



# ARTIFICIAL INTELLIGENCE-DRIVEN INNOVATION: A KEY TO ENHANCE THE PRODUCTIVITY OF EMPLOYEES

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## ABSTRACT:

**Purpose:** To present an overview as how Artificial Intelligence-driven innovations have contributed in the efficiency of organizations and how it has improved the efficacy and productivity of employees.

**Methods:** A systematic literature review was performed for articles pertinent to the topic of artificial intelligence with an emphasis on its impact on the Future of Work. Besides this the research will be qualitative in nature where highly relevant research work would be examined on various KPIS (Key performance indicators) related to performance of employees. The KPI will be scored on likert followed by stepwise statistical test like correlation and factor analysis is identify most important KPI and it's relationship with other KPI. This detailed qualitative and exploratory research will be helpful in framing of pilot study at large level for employees. This would address relevance of AI and help in identifying which KPI would be required by industry in future.

**Results:** Based on results of correlation matrix and factor analysis, it had been observed that out of all the 13 KPIS, "Level Automation", "Data & Content" and "Potential Capacity" has maximum correlation with all other KPIS. Thus, these 3 KPIS can be considered to have high strength of association in positive aspect with other remaining KPIS. 4 factors (Qualitative Transformation Solution, AI-Automation Potential Impact, Innovative Data Outcome and Team Knowledge )were derived from 13 KPIS which combine with each other to produce a cumulative effect on growth and productivity of any organisation and ultimately leads to better work productivity and higher economic returns.

**Conclusions:** Artificial intelligence has a promising future for the modern workforce however, many challenges remain. Since the introduction of new technology, AI, there is no longer a need for employees to manually gather and organise data. AI has the incredible superhuman capacity to acquire data and information. AI gives firms prescriptive and predictive insights, allowing them to see potential

8606



future possibilities and provide suggestions for how to proceed. Artificial Intelligence provides organisations with prescriptive and prophetic data so the organisations will review potential future opportunities and provide steering on the way to proceed. These insights is sometimes employed in alternative ways to extend and boost productivity.

**Translational Relevance:** The aim of this research article is to provide the researchers (both technical and non-technical), business houses and industries explanation of the importance and relevance of the use of Artificial Intelligence methods in the modern era. The aim is to provide the researchers with a healthier empathetic understanding of the potential and prominence of artificial intelligence in enhancing the productivity of employees.

**Key Words:** Artificial intelligence, Efficiency, Efficacy, Employees, Innovation, Organizations, Potential, Workforce

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## INTRODUCTION:

*“Innovation is the art of thinking differently to create something novel, and artificial intelligence is giving wings to thoughts by exploring new thought directions.”*

Artificial intelligence (AI) is a buzzword that is gaining importance in organizations. AI has impacted our lives, both at personal and professional fronts. The way people work and will work in the future is changing. The potential uses of artificial intelligence are reinforcing forward-thinking managers who see AI as the transformational tool in their career planning that will provide opportunities to advance careers and in gaining business results faster. Business artificial intelligence is a breakthrough that can enable good managers to be great.

After decades of stasis, innovation in artificial intelligence has exploded, becoming the hottest subject on the agenda of the world's largest tech businesses. When it comes to technology and innovation that has an impact on people's lives all around the world, AI is the rage. On the one hand, new AI trends are emerging, while on the other, it has opened up a plethora of job opportunities for humans.

Artificial intelligence (AI) is revolutionizing the world, and the possibilities for innovation are boundless. AI has demonstrated some promising tendencies throughout the years and is now touching practically every industry. Changes in consumer and economic patterns

have resulted from the COVID19 pandemic, but the world has progressively come to terms with it.

## Artificial Intelligence a driving force behind Workplace Productivity:

Over 76 percent of business leaders feel artificial intelligence (AI) is essential to the success of their firm, according to a Suresh Sambandam (2019) poll. Businesses that have used AI have seen their revenue increase by 39%. By doing routine tasks for the company, AI may free up workers' time so they can concentrate on more difficult problems. In other words, AI frees up staff to focus on more fulfilling projects, boosting output and enhancing company results. As per Bose, Sayan (2018), artificial intelligence (AI) has the potential to enhance productivity by 40% or more by 2035.

Integrating AI into existing information and communication systems will swiftly result in considerable cost, time, and process savings for industrial organizations. Manufacturer profitability is improved by artificial intelligence (AI) through intelligent automation, increased labour and capital, and the diffusion of innovation. For example, AI can provide early warning of prospective problems and alternative solutions by assessing situations in real-time. Because of these advantages, AI has the potential to enhance revenues by 38 percent on average by 2035.

8607



Artificial intelligence has a wide range of applications in business, including increasing employee and customer relations. While completing repetitive chores, look for patterns in a massive amount of data, most managers will gain profit from these since they will have more time to focus on how they offer value to their organizations. The objective is to grab the opportunities that artificial intelligence brings in business for individual and organisational success, such as broadening your skillset and leveraging AI to increase your impact.

For today's workforces, artificial intelligence (AI) is a blessing. AI can handle routine and repetitive jobs across the firm, freeing up human resources to engage in creative problem-solving and productivity.

