ANALYSING THE EFFECT OF ARTIFICIAL INTELLIGENCE ON PROJECT MANAGEMENT AND EMPLOYEE EFFICIENCY.

Xu Bo, Oyyappan Duraipandi

[1] Lincoln University College, Petaling Jaya, Malaysia.

ABSTRACT

Through the automation of mundane operations, improvement of decision-making, and enhancement of risk management procedures, (AI) is revolutionising the project management industry. Conventional approaches to project management are sometimes unable to keep up with the growing complexity of contemporary projects due to factors such as bigger teams, geographically dispersed workers, and more sophisticated deliverables. The emergence of AI as a potent tool has freed up project managers to concentrate on leadership and strategic decision-making by automating repetitive jobs, analysing massive datasets, and predicting project outcomes. Improving efficiency, reducing risks, and boosting decision-making are the three main ways that (AI) is affecting project management. The researchers start by looking at how AI streamlines and improves daily operations by automating scheduling, resource allocation, and reporting. This helps to decrease human error and increase efficiency. The article uses real-world case studies to show how businesses have utilised AI-driven technologies to shorten project times and make better use of resources. The second part of the paper explores the ways AI may help with risk assessment and reduction. (AI) with predictive analytics may identify hazards early in a project's lifespan, giving managers valuable information they can use to mitigate such risks. The researchers look at real-world examples of AI in action, examining how sectors like construction and IT have utilised it to reduce risks and boost project results. The researchers conclude by looking at how AI may improve decision-making via the use of scenario simulations and real-time data analytics. Project managers may improve project performance using data-driven choices made possible by machine learning algorithms that analyse past project data to forecast outcomes.

Keywords: Implementation of AI, Management of Projects. Operational Staff, Moral Considerations Transition of Power, Instruction and Assistance.

INTRODUCTION

In recent times, artificial intelligence (AI) has been receiving a great deal of attention in the field of project management. Artificial intelligence (AI) has been

included into software for project management since 1987; nonetheless, its use has only lately become increasingly widespread throughout the industry (Shamim, 2022). When it comes to some aspects of project management, such as planning, organising, controlling risks, and making choices, artificial intelligence (AI) has the potential to provide significant improvements. Thanks to advancements in data mining and machine learning, this is now something that can be accomplished. Nevertheless, there were still a variety of perspectives about the impact that AI had on project managers. Artificial intelligence (AI) has the potential to significantly improve the efficiency and productivity of project management teams by providing them with access to a greater quantity of data that assists them in making more informed choices. The ability of artificial intelligence to sift through vast volumes of data in order to identify patterns and insights might make it simpler for project managers to make sound choices. It is possible that the results of the project, efficacy, and utilisation of resources will all improve as a result of this. A number of individuals, on the other hand, are concerned that artificial intelligence (AI) could one day be able to take the place of humans in some industries. If the automated aspects of AI cause a person's field of work to change, the worker may be required to acquire new skills or maintain the ones they currently possess in order to remain competitive. It is essential to have an understanding of the ways in which artificial intelligence may alter career trajectories, increases job security, and the structure of the workforce in the field of project management (Alhart, 2022).

BACKGROUND OF THE STUDY

First efforts to give machines human-like intelligence are characterised by the phrase "artificial intelligence" (AI). While AI was more prevalent in science fiction in the 1800s and 1900s, it is now drawing closer to being a reality. A lot of modern occupations are looking at (AI) as a potential replacement for humans. In fact, AI could wind up replacing humans in more sectors than what's now known (Biswas, 2023). While transitioning from human to AI-powered job performance increased productivity, it also brought about a new and more significant change in the researcher's work-life balance. This change might be one of the greatest technical revolutions that mankind has ever faced; change has never occurred at such a rapid pace. Knowing precisely what changes were needed and how to apply them was critical for minimising the quantity of effects. Since the beginning of time, there have surely been leaders in various kinds. Theoretical frameworks for effective leadership have developed in tandem with human civilisations in response to these changes. AI has already had a significant effect on management, and it will continue to have an effect on all businesses. When it comes to making decisions as a manager or leader, (AI) is changing the game. Among the many fields that stand to benefit substantially from the use of AI, management is among them. This thesis delves into the topic of how future managers will have to adjust to technological advancements brought about by AI in the workplace. It specifically focusses on the question of how leadership roles will change as a result of these breakthroughs (Frankenfield, 2022).

