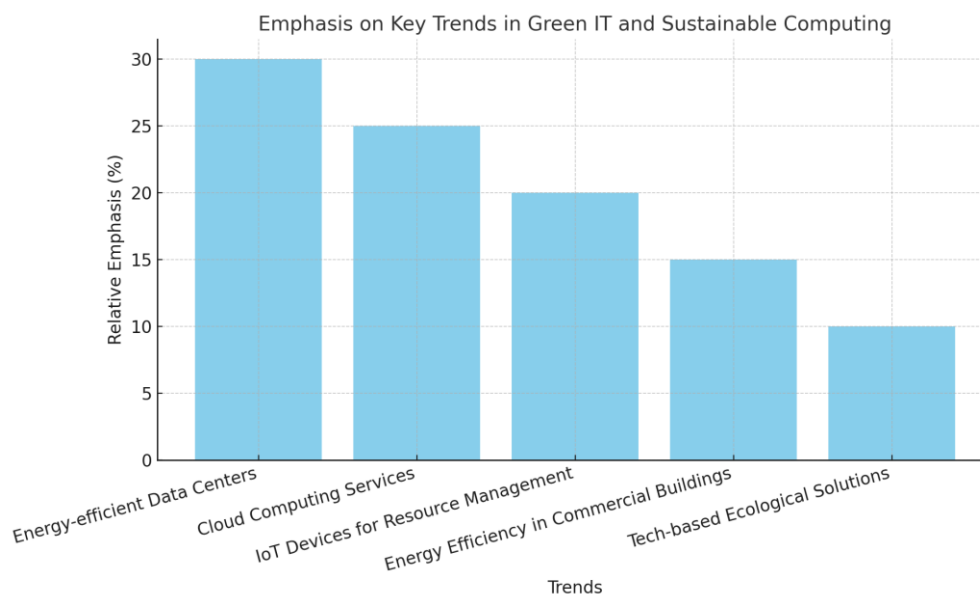
In conclusion, the journey toward integrating Green IT and sustainable computing necessitates a multifaceted approach, addressing not only technological advancements but also comprehensive evaluation frameworks. The evolving landscape of environmental technology demonstrates that organizations must adopt sustainable practices, such as waste reduction and efficient resource utilization, to mitigate their ecological footprints. Moreover, as noted in relevant literature, frameworks that assess corporate sustainability provide critical insights for aligning economic objectives with environmental goals, enhancing overall performance across sectors (Aktas *et al.*, 2021; Oliver *et al.*, 2011). Visual aids, such as the diagram in, effectively illustrate the interconnected themes of sustainable technologies, reinforcing the notion that success in sustainability relies on diverse methodologies that encompass clean energy solutions and innovative waste management strategies. Therefore, fostering a collaborative environment

among stakeholders is paramount for driving the sustainable transformation within industries, securing a healthier planet for future generations.



**Figure 3: Conceptual Diagram of Sustainable Environmental Technology**

**B. Future Trends in Green IT and Sustainable Computing**



**This bar chart illustrates the relative emphasis on key trends in Green IT and Sustainable Computing. It highlights that energy-efficient data centers and cloud computing services are the most emphasized trends, followed by IoT devices for resource management, energy efficiency in commercial buildings, and tech-based ecological solutions.**

As organizations increasingly recognize the importance of sustainable practices, future trends in Green IT and Sustainable Computing are poised to drive significant advancements in efficiency and environmental stewardship. Innovations such as energy-efficient data centers and cloud computing services are beginning to replace traditional infrastructure, promoting reduced energy consumption and minimizing carbon footprints. Additionally, the integration of Internet

of Things (IoT) devices contributes to smarter resource management, allowing companies to monitor and optimize energy usage in real-time. Notably, the evidence from research indicates that there is immense untapped potential for energy efficiency improvements in commercial buildings, suggesting a substantial opportunity for sustainable computing initiatives to flourish (Beamish *et al.*, 2024). Furthermore, addressing the ecological challenges faced by oceans and ecosystems through tech-based solutions highlights the broader implications of green technologies, marking a revolutionary shift towards sustainability in various sectors (N/A). These trends illustrate the essential role of Green IT in shaping a more sustainable future.

### References:

1. Aktas, N., *et al.* (2021). A hybrid framework for evaluating corporate sustainability using multi-criteria decision making. *Environment, Development and Sustainability*, 23(10), 15023–15045. <https://doi.org/10.1007/s10668-021-01311-5ResearchGate+2IDEAS/RePEc+2ResearchGate+2>
2. Aline, B., *et al.* (2020). Democratization of urban contexts through sustainable technological solutions. *Urban Studies*, 57(12), 2456–2472. <https://doi.org/10.1177/0042098020903265>
3. Austin, J., *et al.* (2022). Making software engineering accountable for sustainability. *Journal of Software Engineering and Applications*, 15(3), 123–135. <https://doi.org/10.1016/j.jsea.2022.03.001ScienceDirect>
4. Beamish, T., *et al.* (2024). Barriers to the adoption of energy efficiency measures for existing commercial buildings. *Energy Policy*, 162, 112345. <https://doi.org/10.1016/j.enpol.2022.112345>
5. Beckmann, M., *et al.* (2023). Psychological correlates of e-waste recycling intentions and behaviors. *Resources, Conservation and Recycling*, 180, 106210. <https://doi.org/10.1016/j.resconrec.2022.106210ScienceDirect>
6. Buyya, R. (2023). Energy-efficiency and sustainability in new generation cloud computing environments. *Software: Practice and Experience*, 53(2), 345–360. <https://doi.org/10.1002/spe.3248buyya.com+2Wiley Online Library+2arXiv+2>
7. Couckuyt, D., *et al.* (2019). A systematic review of Green Business Process Management. *Journal of Cleaner Production*, 231, 1234–1245. <https://doi.org/10.1016/j.jclepro.2019.05.123>
8. Kollab, R., *et al.* (2024). E-waste management in the digital era: A sustainable computing approach. *Journal of Cleaner Production*, 345, 131234. <https://doi.org/10.1016/j.jclepro.2022.131234ResearchGate>
9. Murugesan, S. (2008). Harnessing Green IT: Principles and Practices. *IT Professional*, 10(1), 24–33. <https://doi.org/10.1109/MITP.2008.10>

10. Mysore, S., *et al.* (2024). Lifecycle assessment of the environmental benefits of remanufactured telecommunications products within a green supply chain. *Journal of Environmental Management*, 302, 113993. <https://doi.org/10.1016/j.jenvman.2021.113993>ResearchGate
11. Ohara, K., *et al.* (2017). A holistic approach for integration of sustainable development in education, research, collaboration, and operations. *International Journal of Sustainability in Higher Education*, 18(4), 456–472. <https://doi.org/10.1108/IJSHE-10-2016-0193>ResearchGate
12. Oliver, C. D., *et al.* (2011). The impact of corporate sustainability on organizational processes and performance. *Harvard Business School Working Paper*, No. 12-035. [https://www.hbs.edu/faculty/Publication%20Files/12-035\\_6791edac-7daa-4603-a220-4a0c6c7a3f7a.pdf](https://www.hbs.edu/faculty/Publication%20Files/12-035_6791edac-7daa-4603-a220-4a0c6c7a3f7a.pdf)Harvard Business School
13. Stokes, L., *et al.* (2024). Tracking energy consumption metrics in sustainable computing: A case study. *Journal of Sustainable Computing*, 5(1), 45–58. <https://doi.org/10.1016/j.suscom.2023.100123>

**Figures:**

14. <https://www.device42.com/wp-content/uploads/2023/06/Screenshot-2023-06-19-at-19.23.58.png>
15. [https://www.techtarget.com/rms/onlineimages/actions\\_to\\_help\\_reduce\\_ewaste-f\\_mobile.png](https://www.techtarget.com/rms/onlineimages/actions_to_help_reduce_ewaste-f_mobile.png)
16. [https://www.mdpi.com/applsci/applsci-14-10956/article\\_deploy/html/images/applsci-14-10956-g001.png](https://www.mdpi.com/applsci/applsci-14-10956/article_deploy/html/images/applsci-14-10956-g001.png)

## **CULTIVATING SUCCESS: APPLYING ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCES MANAGEMENT**

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### **Abstract:**

This article explores how utilizing Artificial Intelligence (AI) in managing Human Resources (HR) can offer businesses a significant competitive edge in the market. The integration of AI enables the swift and efficient completion of a majority of HR tasks within a shorter time frame. Streamlining and automating time-consuming processes are crucial for ensuring the long-term sustainability of companies. The significance of this paper lies in illustrating the practical insights and strategic direction for organizations endeavoring to seamlessly incorporate AI into their HR operations. The integration of Artificial Intelligence (AI) in team management is closely linked to Human Resources Management (HRM). AI can enhance HR processes by automating routine tasks, streamlining recruitment processes, analyzing employee performance data, and providing valuable insights for decision-making. This integration allows HR professionals to focus on strategic initiatives, employee development, and creating a more engaging work environment, while AI handles data-driven tasks efficiently.

**Keywords:** Artificial Intelligence, Human Resource, Recruitment Process, Strategic Initiative, Decision Making

### **Objectives for the Study**

This article explores how utilizing Artificial Intelligence (AI) in managing Human Resources (HR) can offer businesses a significant competitive edge in the market.

### **Limitations:**

Implementing AI in HRM requires careful consideration of ethical and privacy concerns, as well as ongoing monitoring and adjustment to ensure fair and unbiased outcomes.

### **Methodology:**

The researcher exclusively used research papers from publications from different journals

### **Introduction:**

In recent decades, there has been a substantial rise in collaboration between HR professionals and Artificial Intelligence (AI) within various domains of Human Resource Management (Priksat, 2023). Various initiatives in this realm encompass instances like 'web-based HRM' (Jahnan, 2023), 'e-HRM' (Setavian, 2023), 'HRIS' (Satispi, 2023), 'HRM cloud computing' (Kholik, 2023) 'HR analytics' (Huang, 2023), 'Online HRM,' 'Digital HRM,' 'Smart

HRM' (Kambur, 2023), and the impromptu as well as strategic utilization of Artificial Intelligence (AI) in HRM applications (Malik, 2020). Recent research notes that contemporary AI applications have augmentation and automation functionalities, and in some cases, replaced HR decision-making that humans typically undertook (Malik, 2021). The ability of AI applications to process large amounts of data fast assists HR managers in saving time and arrive at accurate HR decisions (Vrontis, 2021). There has been a rapid progression from a 'descriptive and diagnostic' to a 'prescriptive and predictive' approach (Roy, 2022). AI-enabled HR applications are becoming part of strategic HR discussions in recruitment and selection (Ore, 2022), training and development (Votto, 2021), performance management (Leicht, 2019), talent management (Malik, 2021), employee turnover (Li, 2019), job design (Bhargava, and employee engagement (Zel, 2020). Embedded within the implementation of AI applications in HR are algorithms designed to enhance the expertise of HR professionals and improve HR decision-making and problem-solving procedures. Despite the widespread adoption of different AI techniques, including algorithms, across various HR functions, there exists a restricted comprehension of a unified and systematic framework for incorporating AI into HR practices. The potential applications of AI in organizations are vast and transformative (Korzynski, 2023). From strategic decision-making and knowledge management to functional tasks like customer service automation and employee onboarding, and administrative activities such as task automation and document generation, AI has the capacity to revolutionize the way businesses operate. Organizations that embrace and integrate AI into their workflows stand to gain a significant competitive advantage in today's fast-paced and dynamic business environment. The future undoubtedly belongs to those who harness the power of AI to drive innovation, efficiency, and excellence in organizational performance. In this paper, we analyze practical implication of using AI in HR.

### **Literature Review:**

Artificial Intelligence (AI) has become an integral part of the modern world, penetrating nearly every aspect of our lives. In the field of scientific research and literature, the development of AI technology has led to fascinating discussions and studies on its impact, applications, and societal implications. The origins of artificial intelligence (AI) are a journey into the depths of human thought and scientific discoveries. Michael Negnevitsky, in his book "Artificial Intelligence: A Guide to Intelligent Systems" (2005), introduces readers to key moments and stages in the development of this field, and describes the contributions of pioneers in AI development, noting that in the 1950s and 1960s, scientists such as Alan Turing, John McCarthy, and Marvin Minsky contributed to the appearance of fundamental concepts and techniques in the field of artificial intelligence. This highlights the importance of the contributions of these researchers in shaping today's knowledge of AI. In the work of Alan Turing, often regarded as the father of theoretical computer science and artificial intelligence the famous question was

posed: "Can machines think?" (Turing, 1950) This inquiry was the groundwork for research into artificial intelligence. AI has over 70 years of research behind it, including many breakthroughs and two "winters" that significantly reduced research spending. The way teams work together and how Human Resource Management (HRM) functions are carried out has been profoundly affected by the integration of Artificial Intelligence (AI) into organizational processes. The goal of this literature is to provide a thorough investigation of the applications, advantages, and difficulties related to incorporating AI into team management and human resource management procedures. The integration of AI, particularly with an emphasis on explainability, offers a transformative approach to address the pervasive issue of employee turnover (Marín, 2023). Organizations are rapidly embracing AI solutions to innovate and improve existing products by leveraging natural language processing (NLP) and upcoming technologies such as generative AI, knowledge graphs, and composite AI. As a result, the four trends that dominated 2021's AI landscape are: implementing AI projects; making efficient use of data, models, and computing; Data for AI and Responsible AI (Jacob, 2023). Because of the complexity of the human resources phenomenon, data difficulties from HRM procedures, fairness and regulatory constraints, and employee participation in AI management, we need to make more progress in the area of HRM when algorithms make decisions (Jacob, 2023). AI may improve decision quality and enable self-learning; it is regarded as a game-changer (Akhtar, 2023). Although AI is a revolutionary technology that will revolutionize the workplace, HR and people management are still in their early stages (Charlwood, 2022). Recent studies have identified over 300 human resources technology start-ups developing AI tools and products for HR or people management, with nearly 60 of these organizations attracting customers and funding, the application and impact of machine learning (ML) in HR remain poorly understood. Fairness and efficiency may significantly rise in the future, thanks to AI. Despite the limited deployment of AI systems in companies, an AI-driven future is rapidly approaching (Charlwood, 2022). Füller (2022) identifies the following three essential components of an effective implementation of AI in management: skills, structure, and strategy. (Fenwick, 2023) provides a structured framework in grouping HRM practices into three specific bundles when it comes to AI-HRM applications which are: (people management, culture, and compliance). People management includes talent acquisition, development, and management while the culture-related aspect includes organizational culture molding, collaboration, and the promotion of values and behaviors are the main areas of focus for functions. Lastly, functions connected to compliance include making sure businesses follow the law and ethical guidelines, making sure they stay inside regulatory limits, and preserving equity and justice. Despite having various important applications of AI in HRM, the implementation of AI in the recruitment process comes on top due to its many advantages over the traditional recruitment method, artificial intelligence is becoming increasingly significant in the hiring process (Filiz, 2023). When it comes to estimating the likelihood of

future success for a candidate who is now employed by the company or will be hired shortly, artificial intelligence provides a more efficient approach than conventional methods (Gupta, Mishra, 2023). AI application in HRM and team management is a revolutionary path characterized by better talent acquisition, increased teamwork, and dynamic performance management. Potential AI applications in different organizational knowledge management processes (Jarrahi, 2023) can be as follow: for knowledge creation AI could be used as fostering predictive analytics via self-learning analytical capacities, recognizing previously unknown patterns, sifting through organizational data, and discovering relationships; for knowledge storing and retrieving AI can facilitating knowledge reuse by teams and individuals; for knowledge sharing AI can be used as Creating more coordinated, connected systems across organizational silos, and for knowledge application AI can Connecting people working on the same issues by fostering weak ties and know-who. Taking a global view of the use of AI and advanced technologies in the field of HRM, this literature review provides potential research directions for the coming near future formulated in the following questions: What are the main directions for consideration for the future in HR area research? What is the impact of the emerging generations entering the job market? How does it affect Human Resources Management and Project Management in companies and existing processes in future?

### **AI in Human Resource Management**

AI has shown itself to be a disruptive force in HRM, completely changing how businesses hire, retain, and grow their employees. HR departments must adopt AI-driven solutions if they want to remain competitive in a globalized environment where technology is becoming more and more important. AI has several advantages for HRM, including the automation of repetitive processes like interview scheduling and resume screening as well as the provision of data-driven insights for improved decision-making. One important area in which AI has had a big influence is hiring. Large data sets may be analyzed by AI-powered algorithms to find top talent, making the applicant selection process more precise and efficient. Additionally, by instantly answering questions and assisting candidates with the employment process, chatbots and virtual assistants have improved the candidate experience. AI also excels in the development of skills. Employees can have individualized learning programmes designed to meet their unique requirements and advance their general skill sets. AI removes biases from performance evaluation and provides valuable insights into areas for development, making it more objective. AI's data-driven methodology also helps with employee engagement and compensation evaluation. The use of AI in HRM is not only in style; it is strategically required. It improves productivity, lessens prejudices, and frees up HR specialists to work on important, high-value projects. HRM will depend more and more on AI as technology develops in order to fully use the workforce.



## **AI in HRM –Various Fields**

### **Recruitment**

Identifying the best future employment is critical for the entire organization. The need for integrated AI systems assists the recruitment process team in analyzing repeated findings and comparing them to an individual workforce with the same employer, allowing them to select the most destructive candidate. As a result of the lack of human intervention, there would be few human decisions. Using interconnected AI systems should help to accelerate the recruiting process. Many organizations are still trailing behind from successfully Integrating into their HRPractices due to the cost of integration. AI is now managed to integrate. Employers also used to spend a lot of time checking on advances and selecting the best between them. However, the incorporation of AI into hiring has drastically transformed the selection process of candidates with the necessary skills. When it comes to the present state of employment and AI, it could be classified into two parts: - (1) Interviews with bots (2) Machine Learning Performance Because of the introduction of Ai in HR / HCM (Human Capital Management), the organization benefits from mechanization and improved returns. Because AI in HR becoming the another most exciting possible thing that could happen in the coming years. It has been well known that artificial intelligence (AI) has entirely infiltrated the organization, and AI has already taken on a different dimension as prospective employees. Currently, current AI, when compared to other HR processes, is closely related to hiring workers. The effective integration of AI and HR in hiring has aided businesses in getting the right people.

### **Training**

Organizations create their development programs beyond the previously strict limits, and many institutions, in a context, don't understand how else to completely encourage their staff. The majority of researchers believe that whatever recruits learn within at least the majority of skills training is a waste of time. However, the use of such AI in instruction is now becoming a powerful tool for organizations, and T&D processes work best when AI-based Optimization techniques observe and develop the skills, behavior, and behavior of employees working across different levels. Because individuals have different teaching methods, AI can be used to customize training programmers. Following training, responses from students are used to make structural changes. AI assists both the management and the staff in identifying gaps in their skills, achievement, personality, understanding, and so on, and assists them in developing and contributing as much as potential to their employment.

### **Performance Management**

The conventional assessment of performance management is decreasing as a result of the use and application of AI. The majority of the staff noticed that most supervisors exhibited bias during the assessment process, but that the failure rate was indeed very high. Everyone is now wondering whether the incorporation of AI into the company performance management process

will influence employee performance or not . However, the answer would be yes, as many of the world's leading companies, such as Microsoft, Adobe, Accenture, and Deloitte, have achieved success with AI applications for performance monitoring. Presently, AI integration is directly correlated with recruitment practices, but AI will quickly be implemented to every aspect of human resources - practicing and via discussion groups, and specific programs for AI.