- **Boosts Employees Productivity:** Application of AI enhances productivity amongst employees and knowledge workers by automating mundane tasks. Deloitte's, for example, renders top and middle-level personnel With technologies for productivity analytics, it is possible to pinpoint regions with excessive labour expenditures, roadblocks to worker productivity, and departments in need of more employees.

- **Improves Employees Engagement and Involvement:** A research piloted by Gallup (an advisory company) indicated that 51% of employees based at US don't link with their job. AI based real-time analysis can improve this.

- **Enhances the Decision Making:** AI can prioritize and automate daily routine decision-making processes with its most useful qualities and ability to collect, store and to analyze . AI renders the organization prospective future opportunities and huge data along with the predictive and prescriptive insights. AI gives the organization predictive and prescriptive insights and potential future opportunities. AI has made jobs very easy as now there is no further need for gathering and organizing data manually as it can collect data at a superhuman rate. The finance industry is impacted by the usage of AI. Applications such as Machine Learning (ML),

Data Science Modeling tools and artificial Intelligence (AI) enabled enterprise software help Financial institutions take wiser decisions.

- **Transforming Recruitment and onboarding process:** AI tools enable the pre-screening of candidate profiles before the interview. Montage, a Fortune 5000 company and Textio uses artificial intelligence for the recruitment process.

- **Transforming internal communications and support:** By eliminating interruptions from rote, repeated inquiries AI service desks such to those at Spoke enable staff support teams to balance their service obligations with other essential duties. This provide assistance to team members in carrying out their responsibilities. AI technique helps in converting workplace interactions, like Skype Translator, into automated translations in near-real-time dialogues.

- **Transforming marketing, sales, and customer service through Hyper-personalized manufacturing:** Chatbots powered by AI are revolutionising customer service, sales, and marketing. AI-powered software intelligence enables businesses to increase personalisation by creating goods and services that are highly relevant to specific customers..

- **Transforming business data and analytics:** Today, it's difficult to operate a successful business without data, and even enormous volumes of data are meaningless if you don't know how to turn them into useful insights. As a result, Domo uses AI to centralise all corporate data in the cloud and forecast important business KPIs without the assistance of a data scientist. This technique enhances saves time and enhances the productivity of employees

- **Transforming security and combating frauds:** Using AI-powered software to apply the same fundamental technologies to the workplace helps uncover security issues and protects consumer, employee, and corporate data. To quote some examples: Deep Armor from Spark Cognition protects against malware assaults



using artificial intelligence. Exabeam use artificial intelligence to detect insider risks and notify security personnel. Dark trace claims to be able to deal with cyber security threats in the same way that the human immune system handles infections.

- **Facilitating innovation and problem solving:**

Workplaces, industries, and occupations are all being transformed by AI. In education, IBM's Watson is perhaps one of the greatest examples, since it assists instructors in developing individualized learning programs for kids. Watson is utilized by oncologists in the healthcare industry to generate personalized treatment plans to create personalized treatment ideas and recommendations for each patient.

- **Inducting and Onboarding Corporate training programs:**

For retention strategies, employee engagement, and workplace productivity, corporate learning-development programmes are more vital than ever. When employees can improve their abilities through on-the-job training and have more possibilities for vertical advancement inside the firm, they are more likely to stay in their positions. This may be accomplished by using AI technologies that enable adaptive learning and generate value for both people and the organisation. Honeywell has already created AI solutions that make use of augmented and virtual reality technologies to improve staff learning. AR headsets can be used by more experienced personnel to give real-time information.

- **Predictive analytics:** It uses statistical models, ML and forecasting techniques to foresee a company's future. The sensors track analyses the data and algorithms based on big data to predict future equipment failures by analysing the conditions of equipment.

- **Better customer service:** The effectiveness of services and the speed with which companies respond to customer complaints can both be significantly impacted by AI. By using the Cogito tool, AI approaches based on behavioural science are utilised to analyse voice signals and

offer real-time ideas to reps to increase conversion for better outcomes. Customers may more precisely handle their most basic questions without ever speaking to the customer care personnel by using AI-powered chatbots like Spoke, which can offer more seamless external help.

Chorus is another another AI solution that operates in a similar manner by offering insightful information about the clients. In a similar way, it facilitates quicker lead closure by recording, reviewing, and providing advice on sales calls. recognised sales managers for their efficient client communication simplest questions without even accurately speaking to the customer support personnel directly.

- **Picking up Administrative Slack:** High-value activities are the key focus area in administration and AI helps in achieving them.

- **Raising team Dynamics:** AI plays an important role in enhancing team dynamics by providing managers with more timely feedback. Natural language processing and chatbots help identify the need for feedback and also highlight the future coaching needs of the employee.

- **Automating and streamlining business processes:** Productivity, efficiency and cost minimization can be achieved through business process automation as AI-driven technology can automate repetitive processes. The clearest illustration of this is the digital workplace platform Kissflow, which can interact with staff members working from various physical locations and expedite corporate procedures.