PURPOSE OF THE RESEARCH

This study aims to investigate how intelligent technology has transformed project management and employee work performance. This study attempted to ascertain how artificial intelligence technologies influence worker productivity, job fulfilment, and overall efficiency in addition to evaluating the effects of these innovations on project management, monitoring, and planning. The study's primary objective was to make these consequences clear to urge companies to use AI more widely to increase employee performance and productivity.

LITERATURE REVIEW

One may define AI in a number of ways. In this thesis, the researchers have taken into account the definitions of artificial intelligence (AI) provided by Merriam-Webster and the English Oxford Living Dictionaries, which are "the theory and advancement of computer systems able to perform tasks that typically call for human intelligence" and "the capability of a machine to imitate smart human behaviour" respectively (Lee & Choo, 2020). These definitions proposed that AI was the study and practice of programming computers to think and behave like humans, with the ultimate goal of making computers capable of tasks traditionally performed by humans, such as learning new tasks and navigating their physical environments. The meaning of artificial intelligence (AI) changes throughout time in tandem with technological advancements. When a piece of technology becomes mainstream and user-friendly, the researcher stops calling it an AI. The general public still views AI as a futuristic technology, which explains why this is the case. Improving learning, thinking, and perceiving are the goals of artificial intelligence. With these capabilities, AI may optimise its reasoning and behaviour for maximum success. Because of its numerous useful characteristics, AI has a lot of potential as a solution to difficult issues. It was possible for AI to solve problems that humans couldn't when it learnt to think and act like humans. Using AI to resolve problems instead of humans may have two advantages: reducing the likelihood of human error and increasing productivity to unprecedented levels (Papadakis & Tsironis, 2022).

RESEARCH QUESTION

What is the impact of data quality on project management?

RESEARCH METHODOLOGY

RESEARCH DESIGN

Analyses of quantitative data were conducted using SPSS version 25. To measure the strength and direction of the statistical association, the researchers used the odds ratio and the 95% confidence interval. The scientists established a threshold that was deemed statistically significant at $p < 0.05$. Key aspects of the data were

identified by a descriptive analysis. Data collected via surveys, polls, and questionnaires, as well as data processed using computing tools for statistical analysis, are often assessed using quantitative methods.

SAMPLING

Research participants filled out questionnaires to provide information for the research. Using the Rao-soft programme, researchers determined that there were 875 people in the research population, so researchers sent out 962 questionnaires. The researchers got 945 back, and they excluded 27 due to incompleteness, so the researchers ended up with a sample size of 918.

DATA AND MEASUREMENT

The research mostly used data obtained from a questionnaire survey. The participant's fundamental demographic information was solicited first. Subsequently, participants were provided with a 5-point Likert scale to assess the online and offline channels. The researchers meticulously examined many resources, particularly online databases, for this secondary data collection.

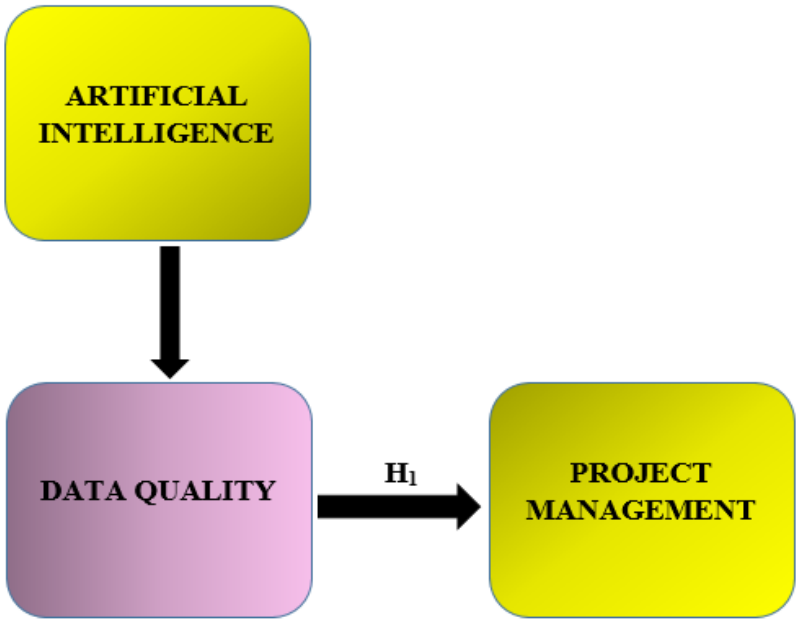
STATISTICAL SOFTWARE

The statistical analysis was conducted using SPSS 25 and MS-Excel.