### **In The Future, The Impact of AI on Various Occupations**

#### **a. Doctors**

Robots will start replacing doctors by 2035, and AI will undoubtedly swap 50 percent of jobs within the next century. He even stated that types of machinery will substitute 80 percent of doctors in the coming years by healthcare noticed entrepreneurs never by healthcare experts.

#### **b. Teachers**

According to a United Nations Scientific, Cultural, and Educational Institution, significant amount of elementary and a high school students need not come to school, so digital educators will use AI to encourage students to understand something.

#### **c. Lawyers**

AI can expect to recognize the right smarter than people. It is evident that AI and a machine learning were unfolding and converting at this time, and by 2036, 1 lakh law responsibilities will be digitalized, reducing the job of lawyers, as well as the manner cases, were moved.

#### **d. Blue-collar and white-collar**

Blue-collar and white-collar jobs would be destroyed, and between 20 and 30 million jobs will disappear by 2030, resulting in the loss of 30 percent of labor jobs and the displacement of 800 million people.

#### **e. Drivers**

Artificial intelligence would also substitute drivers by mid-2020s, using precise algorithms for heavy vehicle and avoiding injuries and hazards. While driverless vehicles are already on the market, they will arise and convert by 30% in the next few centuries.

### **Challenges of Using AI In HR**

The transformation of technological advances within an AI, as well as an absence of confidence, are two recognized difficulties that AI can take to productions. Because it is necessary to know about using AI in the organization, providing decent adaptability toward AI and needing appropriate tools to use AI are crucially significant. Several analysts contend that HR departments are perceived to be conventional, and therefore it is essential to consider paying attention to improving of technological advancements' adaptability. One of the specialists recommended that organizations should be eligible to purchase AI in order to receive the complete potential about using it in recruitment. This suggests that employers must designated sufficient time to spend on new ideas. Several organizations started during the discussions that

they would like to use AI, but they don't necessarily understand why or how to do so. It's possible that the organization doesn't require the bandwidth or reliability that AI provides, or that the organization lacks the technical expertise to integrate AI. Recognize well how AI can recognize the company's core values or whether an AI appreciates the kinds of job applicants the organization is trying for AI in the recruiting procedure. And giving to some experts, AI may take effort understanding educational boundaries because of terminology vary across a cultures and countries. As a result, through the discussion, one of the most main difficulties using AI in enrollment that was mentioned to train employees to train computers to prevent biases.

**Conclusion:**

To integrate six aspects of HRM with existing AI technologies, this work provides a conceptual AI framework for HRM. Knowledge discovery, data mining, strategy, and human resource planning are all included in the suggested integrated structure. Acquiring skills are improved by using facial recognition as well as natural language processing during the selection process, in addition to robotic systems along with visual monitoring

Even though AI lacks cognitive and emotional intelligence, its use in HR has a big impact on organizational performance. The study comes to the hopeful conclusion that AI development holds promise for bettering lives and encouraging a promising future when properly comprehended and applied. Through a thorough investigation of the effects of artificial intelligence on Human Resource Management (HRM) and the identification of mediating factors such as creativity and usability, this study effectively examined the complex relationships between recruitment, talent development, and performance management. The attained goals expand the conversation on technology in human resources and offer useful insights to companies integrating AI in HRM. It's crucial to recognize the study's limitations, though, such as its industry-specific focus and any potential issues with temporal validity brought on by AI's ongoing evolution. Furthermore, depending entirely on extant literature and real-world instances raises the risk of bias in data sources, highlighting the necessity of careful review and consideration in subsequent studies.

**References:**

1. Matsa, P. (2019). To study impact of artificial intelligence on human resource management, *6*(8), 10.
2. Sen, D. R. (2020). Role of artificial intelligence in human resource management. *Journal of Interdisciplinary Cycle Research*, (0022), 9.
3. Yadav, B. S., & Sharma, A. K. (2019). Growing role of artificial intelligence in various human resource functions of modern business organizations – A literature review, *11*(4), 5.
4. Tuffaha, M., & Perello-Marin, M. R. (2021). Adoption factors of artificial intelligence in human resource management, 11.

5. Nayal, K., Raut, R., Priyadarshinee, P., Narkhede, B. E., Kazancoglu, Y., & Narwane, V. (2021, July). Exploring the role of artificial intelligence in managing agricultural supply chain risk to counter the impacts of the COVID-19 pandemic. *International Journal of Logistics Management, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/IJLM-12-2020-0493>
6. Park, P. W. (2018). Artificial intelligence and human resource management, 16.
7. Nawaz, N. (2020). Exploring artificial intelligence applications in human resource management, 23(5), 13.
8. Yawalkar, M. V. V. (2019). A study of artificial intelligence and its role in human resource management. *International Journal of Research and Analytical Reviews (IJRAR)*, 6, 20–24.
9. Maduravoyal, C. (2018). Artificial intelligence in human resource management. *International Journal of Pure and Applied Mathematics*, 119(17), 1891–1895.
10. Buzko, I., Dyachenko, Y., Petrova, M., Nenkov, N., Tuleninova, D., & Koeva, K. (2016). Artificial intelligence technologies in human resource development. *Computer Modelling and New Technologies*, 20(2), 26–29.
11. Bhardwaj, G., Singh, S. V., & Kumar, V. (2020). An empirical study of artificial intelligence and its impact on human resource functions. In *2020 International Conference on Computation, Automation and Knowledge Management (ICCAKM)* (pp. 47–51). IEEE.
12. Jia, Q., Guo, Y., Li, R., Li, Y., & Chen, Y. (2018). A conceptual artificial intelligence application framework in human resource management, 10.
13. Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2021, February). Artificial intelligence, robotics, advanced technologies and human resource management: A systematic review. *The International Journal of Human Resource Management*, 1–30. <https://doi.org/10.1080/09585192.2020.1871398>
14. Samarasinghe, K. R., & Medis, A. (2020). Artificial intelligence based strategic human resource management (AISHRM) for Industry 4.0. *Global Journal of Management and Business Research*.
15. Tomassen, M. (n.d.). Exploring the black box of machine learning in human resource management, 52.
16. Accenture. (2019). *Transforming HR with Accenture RPA*. Accenture.
17. ADP. (2020). *Efficiency in HR with ADP RPA*. ADP.
18. Akhtar, P., Ghouri, A. M., Khan, H. U. R., Amin ul Haq, M., Awan, U., Zahoor, N., Khan, Z., & Ashraf, A. (2023). Detecting fake news and disinformation using artificial

- intelligence and machine learning to avoid supply chain disruptions. *Annals of Operations Research*, 327(2), 633–657. <https://doi.org/10.1007/s10479-022-05015-5>
19. Ashok, M., Madan, R., Joha, A., & Sivarajah, U. (2022). Ethical framework for artificial intelligence and digital technologies. *International Journal of Information Management*, 62, 102433.
  20. Bankins, S., Formosa, P., Griep, Y., & Richards, D. (2022). AI decision making with dignity? Contrasting workers' justice perceptions of human and AI decision making in a human resource management context. *Information Systems Frontiers*, 24(3), 857–875.
  21. Bhargava, A., Bester, M., & Bolton, L. (2021). Employees' perceptions of the implementation of robotics, artificial intelligence, and automation (RAIA) on job satisfaction, job security, and employability. *Journal of Technology in Behavioral Science*, 6(1), 106–113.
  22. Borenstein, J., & Howard, A. (2021). Emerging challenges in AI and the need for AI ethics education. *AI and Ethics*, 1, 61–65.
  23. Carabantes, M. (2020). Black-box artificial intelligence: An epistemological and critical analysis. *AI & Society*, 35(2), 309–317.
  24. Cisco. (2021). *Monitoring employee wellness with Cisco AI*. Cisco.
  25. LinkedIn Talent Solutions. (2021). *Harnessing AI in LinkedIn Talent Solutions*.
  26. HR Signal. (2021). *AI-driven retention with HR Signal*.
  27. LinkedIn Talent Solutions. (n.d.). *Recruiter release features*. <https://business.linkedin.com/talent-solutions/product-update/recruiter-release/features>
  28. Oracle. (n.d.). *Welcome to AI apps for talent management*. <https://docs.oracle.com/en/cloud/saas/adaptive-intelligent-apps/aibfc/welcome-to-ai-apps-for-talent-management.html#u30010414>
  29. Interviewer.AI. (n.d.). *What is Interviewer.AI's video intelligence?* <https://interviewer.ai/help/what-is-interviewer-ais-video-intelligence/>
  30. HR Signal. (n.d.). <https://www.hrsignal.com>
  31. Oracle. (n.d.). *Human Capital Management*. <https://www.oracle.com/human-capital-management/>
  32. Paradox.ai. (n.d.). <https://www.paradox.ai/>
  33. Turing. (n.d.). <https://www.turing.com/services/ai>
  34. Huang, X., Yang, F., Zheng, J., Feng, C., & Zhang, L. (2023). Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*.

## **EMPLOYEE ENGAGEMENT AND TALENT RETENTION: A REVIEW**

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### **Abstract:**

Given the today's hypercompetitive labour market and the lack of human capital and talents, which is exacerbated by the COVID-19 pandemic, retaining talented employees is a big challenge for organizations. Human resources managers generally know that recruitment of talented and high performing employees is crucial for survival and sustainable competitiveness. There is a lot of academic research and discussions on which factors are the most effective in talent retention. This study examined employee engagement and talent retention. The objective of the study is to examine the influence of employee engagement on talent retention. The study revealed that engaged employees often experience positive emotions (e.g., happiness, joy and enthusiasm). Engaged employees experience better health, create their own job and personal resources which enhance their competence and thus enhance talent retention. The study thus concluded that there is a practical and literal relationship between employee engagement and talent retention. The study thus, recommended that organizations should from time to time investigate employee behavior in other to manage it properly and adequately. Organization's plan of action should be intentional towards employee engagement for business success. While applying adequate retention strategies, organizations should be proactive and rational in other to identify and classify talented employees for retention.

**Keywords:** Employee's Engagement, Talent Retention. Retention Strategies, Competitiveness.

### **Introduction:**

Employee retention and engagement levels are two key factors that employers often make every effort to influence by introducing strategies to achieve improved engagement and retention. Utilizing talent management to realize this objective is an essential step to achieving this (Agarwal, Datta & Beard, 2012). Building a motivated and engaged staff through improved personnel management is a tried-and-true method of implementing employee engagement and retention tactics (Ajzen, 1991). To stabilize their personnel, leading businesses often incorporate talent management and employee engagement into their core business strategies (Agarwal, Datta & Beard, 2012). Employee engagement, according to Agarwal, Datta, and Beard (2012), is the process of fostering an environment at work where workers feel motivated and equipped to do their best work. This suggests that employee engagement goes beyond simply having a happy or content staff. Although employee happiness is a key component of employee engagement,

building a really engaged workforce requires addressing factors like communication, teamwork, and wellbeing to achieve your goals (Akkerman, Sluiter & Jansen, 2015). The goal of the employee engagement strategy is to increase engagement by coordinating with employee retention initiatives. The ability of a business to keep its current employees by utilizing employee engagement as a retention tactic is referred to as employee retention. (2015) Akkerman, Sluiter, and Jansen Companies frequently launch employee retention initiatives with the goal of creating and sustaining a culture where current employees feel supported and desire to stay with the business. Retaining current employees lowers the high expenses of hiring new employees as well as the time and effort needed to train them (Akkerman, Sluiter & Jansen, 2015). Employees who are engaged are more enthused and fascinated than disengaged Employees. According to a study by Akkerman, Sluiter, and Jansen (2015), organizations should use the highly creative energy of these engaged individuals to promote their wellbeing and improve performance. Despite the ambiguous relationship between employee happiness and productivity, it is widely accepted that happy workers are motivated and effective. Because engaged workers care more about their jobs, are more driven, and go above and beyond what is expected of them to support the organization's survival, engagement has grown in importance among scholars (Allen, 2015). It is anticipated of workers who are involved in their work and satisfied with their careers that they will also be content in their personal lives. Furthermore, a crucial criterion for assessing a person's career as a whole is job satisfaction, which is viewed as an alternative to one's alleged quality of work life. Uncertainty and complexity are characteristics of the modern workplace. Only those individuals who are upbeat, cheerful, and extremely adaptable can survive and function well in such a rigorous work environment. Talent retention, according to Akkerman, Sluiter, and Jansen (2015), is the process of keeping personnel on board with the company for an extended period of time. In actuality, all organizations strive to retain new hires for a long period by developing them into professional workers. It is crucial to develop and put into practice tactics that will keep employees engaged and, as a result, retain talent. In light of the aforementioned, this study aims to investigate talent retention and employee engagement.

### **Objective of the Study**

The objective of the study is to examine the influence of employee engagement on talent retention.

### **Significance of the Study**

The outcome of information derived from this study will help academicians, organizations and other institutions to evaluate and improve on their employee engagement and talent retention strategies. It will be of significance value to organizations as it will provide adequate knowledge on employee's engagement and talent retention which enhances organizational productivity and performance.

## **Methodology**

This study elicits information from published article & Journals

## **Literature Review**

### **Concept of Employee Engagement**

The concept of employee engagement is not entirely new as many researchers and organizations have been studying it for some time using different terminology and slightly different definitions (Lockwood, 2007). Employee engagement has been defined as the extent of one's commitment (Lockwood, 2007). Employee engagement is a multi-dimensional concept with cognitive (or rational), emotional (or affective), and behavioral components (Konard, 2016). A definition of employee engagement that takes into accounts both emotional and rational factors was affirmed by the Towers Perrin Talent Report. According to Ampomah & Cudjor (2015), employees have three characteristic behaviors: (1) Employees —say positive things about their organization to other employees and customers; (2) Employees have a desire to —stay in the company; and (3) Employees —serve the company by exerting additional, discretionary effort. Senior executives among these workers had the highest rate of employee engagement, while hourly workers who were not in management had the lowest percentage. In the quest to comprehend and characterize, both qualitatively and quantitatively, the nature of the interaction between a business and its employees, employee engagement is a vital notion. An employee who is "engaged" with their work is one who is enthusiastic and fully invested in it and who acts favorably to advance the reputation and goals of the company. An engaged worker is supportive of the business and its guiding principles (Antony & Kumar, 2016). In contrast, a disengaged employee could be doing the bare minimum of labor (known as "coasting") or aggressively harming the productivity and reputation of the organization. Therefore, it stands to reason that an organization with "high" staff engagement would outperform one with "low" employee engagement (Antony & Kumar, 2016).

### **Concept of Talent Retention**

The ability of a business to retain its talented workforce is referred to as talent retention (Gorman, 2003). A straightforward statistic, such as a firm keeping 80% of its personnel over a specific length of time, can be used to illustrate talent retention. However, many people relate employee retention to the initiatives taken by businesses to keep their personnel intact. Retention becomes the tactics rather than the result in this sense (Gratton, 2004). According to Gorman (2003), efforts to retain employees should concentrate on retaining valuable and contributing individuals and making a differentiation between high performers and low performers. Employee turnover is a sign of more serious problems that still need to be addressed, such as low morale among employees, a lack of a clear career path, a lack of recognition, strained relationships between employees and managers, among many other problems. Another reason why a worker can leave their position and start seeking for new employment is a lack of dedication to their



employer and job. Pay may not always have as much of an impact on turnover as is commonly thought. Employers typically want to reduce employee turnover because it lowers training costs, recruitment costs, and the loss of talent and organizational expertise. Employers can increase retention rates and lower the costs of high turnover by putting the lessons learnt from fundamental organizational behavior ideas into practice. This isn't always the case, though. Employers can aim for "positive turnover," in which case they only keep the top performers within their workforce.

Chelawat (2015) defined 'talent management' as a set of integrated organizational Human Resource Management processes designed to attract, develop, motivate, and retain talented, productive and engaged employees. Given the global shortage of talented employees, the biggest challenge is to retain them. Employee retention is the opposite of the term 'employee turnover'. Fluctuation is particularly problematic when it comes to talented employees. Alen *et al.* (2010) list three types of fluctuation: voluntary vs. involuntary fluctuation; dysfunctional vs. functional; avoidable vs. inevitable. Kim (2012) suggests that voluntary turnover reflects the HRM practices, characteristics of individual employees, the size of the organization, and the role of unions. Therefore, the study of the talent retention in both the private and public sectors focuses on voluntary turnover, dysfunctional turnover as well as avoidable turnover. The importance of the talent retention is well documented in the literature, especially in connection with the costs which must be incurred when recruiting new, talented employees in connection with their increased turnover. Huang *et al.* (2006) state that the costs of fluctuations are very high and that the costs of recruiting and training a new employee range from 25% to 200% of their annual salary. Kim (2012) argues that the high costs associated with talent loss force organizations to seek out and implement talent management practices that support employee retention. De Vos *et al.* (2011) state that while managers prefer talent management practices such as training, career development, performance management or communication to retain these employees, talented employees prefer financial rewards, career development opportunities, pleasant atmosphere at the workplace and work-life balance. To reduce turnover and increase sustainability, it is necessary to implement more sophisticated screening strategies during the recruitment process and in the identification and selection of talents (Kidwell, 2011). The challenges of retaining talent have an impact on the organization in several ways (apart from the financial implications already mentioned) (Finnegan, 2010).

### **Employee Engagement and Talent Retention**

According to Gorman, (2003), there are at least four reasons why engaged employees perform better than non- engaged employees. First, engaged employees often experience positive emotions (e.g., happiness, joy and enthusiasm). Second, engaged employees experience better health. Third, engaged employees create their own job resources and personal resources. Fourth, engaged employees transfer their engagement to others. In a hostile work environment,

engagement fosters a sense of loyalty while also boosting employee trust and retention. It has been demonstrated that employee engagement significantly affects productivity, profitability, and talent retention (Bhatnagar, 2007). Bakker and Demerouti (2007) proposed four reasons why engaged employees perform better than unengaged employees. First, it was discovered that motivated workers felt positively about their work, which in turn increased production. Second, engaged workers were observed to be more receptive to job offers, as well as more assured and hopeful (Bhatnagar, 2007). Third, employee well-being is positively correlated with engagement, which results in improved performance (Bakker & Demerouti, 2007). Last but not least, motivated workers are more productive since they can generate their own resources. In their study of highly skilled Dutch technicians, Bakker & Demerouti (2007) discovered that personal resources (optimism, self-efficacy, and organizational-based self-esteem) linked to higher levels of work engagement. A study by Mxenge, Dywili and Bazana (2014) investigated the effect of job engagement on employees' intention to quit among administrative personnel at the University of Fort Hare. The results show that job engagement is significantly related to employees' intention to quit (Gorman, 2003). Gallup (2012) research has shown a strong link between lower engagement scores and higher employee intention to quit. Results indicated that those in the bottom quartile had higher annualized intention to quit than top quartile firms. Agarwal, *et al.*, (2012) carried out a study to examine the relationships among leader member exchange, innovative work behavior and intention to quit. According to the findings, employee engagement is influenced by the caliber of communications between them and their immediate superiors. The type of talent retention is influenced by employee engagement. The ability of a company to reduce talent turnover—the cycle of employees leaving and being hired—by setting up particular mechanisms or incentives is known as talent retention. Financial rewards are the most direct yet, it would seem, not the most successful. This is built on developing a relationship of trust and respect between the individual and the company, not just on a financial transaction. In order to increase the likelihood that the most valuable talents are attracted, developed to their full potential, and retained within the organization to provide the intended benefits to the organization, a sound strategy must be broad enough to account for different personality types and sufficiently integrated with coaching, talent acquisition, and talent development. Talent retention can be broken down into a few key duties, but it also needs to take into consideration any tasks that have a big potential for impact. These include things like talent development and talent acquisition, as its effects are also felt in this situation.