- **Safeguarding sensitive data:** AI ensures a competitive edge by eliminating human error and improving output quality and strengthening cyber security.

- **Precise Demand forecasting:** A large number of mathematical models of production and outcome possibilities can be tested using AI and machine learning. Its technologies give more precise analysis and new information for novel product introductions, supply chain disruptions or sudden changes in demand. As per McKinsey 20% to 50% of overall inventory



reductions, can be made possible through AI and ML.

•**Boosting manufacturing processes:** AI-powered machine types are able to monitor the amounts utilised, temperatures, lead times, mistakes, cycle durations, and downtime to optimise production runs, hence enhancing the efficiency of manufacturing operations. In other words, by converting data into intelligence, AI will create a vendor-agnostic environment where all machines will speak the same language, improving production efficiency from machine to machine throughout the shop floor.

•**Automated material procurement and cost Management:** AI and ML combined analytics will facilitate establishing the supply chain. Cost management, procurement, and strategic sourcing have already included AI and machine-learning algorithms from Honeywell.

#### **Futures trends of AI**

Recently more and more companies are introducing artificial intelligence-based solutions for incorporating standard operating procedures and enhancing the efficiency and productivity of employees.

A few emerging trends include:

•**Knowledge Learning Engineering through language processing:** AI's ability to decipher human language is increasing through the use of advanced algorithms and deep learning. E.g chatbots are gaining popularity day by day.

•**Precision in Simulations:** AI will analyze massive amounts of Real-world situations and will model them more accurately than ever.

•**Support for Knowledge Workers through Smart Process Automation:** AI will help Knowledge workers to automate unproductive tasks and will also induce smart process automation of work and the labour arbitrage i.e computer associated trading related with substituting people with bots.

•**Human-Machine Interaction:** Human-machine interaction is advancing and progressing day by day, and the objective now is to have machines interact in a human-like manner. Machines can now recognize emotion

in human voices and written words, and they may learn to adjust their answers accordingly.

#### **REVIEW OF LITERATURE:**

N. Haefner, et al.(2021), Researched on impact of innovation control in supporting artificial intelligence systems. The traditional Human-focused, processes to innovation control have various constrains and hence difficulties in coping with complexity. Their study found that AI has a positive role to play since it has a more methodical approach when integrated into businesses that prioritise innovation. The use of AI and machine learning algorithms in the organisation of innovation in the future was highlighted by research findings. Results indicated critical points and areas where AI systems can already be successfully deployed in businesses that leverage innovation, such as those where information processing limits have an impact on where new inventions may be developed. AI systems that rely on anomaly detection may be helpful in situations when businesses are constrained in their ability to handle statistics while looking for new opportunities.. Eventually, the study highlights current improvements in AI algorithms which can be enhance the capabilities of organization in the extra tough demanding situations of innovation management. This includes search of novel ideas so as to provide opportunities and expand the areas in which AI can usefully be carried out.

Giacomo Damioli et al.(2020), studied the impact of artificial intelligence on labour productivity and their recent years documentation indicates an increase in artificial intelligence(AI) and robotics patenting conditioning suggests that solutions based on AI technologies might effect the economy. They tested this hypotheses using a population sample of more that 5000 companies which have filed at least one patent related to artificial intelligence between the year 2000 and 2016. The research revealed that, AI based patent catalyze an extra-positive effect on productivity of labor. This effect laid its focused on services

8610



industries and Small and medium enterprises which implies that the potential to fast readapt and introduce AI based application is an important determinant of the impact of AI observed to date.

M. B. Schrettenbrunner (2020), though his research on AI Driven management introduced the immediate and disruptive use of AI along with its Characteristics, implications and concerns in management. He further stated that AI driven management will support organizations in enhancing competitive advantage as it can replace domain-fixed – functional –expertise. The research proclaims that future effectiveness and competitiveness will be AI dependent hence there is a need that this innovative technology has to be taken seriously and entrenched.

Acemoglu and Restrepo (2020), explains that, if automation increases labour productivity as for efficiency, monetary hypotheses foresee a positive outcome of innovative change on productivity.

Rene Y. Choi et al.(2020),through their research on Introduction to Machine Learning, Neural Networks, and Deep Learning propounded that if these AI techniques are used by the medical employees it can prove to be an promising tool in the field of science and medicine. Their work in this field has revealed that these methods can be effective in diagnostic and predictive tools in tracing out various diseases. In future, AI-based programs will become an integral part of medical employees and patients' clinic visits and checkups as hands in AI techniques will enhance their capabilities to assist in diagnosis and management of various illnesses. Hence Doctors, medical officers and supporting employees should reach out in understanding the AI theories with positive approach and its effectiveness in medicine with the objective to offer excellent patient care.

Akter et al. (2020), through his research propounded that the capability of artificial intelligence that were verified to strengthen the dynamic interaction of decision making in

supply chains creates a significant reflection on how artificial intelligence can be used regularly in seeking the supply chain's long-term exhibition in terms of performance and upper hand competitive advantage, i.e., innovation.

Agrawal et al. (2019), states that artificial intelligence can perhaps build profitability gains through various channels keeping in mind the decrease in vulnerabilities for the reason of expanded meticulousness of conjectures the computerized recombination of existing novelties.

Jurgen Kai-Uwe Brock & Florian von Wangenheim( 2019), conducted a study which presents a framework for effective implementation of AI of digital transformation that projects explicit knowledge in the areas of leadership ,data, , being grounded, integrated, intelligence ,agility and teaming. The Data was gathered in two phases for which a set of digital transformation AI case studies was followed. For the purpose of study the survey was conducted through online mode globally thereby utilizing a database thus provided by an international market research firm of senior managers and executives. The first exploratory research based survey was piloted for a year for a year from 2016-2017, addressing the first research question which was to know the extent to which the application of AI diffused has in business?

SoniNeha, et al. (2019),They did more research on how artificial intelligence affects businesses. For the purpose of the study, variables such as innovation, research, market deployment, and potential changes in business models were taken into account. In order to determine the overall impact, a three-dimensional research model design based on Neo-Schumpeterian economics and its three forces— entrepreneurship, knowledge, and innovation— was then taken into account. The three-dimensional approach took into account the impact of AI on the global market, the strategic goals of the organisations, the role of AI in





influencing business environments, and research and innovation. Ernst, Ekkehardt et al.(2019), stated that in the light of the advancement in the field of digitalization and automation artificial intelligence has prevalent produced a fear of job losses. Their research argues the validation on these fears, by laying a special focus on the specific nature of artificial intelligence (AI). Their research paper on economics of Artificial Intelligence: Implications for the Future of Work further states that greater opportunities in terms of growths progressions in productivity output may arise in developing countries too with the reduced costs of capital and increases in the productivity potential will be seen especially among the low skilled workforce.

Iain M. Cockburn et al (2018), studied the impact of artificial intelligence on innovation and concluded that AI plays an important role in amplifying the efficiency of the existing economy. Additionally it will also have a far larger impact through serving as an extensively beneficial approach for invention which will reshape the concept of the innovation process and the organization of Research & Development. They advocated that “deep learning” will serve as a general-purpose method of invention, which will be getting to set off an enormous substitute far from extra routinized labor-intensive research.

Bertin Martens & Songül Tolan (2018), presented a review of the literature on the Impact of Artificial Intelligence on Employment, Incomes and Growth and propounded that the productivity in most of the industries and service sectors will expand through AI thereby boosting economic processes, incomes and overall welfare. The increased growth would eventually run into constraints caused by the leading factors essential to production but cannot be automated. Macroeconomic outcomes of AI are also molded by firm behavior and there's clear evidence for a large

redistribution implications of AI. Now, inferring from the experience of globalization and digitization in past decades, this cycle is likely to be imperfect and steady, with high and irregular distributed costs. Flexible organizations and easing sectorial reallocation are particularly relevant to understand potential benefits of AI to ensure competitive markets.

Manav Raj & Robert Seamans(2017), They conducted an empirical study on the adoption of artificial intelligence and robotics and its impact on aggregated labor and productivity. Their research put forward the recommendations for more organized and systematic collection of the use of technologies like artificial intelligence and robotics at the firm level. They have also endorsed various ways through which firm-level data could be gathered and used by academics, policymakers and other researchers. These new technologies will be beneficial for entrepreneurs as they lack knowledge on capital-intensive technologies and find difficulty as of how to integrate robotics and artificial intelligence with a workforce. Hence it was recommended to use Firm-level surveys on the use of AI to enhance a better understanding of AI and robotics and related issues.

Khan et al. (2009), stated that at the Supply Chain Performance at the hierarchical level, involves efficiency, effectiveness, and agility i.e is resource performance, output performance and flexibility performance. According to him the capability to make more worth for the purchasers with less resource utilization is efficiency. The capacity to form the customer's and client value, like quality, cost, and delay was categorized as effectiveness and ability to take care of value formation during a tempestuous and unsure environment was considered to be the agility.

Autor et al. 2003 and Barbieri et al.(2020), states that technological change which is skill-



biased, suggest that technological innovation may additionally intent wage polarization through relative increase in the demand of knowledgeable employees with reference to unskilled ones, and there is practical job losses through the automation of tasks.

Acemoglu(2002), states that educational accomplishment also rose, with the increase in income. With the advent of the young workers becoming cultured and highly educated, technological transformations shifted gears, providing the base for the initiation of the third industrial revolution based on the introduction of technology in the form of computers.