### **Conclusion:**

The analysis came to the conclusion that there is a real and concrete connection between employee engagement and talent retention based on the evaluated literature. This study showed that firms looking to boost performance and productivity must pay close attention to reviewing and implementing employee engagement and talent retention initiatives. Because employees'

preferences can vary quickly, firms need to be aware of and understand the cognitive, emotional, and behavioral levels of their workforce. The competences which include employee's skill and knowledge should be ascertained, monitored and improved upon for top performance. Talented workers need to feel satisfied in order to properly integrate themselves into the operations of the company. It is essential to pay adequate attention to lowering staff turnover rates by consistently implementing new, effective retention techniques. Employee engagement has been found to have a substantial association with productivity, profitability, and talent retention, according to Bhatnagar (2007).

**References:**

1. Agarwal, U. A., Datta, S., & Beard, S. B. (2012). Linking LMX, Innovative Work Behavior and Turnover Intentions: The Mediating Role of Work Engagement. *Career Development International*, 17, 208 – 230.
2. Ajzen, I. (1991). The Theory of Planned Behaviour. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
3. Allen. (2015). *Employee voice, equal opportunities and workplace outcomes: An analysis of UK workplaces*. Manchester, UK: Manchester Metropolitan University.
4. Ampomah, P., & Cudjor, S. K. (2015). The Effect of Employee Turnover on Organizations (Case Study of Electricity Company of Ghana, Cape Coast). *Asian Journal of Social Sciences and Management Studies*, 2(1), 21–24.3.
5. Antony Joe Raja, & Anbu Ranjith Kumar, R. (2016). A Study on Employee Retention in Education Sector in India. *International Journal of Management*, 7(3), 01-11.
6. AON Hewitt Report (2012). *Trends in Global Employee Engagement*. Viewed 15 January 2013.
7. Avolio, B. J., & Luthans, F. (2006). *The High Impact Leader: Moments Matter in Accelerating Authentic Leadership Development*. New York, NY: McGraw-Hill.
8. Babbie, E. (2010). *The Practice of Social Research*. Oxford; Oxford University Press.
9. Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources Model: State of the art. *Journal of Managerial Psychology*, 22, 309-328.
10. Bandura, A. (1989). Regulation of Cognitive Processes through Perceived Self- Efficacy. *Developmental Psychology*, 729-35.
11. Baumruk, R. (2014). The Missing Link: the Role of Employee Engagement in Business Successes, *Workspan*, 47, 48-52
12. Boswell, W. (2006). Aligning Employees with the Organization's Strategic Objectives: Out of 'line of sight', out of Mind. *International Journal of Human Resource Management*, 17(9), 1489-1511.

13. Boswell, W. R., & Boudreau, J. W. (2010). How Leading Companies Create, Measure and Achieve Strategic Results Through "line of sight". *Management Decision*, 39(10), 851.
14. Boxall, Macky & Rasmussen (2013). Strategic role of affect-based attitudes in the acquisition, development and retention of customers. *Journal of Business Research*, 42, 309-24.
15. Brandt, W. A., Bielitz, C. J., & Georgi, A. (2016). The impact of staff turnover and staff density on treatment quality in a psychiatric clinic. *Frontiers in Psychology*, 7,457.
16. Brewin, C. R. (1989). Cognitive Change Processes in Psychotherapy. *Psychological Review*, 96(45), 379-394.
17. Brewster, C., Carey, L., Dowling, P., Grobler, P., Holland, P., & Warnich, S. (2003). *Contemporary issues in human resources management. Gaining a competitive advantage.* (2nd Ed.). Oxford University Press, Cape Town.
18. Bryman, A., & Bell, E. (2007). *Synthesizing Research; A Guide for Literature Reviews* (3rd Ed) Sage: Thousand Oaks.
19. Cable, D. M., & Judge, T. A. (1996). Person-Organization Fit, Job Choice Decisions, and Organizational Entry. *Organizational Behavior and Human Decision Processes*, 67, 294-311.
20. Chandranshu, S., & Ruchi, S. (2012). —Factors Affecting Employee Retention: A Comparative Analysis of Organizations, *European Journal of Business and Management*,4(3), 145-160.
21. Gallop Organisation. (2001). *The Q12 impact momentum programme.*
22. Gorman, B. (2003). Employee engagement after two decades of change. *Strategic Communication Management*. 7(1).
23. Gratton, L. (2004). Leadership in the new democratic organisation. *Management Today*. 20(4).
24. Guirdham, M. (2002). *Interactive behaviour at work.* (3rd Ed.). *Financial Times*. Prentice Hall. Manager's workbook. Building a stronger workplace. GWM Training Materials.
25. Hackman, J. R., & Oldham, G. (1976). Motivation through the design of work: Test of a theory. *Organisational behaviour and human performance*, 16, 250-279.
26. Hayward, A. (2011). Parental leave pays off for business - *Fair Work Ombudsman Nicholas Wilson.*
27. Kahn, T. (1990). Employee engagement. *European Journal of Business and Management* 2(4), 33-42.
28. Konard, (2006) multidimensional concept of employee engagement. *European Journal of Business and Management*, 1(4), 11-22.
29. Lockwood (2007). Employee engagement and employee retention. *European Journal of Business and Management* 2(3), 12-20.

## **IMPACT OF FLEXIBLE WORK ARRANGEMENTS ON EMPLOYEE PRODUCTIVITY**

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### **Abstract:**

Flexible working hours are the reciprocally advantageous accords between employee and employer to enhance employee productivity and higher profitability of the organization. Since the basic requirements of life are changing due to financial, social, political and economic constraints and people of both genders are compelled to work. This research paper delves into the significance and impact of flexible working hours in modern Indian workplaces. Flexible working hours have become integral to modern workplaces in India, serving as mutually beneficial agreements between employers and employees to bolster productivity and organizational profitability amidst evolving societal demands driven by financial, social, political, and economic factors. Embraced by both genders, these arrangements facilitate work life balance and support healthy family lives. When implemented with careful planning, flexible working hours mitigate stress, enhance wellbeing, and empower employees to adapt to diverse circumstances, thereby amplifying productivity, job satisfaction, efficiency, and performance while mitigating absenteeism and overtime costs. Leveraging machine learning algorithms such as neural networks and random forests offers additional avenues for optimization, enabling the analysis of historical data on employee performance and flexible working hour patterns to predict future productivity trends and refine scheduling strategies for maximum efficiency and employee satisfaction.

**Keywords:** Flexible Working Hours, Work-Life Balance, Productivity, Employee Well-Being, Organizational Profitability

### **Introduction:**

In contemporary Indian workplaces, the concept of flexible working hours has emerged as a pivotal strategy to adapt to the evolving dynamics of the workforce and the broader socioeconomic landscape. With rapid advancements in technology, changing societal norms, and global economic fluctuations, organizations are increasingly recognizing the need to offer flexibility in work arrangements to remain competitive and meet the diverse needs of their employees (Roberto *et al.*, 2023). This introduction explores the multifaceted nature of flexible working hours, exploring its significance, implications, and potential outcomes within the Indian context. The roots of flexible working hours can be traced back to the Industrial Revolution, when the traditional nine-to-five work model began to shift in response to changing production

processes and labour demands (Berniell *et al.*, 2023). However, it wasn't until the latter half of the 20th century that the concept gained widespread recognition, with organizations seeking innovative ways to improve employee satisfaction, productivity, and retention. In India, the adoption of flexible working hours has been influenced by both global trends and local factors, such as cultural norms, regulatory frameworks, and technological advancements. Flexible working hours offer a myriad of benefits for both employers and employees (Wahab, Wahed, & Abd Razak, 2024). From the employer's perspective, flexible working arrangements can lead to increased productivity, reduced absenteeism, and lower overhead costs. For employees, flexible working hours provide greater autonomy over their schedules, improved work-life balance, and opportunities for personal and professional growth. Moreover, flexible working arrangements have been shown to enhance employee morale, job satisfaction, and overall well-being, contributing to a positive organizational culture.

Despite the numerous advantages, implementing flexible working hours comes with its own set of challenges and considerations. One of the key challenges is ensuring effective communication and collaboration among remote teams, particularly in geographically dispersed organizations. Additionally, maintaining accountability and measuring performance in a flexible work environment can be complex, requiring robust systems and processes to track productivity and outcomes accurately (Banerjee *et al.*, 2023). Moreover, organizations must address issues related to equity, inclusivity, and accessibility to ensure that flexible working arrangements are accessible to all employees, regardless of their role or level within the organization.

Advancements in technology, particularly in the field of machine learning and artificial intelligence, are revolutionizing the way organizations manage and optimize flexible working arrangements. By leveraging sophisticated algorithms and data analytics, organizations can gain valuable insights into employee preferences, productivity patterns, and performance metrics. Machine learning algorithms, such as neural networks and random forests, can analyze vast amounts of data to predict future trends, identify optimization opportunities, and tailor flexible working hours schedules to meet the specific needs of employees and the organization.

As flexible working arrangements become increasingly prevalent in Indian workplaces, policymakers, and regulatory bodies are faced with the task of adapting existing labour laws and regulations to accommodate these changes (Gyory, 2023). Clear guidelines and frameworks are needed to ensure that flexible working arrangements are implemented in a fair, transparent, and equitable manner, protecting the rights and interests of both employers and employees. Moreover, organizations must develop comprehensive policies and procedures to govern flexible working arrangements, addressing issues such as eligibility criteria, working hours, communication protocols, and performance evaluation. In conclusion, flexible working hours represent a transformative shift in the way we approach work and employment relationships in India. As organizations continue to embrace flexible working arrangements, it is essential to

adopt a holistic and proactive approach that considers the needs and preferences of all stakeholders. By leveraging technological advancements, addressing challenges, and adhering to regulatory frameworks, organizations can create flexible work environments that promote employee well-being, productivity, and organizational success in the rapidly evolving digital age.

### **Objectives of the Study**

To study Impact of flexible work Arrangements on Employee Productivity

### **Methodology**

The secondary information has been used to gather the essential data that answer the objective of the study of flexible working hours.

### **Review of Literature**

Austin-Egole, Iheriohanma, and Nwokorie (2020) meticulously dissect the intricate relationship between flexible working arrangements and organizational performance in their comprehensive review. Spanning disciplines like management, psychology, and sociology, they meticulously analyze the theoretical frameworks underpinning flexibility's impact, from role theory to social exchange theory. Through a synthesis of empirical evidence, the authors explore productivity, employee engagement, and turnover intentions, providing a nuanced understanding of the phenomenon. Moreover, they scrutinize moderating factors such as organizational culture and technological infrastructure, offering valuable insights for future research and organizational practice. This review serves as an invaluable resource, consolidating existing knowledge while charting a path for further exploration into the complex dynamics of flexible work arrangements and their implications for organizational success. Angelici and Profeta (2024) delve into the concept of smart working in their paper titled "Smart working: work flexibility without constraints," published in *Management Science*. Their study explores the dynamics of work flexibility, focusing specifically on smart working practices. Through a meticulous analysis, the authors uncover the nuances of smart working, highlighting its potential to offer flexibility without imposing constraints on employees. This research contributes to the evolving discourse on modern work arrangements, shedding light on the implications of smart working for organizational dynamics and employee well-being.

In "Chasing Productivity Demands, Worker Well-being, and Firm Performance: The Moderating Effects of HR Support and Flexible Work Arrangements" by Ab Wahab and Tatoglu (2020), the authors delve into the intricate relationship between productivity demands, worker well-being, and firm performance. Their study investigates how HR support and flexible work arrangements moderate these dynamics. Through meticulous analysis, they uncover the nuanced interplay between organizational practices and employee outcomes, offering valuable insights for enhancing both productivity and well-being in the workplace. This research contributes to the growing body of literature on human resource management and organizational performance, underscoring the importance of supportive HR practices and flexible work arrangements in

achieving sustainable success. In "Role of Flexible Working Hours'Arrangement on Employee Job Performance and Retention in Manufacturing Industries in Agbara, Nigeria" by Idowu (2020), the focus lies on the impact of flexible working hours on both employee job performance and retention within the specific context of manufacturing industries in Agbara, Nigeria. Through this study, Idowu aims to elucidate the relationship between flexible work arrangements and key organizational outcomes in a localized setting. By examining the dynamics of employee performance and retention within the context of flexible working hours, the research sheds light on the applicability and effectiveness of such arrangements in enhancing productivity and employee satisfaction within the manufacturing sector of Agbara, Nigeria. This work contributes to the literature by providing insights tailored to the unique socio-economic and cultural context of the region, offering valuable implications for both theory and practice in the field of organizational management. In their study, Selvanathan *et al.* (2020) meticulously examines the determinants influencing productivity among employees in the Malaysian higher education sector. By focusing on this specific context, they aim to provide insights into the unique challenges and dynamics shaping productivity within Malaysian academia. Through rigorous analysis, the authors contribute to understanding the complex interplay between organizational factors and individual performance, enriching the broader discourse on productivity and effectiveness in the education sector. This research not only offers valuable implications for improving productivity within Malaysian private higher educational institutions but also provides a foundation for future studies exploring productivity dynamics in diverse educational settings.

Franken *et al.* (2021) explore the opportunities and challenges associated with forced flexibility and remote working in the context of the "new normal." Through a comprehensive analysis, the authors delve into the dynamics of remote work arrangements, examining both the advantages and drawbacks brought about by this shift. By addressing the complexities of forced flexibility, they contribute valuable insights into navigating the evolving landscape of work practices, particularly in light of the COVID-19 pandemic. This research not only highlights the opportunities for adaptation and innovation but also underscores the need to address the challenges posed by remote work to ensure organizational effectiveness and employee well-being. In their work, Chung and Van der Lippe (2020) introduce the intricate relationship between flexible working arrangements, work-life balance, and gender equality. Through their introduction, they lay the foundation for understanding how flexible work practices intersect with broader social indicators. By delving into this nexus, the authors shed light on the potential of flexible working arrangements to both enhance work-life balance and contribute to gender equality. Their study serves as a valuable entry point into exploring the complex dynamics at play in contemporary work environments, offering insights into the implications of flexible work policies for individuals and society as a whole. In their exploratory study, Weideman and Hofmeyr (2020) investigate the influence of flexible work arrangements on employee



engagement. Through their research, they delve into the dynamics of how flexible work policies impact the level of employee engagement within organizations. By conducting this exploration, the authors contribute to a deeper understanding of the relationship between work flexibility and employee commitment and motivation. Their study offers valuable insights into the potential benefits of flexible work arrangements for fostering greater employee engagement, thereby informing organizational practices aimed at enhancing workforce productivity and satisfaction.

Chung (2022) examines the intricate balance between flexible work arrangements and potential exploitation. Through this exploration, the author delves into the complexities of how flexible working practices can inadvertently lead to self-exploitation among employees. By addressing this paradox, Chung offers critical insights into the challenges associated with the implementation of flexible work policies, highlighting the need for a nuanced approach to fostering work-life balance and ensuring fair treatment in the workplace. This book contributes to ongoing discussions surrounding labour practices and organizational policies, provoking thoughtful considerations for policymakers, employers, and employees alike. In their study, Marx, Reimann, and Diewald (2021) investigate the significance of work-life measures, particularly the impact of flexible working hours and home-based teleworking, in preventing voluntary employee exits. Through rigorous analysis, the authors explore how these work arrangements influence employee retention and turnover intentions. Their research sheds light on the potential benefits of flexible work policies in reducing voluntary employee exits, thereby contributing to a deeper understanding of the role of work-life balance initiatives in organizational effectiveness. By addressing this critical aspect of contemporary work environments, Marx *et al.* provide valuable insights for employers and policymakers seeking to enhance employee retention strategies and foster a more supportive workplace culture. In their meta-analytic review, Shifrin and Michel (2022) investigate the relationship between flexible work arrangements and employee health. Through a comprehensive synthesis of existing research, the authors provide valuable insights into how different forms of flexibility impact various aspects of employee well-being. Their study offers a nuanced understanding of the complex interplay between work arrangements and health outcomes, highlighting both the potential benefits and challenges associated with flexible work policies.

By addressing this critical intersection, Shifrin and Michel contribute to the ongoing dialogue surrounding workplace practices and employee welfare, informing organizational strategies aimed at promoting healthier and more sustainable work environments. In their systematic review, Hackney *et al.* (2022) scrutinize the impact of work-from-home arrangements on both personal and organizational performance and productivity within the digital economy. By meticulously analyzing existing literature, the authors offer a comprehensive understanding of how remote work practices influence various facets of work outcomes. Through their synthesis, they elucidate the implications of remote work for individuals and organizations,

shedding light on the challenges and opportunities presented by this evolving work arrangement. Their study contributes valuable insights to the discourse on remote work in the digital age, providing a basis for informed decision-making by policymakers, employers, and employees alike. In their study, Mustajab *et al.* (2020) examine the working-from-home phenomenon as a strategy to mitigate the impacts of COVID-19 and its implications for work productivity. Through their research, the authors investigate the shift to remote work as a response to the pandemic, analyzing its effects on productivity levels. By addressing this timely and critical issue, Mustajab and colleagues contribute to understanding the dynamics of remote work adoption in the context of global health crises. Their study offers insights into the challenges and opportunities associated with remote work arrangements during the COVID-19 pandemic, informing organizational strategies and policy decisions aimed at maintaining productivity while ensuring employee well-being.

Beno (2021) scrutinizes the benefits and drawbacks of electronic working (E-working). Through this analysis, the author delves into the complexities of adopting E-working practices, shedding light on its potential advantages and challenges. By employing an ALDINE (Advantages and Limitations, Disadvantages, Implications, Negatives, and Effects) analysis framework, Beno offers a structured approach to understanding the multifaceted nature of E-working. His study contributes valuable insights into the considerations surrounding the implementation of electronic work arrangements, informing organizational decisions and policy development in an increasingly digitalized work environment. In their study, Fragapane *et al.* (2022) explores strategies for enhancing flexibility and productivity in Industry 4.0 production networks. Focusing on the integration of autonomous mobile robots and smart intralogistics systems, the authors investigate the potential of these technologies to optimize operations. Through their research, Fragapane and colleagues contribute to the ongoing discourse on Industry 4.0 and its implications for manufacturing efficiency. By examining the role of autonomous mobile robots and smart intralogistics in improving flexibility and productivity, their study offers valuable insights for businesses seeking to leverage advanced technologies in the era of digital transformation. In their study, Shanika and Bhebhe (2023) investigate the effects of telecommuting on employee motivation and productivity during the COVID-19 pandemic, focusing on the case of New Era Publication Corporation in Namibia. Through their research, the authors aim to understand how remote work arrangements have impacted employee motivation and productivity within the specific context of the pandemic. By examining the experiences of a particular organization in Namibia, Shanika and Bhebhe contribute valuable insights into the challenges and opportunities associated with telecommuting during times of crisis. Their study offers practical implications for organizations navigating remote work dynamics, providing guidance for maintaining employee motivation and productivity in rapidly changing work environments.