#### **METHODOLOGY :**

**Sample Size:** 30 Highly cited and well-reputed research papers based on artificial intelligence-driven innovation were selected from last 18 years (2002-2021). After critical qualitative in-depth analysis of selected research papers, 13 KPIs (Key Performance Indicators) were identified for further analysis, namely:

*Level of Automation, Data and Content, Level of Innovativeness, Work Quality, Work Productivity, Level of AI adoption, Potential Capacity, Economic Outcome, Knowledge Stock, Firm Size, Digital Transformation, Agility and Teaming*

#### **Tools & Techniques:**

**Factor Analysis-**As factor Analysis is a method to reduce the data including many variables into few variables. It is also known as dimension reduction analysis. Goretzko (2021), explained that Factor Analysis depends mainly on the selected settings and shows strong guidelines to context as its current use and methodology development also results in practical

research. Dubey (2021), estimated machine learning algorithm in factor analysis of COVID-19 data set as the analysis shows attributed correlation, estimated survival days and death prediction. Lorenzo- Seva (2021), used factor analysis based on polychromic correlation for functioning item analysis in the first step of scale development. Laurett(2021), used factor analysis in measuring sustainable development in agriculture and also its antecedents, its barriers and consequences. Ouyang (2021), worked on Spatial differentiation and its driving factors analysis on urban construction and change in land in China.

In this study, Factor analysis was performed for dimension reduction of above mentioned 13 KPIs, using principal component extraction method with Varimax rotation, to explain the variance.

Using the factor loadings, the KPIs were grouped into respective factors and were renamed according to their collective representation. If the variables are standardized, the factor analysis model may be represented as:

$$X_i = A_{i1}F_1 + A_{i2}F_2 + A_{i3}F_3 + \dots + A_{im}F_m + V_i U_i$$

where,

$X_i$  = ith standardized variable

$A_{ij}$  = standardized multiple regression coefficient of Variable i on common factor j

F = common factor

$V_i$  = standardized regression coefficient of variable i on unique factor i

$U_i$  = the unique factor for variable im = number of common factors

#### **RESULTS**

As a first step of factor analysis, the correlation matrix was obtained.

Figure 1: Correlation Matrix based in Principal Component Factor Analysis





Correlation Matrix<sup>a</sup>

	Level_of_Automation	Data_and_Content	Level_of_Innovativeness	Work_Quality	Work_Productivity	Level_of_AI_adoption	Potential_Capacity	Economic_Outcome	Knowledge_Stock	Firm_Size	Digital_Transformation	Agility	Teaming
Level_of_Automation		0.551	0.383	0.471	0.231	-0.261	0.353	0.331	-0.056	-0.06	0.073	0.148	-0.11
Data_and_Content	0.551		0.375	0.507	0.086	-0.009	0.174	0.286	-0.201	0.159	0.266	0.206	-0.231
Level_of_Innovativeness	0.383	0.375		0.138	0.422	-0.181	0.02	0.17	-0.017	0.293	0.055	0.199	0.107
Work_Quality	0.471	0.507	0.138		0.225	0.184	0.371	0.001	-0.137	-0.156	0.499	0.454	0.02
Work_Productivity	0.231	0.086	0.422	0.225		-0.279	0.452	0.32	0.269	-0.026	-0.052	-0.185	-0.102
Level_of_AI_adoption	-0.261	-0.009	-0.181	0.184	-0.279		-0.215	-0.027	-0.089	0.161	0.202	0.151	0.087
Potential_Capacity	0.353	0.174	0.02	0.371	0.452	-0.215		0.029	-0.059	-0.222	0.142	-0.026	-0.263
Economic_Outcome	0.331	0.286	0.17	0.001	0.32	-0.027	0.029		0.183	0.288	0.083	-0.02	0.024
Knowledge_Stock	-0.056	-0.201	-0.017	-0.137	0.269	-0.089	-0.059	0.183		-0.038	0.164	0.082	0.392
Firm_Size	-0.06	0.159	0.293	-0.156	-0.026	0.161	-0.222	0.288	-0.038		0.043	0.167	0.031
Digital_Transformation	0.073	0.266	0.055	0.499	-0.052	0.202	0.142	0.083	0.164	0.043		0.462	0.312
Agility	0.148	0.206	0.199	0.454	-0.185	0.151	-0.026	-0.02	0.082	0.167	0.462		0.222
Teaming	-0.11	-0.231	0.107	0.02	-0.102	0.087	-0.26	0.024	0.392	0.031	0.312	0.222	

Source: Authors self-data computation using SPSS version 25 and R studio

Bold red colour shows significant correlation (p values <0.05). Correlation values:  $r > 0.5$  were considered as **high correlation**, correlation values between  $r = 0.3-0.5$  were considered as **moderate correlation** and values with  $r < 0.3$  were considered as **low correlation**. Following results were obtained based on correlation matrix:

1. **“Level of Automation”**: High positive correlation with “Data & Content” and medium correlation with “Level of Innovativeness”, “Work Quality”, “Potential Capacity” and “Economic Outcome”. This KPI had maximum positive correlation with other 5 KPIs.
2. **“Data & Content”**: High positive correlation with “Level of Automation” and “Work Quality”. Medium correlation with “Level of Innovativeness”.
3. **“Level of Innovativeness”**: Medium correlation with “Level of Automation” and “Data & Content”.
4. **“Work Quality”**: High positive correlation with “Data & Content” and medium correlation with “Level of Innovativeness”.
5. **“Work Productivity”**: Medium correlation with “Potential Capacity” and “Economic Outcome”.
6. **“Level of AI Adoption”, “Firm Size”**: No significant correlation with any other KPI
7. **“Potential Capacity”**: Medium correlation with “Level of Automation”, “Work Quality” and “Work Productivity”. Low negative correlation with “Teaming”
8. **“Economic Outcome”**: Medium correlation with “Level of Automation” and “Work Productivity”.
9. **“Knowledge Stock”**: Medium correlation with “Teaming”.
10. **“Digital Transformation”**: Medium correlation with “Work Quality” and “Agility”.
11. **“Teaming”**: Medium correlation with “Knowledge Stock” and “Digital Transformation”.