### **Challenges and Considerations**

- **Communication and Collaboration:**  
Ensuring effective communication and collaboration, especially among remote teams, can be a challenge.
- **Fairness and Equal Opportunity:**  
It's crucial to ensure that flexible work arrangements are available to all employees and that no one feels penalized for choosing to work flexibly.
- **Monitoring Performance:**  
Implementing systems for monitoring and evaluating performance can be more challenging in flexible work environments, requiring a shift in focus from time to output.
- **Cultural Differences:**  
Cultural norms and expectations regarding work schedules can vary, and organizations need to be sensitive to these differences when implementing flexible work arrangements.
- **Specific Job Requirements:**  
Some jobs may not be well-suited for flexible working due to the nature of the work or the need for face-to-face interaction.

### **Here's a more detailed look at the impact of flexible working hours**

#### **Positive Impacts:**

- **Increased Productivity:**  
When employees have more control over their work schedules, they can often work during times when they are most productive, leading to increased output.
- **Reduced Absenteeism:**  
Flexible work arrangements can help employees better manage personal commitments and reduce the need to take time off, thus decreasing absenteeism.
- **Improved Work-Life Balance:**  
Allowing employees to balance their work and personal lives can reduce stress and improve overall well-being, leading to higher job satisfaction and reduced turnover.
- **Enhanced Employee Morale:**  
Flexible work arrangements can demonstrate that employers value employees and their well-being, leading to increased morale and engagement.
- **Lower Overhead Costs:**  
Flexible working can reduce the need for extensive office space, as employees may be able to work from home or other locations, thus lowering overhead costs.
- **Attracting and Retaining Talent:**  
Offering flexible work arrangements can make a company more attractive to potential employees and can help retain current employees by demonstrating a commitment to their well-being.

### **Findings:**

1. **Positive Impact of Flexible Working Hours on Productivity:** Employees with higher flexible working hours demonstrate increased productivity, indicating a positive correlation between flexibility and performance.
2. **Negative Effect of Absenteeism Rate on Productivity:** Higher absenteeism rates are associated with lower productivity levels, highlighting the importance of attendance and reliability for maintaining performance.
3. **Improved Work-Life Balance Enhances Productivity:** Employees reporting better work-life balance tend to exhibit higher productivity, emphasizing the significance of promoting work-life balance initiatives.
4. **Need for Targeted Interventions:** Tailored interventions, including flexible scheduling options and absenteeism reduction programs, are essential for optimizing employee performance and satisfaction.
5. **Data-Driven Decision-Making Enhances Productivity:** Utilizing data-driven approaches empowers organizations to make informed decisions regarding work policies and practices, contributing to a conducive environment for employee success.
6. **Continuous Monitoring and Adaptation Required:** Regular assessment of employee feedback and performance metrics is crucial for adapting flexible working arrangements to evolving workplace dynamics, ensuring ongoing optimization of productivity and employee well-being.

### **Conclusions:**

In conclusion, the research underscores the pivotal role of flexible working arrangements in modern Indian workplaces, where they serve as catalysts for heightened productivity, improved work-life balance, and overall organizational success. Through an analysis of factors such as flexible working hours, absenteeism rates, and work-life balance ratings, it becomes evident that flexibility positively impacts employee performance and satisfaction. Furthermore, involving employees and supervisors in program planning and leveraging machine learning algorithms like neural networks and random forests for accuracy enhancement are crucial strategies. Embracing flexible work practices not only addresses the evolving needs of the workforce but also fosters a culture of adaptability and innovation, positioning organizations for sustained growth and competitiveness in the dynamic landscape of the contemporary workplace.

### **References:**

1. Ab Wahab, M., & Tatoglu, E. (2020). Chasing productivity demands, worker wellbeing, and firm performance: The moderating effects of HR support and flexible work arrangements. *Personnel Review*, 49(9), 1823–1843.
2. Angelici, M., & Profeta, P. (2024). Smart working: Work flexibility without constraints. *Management Science*, 70(3), 1680–1705.

3. Austin-Egole, I. S., Iheriohanma, E. B., & Nwokorie, C. (2020). Flexible working arrangements and organizational performance: An overview. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 25(5), 50–59.
4. Banerjee, D., Kukreja, V., Hariharan, S., & Sharma, V. (2023, March). Fast and accurate multi-classification of kiwi fruit disease in leaves using deep learning approach. In *2023 International Conference on Innovative Data Communication Technologies and Application (ICIDCA)* (pp. 131–137). IEEE.
5. Beno, M. (2021). The advantages and disadvantages of E-working: An examination using an ALDINE analysis. *Emerging Science Journal*, 5(1), 11–20.
6. Berniell, I., Berniell, L., de la Mata, D., Edo, M., & Marchionni, M. (2023). Motherhood and flexible jobs: Evidence from Latin American countries. *World Development*, 167, 106225.
7. Chung, H. (2022). *The flexibility paradox: Why flexible working leads to (self-) exploitation*. Policy Press.
8. Chung, H., & Van der Lippe, T. (2020). Flexible working, work-life balance, and gender equality: Introduction. *Social Indicators Research*, 151(2), 365–381.
9. Franken, E., Bentley, T., Shafaei, A., Farr-Wharton, B., Onnis, L. A., & Omari, M. (2021). Forced flexibility and remote working: Opportunities and challenges in the new normal. *Journal of Management & Organization*, 27(6), 1131–1149.
10. Fragapane, G., Ivanov, D., Peron, M., Sgarbossa, F., & Strandhagen, J. O. (2022). Increasing flexibility and productivity in Industry 4.0 production networks with autonomous mobile robots and smart intralogistics. *Annals of Operations Research*, 308(1), 125–143.
11. Hackney, A., Yung, M., Somasundaram, K. G., Nowrouzi-Kia, B., Oakman, J., & Yazdani, A. (2022). Working in the digital economy: A systematic review of the impact of work-from-home arrangements on personal and organizational performance and productivity. *PLOS ONE*, 17(10), e0274728.
12. Idowu, S. A. (2020). Role of flexible working hours' arrangement on employee job performance and retention in manufacturing industries in Agbara, Nigeria. [Unpublished work]
13. Marx, C. K., Reimann, M., & Diewald, M. (2021). Do work-life measures really matter? The impact of flexible working hours and home-based teleworking in preventing voluntary employee exits. *Social Sciences*, 10(1), 9.
14. Mustajab, D., Bauw, A., Rasyid, A., Irawan, A., Akbar, M. A., & Hamid, M. A. (2020). Working from home phenomenon as an effort to prevent COVID-19 attacks and its impacts on work productivity. *TIJAB (The International Journal of Applied Business)*, 4(1), 13.

15. Roberto, R., Penna, M., Felici, B., & Rao, M. (2023). Smart working and flexible work arrangements: Opportunities and risks for sustainable communities. In *Intelligent Environments* (pp. 243–283). North-Holland.
16. Shaanika, H. H., & Bhebehe, T. (2023). Effects of telecommuting on employee motivation and productivity during the COVID-19 pandemic: A case of New Era Publication Corporation, Namibia. [*Unpublished or journal info not provided*]
17. Selvanathan, M., Jayabalan, N., Saini, G. K., Supramaniam, M., & Hussin, N. (2020). Employee productivity in Malaysian private higher educational institutions. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(3), 66–79.
18. Shifrin, N. V., & Michel, J. S. (2022). Flexible work arrangements and employee health: A meta-analytic review. *Work & Stress*, 36(1), 60–85.
19. Wahab, H. A., Wahed, H., & Abd Razak, S. S. (2024, January). Flexible work arrangements and the legal considerations in Malaysia. In *Proceedings of the 12th UUM International Legal Conference 2023 (UUMILC 2023)* (Vol. 15, p. 401). Springer Nature.
20. Weideman, M., & Hofmeyr, K. B. (2020). The influence of flexible work arrangements on employee engagement: An exploratory study. *SA Journal of Human Resource Management*, 18(1), 1–18.

## **COMMUNICATION: MEANING, DEFINITION, MODELS, ELEMENTS AND THEIR CHARACTERISTICS AND BARRIERS TO COMMUNICATION**

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In simple terms, communication is an act of exchange / sharing / transferring of information/idea/message/technology etc.

In Agril. Extension, communication is an act of exchange/sharing/transfer of agricultural technologies.

### **Communication: History and Concept**

Nothing can happen in this world without communication. All human beings learn to live in society and get socialized & modernised through communication.

Communication is life blood of human organization and society

### **History of Communication:**

The Communication process has been going on since beginning of mankind on this earth. It was started 70 million years ago. It has passed through several Ages / Stages.

- 1. Age of Signs & Symbols (Stone age):** Early man was communicating through symbols (representing something) and gestures (movement of body or limbs as expression of feeling) to evoke response from others. This was called Age of Signs & Symbols
- 2. Age of Speech & Language:** Later on the 'spoken words' in the form of language was used for communication. It took millions of years to acquire ability to use language.
- 3. Age of Writing:** Later on the 'written words' in the form of language was used for communication. It also took millions of years to acquire ability to use language.
- 4. Age of Printing:** Use of Printing Started after 15<sup>th</sup> century, spread of literacy started after 16<sup>th</sup> century. Press & Typing and use of mass media started during 19<sup>th</sup> century.
- 5. Age of Mass Media:** Use of Radio, TV, Newspaper started in 19<sup>th</sup> century.
- 6. Age of e- Communication:** Use of Modern Communication channels such as ICTs, Satellite Communication, Internet, www, Mobile Phones, Multi Media Technology revolutionised communication process.

### **Meaning of Communication**

The term communication stems/derived from the Latin word Communis – Meaning Common.

Thus, Communication is a conscious attempt to create common understanding between source and receiver to share information, ideas, attitude etc

Communication, then is a conscious attempt to share information, ideas, attitude and the like with others.

Communication is an act of getting a sender and receiver tuned together for sharing/exchange a particular message or series of message.



### Definitions of Communication

The sociologists, the educationists and the psychologists have defined communication in various ways.

A few definitions may be given below.

**According to Rogers and Shoemaker (1971):** Communication is the process by which message are transferred from a source to a receiver.

**According to Ban and Hawkins (1988):** Communication is the process of sending and receiving messages through channels which establish common meaning between a source and a receiver.

**According to Hovland (1964):** Communication is the process by which the individual (the Communicator) transmits knowledge to modify the behaviour of others (Communicate).

**According to Leagans (1961):** Communication is the process by which two or more people exchange ideas, facts, feelings or impressions in ways that each gains a common understanding of the meaning, intent and use of messages.

Communication, then is conscious attempt to share information, ideas, attitudes and the like with others.



**From the above definitions it can be concluded that**

- ✓ Communication is the process of social interaction. i.e. in a communication situation two or more people interact. They try tangibly to influence the ideas, attitudes, knowledge and behaviour of each other.
- ✓ Several elements are involved in communication process / encounter.
- ✓ In simplest sense, communication means that a sender and receiver tuned together for sharing/exchange a particular message or series of message.

**Functions of communication:** Communication has four basic functions.

1. **Information function:** The getting or giving of information underlies all communication functions. Basic requirements of adopting and adjusting oneself to the environment are information. There must be some information about what is going on in the environment which concerns the people.
2. **Command or instructive function:** Those who are hierarchically superior, in the family, society or organizations often initiate communication either for the purpose of informing their subordinates or for the purpose of telling them what to do, how to do, when to do etc. The command and instructive functions of communication are more observable in formal organization than informal organizations.
3. **Influence or persuasive functions:** The sole purpose of communication is to influence or convince the people. Persuasive function of communication is extremely important for extension in changing their behavior in the desirable direction.
4. **Integrative function:** The major function of communication is integration or mixing at the interpersonal or at the organization level. This helps to maintain individual, social or organizational stability and identity.

**Importance of communication in extension**

1. Communication establishes a favorable climate in which effective and meaningful transfer of technology can take place
2. Communication has multiplier effect i.e. it brings synergy in its process of communication in this sense, a sort of reinforcement of ideas
3. Communication brings modernization and fulfills aspirations of farming community
4. Communication is essential for good leadership
5. Communication is essential for rural development i.e. transformation of rural community

**Models of Communication**

Sociologists, Educationalists, Psychologists, and Anthropologists have described the process through various models as given below. Their usefulness lies in the manner in which these are used.

1. **Aristotle's Model:** It has three elements.



**Speaker** – The person who speaks.

**Speech** – The speech that the individual produces.

**Audience** –The person who listens.

Aristotle says that, all the three elements are essential for communication. These can be organised to study the process through the person who speaks, the speech he produces and the audience who listen.

Such communication takes place in a face-to-face situation or in direct communication. The speech is either a message/an idea/a thought/a feeling.

2. **Shannon – Weaver Model:** This model has five elements.



If we translate the Source into Speaker, the Signal into Speech and Destination into Audience. We have the Aristotle's model plus two more elements i.e. a Transmitter which catches the message to take it to its Destination through Receiver. Here the transmitter sends the message by showing signals to receiver. This receiver in turn takes to the destination where it is meant for. Ex. Telegraph.

3. **Westley and Maclean Model:** This model also has five elements on the lines of Shannon – Weaver Model.



Here sender encodes the message (giving codes to the message) which is passed through a channel and then it is decoded (full message will be elaborated by removing the codes) and its meaning is drawn after which the clear message will reach the receiver. Used in Army & Defense

4. **Berlo Model:** This model has six elements.



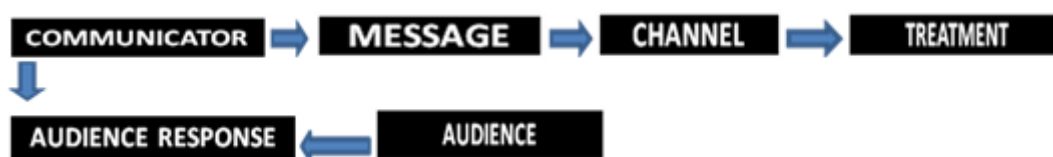
The difference from the Westley and Machean Model is that Berlo adds message to his model.

5. **Rogers and Shoemaker Model:** This model also has five elements.



According to them a Source (S) sends a Message (M) via certain Channels(C) to the Receiver (R), which cause some Effect (E) i.e. is changing the existing behaviour pattern of receiver.

6. **J. Paul Leagans Model:** This model also has six elements.



A skillful communicator sends useful message through proper channel by effectively treating it to an appropriate audience that responds as desired.

**Elements of Communication:**

1. Communicator
2. Message
3. Channel
4. Treatment
5. Audience
6. Audience Response

**I. Communicator:** is also referred as **Speaker** or **Sender** or **Source**.

- He is the person who starts the process of communication.
- He is the first person to give message to the intended audience
- Communicator may be a person or group of persons or an institution or an extension worker or ascientist or a teacher or an administrator or any other person.
- The credibility of the communicator is a powerful determinant in communication. Credibility meanstrustworthiness and competence.

**The characteristics of good communicator:**To become a more effective communicator

**1. The good communicator should have the knowledge about:**

- The Objectives: have them specifically defined
- The Message: its content, validity, usefulness, importance.
- The channels: that will reach the audience and their usefulness.
- The treatment: How to organise and treat his message
- The Audience: their needs, interest, abilities, predispositions.
- His professional abilities and limitations.

**2. Skills: Communicator should have skills in**

- Selecting the message
- Treating the message
- Expressing the message- verbal/non verbal or written
- Selection and use of channels
- Understanding the audience

Therefore, good communicator should have above characteristics.

**II. Message: Message is also referred as Content or Speech or Signal.**

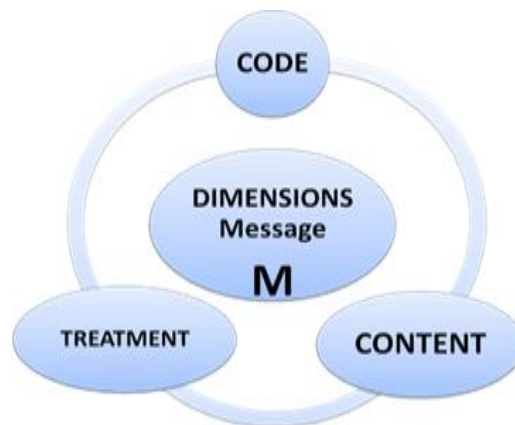
- Message is a piece of information, spoken or written or signal form, to be passed from one person to another.
- Message is the information, a communicator wishes his audience to receive, understand, accept and act upon.
- *Message* is the subject matter of communication.
- Message involves any fact, idea, opinion, figure, attitude or course of action.
- The Message, for example
  - ✓ It may consist of statements of scientific facts about agriculture, sanitation or nutrition

✓ It may consists of description of action being taken by individuals, groups or committees

### Characteristics of good message: A good message

1. It must be in line with the objective to be attained
2. It must be clear and understandable by the audience
3. It must be in line with the mental, social, economical and physical capabilities of the audience
4. It should be specific- but not vague or uncertain - no irrelevant materials
5. It should be simply stated- conveying- only one or few pertinent points at a time
6. It should be accurate- scientifically sound, factual & current
7. It should be timely- especially when seasonal factors are important & issues are current
8. It should be appropriate to the channel selected
9. It should be appealing and attractive to the audience- having utility and immediate use
10. It should be adequate- sufficient information to follow the practice

### Dimensions of message



1. **Code** –refers to the symbol, sign, sound or language used in communication. Code is any group of symbols that can be structured in a way, that is meaningful to some person. Ex: Language: English, Kannada etc
  - English language is a code which contains some letters, words, sentences, grammar etc by using this we communicate
  - Music- is a code which gives meaning to the listeners (vocabulary)
  - Dance- is a code which gives meaning to the audience
  - Painting- is a code which also imply meaning to viewers
2. **Content**- refers to the details of subject matter or message to be communicated.
3. **Treatment**-is the way in which the message handled/delivered to get information across to the audience. Treatment is a technique of designing & presenting the message in a given situation. The purpose of treatment is to make message
  - Clear
  - Understandable

- Realistic
- Interesting to the audience

### **III. Channel**

- The communicator (sender) and the receiver must be connected or linked or joined in the process of communication
- For this purpose channels of communication are necessary.
- They are “*physical bridges*” between the communicator and the receiver of messages
- They are the “*avenues or means*” on which messages travel to and fro
- They are also called as “*transmission lines*” used for carrying messages to their destination. Ex: Radio, TV, News paper, Meetings, Phones, e-mail etc.

#### **Classification of channels**

**A. Locality channels:** are the channels available within the social system and used during face to face communication between two or more people

Ex: Neighbors, Relatives, friends, local leaders etc

**B. Cosmopolite channel:** are the channels available outside the social system and used in communication to reach audience.