Table 1: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.513
Bartlett's Test of Sphericity	106.829
Approx. Chi-Square df	78



Sig. .017

Source: Authors self-data computation using SPSS version 25

Kaiser-MeyerOlkin Measure (KMO) of Sampling Adequacy should be greater than 0.50 because if KMO value was less than 0.5 than distinct and reliable factors could not be produced. KMO more than 0.5 indicated that model has produced reliable factor. In this case KMO is 0.513, thus our model has produced distinct and reliable factors.

Bartlett’s Test of Sphericity was 0.017 ( $p < 0.05$ ) thus it could be concluded that 13 KPI variables has pattern of relationship.

Table 2: Commuality Extraction

Communalities		
	Initial	Extraction
Level_of_Automation	1.000	.669
Data_and_Content	1.000	.722
Level_of_Innovativeness	1.000	.512
Work_Quality	1.000	.842
Work_Productivity	1.000	.665
Level_of_AI_adoption	1.000	.421
Potential_Capacity	1.000	.654
Economic_Outcome	1.000	.548
Knowledge_Stock	1.000	.746
Firm_Size	1.000	.610
Digital_Transformation	1.000	.687
Agility	1.000	.602
Teaming	1.000	.653

8615

Extraction Method: Principal Component Analysis.

Source: Authors self-data computation using SPSS version 25

It has been observed that all the 13 KPIs were able to explain the extraction of factors obtained

Table 3: Total Variance Explained by 4 Factors

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.922	22.478	22.478	2.922	22.478	22.478	2.421	18.623	18.623
2	2.134	16.415	38.893	2.134	16.415	38.893	2.215	17.040	35.663
3	1.668	12.831	51.724	1.668	12.831	51.724	1.924	14.800	50.464
4	1.606	12.356	64.081	1.606	12.356	64.081	1.770	13.617	64.081
5	1.102	8.480	72.561						
6	.749	5.762	78.323						



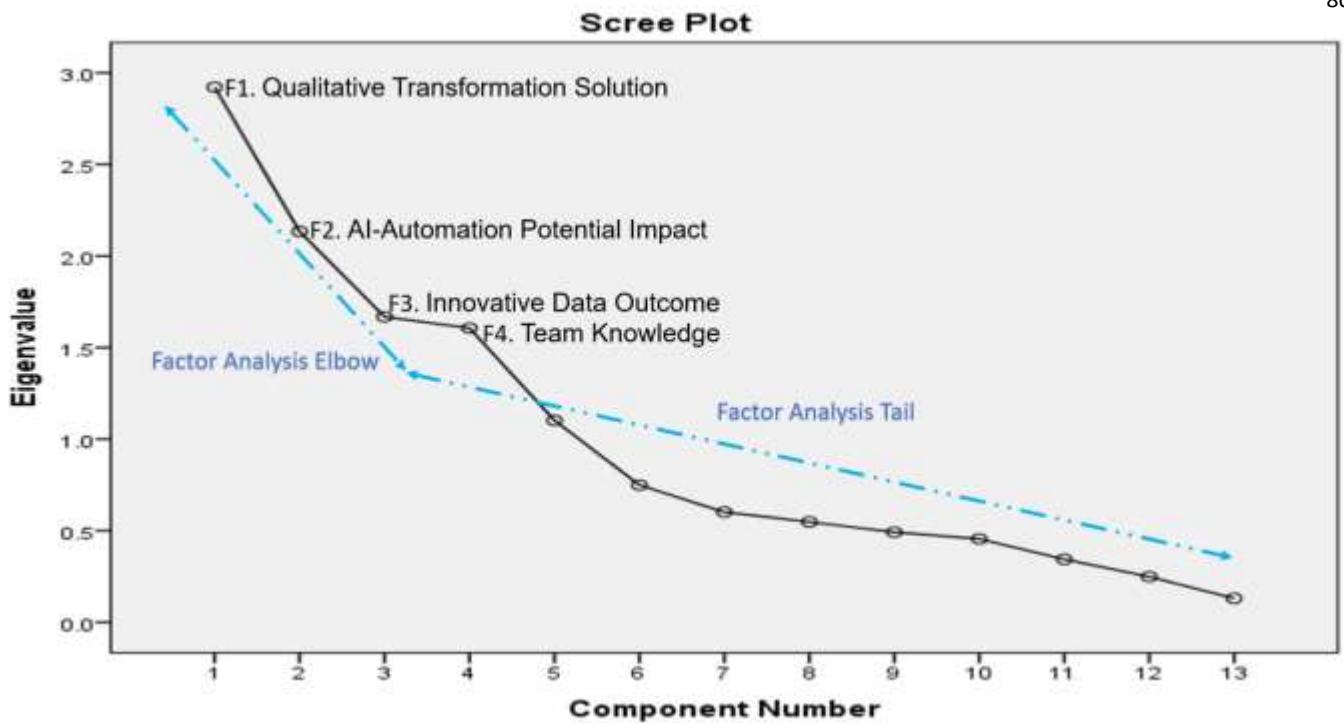
7	.601	4.626	82.949						
8	.548	4.212	87.162						
9	.492	3.782	90.943						
10	.455	3.500	94.443						
11	.344	2.643	97.086						
12	.249	1.912	98.998						
13	.130	1.002	100.000						

Extraction Method: Principal Component Analysis.