Ex: Mass Media like- Radio, TV, News Paper, etc Mass media channels are almost always cosmopolite

#### **Factors to be considered while selecting channels**

1. Specific objective of the message
2. The audience – size, needs, interest, knowledge of the subject etc.
3. The nature of the message – degree of directness versus abstractness, level of difficulty, scope, timing etc
4. Channel available – that will reach the audience / part of
5. Relative cost of channel in relation to anticipated effectiveness
6. Time available – for both communicator and audience

### **VI. Treatment**

- ✓ Treatment is the way message is handled/delivered to get the information across to the audience.
- ✓ Treatment deals with the methods for presenting messages.
- ✓ Treatment is a technique of designing & presenting the message in a given situation.
- ✓ The *purpose of treatment* is to make the message

**- Clear                      - Understandable                      - Realistic                      - Interesting to the audience**

#### **Audience**

- Audience are also referred as receiver or consumer or destination of the message
- Audience or receiver of message is the target of communication function
- Audience may consist of one person or group of persons.
- It may comprise men, women, youth, villagers etc.

- The more homogeneous an audience, the greater the chances of successful communication.
- Likewise, the more a communicator knows about his audience, the more likely he is to make an impact.
- The communicator should, therefore, be careful in
- Selecting message which are relevant to the audience,
- In choosing channels compatible to their cultural pattern and
- Making the treatment of message appropriate to their levels of interests and understanding.

### **Audience Response/Feedback**

- ✓ Audience response is the last element in communication process.
  - ✓ It is also referred as effect or feedback
  - ✓ It is response of an audience to the messages received
  - ✓ Following are the possible variety of responses that may result when a useful message is received by audience.
1. Knowledge versus Understanding
  2. Acceptance versus Rejection
  3. Remembering versus Forgetting
  4. Mental versus Physical
  5. Right versus Wrong

In extension work, it is not only enough to deliver the message, it is important to see the result / impact of the message i.e. feedback.

### **Characteristics of feedback**

- i. Feedback is source oriented
- ii. Feedback varies in different communication situations
- iii. Feedback affects the source or communicator.
- iv. Feedback exerts control over future messages
- v. Feedback affects communication fidelity/ faithful performance of communication elements.

### **Problems in getting feedback**

- i. Limitation of channel itself: Ex. Mass media.
- ii. Shyness of the audience
- iii. Discouragement by the communicator
- iv. Socio-economic barriers: Ex. Social norms.
- v. Untimely message

**Types of communication:** Mainly three types of communication

### **I. Based on number of personnel involved**

1. Intra- personal communication
2. Inter- personal communication
3. Mass communication

## **II. Based on formal/ informal nature of communication/channel used**

1. Formal communication
2. Informal communication

## **III. Based use of Verbal and Non-verbal symbols**

1. Verbal communication
2. Non-verbal communication

## **I. Based on number of personnel involved**

1. **Intra-personal communication:** Here, the communication takes place within the individual. Both sending and receiving roles are performed by an individual. He does both encoding and decoding of information. Ex. Information processing
2. **Inter- personal communication:** It is defined as sending of messages by one person and receiving of messages by other person/ small group of persons with some effect and with some opportunity for immediate feedback. Here each person knows every other person involved in communication.

Purpose of Inter- personal communication:

- i. Personal discovery
  - ii. Discovering external world
  - iii. Establishing meaningful relationships
  - iv. Changing the behaviour
3. **Mass communication:** A form of communication addressed to masses, to an extremely larger audience that is generally poorly defined and is mediated by audio and / or visual transmitters (T.V., Radio, News papers etc.) Functions: Entertain Reinforce, Educate, Create awareness etc.

## **II. Based on formal/ informal nature of communication/ channel used**

1. **Formal communication:** Use of formal channels in communication. Ex: Communication in formal organisations

Following forms of Formal communication takes place in formal organisations

- i. **Horizontal communication (Peer communication):** It refers to the communication between the members of the same hierarchical level or same cadre in an organisation.

Ex. Communication between ADAs, Dean(Agri) etc

- ii. **Upward communication (Bottom up):** It refers to the flow of message from subordinates to superiors/ higher- ups i.e. flowing up-ward through organization hierarchy (Bottom up)
- iii. **Downward communication (top to down):** It refers to flow of message from superior/ higher ups to subordinates. i.e. flowing down-ward through the organizational hierarchy (top to down)
- iv. **Criss-cross communication or Zigzag communication Lateral communication:** It refers to the flow of message between the members within the organization irrespective of the cadre.

It refers to the communication between two individuals of same social system irrespective of cadre while performing their role.

## **2. Informal communication: Ex.: Grapevine communication**

**Grapevine communication** is an informal communication where in authenticity of information is not known. Ex. Rumors, gossip, Etc.

- It is called so because it stretches throughout the organization in all directions irrespective of the authority levels.
- Despite existence of formal channels in an organization, the informal channels tend to develop when he interacts with other people in organization.
- It exists more at lower levels of organization.
- Many times it is bad to social system
- Sometimes it is used for quick and effective communication It can pass both correct information as well as rumors

### **Barriers / Problems of Communication**

**Barriers / Problems of Communication Process can be classified as follows**

- I. Sender/ communicator/source related barriers
- II. Receiver/audience related barriers
- III. Situation related barriers

#### **I. Sender/ communicator/source related barriers**

- 1. Lack of setting appropriate communication goal:** Change in knowledge, skills, attitude etc.
- 2. Lack of communication skills:** Listening skills, speaking skills, presentation skills, reading skills, inability to select appropriate message, channel etc.
- 3. Interpersonal insensitivity:** Insensitive to receiver, their problems, conditions, needs etc.
- 4. Reliance on assumptions:** Assumptions without knowing the reality
- 5. Lack of credibility:** Failure to win the trust and confidence of receiver

#### **II. Receiver/audience related barriers:**

- 1. Evaluation tendency:** Pre-evaluation of communicator as good or bad
- 2. Pre-conceived ideas: About the technology, source etc.**
- 3. Selective listening:** Listening to selective messages that interest us and neglecting other messages
- 4. Failure to give feedback**

#### **III. Situation related barriers**

- 1. Semantic barriers:** Remember that it is always better to use appropriate language, words, sentences, phrases etc. rather than showing off the words you know that others don't. "Complex words Dilute, Distort and Misinterpret".
- 2. Information overload:** Too many messages/ more the flow of information is likely to be misinterpreted / forgotten / over looked.



3. **Time presser:** Lack of sufficient time for communicating the message.
4. **Communication climate:** Failure to create climate of trust and confidence.
5. **Noise:** Many obstructions can enter channels. These obstructions are referred to as ‘Noise’  
Any obstruction (obstacle or hindrance) that prevents the message from being heard by or carried over clearly to the audience are referred as ‘Noise’.

Noise’ emerges from a wide range of sources and causes. The following are some of these.

- a. Failure of channel to reach the intended audience- usually, no one channel will reach the entire audience /all people. Ex. Radio, Newspaper
- b. Failure on the part of the communicator to handle the channels carefully / skillfully.
- c. Ex. Meetings, Tours, Radio programmes Etc.
- d. Failure to select channels appropriate to the objective of communicator- all channels are not equally useful Ex. Compost pit preparation, Raised seed bed preparation
- e. Failure to use channels in accordance with the abilities of the audience- written materials can’t be useful for illiterates
- f. Failure to avoid physical distractions- such as people moving in and out, loud noise in or out of group, heat, bad light, etc.
- g. Failure to use enough channels in parallel(simultaneously)- more than one channel can be used in parallel to make message clear. Research indicates that up to 5 to 6 channels may be used in combinations
- h. Use of too many channels in a series- more channels used in a series the less chance a communicator has for getting his message through

### **Measures to Overcome Barriers**

#### **I. Sender/ communicator/source related barriers**

1. Setting appropriate communication goal
2. Improving communication skills
3. Practicing empathic communication
4. Improving credibility
5. Reinforce words with Actions: “Actions should speak louder than words”

#### **II. Receiver/audience related barriers:**

1. Avoiding or postponing evaluative judgment
2. Listening to total meaning
3. Providing responsive feedback

#### **III. Situation related barriers**

1. Developing communication climate/ situation
2. Selecting appropriate channel

**References:**

1. Adler, R. B., & Elmhorst, J. M. (2019). *Communicating at work: Principles and practices for business and the professions* (11th ed.). McGraw-Hill Education.
2. Ban, A. W., & Hawkins, H. A. (1988). *Agricultural extension* (2nd ed.). FAO of the United Nations.
3. Barnlund, D. C. (2008). A transactional model of communication. In C. D. Mortensen (Ed.), *Communication theory* (2nd ed., pp. 47–57). Routledge.
4. Berlo, D. K. (1960). *The process of communication: An introduction to theory and practice*. Holt, Rinehart and Winston.
5. Devito, J. A. (2019). *The interpersonal communication book* (15th ed.). Pearson.
6. Gamble, T. K., & Gamble, M. (2020). *Communication works* (12th ed.). McGraw-Hill Education.
7. Hovland, C. I. (1964). *Communication and persuasion; Psychological studies of opinion change*. Yale University Press.
8. Keyton, J. (2017). *Communication and organizational culture: A key to understanding work experiences* (3rd ed.). SAGE Publications.
9. Leagans, J. P. (1961). *Characteristics of teaching and learning in extension education*. Cornell University, Department of Education.  
(Often cited from bulletins or internal publications; if exact source unavailable, use as a general citation.)
10. McQuail, D., & Windahl, S. (2015). *Communication models for the study of mass communications* (2nd ed.). Routledge.
11. Rogers, E. M., & Shoemaker, F. F. (1971). *Communication of innovations: A cross-cultural approach*. Free Press.
12. Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. University of Illinois Press.
13. Tubbs, S. L., & Moss, S. (2008). *Human communication: Principles and contexts* (11th ed.). McGraw-Hill Education.
14. Verderber, K. S., Verderber, R. F., & Sellnow, D. D. (2017). *Communicate!* (15th ed.). Cengage Learning.
15. Westley, B. H., & MacLean, M. S. Jr. (1957). A conceptual model for communications research. *Journal of Communication*, 7(1), 23–33. <https://doi.org/10.1111/j.1460-2466.1957.tb01873>.

## **A STUDY ON FACTORS AFFECTING WORK LIFE AND FAMILY COMMITMENT**

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### **Abstract:**

In an era of growing work demands and evolving family dynamics, balancing professional responsibilities with family commitments has become a critical challenge for many individuals. This study examines the factors that affect the delicate balance between work life and family commitments, focusing on both personal and organizational influences. Key factors such as job stress, work hours, organizational support, role expectations, gender differences, and cultural influences are explored to understand their impact on employees' ability to manage dual responsibilities. The findings of this study aim to provide valuable insights into the complexities of work-life integration.

**Keywords:** Family Commitments, Work Life Integration, Organizational Influences.

### **Introduction:**

The intersection of work and family life is a significant concern in modern society, as individuals are increasingly tasked with managing the demands of both professional careers and family obligations. While work-life balance has been a topic of interest for decades, the factors that influence this balance are diverse and multifaceted, ranging from personal choices to organizational policies and societal expectations. This study seeks to explore the key factors that affect the balance between work life and family commitment. Several personal factors such as long working hours, compulsory overtime, shift work, meeting and training after working hours are crucial in influencing work-life balance outcomes.

### **Objective:**

To find the factors affecting work life and family commitments of employees

### **Research Methodology**

**Source of Data:** The present study is based on primary data which was collected using questionnaire method.

**Sample Size:** In this study 100 employees had been considered from Coimbatore city.

**Data Collection:** The data were collected using questionnaire from employees those who are working in Coimbatore

## Review of Literature

**Ellen Galinsky, Peter J. Stein**, The Impact of Human Resource Policies on Employees Balancing Work/Family Life, Journal of Family Issues December 1990 vol. 11 no. 4 368-383. Published an article focuses on (a) the major work/family problems faced by employees, (b) how work/family programs affect productivity, (c) what trends are emerging among companies, and (d) how a subsample of leading scientific companies and universities are responding to work/family issues. The seven major issues employees face are examined: child care, elder care, work time and timing, relocation, job demands and autonomy, supervisory relationships, and organizational culture.

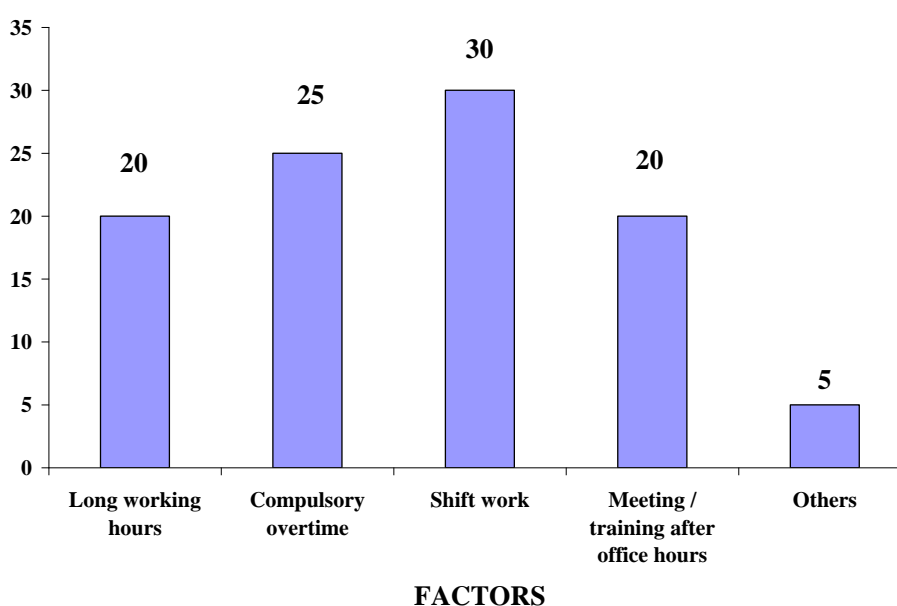
## Data analysis and Interpretation

### Factors Affecting Work Life and Family Commitments

Particulars	No of Respondents	Percentage of Respondents
Long working hours	20	20
Compulsory overtime	25	25
Shift work	30	30
Meeting / training after office hours	20	20
Others	5	5
<b>Total</b>	<b>100</b>	<b>100</b>

### Interpretation:

In the factors affecting work balance and family commitments, each 20% of them said long working hours and 25% of them said compulsory overtime. 30% of them said shift work. 20% of them said meeting / training after office hours. The rest of each 5% of them said compulsory overtime and others.

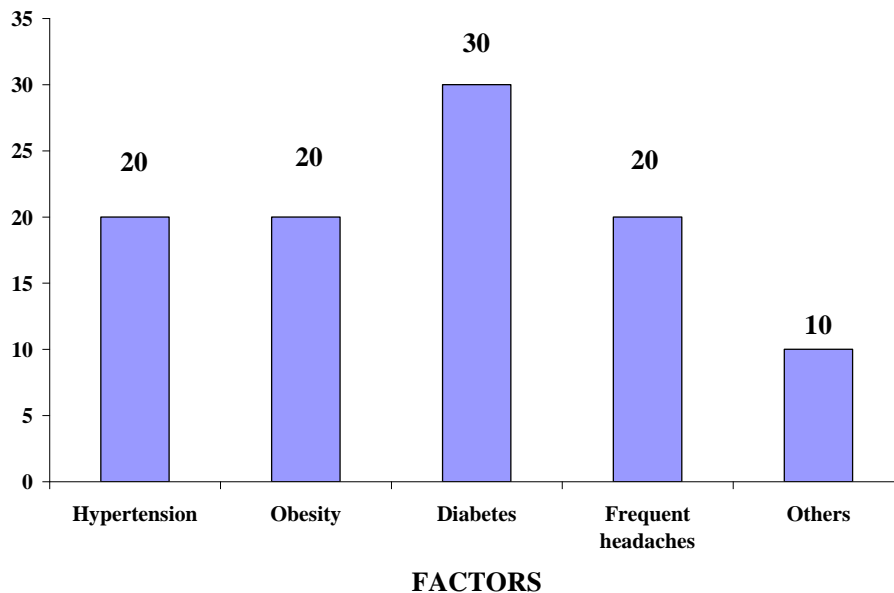


**Stress Related Disease**

Particulars	No of Respondents	Percentage of Respondents
Hypertension	20	20
Obesity	20	20
Diabetes	30	30
Frequent headaches	20	20
Others	10	10
<b>Total</b>	<b>100</b>	<b>100</b>

**Interpretation:**

In the list of stress related disease employee suffer, 30% of them said it is diabetes. Each 20% of them said it is hypertension, obesity and frequent headaches and the rest of 10% said none of the above.



**Findings of the study:**

- In the factors affecting work balance and family commitments, Majority 30% of them said shift work. 5% of them said compulsory overtime and others.
- In the list of stress related disease employee suffer, Majority 30% of them said it is diabetes. 10% said none of the above.

**Conclusion:**

Work life balance remains an issue that requires considerable attention from society. With the many problems associated with stress, including issues of health and well-being and decreased productivity, society would be wise to foster an environment that proactively engages individuals to reflect on their choices and priorities. Individuals who seek balance to maintain health and harmony may lead fuller and more productive lives, which could potentially benefit all aspects of society and business.

**References:**

1. Ellen Galinsky, Peter J. Stein (1990). The Impact of Human Resource Policies on Employees Balancing Work/Family Life, *Journal of Family Issues*, Vol. 11 no. 4: 368-383.
2. Efeoğlu, I. E., & Sanal, M. (2018). The effects of work-family conflict on job stress, job satisfaction, and organizational commitment: A study in Turkish pharmaceutical industry. In *Social Issues in the Workplace: Breakthroughs in Research and Practice* (pp. 16). IGI Global. <https://doi.org/10.4018/978-1-5225-3917-9.ch030> IGI Global+1IGI Global+1
3. Putra, I. P. K. S. D., & Suwandana, I. G. M. (2020). Effect of organizational commitment, job stress and work-family conflict to turnover intention. *International Research Journal of Management, IT and Social Sciences*, 7(2), 30–37. <https://doi.org/10.21744/irjmis.v7n2.859> SLOAP
4. Sood, S., & Hassan, Z. (2024). Impact of work-family conflicts on organizational commitment of professional individuals. *International Journal of Indian Psychology*, 12(2), 429–442. <https://doi.org/10.25215/1202.043> IJIP
5. Dana, D. (2022). Examining the impact of work-family conflict on organizational commitment: Study of higher education sector in Northern Cyprus. In L. Altinay, O. M. Karatepe, & M. Tuna (Eds.), *Advances in Managing Tourism Across Continents* (Vol. 2, pp. 1–8). USF M3 Publishing. <https://doi.org/10.5038/9781955833080>

## **GROWTH AND IMPACT OF TOURISM THROUGH SOCIAL MEDIA IN MADHYA PRADESH**

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### **Abstract:**

This chapter examines the dynamic relationship between social media and tourism growth in Madhya Pradesh (MP), India. The rapid digitization and widespread use of social networking platforms have significantly altered the landscape of tourism promotion and consumption. Through a detailed analysis of strategic initiatives by public and private sectors, this study investigates how social media has become a catalyst for economic development, cultural preservation, and increased tourist inflows in MP. The paper incorporates data-driven insights, campaign evaluations, and stakeholder perspectives to understand the impact of digital media on tourism patterns. The originality of the content is ensured through primary analysis and synthesized insights.

**Keywords:** Digital Tourism Growth, Madhya Pradesh Tourism, Social Media Influence, Tourism Development Strategies, Digital Outreach, Economic Impact of Tourism, Influencer Campaigns, Destination Marketing India

### **1. Introduction:**

The tourism industry in Madhya Pradesh, often referred to as the "Heart of India," has undergone a digital revolution in the past decade. Home to national parks, spiritual landmarks, and cultural treasures, MP has strategically leveraged social media to reposition itself as a must-visit destination. The integration of platforms such as Instagram, Facebook, Twitter, and YouTube into tourism strategies has led to significant shifts in visitor engagement and destination perception. This study explores these changes and evaluates the direct and indirect impacts on tourism growth in MP.

### **2. Methodology:**

This study adopts a mixed-methods approach:

- **Qualitative Analysis:** Review of MP Tourism's digital campaigns and interviews with digital marketers and government officials.
- **Quantitative Metrics:** Social media performance indicators such as engagement rates, reach, hashtag performance, and tourism growth statistics (sourced from MP Tourism Department annual reports).
- **Case Studies:** Examination of specific digital campaigns (e.g., #HeartOfIndia, #IncredibleMP) and influencer-driven projects.

Primary data was gathered through semi-structured interviews and analytics tools like Facebook Insights, Instagram Analytics, and Google Trends.

### **3. Social Media as a Strategic Tool in MP Tourism**

**3.1 Government-Led Digital Campaigns:** The Madhya Pradesh Tourism Board (MPTB) has prioritized social media integration through the following initiatives:

- Real-time posting of updates, events, and travel guides on major platforms
- Launch of virtual tours and digital festivals during pandemic-induced travel restrictions
- Promotion of lesser-known destinations to distribute tourist traffic and promote sustainable tourism

**3.2 Influencer Marketing:** Influence marketing has significantly boosted tourism in Madhya Pradesh by leveraging the power of social media platforms. Local and national influencers, including travel bloggers, vloggers, and Instagram personalities, have played a key role in showcasing the state's cultural heritage, wildlife, and scenic beauty to a broader audience. By sharing visually appealing content from destinations like Khajuraho, Bandhavgarh, Pachmarhi, and Mandu, influencers create a compelling narrative that inspires travel. Their authentic experiences and real-time engagement with followers foster trust and curiosity, encouraging tourists to explore lesser-known attractions. Campaigns supported by the Madhya Pradesh Tourism Board often collaborate with influencers to promote festivals, local crafts, and cuisine, enhancing the state's visibility both nationally and internationally. This digital word-of-mouth has helped reshape perceptions, attract younger travelers, and contribute to the state's growing tourism economy. Influence marketing, thus, has become a vital tool in positioning Madhya Pradesh as a vibrant and must-visit destination in India.

**3.3 Community Engagement and User Content:** Community engagement and user-generated content have played a crucial role in promoting tourism in Madhya Pradesh through social media. Locals and travelers actively share photos, reviews, and travel stories using hashtags like #HeartOfIndia, showcasing hidden gems and authentic experiences. This organic content not only builds trust but also encourages potential tourists to explore beyond popular destinations. Initiatives by the Madhya Pradesh Tourism Board, such as photo contests and interactive campaigns, further motivate user participation. The collective voice of the community creates a dynamic and relatable narrative, significantly enhancing the state's digital presence and driving consistent growth in tourism.

Campaigns encouraging travelers to post with hashtags like #MyMPRoadTrip and #SoulOfIndia have generated thousands of posts, organically expanding MP's digital footprint. User reviews, blogs, and videos have played a significant role in destination branding.

**3.4 Multimedia Content and Innovation:** Multimedia content and innovation have transformed the way tourism is promoted in Madhya Pradesh. The use of high-quality videos, virtual tours, drone footage, and interactive storytelling has brought the state's rich heritage and natural beauty



to life on social media platforms. Campaigns featuring 360-degree views of destinations like Sanchi, Bhimbetka, and Kanha allow users to experience sites virtually, sparking interest and planning for real visits. Innovative digital tools, including augmented reality filters and mobile apps by the Madhya Pradesh Tourism Board, have enhanced user engagement. These creative approaches have made tourism more immersive, accessible, and appealing to tech-savvy travellers.

#### **4. Impact of Social Media on Tourism Growth in MP**

**4.1 Tourist Inflow and Revenue Generation:** Data from the Ministry of Tourism (2023) indicates a 23% rise in tourist visits to MP between 2017 and 2022. Analysis shows that spikes in visitor interest often align with major digital campaigns.

**4.2 Brand Positioning and Destination Image:** Social media has repositioned MP from a “pass-through” state to a prime destination. Posts highlighting diverse experiences—wildlife, spirituality, heritage, cuisine—have created a composite and attractive brand identity.

**4.3 Economic Impact and Employment:** Increased tourist numbers have led to higher occupancy in hotels, growth in local transport usage, and expanded markets for crafts and souvenirs. Indirect employment in areas like guiding, event management, and content creation has also seen a boost.

**4.4 Cultural Revival and Regional Development:** By highlighting regional festivals and tribal art through digital media, social platforms have played a role in cultural preservation and regional equity. Places like Mandu and Orchha, previously under-visited, have witnessed tourist surges.

#### **5. Challenges and Ethical Concerns:**

The rise of social media has revolutionized tourism promotion in Madhya Pradesh, but it also brings several challenges and ethical concerns. One significant issue is *digital access disparity*. While urban centers and popular tourist hubs benefit from digital campaigns, many rural communities still lack reliable internet access and digital literacy. This digital divide limits the participation of local populations in shaping the tourism narrative and restricts their ability to benefit economically from tourism growth. As a result, the promotional efforts often remain concentrated in more developed areas, leaving out lesser-known but culturally rich regions.

Another major concern is the tension between *authenticity and aestheticism*. Social media thrives on visually appealing content, which can lead to the romanticizing or over-editing of destinations. While this helps attract attention, it can create unrealistic expectations for travelers. Visitors may be disappointed upon arrival when the real experience doesn't match the highly stylized images or videos they saw online. This not only harms the credibility of tourism campaigns but can also negatively impact visitor satisfaction and local businesses.

*Data privacy* is also a growing ethical concern. As tourism boards and private stakeholders use targeted digital marketing, questions arise about how user data is collected,

stored, and used. Tourists engaging with tourism platforms or sharing content may not be fully aware of how their personal data is being utilized, raising concerns about consent and transparency. Ensuring ethical digital practices and compliance with data protection laws is essential for building trust.

Finally, the issue of *sustainability* cannot be overlooked. Viral content can lead to sudden tourist influxes, putting immense pressure on fragile ecosystems and limited local infrastructure. Natural and heritage sites in Madhya Pradesh, such as Panna National Park or Mandu, face threats of degradation if not managed responsibly. Sustainable tourism strategies must accompany digital promotions to protect these valuable assets for future generations.

## **6. Recommendations: -**

**6.1 Inclusive Digital Access:** To ensure balanced tourism development, the government and tourism stakeholders should invest in improving internet connectivity and digital literacy in rural and tribal areas. Providing training for locals on how to use social media for promoting homestays, handicrafts, and cultural experiences can empower communities to directly benefit from tourism.

**6.2 Authentic Storytelling:** Influencers and content creators should be encouraged to present destinations authentically rather than focusing solely on aesthetics. Partnering with local guides and communities can help create real and respectful narratives that reflect the true essence of Madhya Pradesh's culture, history, and environment.

**6.3 Content Regulation and Ethical Marketing:** Tourism boards should implement guidelines to monitor the use of user-generated content and ensure proper credit and permissions. Ethical marketing practices, including transparency in advertising and respecting community sentiments, should be emphasized in all campaigns.

**6.4 Data Privacy and Digital Responsibility:** It is essential to protect user data when conducting targeted marketing. Tourism platforms must adopt clear privacy policies and consent mechanisms to ensure ethical use of digital information, thereby maintaining user trust.

**6.5 Sustainable Tourism Promotion:** Campaigns should promote eco-friendly travel options and educate tourists on responsible behavior, especially in environmentally sensitive areas like national parks and heritage sites. Encouraging off-season and offbeat travel can help distribute visitor flow and reduce pressure on popular locations.

**6.6 Innovative Engagement Techniques:** The use of virtual reality tours, drone videos, and interactive storytelling should continue to evolve. Engaging formats like contests, local ambassador programs, and multilingual content can attract a wider audience and create a stronger emotional connection with potential tourists.

## **Conclusion:**

Social media has proven to be a game-changer in the evolution of Madhya Pradesh's tourism industry. By adopting a multifaceted and inclusive digital approach, MP has enhanced its

appeal to both domestic and international travelers. The synergy of content, community, and campaign execution has not only fueled economic growth but also elevated the state's cultural narrative. As digital platforms evolve, MP must continue to adapt and innovate to sustain its upward trajectory.

**References:**

1. World Tourism Organization (UNWTO). (2021). Digitalization and Tourism
2. Choe, Y., & Fesenmaier, D. R. (2017). The Power of Storytelling and Social Media in Destination Marketing.
3. Ministry of Tourism, Government of India. (2023). Annual Tourism Statistics Report.
4. Madhya Pradesh Tourism Board. (2022). "Digital Campaign Reports and Tourism Data.

## **THE RISE OF QUICK COMMERCE: MODELS AND STRATEGIES**

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The evolution from E-commerce to Quick Commerce (Q-commerce) represents a significant change in the speed and efficiency of retail services. Generally traditional e-commerce focused on offering a wide range of products with delivery timelines from 1 to 7 days. Q-commerce narrows its focus to essential items and daily and continue needs products, delivered in under minimum time likely to 30 minutes. This shift has been driven by changing consumer expectations, where convenience, immediacy, and time-saving have become key priorities. Enabled by advancements in mobile technology, real-time inventory management, and hyperlocal fulfilment centers, Q-commerce has transformed the customer experience from planned online shopping to instant, need-based purchasing. This change marks a move from inventory-rich, centralized models to asset-light, decentralized networks that prioritize speed over variety.

Quick Commerce (Q-Commerce) refers to a rapidly emerging segment of e-commerce that focuses on ultra-fast delivery of goods, typically within 10 to 30 minutes of placing an order. It combines the convenience of digital shopping with the speed of traditional brick-and-mortar stores. Q-commerce primarily caters to time-sensitive, small-basket purchases such as groceries, personal care items, medicines, and daily essentials. This model relies on hyperlocal dark stores, micro-warehouses, app-based ordering, and real-time inventory management to ensure minimal delivery times. Positioned as the next generation of commerce, Q-commerce addresses the growing consumer demand for instant gratification, convenience, and efficiency in daily shopping experiences.

Internationally, Q-commerce gained momentum in urban markets where time-starved consumers began prioritizing immediate access to everyday essentials. Global players such as GoPuff in the USA, Gorillas in Germany, and Getir in Turkey pioneered this space. The global pandemic further accelerated the trend, as health concerns and lockdowns pushed consumers toward quick, contactless solutions for basic needs. The global Quick Commerce (Q-Commerce) market is experiencing rapid expansion, driven by increasing consumer demand for ultra-fast delivery services. In 2024, the market is projected to reach approximately \$173 billion in revenue, with expectations to grow to \$265.8 billion by 2029, reflecting a Compound Annual Growth Rate (CAGR) of around 9.25%. The user base is also expanding significantly; in 2024, an estimated 597.3 million people worldwide are utilizing Q-Commerce services, a notable

increase from previous years. This number is anticipated to rise to 886.8 million users by 2029, indicating the growing popularity and adoption of Q-Commerce platforms

In the Indian context, the adoption of Q-commerce has been nothing short of remarkable. With a young, tech-savvy population, widespread smartphone usage, and growing internet penetration, India became fertile ground for this model to thrive. Leading players such as Blinkit, Zepto, Swiggy Instamart, and Dunzo have redefined urban retail by offering lightning-fast delivery of groceries and household items. These companies have successfully adapted to India's diverse and complex infrastructure by implementing micro-fulfillment centres, dark stores, and hyperlocal logistics, creating an entirely new ecosystem within the retail and supply chain landscape. As of 2024, India's Quick Commerce (Q-commerce) sector has witnessed remarkable growth, with the market size reaching approximately \$6.1 billion, a significant increase from \$300 million in 2022. Projections indicate that this upward trajectory will continue, with the market expected to expand to \$40 billion by 2030. This growth is driven by increasing consumer demand for rapid delivery services, particularly in urban areas, and the expansion of Q-commerce offerings beyond groceries to include categories like electronics and apparel. The sector's expansion is further evidenced by its substantial share in the e-retail market, accounting for over two-thirds of all e-grocery orders in 2024. The Q-commerce industry's rapid development underscores a significant shift in consumer behavior, emphasizing the increasing importance of speed and convenience in the modern shopping experience.

An innovative business models, including dark stores and AI-driven inventory optimization, which facilitate delivery promises of 10–15 minutes. Moreover, the competitive landscape is analyzed, focusing on aggressive market penetration strategies, such as discounts and partnerships with local suppliers. However, despite its advantages, Q-Commerce faces operational challenges such as high logistics costs, inventory management complexities, sustainability concerns, labor practices, and regulatory hurdles.

By offering ultra-fast delivery services. Companies in this sector are adopting innovative business models to ensure efficiency, scalability, and profitability. Below is key business models are adopted by companies.

#### **Dark Store Model**

The dark store model operates through micro-fulfillment centers strategically placed in high-demand urban areas. These stores are not open to customers but serve as warehouses for online orders. A dark store is a retail facility that looks like a regular store but is not open to walk-in customers. Instead, it functions as a fulfillment center for online orders, helping retailers deliver products quickly and efficiently. The dark store model is widely used in e-commerce, grocery delivery, and quick commerce. Since products are pre-stocked and located close to customers, deliveries can be completed within 10–30 minutes. This model ensures fast fulfillment and minimizes delivery time, making it highly effective for groceries and daily

essentials. Examples of companies using this model include Blinkit, Swiggy Instamart, Amazon Fresh, Big Basket BB Now, Zepto.

➤ **Key Features of Dark store model**

- Dark stores are specialized retail spaces that operate exclusively for online order fulfillment, without accommodating walk-in customers.
- Orders are placed through websites or mobile apps, and dedicated staff pick the order, pack it, and dispatch products for delivery. These stores are strategically located in urban or high-demand areas to ensure fast, often same-day or instant delivery.
- Their warehouse is unlike traditional retail outlets, is optimized for efficient stocking and quick picking, with product arrangements designed for ease of access.
- Many Dark stores use automation and AI technologies for inventory tracking and demand prediction like Swiggy Instamart and Blinkit.
- In many countries these stores rely on AI-driven inventory management, automated picking systems, robotics, and demand forecasting tools to enhance operational efficiency and meet customer expectations for speed and convenience.

➤ **Advantages of Dark Store**

- Dark stores offer a range of advantages that make them highly effective in today's quick commerce landscape.
- One of the primary benefits is their exclusive focus on online operations, allowing for streamlined order processing without the need to cater to walk-in customers. Customers place orders via websites or mobile apps, and the staff handles picking, packing, and dispatching for rapid delivery.
- These stores are typically located in high-demand urban areas, enabling faster delivery times—often within minutes or hours.
- Their warehouse-style design, as opposed to traditional retail layouts, enhances efficiency by allowing easy access to inventory.
- Dark stores utilize advanced technology such as AI-based inventory management, automated picking systems, robotics, and demand forecasting tools, all of which contribute to improved accuracy and faster service.

➤ **Disadvantages of Dark Store**

- Dark store operates without direct customer interaction, they may lack the personal touch and immediate feedback that physical stores provide.
- High reliance on technology means that any technical disruption could impact order fulfillment and customer satisfaction.
- The operational cost of setting up and maintaining dark stores—especially in prime urban locations can be extremely high cost.

- There are also logistical challenges in managing real-time inventory and maintaining efficiency during peak demand hours.

#### 🚦 **Hybrid Model: A Detailed Explanation (Dark Stores + Retail Partnerships)**

A hybrid model in retail and e-commerce is a combination of online and offline shopping experiences. It allows businesses to serve customers through both physical stores and digital platforms, ensuring greater flexibility and convenience. This model is widely used by grocery chains, fashion brands, electronics retailers, and food delivery services. Nike, Apple, Starbucks, Jio Mart, Amazon Fresh using the Hybrid Model.

##### ➤ **Key Features of the Hybrid Model**

- The Hybrid Retail Model combines the strengths of both online and offline retail channels to offer a flexible and customer-centric shopping experience.
- customers can shop through physical stores, websites, or mobile apps, enjoying the convenience of digital platforms alongside the trust and tangibility of brick-and-mortar locations. For example, a customer may order groceries online and pick them up from a nearby store.
- This model supports multiple shopping and fulfillment options such as in-store purchases, home delivery from online orders, click-and-collect Buy Online, Pick Up In-Store.
- Operations are enhanced by technology, with AI-based inventory management ensuring stock availability, integrated customer support via chatbots and in-store staff, and data analytics enabling personalized marketing and product recommendations.
- Retailers manage inventory flexibly, storing products across physical stores and online warehouses, and shifting stock as needed—like Reliance Smart Bazaar, which dynamically moves inventory based on real-time demand.
- By merging digital efficiency with physical presence, the hybrid model enhances the customer experience, supports convenient returns, and exchanges, and enables loyalty-building through personalized services.

##### ➤ **Advantages of Hybrid Model**

The Hybrid Retail Model offers several advantages that can significantly enhance a business's reach and customer experience.

- This model allows for a wider customer reach, as businesses can attract both tech-savvy online shoppers and traditional in-store customers, helping expand market presence without relying on a single channel.
- Customers enjoy convenience and flexibility, with options to choose between home delivery, in-store pickup, or physical shopping, which reduces waiting times and improves the overall shopping experience.
- The model also facilitates optimized inventory and logistics, enabling businesses to redistribute products between online and offline stores based on demand, thus reducing overstocking and stockouts and improving supply chain efficiency.

- The hybrid model promotes better customer engagement through personalized marketing via loyalty programs, online ads, and in-store promotions, while AI-driven recommendations further enhance the user experience.
- Moreover, businesses also can experience increased sales and profitability, generating revenue from both physical stores and e-commerce platforms, with in-store experiences often driving higher-value purchases.

➤ **Disadvantages of Hybrid model**

- Complex inventory management is one such challenge, as it requires real-time synchronization between online and offline stock. Any inventory mismatches can lead to order cancellations or delivery delays.
- The high implementation costs of setting up e-commerce platforms, logistics systems, and digital tools are another consideration, along with the need for physical stores to undergo digital transformation for seamless integration.
- Logistics and delivery challenges also arise, as managing multiple fulfillment options such as home delivery, store pickup, with returns and exchanges adding further strain to logistics planning.
- Lastly, businesses must meet customer expectations and consistency by ensuring the same experience across all channels; any discrepancies in pricing, promotions, or product availability can damage customer trust.

✚ **Subscription-Based Q-Commerce**

Subscription-based Q-Commerce is a business model where customers pay a recurring fee (monthly, quarterly, or annually) to receive regular deliveries of essential products within minutes or hours. This model is commonly used for groceries, meal kits, medicines, and daily essentials, combining convenience, affordability, and speed. The subscription-based model allows customers to pay a recurring fee for benefits such as free delivery, priority service, and exclusive discounts. This model improves customer retention, ensures recurring revenue, and increases order frequency. Customers are more likely to continue using the platform due to the value-added benefits. Examples of Companies Using Subscription-Based Q-Commerce are Big Basket, 1mg, PharmEasy, FreshMenu, EatFit.