Source: Authors self-data computation using SPSS version 25

It has been observed that 4 factors extracted from factor analysis, contributed to 64% explanation of variance for the developed factor analysis model.

Figure 2: Scree plot showing loading of 4 clear factors from 13 KPIs



Source: Authors self-data computation using SPSS version 25

Screen plot clearly indicated extraction and loading of 4 prominent factors through factor analysis.

Table 4: Rotated Component Matrix obtained through factor analysis

**Rotated Component Matrix<sup>a</sup>**

	Component
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	F1 Qualitative Transformation Solution	F2 AI- Automation Potential Impact	F3 Innovative Data Outcome	F4 Team Knowledge
Level_of_Automation	.342	.541	.437	-.262
Data_and_Content	.466	.207	.529	-.426
Level_of_Innovativeness	.150	.048	.695	-.066
Work_Quality	.851	.279	-.008	-.202
Work_Productivity	-.061	.786	.084	.189
Level_of_AI_adoption	.318	.554	-.109	-.022
Potential_Capacity	.257	.712	-.177	-.223
Economic_Outcome	-.046	.292	.645	.212
Knowledge_Stock	-.016	.228	.029	.832
Firm_Size	-.083	-.353	.690	.055
Digital_Transformation	.777	-.050	.012	.283
Agility	.706	-.235	.166	.142
Teaming	.238	-.218	.033	.740

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 10 iterations.

8617

Through rotated component matrix, 4 distinct factors were loaded. Details of each factor created along with loaded KPIs is mention below:

**Factor 1 (F1)-Qualitative Transformation Solution:**WorkQuality, DigitalTransformation and Agility were loaded on this factor.

**Factor 2 (F2)- AI-Automation Potential Impact:**LevelofAutomation, WorkProductivity, LevelofAladoption and PotentialCapacitywere loaded on this factor.

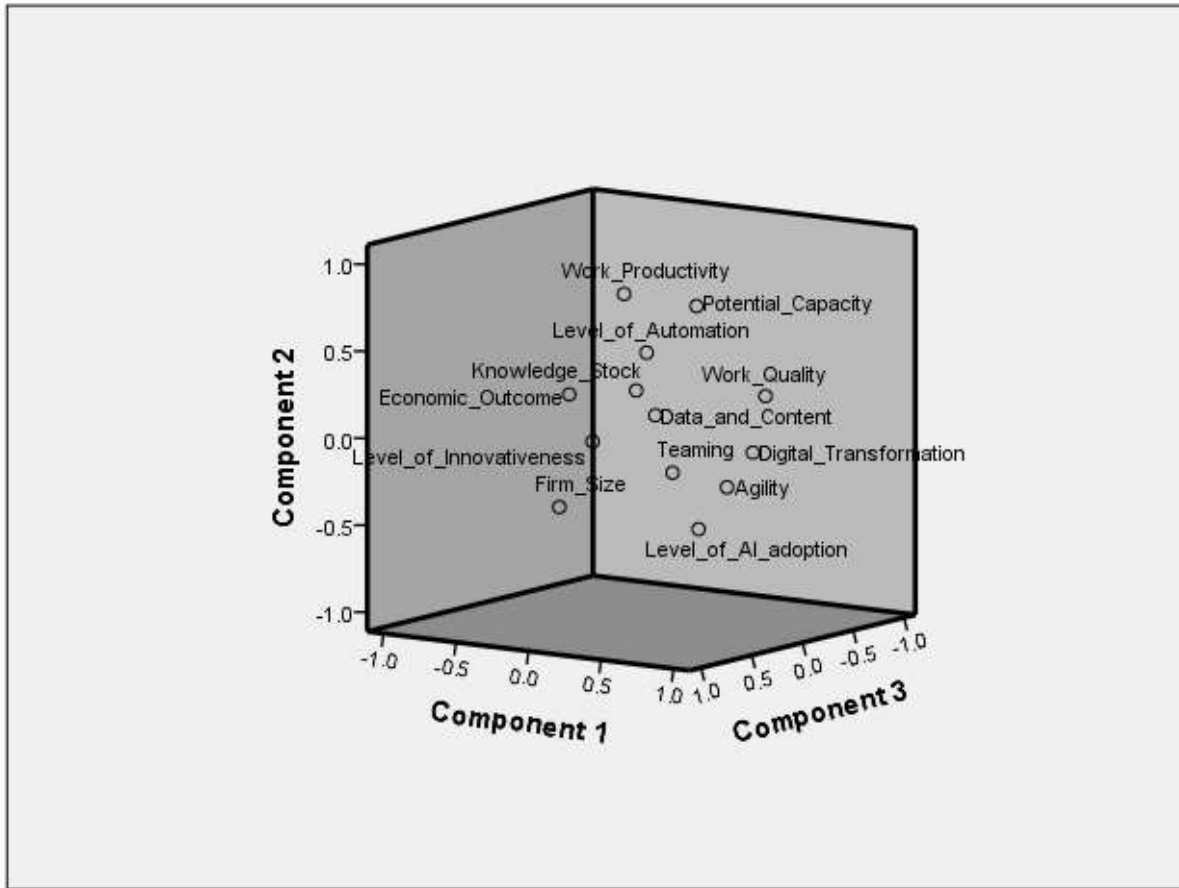
**Factor 3 (F3)- Innovative Data Outcome:**DataandContent, LevelofInnovativeness, EconomicOutcome and FirmSizewere loaded on this factor.