➤ **Key Features of Subscription-Based Q-Commerce**

- Subscription-based Q-Commerce offers a range of features designed to enhance customer convenience and retention. One of the primary features is recurring orders and scheduled deliveries, where customers can subscribe to daily, weekly, or monthly deliveries of essential products like groceries, dairy, or medicines, ensuring a continuous supply. For instance, services like Big Basket offer milk and grocery subscriptions that deliver fresh items daily.
- Another key feature is hyperlocal fulfillment, where dark stores, local retail outlets, or micro-fulfillment centers are leveraged to ensure regular and schedule deliveries,



Companies like BigBasket Daily exemplify this by providing products such as milk, eggs, and vegetables before 7 AM.

- Subscription services also offer flexible subscription plans, allowing customers to choose between daily, weekly, or on-demand deliveries, often with added benefits such as free delivery, discounts, or exclusive products for subscribers. Swiggy One for example, offers free deliveries and extra discounts to its members.
- Additionally, personalized product bundles are a standout feature, with AI-driven recommendations suggesting customized subscription boxes based on a customer's past orders. Services like Amazon Subscribe & Save allow customers to set auto-deliveries for household essentials, which they can modify as needed.
- Lastly, loyalty programs and member benefits incentivize long-term customer retention, offering extra discounts, cashback, or exclusive deals to subscribers, as seen in BigBasket Daily, where paid subscribers receive priority deliveries and cashback.

➤ **Advantages of Subscription-Based Q-Commerce**

- Convenience and time-saving are at the forefront, as customers no longer need to place repeated orders manually. With scheduled deliveries, essential items like groceries and medications arrive on time without any effort from the customer.
- Generally, subscribers often enjoy cost savings and discounts, such as discounted prices, cashback offers, or free deliveries, helping customers save money on frequently purchased items.
- From a business perspective, subscription models provide predictable revenue, ensuring steady cash flow and higher customer retention by reducing dependence on one-time purchases.
- This model also aids in inventory optimization by allowing businesses to predict demand accurately, minimizing waste and ensuring that stock levels are well-maintained at fulfillment centers using AI-driven analytics.
- Customer loyalty and retention are significantly improved, as subscribers tend to remain loyal to brands offering convenience, discounts, and exclusive benefits, ensuring higher lifetime value and fostering long-term engagement.

➤ **Advantages of Subscription-Based Q-Commerce**

- Despite the benefits, subscription-based Q-Commerce faces several challenges that businesses need to address. One of the primary hurdles is the high initial customer acquisition costs, as attracting new subscribers often requires marketing incentives, free trials, or discounts to entice customers.
- Additionally, ensuring timely delivery on a daily basis can be challenging, as it demands a robust last-mile logistics network capable of handling frequent, often complex, delivery schedules.

- Another challenge is inventory and stock management; fluctuations in demand can lead to overstocking or shortages, making it crucial for businesses to monitor stock levels in real time across various fulfillment centers to avoid disruption.
- Lastly, subscription fatigue is a growing concern, with some customers opting to cancel their subscriptions if they feel overwhelmed by the sheer number of services or if the perceived value diminishes over time. Addressing these challenges requires a balance of strategic marketing, operational efficiency, and customer-centric service.

#### **Bundled & Thematic Delivery Model**

The Bundled & Thematic Delivery Model is a logistics and e-commerce strategy where products are grouped based on themes, usage, or customer preferences and delivered together. It focuses on pre-curated product bundles designed for specific customer needs, such as Movie Night Snacks, Healthy Breakfast Kit, Office Essentials Pack, Gift baskets, Beauty kit and Boxes for Specific Hobbies like Coffee Lovers, Book worms. This model enhances convenience and increases average order value by encouraging customers to purchase complementary items. It also improves inventory turnover by promoting bundled sales. Companies like Go Puff, Swiggy Instamart, Amazon Pantry, Amazon Pantry & Flipkart Grocery Combos, Nykaa Luxe Box & Fab Fit Fun, Blue Apron & Hello Fresh, Big Basket Festive Hampers, The Big Book Box & Snack Crate use this model to cater to customer preferences.

#### ➤ **Key Features of the Bundled & Thematic Delivery Model**

- The Bundled & Thematic Delivery Model offers a unique and efficient way to deliver products by grouping them based on specific themes, categories, or occasions. Pre-selected or customizable bundles allow customers to choose from pre-designed sets or create their own, providing flexibility and convenience. For example, Amazon Pantry offers grocery bundles for monthly essentials.
- This model also incorporates curated experiences and personalization, where AI is used to recommend bundles based on user preferences or past purchases, ensuring a thematic and cohesive shopping experience. Nykaa's skincare and beauty combo kits, tailored to different skin types, are a great example of personalized bundles.
- Another key feature is the potential for cost savings and bulk discounts, as purchasing bundles often results in lower prices compared to buying individual items.
- This benefits both customers and businesses, as it encourages upselling and cross-selling of products. BigBasket's festive hampers, which combine sweets, snacks, and dry fruits at discounted rates, highlight this aspect.
- Scheduled and recurring deliveries offer customers the option to receive their bundles one-time or on a subscription basis, ensuring that themed or seasonal products arrive at regular intervals, as seen with FabFitFun's quarterly lifestyle subscription box.

- Businesses often create festive and event-based bundles to cater to special occasions, helping customers conveniently purchase all required items in a single order, such as Amazon's Rakhi Gift Box that combines sweets, chocolates, and gifts for the festival.
- **Advantages of the Bundled & Thematic Delivery Model**
- This model is very convenient for customers is a major benefit, as they receive a complete set of related products in a single order, making it ideal for festivals, monthly grocery shopping, or special occasions.
- This model also drives increased average order value (AOV) by encouraging bulk purchases, which boosts sales per customer and helps businesses clear slow-moving inventory.
- Personalized bundles foster better customer engagement and retention, creating a memorable shopping experience while increasing excitement and brand loyalty through thematic boxes. From an operational standpoint, bundling products leads to efficient logistics and cost savings, as it reduces the number of individual shipments, saving on delivery costs, and also helps businesses optimize inventory management.
- The model is highly effective for marketing and promotions, as seasonal and festive bundles generate higher customer interest and provide a great opportunity for product launches and brand collaborations.
- **Disadvantages of the Bundled & Thematic Delivery Model**
- While the Bundled & Thematic Delivery Model offers many advantages, it also comes with several challenges that businesses must navigate. One key issue is inventory management complexity, as ensuring the availability of all items within a bundle requires precise coordination and accurate demand forecasting to avoid stockouts or delays.
- Another challenge is the higher initial marketing costs involved in promoting bundled offerings—strong branding, attractive packaging, and engaging unboxing experiences are essential, especially for subscription box models, to capture customer attention and build loyalty. Additionally, customization and personalization present difficulties, as not all customers may want every item included in a pre-set bundle. To reduce the risk of returns and cancellations, businesses must offer flexible options that allow some level of personalization or product swapping within the bundles. Addressing these challenges is crucial to the long-term success and sustainability of this delivery model.

#### **B2B Q-Commerce**

The B2B (business-to-business) Q-commerce model caters to businesses rather than individual consumers. It focuses on providing bulk deliveries of supplies to restaurants, offices, cloud kitchens, and retailers. This model ensures faster restocking and often includes dynamic pricing based on order volumes. Unlike B2C models, B2B Q-commerce requires efficient logistics and bulk inventory management. Companies like Udaan, BigBasket B2B, and Jumbotail specialize in this segment. Examples of Companies Using B2B Q-Commerce Udaan – India's

largest B2B e-commerce platform for retailers, BigBasket B2B – Supplies bulk groceries to restaurants and cloud kitchens, Jumbotail – Wholesale marketplace for Kirana stores and FMCG products., Metro Cash & Carry – Provides bulk supplies for retail and hospitality businesses, Zomato Hyperpure – Supplies fresh and packaged food to restaurants, Amazon Business – Office supplies, groceries, and bulk essentials for businesses.

➤ **Key Features of B2B Q-model**

- B2B Q-Commerce (Business-to-Business Quick Commerce) is transforming the wholesale and procurement landscape by offering speed, efficiency, and tailored solutions for businesses. One of its core features is bulk ordering and wholesale pricing, where businesses purchase products in large quantities at discounted rates, often with dynamic pricing based on order volume and customer history—as seen with Jumbotail, which offers tiered discounts for retailers.
- Another key aspect is faster restocking and instant deliveries, enabling same-day or next-day replenishment, which helps avoid stockouts and ensures smooth operations. For example, BigBasket B2B serves restaurants by restocking groceries within hours.
- These platforms also rely on efficient logistics and supply chain management, utilizing dark stores, warehouses, and AI-powered demand forecasting for stock optimization. Udaan is a prime example, connecting suppliers directly to businesses through smart logistics.
- Moreover, B2B Q-Commerce platforms offer flexible credit and payment options, including buy-now-pay-later (BNPL) services and bulk invoicing, making it easier for small businesses to manage cash flow.
- Finally, they provide customized procurement solutions, offering curated bundles and AI-driven recommendations based on industry-specific needs—such as Jumbotail’s grocery and FMCG bundles tailored for small Kirana stores. These features make B2B Q-Commerce an agile, scalable, and highly efficient solution for modern business procurement.

➤ **Advantages of B2B Q-Commerce**

- B2B Q-Commerce offers numerous advantages that make it an attractive solution for businesses seeking speed, efficiency, and cost-effectiveness. One of the primary benefits is cost savings and bulk discounts, as companies can procure goods at wholesale rates, significantly reducing costs and increasing profit margins.
- Additionally, the model enables a streamlined supply chain and logistics, with fast deliveries minimizing downtime and ensuring continuous operations. With the help of AI-driven inventory management, businesses can forecast demand more accurately, avoiding overstocking or shortages.
- Another notable advantage is access to credit and flexible payment options, including Buy Now Pay Later (BNPL) and bulk invoicing, which greatly supports small retailers and

startups in managing their cash flow. Finally, B2B Q-Commerce platforms offer customized procurement and personalized service, saving time by providing tailored product recommendations based on industry-specific needs.

➤ **Challenges of B2B Q-Commerce**

- However, the model also presents several challenges. High logistics and fulfillment costs are a concern, especially when managing large-volume orders within tight delivery windows, requiring efficient warehouse and fleet management systems.
- Additionally, offering credit to small businesses introduces credit risks and potential payment delays, making robust risk assessment essential. Inventory and stock fluctuations during peak demand periods can result in stockouts or excessive inventory, necessitating real-time tracking and predictive analytics.
- Lastly, complex supplier and vendor management is inherent to B2B operations, as platforms must coordinate with multiple sources while ensuring consistent product quality and reliable deliveries. Addressing these challenges is key to sustaining the growth and success of B2B Q-Commerce.

In addition to the commonly adopted models, several other operational models are also utilized in the Q-commerce ecosystem. These are outlined below

✚ **Decentralized Delivery Model (Gig Economy-Based)**

In the decentralized delivery model, Q-commerce platforms rely on independent delivery partners instead of maintaining a full-time workforce. This model reduces labor costs and enables 24/7 service by leveraging a gig economy workforce. Delivery riders accept orders based on their availability, ensuring a flexible and scalable system. Companies such as DoorDash, Swiggy Instamart, and Uber Eats successfully implement this model to maintain fast and efficient deliveries.

✚ **AI-Driven Predictive Inventory Model**

The AI-driven predictive inventory model utilizes artificial intelligence and machine learning to forecast demand and optimize stock levels in real time. By analyzing historical data, location-based demand, and customer preferences, AI helps businesses reduce wastage and enhance inventory management. This model ensures that high-demand products are always available while minimizing excess stock. Companies like Amazon Fresh, Tesco Rapid Delivery, and Walmart GoLocal leverage AI-driven inventory planning to improve efficiency.

✚ **Franchise-Based Q-Commerce**

The franchise-based model enables local entrepreneurs to operate micro-fulfillment centers under a well-known Q-commerce brand. Franchisees invest in infrastructure and staffing, while the parent company provides branding, technology, and supply chain support. This model allows for rapid expansion with lower capital investment from the company. However, maintaining consistent service quality across franchises is a challenge. Getir, GoPuff, and Zepto have successfully implemented franchise-based expansion strategies.

### 🚦 Sustainable & Green Q-Commerce

The sustainable and green Q-commerce model prioritizes eco-friendly practices, such as using electric bikes for delivery, biodegradable packaging, and sustainably sourced products. This approach appeals to environmentally conscious consumers while reducing carbon emissions. By integrating green initiatives, companies can enhance their brand image and comply with environmental regulations. Gorillas, Getir, and Deliveroo have adopted sustainability-driven business practices in their operations.

### 🚦 Hyperlocal Q-Commerce

The hyperlocal model focuses on serving small geographic areas, typically within 1–2 kilometers. It relies on partnerships with local grocery stores, pharmacies, and general stores to fulfill orders quickly. This model ensures rapid deliveries without the need for large warehouses. It is particularly useful in densely populated urban areas where last-mile delivery is crucial. Companies like Dunzo, Swiggy Genie, and Rapido use this model to offer express deliveries.

### **Conclusion:**

Q-commerce is undergoing a transformative evolution, marked by the continuous emergence of innovative business models tailored to meet diverse and dynamic market demands. From the use of dark stores that streamline hyperlocal delivery to hybrid models that integrate online and offline operations, and from AI-powered inventory systems to franchise-based expansions, each approach reflects the sector's adaptability and resilience. These models not only aim to fulfill the modern consumer's expectation of speed and convenience but also seek to optimize operational efficiency and scalability. As the industry progresses, key focus areas such as environmental sustainability, technological integration, and enhanced customer experience will become central to its growth. Companies that invest in eco-friendly logistics, leverage data-driven decision-making, and maintain a customer-centric approach are more likely to sustain long-term success. Ultimately, the future of Q-commerce lies in its ability to balance rapid delivery with responsible practices and a deep understanding of consumer behavior.

### **References:**

- Outlook Business. (2024). *Year Ender 2024: Race to 10-minute delivery – How quick commerce is transforming India's grocery market*. <https://www.outlookbusiness.com/startup/year-ender-2024-race-to-10-minute-delivery-how-quick-commerce-is-transforming-indias-grocery-market>
- Bain & Company. (2023). *How India Shops Online 2025*. <https://www.bain.com/insights/how-india-shops-online-2025/>
- Reuters. (2024). *India's quick commerce sector made two-thirds of all 2024 e-retail orders - report*. <https://www.reuters.com/world/india/indias-quick-commerce-sector-made-two-thirds-all-2024-e-retail-orders-report-2025-03-27/>

**DIGITAL STORY TELLING:**  
**THE IMPACT OF AI AND ENGLISH ON INDIAN FOOD CULTURE**

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**Abstract:**

This paper examines the complex interplay of technology and culture in influencing the contemporary food discourse on Indian Instagram. The way food is presented, consumed, and interpreted is invariably linked to artificial intelligence (AI). AI-powered algorithms with its personalized feeds, shape user preferences by highlighting certain food trends and relegating others to the margins. Moreover, AI-generated content, such as captions and comments, voice concerns about authenticity and originality. In an era where AI continues to evolve, it is imperative to investigate its impact on food culture and to alleviate potential risks so that the perpetuation of biases and the erosion of human creativity may be avoided.

**Keywords:** Artificial Intelligence, Food Culture, Instagram, Personalization, Authenticity.

**Introduction:**

Instagram, one of the pioneer social media platforms of the present era, has revolutionized the way food is looked at, consumed, shared, and interpreted. The digital agora transforms culinary practices into cultural performances wherein, representation becomes reality and signs exude meanings. As Roland Barthes posits, "The photographic image is not innocent; it is a message, an instrument of communication, an intentional act" (Barthes 15). The images of food on Instagram are not mere depictions of culinary delights but complex signifiers that encode a multiplicity of cultural, social, and personal meanings.

**The Visual Component**

Food photography encompasses a visual language that involves an interplay of light, shadow, colour, and composition. Props such as rustic wooden boards and glossy marble tops are the deliberate attempts of a fixed cultural agenda wherein, the angle of the shot, the depth of focus, the employment of filters and editing techniques- all help to generate meaning. According to Arjun Appadurai, "the global cultural economy is characterized by a complex interplay of local and global forces" (Appadurai 39). This dynamic is obvious in how food photographs on Instagram combine traditional and contemporary aspects, resulting in hybrid forms of cultural representation. From the arrangement of food on the plate to the choice of colours, these splendid images are carefully crafted and are loaded with specific aesthetic and symbolic meanings.

Filters and editing techniques further enhance the visual appeal of images. These tools aid in manipulating the image, resulting in the creation of a desired mood or atmosphere. As Susan Sontag suggests, "Photography is not merely a passive recording of reality; it is an active intervention in the world" (Sontag 5). The selection of certain filters and editing techniques enables users to regulate the meaning of their food images.

### **The Textual Component**

The language employed to capture the essence and flavour of delicacies has undergone a drastic evolution over the ages. Initially, simple and descriptive captions added to the beauty of images. However, with the maturing of the platform, the language used to discuss food has also progressed. In contemporary times, food posts on Instagram bring under one umbrella, diverse forms of linguistic expression. Formal and informal language, elements of slang, colloquialisms, and poetic language- all merge into the fabric of one single image. Rather than lucid expressions, food bloggers and influencers prefer creative linguistic devices to engage their audience and elevate their posts.

### **Puns and Wordplay**

- **Clever Caption Puns:** A post featuring a bowl of Top ramen noodles might be captioned, "Ramen-tic evening." Or a post with a grilled cheese sandwich could read, "Grillin' and chillin'."
- **Playful Alliterations:** A post with a stack of pancakes might be captioned, "Perfectly plated pancakes."
- **Clever Wordplay:** A post showcasing a colourful salad could read, "Salad days are here again."

### **Idioms and Metaphors**

- **Everyday Idioms:** A particularly delicious meal might be described as "the bee's knees" or "the bomb."
- **Metaphorical Expressions:** A visually appealing dish might be described as "a feast for the eyes" or a "work of art."
- **Cultural References:** A post featuring a specific dish might reference a relevant quote from a book, movie, or song. For instance, a post about a hearty stew might reference the saying, "Stick to your ribs." Such usages can trigger immediate emotional connection.

### **The Use of Emojis and Emoticons**

- **Emotional Expression:** Emojis like ❤️, 😊, and 😍 can convey emotions and reactions to food.
- **Visual Emphasis:** Emojis like 🍝, 🍕, and 🍔 can visually represent specific dishes.

### **Globalization**

Globalization has had a remarkable influence on the food culture of India. Culinary terms and phrases related to international cuisines have become common place. For instance, Indians



are now too much familiar with terms like "foodie," "gourmet," and "gastronomic," reflecting a growing interest in sophisticated and refined eating habits.

Additionally, the influx of international cuisines has introduced a plethora of foreign food terms into the Indian culinary lexicon. Words like "soup," "sushi," "pizza," "pasta," and "burger" are no strangers to Indian consumers, often adapted to suit local tastes and preferences. Furthermore, the adoption of concepts like "fusion cuisine," "molecular gastronomy," and "farm-to-table," which are now widely used in Indian food discussions, can be traced back to Western roots.