**Factor 4 (F4)- Team Knowledge:**KnowledgeStock and Teamingwere loaded on this factor.

Figure 3: Component Plot in Rotated Space



Component Plot in Rotated Space



8618

Above figure shows component plot in rotated space. 3 dimensional plot shows how different KPIs are loaded in 3-D space.

## DISCUSSION

Based on results of correlation matrix and factor analysis, it had been observed that out of all the 13 KPIs, “Level Automation”. “Data & Content” and “Potential Capacity” has maximum correlation with all other KPIs. Thus, these 3 KPIs can be considered to have high strength of association in positive aspect with other remaining KPIs.

Factor analysis results further revealed that **Factor 1 (F1)- Qualitative Transformation Solution** was able to explain 18.623% variance of overall factor loadings, followed by **Factor 2 (F2)- AI-Automation Potential Impact**

(explained 17.040% variance of overall factor loadings), **Factor 3 (F3)- Innovative Data Outcome**(explained 14.800% variance of overall factor loadings) and **Factor 4 (F4)- Team Knowledge**(explained 13.617% variance of overall factor loadings).

Overall loadings of KPIs on each factor further hinted that “Work Quality”, “Digital Transformation” and “Agility” (KPIs loaded on **Factor 1 (F1)- Qualitative Transformation Solution**) goes together since flexibility in work (agility) and positive digital transformation provided more work and creative space to the employees, which in return also enhanced their overall work quality.



**Factor 2 (F2)- AI-Automation Potential Impact** has KPIs like “Level of Automation”, “Work Productivity”, “Level of AI adoption” and “Potential Capacity”. Factor 2 indicated that increased level of AI adoption and improvements in level of automation in any official task, positively increased the work productivity, saved time and cost, which in return increased the overall potential and working capacity of the organisation.

**Factor 3 (F3)- Innovative Data Outcome** included KPIs like “Data and Content”, “Level of Innovativeness”, “Economic Outcome” and “Firm Size”. It could be concluded that high level of innovations and creative web content ultimately lead to growth of firm and higher economic returns.

**Factor 4 (F4)- Team Knowledge** contains KPIs like “Knowledge Stock” and “Teaming”, which indicated that knowledgeable team and constant learning attitude of employees lead to enhancement in overall work productivity.

The above mentioned 4 factors were derived from 13 KPIs which combine with each other to produce a cumulative effect on growth and productivity of any organisation and ultimately leads to better work productivity and higher economic returns.

**CONCLUSION:** We are living in fascinating times, with technological advancements occurring at breakneck speed. AI is transforming our lives at a great pace it is changing the way we work and live. To be successful in the business environment of the future, today's organisations must take all of these factors into account. The workplace of the future is being transformed by AI. The crucial human aspects of work are becoming more and more crucial as more professions are becoming automated and computerised. Artificial intelligence has the potential to create a more productive and human workplace. Artificial Intelligence in the workplace, is in action, another dreaded but frequently useful task is recording, transcribing, and disseminating meeting notes. Zoom's AI Sense function transcribes meetings

automatically and makes them a searchable text. According to Deloitte, these potent technologies will also help produce new jobs, enhance productivity, and let people to focus on the human elements of work. As operations are automated, the "fundamental human" components of work are becoming more vital. Businesses and their staff may be more understanding thanks to automation, allowing them to concentrate on topics like customer service, employee engagement, and workplace culture. The use of AI is becoming more mainstream in the manager's role and the organization along with the market is adapting to the new status quo. It is reflected in the preferred strengths profile, work style, skillset, productivity and overall fit for the role.

**LIMITATIONS:** Given the conduct of small-scale research in the past, the study is susceptible to a few restrictions often connected with data size. We thus advise academics and professionals to assess the study's findings and implications in light of these constraints.

**FUTURE RESEARCH POSSIBILITIES:** Future research work is suggested to discover added relationships using mixed qualitative and quantitative techniques to get deeper insights. Overview of this research findings need to have a similar market research and investigation to be performed in different sectors.

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