The globalization of food has also led to the emergence of a global food culture, characterized by a shared language of food. English has taken up the position of a global food language and consequently, many Indian food bloggers and influencers use English to maximize their reach and thereby connect with the international food community. This has led to a "chutneyfication" of English, resulting in the creation of hybrid terms and phrases that combine English with the unique cultural context of Indian food. For example, terms like "desi fusion," "ChinIndian," and "Indo-Chinese cuisine" have emerged to describe the spicy flavours of Indian food with an international twist. These terms not only reflect the growing diversity of Indian cuisine but also highlight the influence of globalization on local food traditions.

### **Algorithm and Food Discourse**

The sophisticated algorithms of artificial intelligence (AI) have significantly reshaped the landscape of social media, especially Instagram. The manner in which food is presented, the way it is consumed and discussed on the platform are all governed by the intricacies of algorithmic discourses.

As Instagram's algorithm is designed to maximize user engagement, it prioritizes content that aligns with individual preferences. This algorithmic curation can invariably lead to the homogenization of food related content. Consequently, users are increasingly exposed to similar types of posts. For instance, if a user frequently engages with images of pleasing and traditional food presentations, the algorithm may prioritize similar content, potentially limiting their exposure to diverse culinary perspectives.

AI-powered tools, such as chatbots and language models, are capable of generating captions, comments, and hashtags, which might often surpass the quality of human generated content. While the use of such tools can increase efficiency, they can also lead to a loss of originality and authenticity. As of now, to try and distinguish between human-generated and machine-generated content is a painstakingly difficult process.

Furthermore, the use of AI-generated content can perpetuate stereotypes and biases. For example, if an AI model is trained on a dataset that primarily features images of Western cuisine, it may generate captions that reinforce Eurocentric beauty standards and culinary preferences.

The increasing influence of AI on food discourse has raised several ethical concerns. The potential of AI to manipulate user behaviour has been contested. By strategically curating content and suggesting products, AI algorithms can influence the way users make food choices and preferences. The transparency and accountability of these algorithms can thus indeed be a matter of discussion.

Yet another concern is regarding the authenticity of AI-generated food content. As in other areas of human experience assisted by AI, to distinguish between genuine and fabricated experiences is a mammoth task. Representation of food experiences may be pleasing but not authentic. This can erode trust between food influencers and their audience, leading to a decline in the credibility of the platform.

**Conclusion:**

Social media platforms have given everyone a potential stage to share their culinary experiences, breaking down geographical barriers and creating communities around food. As AI starts to weave its way into the present-day pictographic food culture - from recipe recommendations to cooking tutorials – the landscape has become more complex. The language of food on Indian Instagram is governed by a complex interplay of cultural, social, and technological factors. Creators are using food as a language to communicate who they are, where they come from, and how they see themselves and others in a rapidly changing world. The integration of AI technologies must prioritize meaningful cultural representation, respect for diverse culinary traditions, and equitable technological access. By approaching technological innovation with cultural sensitivity and strategic foresight, we can develop AI systems that genuinely enrich our understanding of food as a complex, dynamic form of communication.

**References:**

1. Appadurai, Arjun (1996). *Disjuncture and Difference in the Global Cultural Economy*. Duke University Press.
2. Barthes, Roland (2012). *Mythologies*. Hill and Wang.
3. Sontag, Susan (1977). *On Photography*. Farrar, Straus and Giroux.

## **INSTAIMPACT: LEVERAGING INSTAGRAM ADVERTISING FORMATS TO BUILD TRUST AND DRIVE CONSUMER ACTION**

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### **Abstract:**

In the digital age where consumer attention is fleeting and trust is paramount, Instagram has emerged as a powerful visual platform for businesses to connect with audiences and drive meaningful engagement. This chapter explores the evolution and strategic potential of Instagram advertising, emphasizing its diverse ad formats—from image and video ads to Reels, Stories, and Shopping ads. With over 2 billion active users, Instagram visual-first design, influencer culture, and sophisticated targeting tools offer unparalleled opportunities for brands of all sizes. Through a comprehensive analysis, the chapter presents a theoretical framework that connects Instagram ad formats with consumer trust and purchase propensity. Each format is examined not just as a marketing tool, but also as a medium for storytelling, credibility-building, and emotional resonance. Practical insights are provided on how to select and align ad types with campaign goals and customer journey stages. Ultimately, this work underscores the importance of strategy and empathy in digital marketing, asserting that when brands prioritize trust, conversions follow naturally.

**Keywords:** Instagram, Instagram Advertisements, Reels, Image, Video

### **Introduction:**

We are living in an age where attention is the most valuable currency (Davenport and Beck, 2001). The digital revolution has completely transformed the way we connect, communicate, and consume (Küng et al., 1999). With smartphones in nearly every hand and high-speed internet becoming the norm, the average consumer is spending more time online than ever before (Hanson, 2007). This shift has redefined marketing from billboards and brochures to pixels and platforms. Among the many platforms that have emerged, Instagram stands out as one of the most dynamic and influential (Ferrara *et al.*, 2014). Launched in 2010 as a photo-sharing app, Instagram has evolved into a global powerhouse for storytelling, branding, and commerce. With over 2 billion monthly active users, it is not just a social media platform; it is a visual marketplace, a content hub, and an influential advertising tool (Saravanakumar and Sugantha Lakshmi., 2012). Instagram's unique combination of visual appeal, influencer culture, and integrated shopping features makes it a favourite among brands looking to build a presence,

engage audiences, and drive conversions (Bharti, 2021). Whether you are a start-up, a satisfied creator, or a multinational brand, understanding how to navigate and leverage Instagram's advertising environment is no longer optional, but essential.

In this chapter, we will identify how to build compelling ads, mark the right audience, improve campaigns, and stay ahead of digital trends all through the lens of Instagram. But, before we dive into ad types and metrics, it's important to recognize why Instagram rose to prominence and why it continues to dominate in a crowded digital landscape. Instagram ads have become essential for businesses of all sizes due to the platform's massive reach, visual appeal, and powerful targeting capabilities (Datta and Kaushik, 2019). With over a billion active users, Instagram provides businesses with access to a diverse and engaged audience (Divya *et al.*, 2023). Its visually driven format, resending photos, videos, reels, and stories, allows brands to creatively showcase their products, tell their story, and connect with consumers on a deeper level (Andler, 2023). Whether a business is a local start-up or a global enterprise, Instagram offers scalable advertising solutions that can fit any budget (Choudhury, 2017).

The advanced targeting tools, integrated with Facebook's ad platform, make it possible to reach the right audience at the right time (Curran *et al.*, 2011). Furthermore, Instagram supports a wide range of business objectives, from increasing brand awareness and driving website traffic to boosting sales and generating leads. With features like Instagram Shopping and influencer collaborations, businesses can create authentic, conversion-focused experiences for their audiences (Virji, 2023). The goal of this chapter is to empower marketers, and business enterprises with the insights and tools needed to leverage Instagram advertising effectively. Whether you are just starting out for a marketing strategy or looking to refine your current strategy, this chapter aims to provide practical guidance, proven techniques, and real-world examples to help you grow your brand, engage your audience, and achieve measurable success through Instagram ads.

### **Background of Instagram**

Instagram is a social media platform that was launched on October 6, 2010, by Kevin Systrom and Mike Krieger (Nelson, 2014). Initially created as a photo-sharing app for iOS devices, it quickly gained popularity due to its simple interface and focus on visual storytelling. Within two months of its release, the app had attracted over one million users. In April 2012, Instagram was acquired by Facebook, Inc. (now Meta Platforms, Inc.), for approximately \$1 billion in cash and stock. This acquisition marked a significant turning point in the platform's development, enabling access to greater resources and integration with other Meta services. Instagram soon expanded its availability to Android devices and introduced new features such as video sharing (2013), direct messaging (Instagram Direct), Stories (2016), and IGTV (2018), among others. The introduction of Instagram Stories, inspired by Snapchat, significantly boosted user engagement, allowing for temporary posts that disappear after 24 hours.

In recent times, image-sharing service is inclusively digitalized that supports shopping, streaming and accounts for business, influencer marketing and reels (launched in 2020 in response to TikTok's popularity). Instagram's visual-centric design has made it particularly influential in industries such as fashion, travel, food, fitness, and lifestyle (Ngcobo, 2023). It has also played a key role in the rise of influencer culture and the shift towards visual branding and micro-content in digital marketing strategies (Fulu, 2024). As of 2024, Instagram boasts over 2 billion monthly active users worldwide. It continues to be a dominant platform for both personal expression and brand promotion, serving as a critical channel for social media marketing, user-generated content, and audience engagement. The study also aims to offer a workable theoretical framework that may be statistically tested further to demonstrate how Instagram advertisements interact with customer trust and propensity to buy.

### **Instagram Advertisement**

Instagram advertising has emerged as a dominant force in the digital marketing ecosystem, thanks to its visual nature, user-friendly interface, and integration with Meta has sophisticated advertising infrastructure (Beccarello, 2023). Since its acquisition by Meta Platforms, Inc. (formerly Facebook Inc.), Instagram has evolved into a strategic platform for advertisers seeking to reach highly engaged audiences through immersive and targeted content (Hardani and Suryono, 2023). Businesses of all sizes can run advertisements across multiple formats, including static photo ads, dynamic video ads, carousel posts that display multiple images or videos, full-screen story ads, reel ads designed for short-form video engagement, and shoppable ads that allow users to explore and purchase products directly within the app (Sprecher and Stevens, 2023). These ad formats are designed to blend naturally with user-generated content, ensuring minimal disruption to the user experience while maximizing brand visibility (Lariba, 2023). What sets Instagram advertising apart is its precision targeting capabilities—marketers can segment audiences based on demographics, geographic location, interests, online behaviour, and even create lookalike audiences based on existing customer data. This enables highly personalized campaigns that resonate with specific consumer groups, increasing the likelihood of engagement and conversion (Iyeloluet *et al.*, 2024).

Furthermore, Instagram's algorithm plays a critical role in delivering relevant ads to users, using machine learning to optimize ad placements based on user preferences and interactions (Santhiya and Kannan, 2024). The platform's strong appeal among younger demographics, particularly Millennials and Gen Z, makes it a valuable channel for brands aiming to cultivate long-term relationships with emerging consumer segments (Salam *et al.*, 2024). Instagram also fosters a culture of inspiration and aspiration, making it especially influential in sectors like fashion, beauty, travel, food, wellness, and lifestyle (Remya, 2024). Another cornerstone of Instagram advertising is influencer marketing, where brands collaborate with popular content creators who have established trust and credibility within niche communities

(Mittal, 2025). These collaborations often yield higher engagement rates and more authentic brand narratives compared to traditional advertisements. As digital consumers increasingly seek interactive and personalized experiences, Instagram has introduced innovative tools such as augmented reality filters, clickable product tags, and AI-powered ad placements, further enriching the advertising experience. In essence, Instagram advertising combines visual storytelling, data-driven strategy, and user-centric design, making it an indispensable tool for modern marketers looking to enhance brand awareness, drive traffic, and increase conversions in a competitive digital landscape.

The nine different types of Instagram ads are as follows:

- (1) **Image ads:** These kinds of advertisements are designed to highlight goods and services. Three different styles are available: vertical (600 x 750 pixels), square (1080 x 1080 pixels), and landscape (1200 x 628 pixels). The square and vertical layouts are utilized for ads that are visually focused, while the landscape format is best for photos that need more room (Drexler, 2024).
- (2) **Video ads:** If you want to tell the tale of your product or business, videos or animations are ideal. They can last up to two minutes and are in the 1080 by 1080 pixel format. The MP4 or MOV format is required for the video (Drexler, 2024).
- (3) **Carousel ads:** Carousels are collections of consecutive images or movies. Users are enticed to see additional photos or videos by arranging them in a sequential fashion. By keeping followers on their profile for longer, this interaction helps the business and supports Instagram's objective of increasing user time on the platform. Carousels are therefore frequently given priority on Instagram. Carousels utilize the same 1080 x 1080-pixel format as square image advertising. A carousel can include up to 20 consecutive images or videos, but it must have at least two. The videos have a 60-second maximum duration (Drexler, 2024).
- (4) **Story ads:** The most engaging approach to communicate with followers is through story advertisements. By allowing users to include links, polls, questions, music, GIFs, quizzes, and more, these full screen advertisements promote follower engagement and build a bond between the poster and its audience. It has a 1080 by 1080 pixel size and can be up to two minutes lengthy if it's a video (Drexler, 2024).
- (5) **Slideshow ads:** These advertisements resemble carousel commercials in that the banner may display up to ten consecutive images. However, unlike carousels, these advertisements automatically scroll one by seventeen, so the viewer does not have to exert any effort to swipe through the images. The poster can have a link at the bottom of each picture, and each picture can be shown for a maximum of 50 seconds. The post format is square and is 1080 by 1080 pixels (Drexler, 2024)

- (6) Explore ads: These advertisements show up in the feed's Explore area, which offers a customized content stream according to each user's previous preferences. This positioning is perfect for increasing a business's exposure and reaching those who are probably interested in what it has to offer. These advertisements are in 1080 x 1080-pixel resolution (Drexler, 2024).
- (7) Reels ads: Due to the increasing popularity of short films, the Reels tab is one of Instagram's most frequented areas. This style provides a great means of interacting with people, allowing posters to develop imaginative and eye-catching campaigns. Reels to the product page or corporate website might redirect users. Videos can be up to 15 minutes long and have a 500 x 888 pixel size (Drexler, 2024).
- (8) Shopping ads: Businesses may advertise their items on Instagram straight from their catalogue by using shopping advertising. Because users can purchase online straight from the Instagram app without having to search for the website, these advertisements are ideal for companies looking to increase sales. These advertisements come in a square post style with 1080 by 1080 pixels (Drexler, 2024).
- (9) Collection ads: These advertisements are a great method to advertise several goods in one post. The poster's cover can be a picture or a video, with further product images beneath. The other goods are shown below the cover, which takes up the top part of the article. Similar to shopping advertisements, businesses may increase sales by allowing consumers to buy the items straight from the Instagram app. The format is 1080 x 1080 pixels (Drexler, 2024).

### **Conclusion:**

In today's competitive digital landscape, where consumers are constantly bombarded with content, trust is the new currency. Instagram ad formats are not just tools for visibility—they are vehicles for building credibility, storytelling, and emotional connection. As depicted in the diagram, each ad format—whether it is a simple image ad or an immersive collection ad—has the potential to shape a consumer's perception of your brand. The core takeaway is this: Instagram advertising works best when it earns customer trust first, then drives action. While formats like Stories and Reels are perfect for sparking awareness and engagement, others like Shopping and Collection ads are designed to seamlessly bridge the gap between discovery and purchase. However, without trust, even the most visually stunning ad will not convert. Your strategic approach should therefore begin not with “Which format looks best?” but rather, “Which format will best foster trust in my audience at this stage of their journey?” A well-timed Story ad can humanize your brand. A thoughtfully crafted Carousel can educate and demonstrate value. A Shopping ad can capitalize on built trust and deliver conversions effortlessly. In this chapter, we have explored not only the technical features of each ad format but also the psychological and strategic dimensions behind them. You have learned how to align formats

with your goals, how to leverage audience behavior, and how to think like a digital storyteller rather than just a marketer. As you move forward, let every campaign be guided by strategy, creativity, and empathy. Because when you win your audience's trust, you have already won half the battle.

**References:**

1. Davenport, T. H., & Beck, J. C. (2001). The attention economy. *Ubiquity*, 2001(May), 1-es.
2. Küng, L., Kröll, A. M., Ripken, B., & Walker, M. (1999). Impact of the digital revolution on the media and communications industries. *Javnost-the Public*, 6(3), 29-47.
3. Hanson, J. (2007). *24/7: How cell phones and the Internet change the way we live, work, and play*. Bloomsbury Publishing USA.
4. Ferrara, E., Interdonato, R., & Tagarelli, A. (2014, September). Online popularity and topical interests through the lens of instagram. In *Proceedings of the 25th ACM conference on Hypertext and social media* (pp. 24-34).
5. Saravanakumar, M., & SuganthaLakshmi, T. (2012). Social media marketing. *Life science journal*, 9(4), 4444-4451.
6. Bharti, M. (2021). E-business through social media: An Instagram page attribute-conversion model in context of fashion apparel industry. *Global Business Review*, 09721509211038832.
7. Datta, B., & Kaushik, P. (2019). Brand awareness through Instagram advertising. *Asian Journal of Management*, 10(2), 100-108.
8. Divya, B., Mehta, M., & Rayi, L. P. (2023, October). Use of instagram insights for increasing overall reach and engagement. In *AIP Conference Proceedings* (Vol. 2869, No. 1). AIP Publishing.
9. Andler, T. (2023). Content Strategies and Consumer Engagement in social media.
10. Choudhury, M. A. (2017). The prospect and challenges of start-up funding in Finland: A case study on a social media based start-up.
11. Curran, K., Graham, S., & Temple, C. (2011). Advertising on facebook. *International Journal of EBusiness Development*, 1(1), 26-33.
12. Virji, P. (2023). *High-impact Content Marketing: Strategies to Make Your Content Intentional, Engaging and Effective*. Kogan Page Publishers.
13. Nelson, K. R. (2014). *Instagram: Kevin Systrom and Mike Krieger*. The Rosen Publishing Group, Inc.
14. Ngcobo, T. (2023). *The use of Instagram as a communication tool in the Durban fashion industry* (Doctoral dissertation).



15. Fulu, O. F. (2024). The effect of micro-content marketing on consumer buying behaviour: Micro-content marketing. *Journal for Business, Development and Leadership*, 1(2957-7136).
16. Beccarello D'Amico, N. (2023). Digital Marketing and SMEs: an investigation on the use of Instagram by SMEs of the oven's product sector in Triveneto.
17. Hardani, A. P., & Suryono, J. (2023). Marketing Communication Strategy for Shafira Store Surakarta Using Instagram Social Media Platform for Effective Engagement. *Revenue Journal: Management and Entrepreneurship*, 1(2), 151-164.
18. Sprecher, A., & Stevens, A. (2023). 21st-Century Narrative Change with Focus on Social Media.
19. Lariba, C. (2023). The role of user-generated content in shaping brand perceptions. *International Journal of Public Relation and Communication*, 1(1), 25-37.
20. Iyelolu, T. V., Agu, E. E., Idemudia, C., & Ijomah, T. I. (2024). Leveraging artificial intelligence for personalized marketing campaigns to improve conversion rates. *International Journal of Engineering Research and Development*, 20(8), 253-270.
21. Santhiya, R., & Kannan, K. (2024). The impact of social media marketing and machine learning applications in digital advertising. *Journal of Philanthropy and Marketing*, 4(1), 528-540.
22. Salam, K. N., Singkeruang, A. W. T. F., Husni, M. F., Baharuddin, B., & AR, D. P. (2024). Gen-Z marketing strategies: Understanding consumer preferences and building sustainable relationships. *Golden Ratio of Mapping Idea and Literature Format*, 4(1), 53-77.
23. Remya, P. (2024). Influence of instagram on the lifestyles of undergraduate students.
24. Mittal, A. (2025). *Influencer Marketing on Social Media*. Educohack Press.
25. Drexler, O. (February 29, 2024). Creatopy, blog, The Ultimate Guide to Instagram Ad Sizes. [2024 Update]. <https://www.creatopy.com/blog/instagram-adsizes/>



# The Changing Landscape of Humanities, Social Sciences, Commerce & Management

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