STATISTICAL TOOLS

To grasp the fundamental character of the data, descriptive analysis was used. The researcher is required to analyse the data using ANOVA.

CONCEPTUAL FRAMEWORK



RESULT

Factor Analysis: One typical use of Factor Analysis (FA) is to verify the existence of latent components in observable data. When there are not easily observable visual or diagnostic markers, it is common practice to utilise regression coefficients to produce ratings. In FA, models are essential for success. Finding mistakes, intrusions, and obvious connections are the aims of modelling. One way to assess datasets produced by multiple regression studies is with the use of the Kaiser-Meyer-Olkin (KMO) Test. They verify that the model and sample variables are representative. According to the numbers, there is data duplication. When the proportions are less, the data is easier to understand. For KMO, the output is a number between zero and one. If the KMO value is between 0.8 and 1, then the sample size should be enough. These are the permissible boundaries, according to Kaiser: The following are the acceptance criteria set by Kaiser: A pitiful 0.050 to 0.059, below average 0.60 to 0.69

Middle grades often fall within the range of 0.70-0.79. With a quality point score ranging from 0.80 to 0.89. They marvel at the range of 0.90 to 1.00. Testing for KMO and Bartlett's Sampling Adequacy Measured by Kaiser-Meyer-Olkin .980

The results of Bartlett's test of sphericity are as follows: approx. chi-square

df=190

sig.=.000

This establishes the validity of assertions made only for the purpose of sampling. To ensure the relevance of the correlation matrices, researchers used Bartlett's Test of Sphericity. Kaiser-Meyer-Olkin states that a result of 0.980 indicates that the sample is adequate. The p-value is 0.00, as per Bartlett's sphericity test. A favourable result from Bartlett's sphericity test indicates that the correlation matrix is not an identity matrix.

Table 1: KMO and Bartlett's Test.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.980
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

Bartlett's Test of Sphericity further validated the overall relevance of the correlation matrices. The Kaiser-Meyer-Olkin measure of sample adequacy is 0.980. The researchers determined a p-value of 0.00 via Bartlett's sphericity test. The correlation matrix was deemed invalid due to a significant outcome from Bartlett's sphericity test.

INDEPENDENT VARIABLE

Artificial Intelligence: Without a doubt, AI has transformed decision-making, process management, and job performance across a wide range of industries. This had the greatest effect on the corporate sector, the healthcare system, and commonplace technology (Smith & Wong, 2022). By automating routine and complicated commercial tasks, artificial intelligence greatly increases output per unit of effort. Supply chain optimisation, data input, and chatbot customer assistance are just a few of the more complex tasks that systems driven by artificial intelligence (AI) may do. Since automation boosts productivity and decreases human error, workers are free to concentrate on higher-level, more creative tasks. Artificial intelligence allowed for better long-term planning and decision-making by sifting through mountains of data in quest of insights and patterns that humans would overlook. The use of AI has completely altered the diagnostic and treatment processes in the medical industry. Using machine learning algorithms, radiologists can detect tumours or fractures in medical pictures more accurately and earlier. Treatment regimens may be fine-tuned with the use of AI and patient data, leading to better results with less effort. Medication research was also seeing a rise in the usage of AI-driven technology, which was leading to the development of new treatments more quickly and at a lower cost. In addition, AI has revolutionised everyday technologies. With the use of natural language processing, voice assistants such as Siri, Google Assistant, and Alexa can comprehend and respond to user enquiries, facilitating more natural and seamless interactions with technology. Platforms like Amazon and Netflix used recommendation algorithms that were heavily dependent on AI to offer users content or items that were personalised based on their preferences and previous actions (Toorajipour et al., 2020).

FACTOR

Data Quality: An organization's data governance activities cannot be successful without high-quality data, which is defined as information that satisfies standards for correctness, completeness, validity, consistency, uniqueness, timeliness, and suitability for purpose (Li et al., 2021). Businesses may achieve their objectives with the help of data-driven choices made possible by data quality standards. Businesses run the danger of unfavourable business results if data problems such outliers, duplicate data, missing values, and improper addressing are not adequately handled. An annual average of USD 12.9 million is lost by organisations due to poor data quality, according to a Gartner analysis 1. To counteract the consequences of

inaccurate data, data quality technologies have been developed. Data consumers have faith in the data and can use it to make better decisions, which in turn leads to the creation of new company strategies or the improvement of current ones, when data quality is up to par for its intended purpose. Data quality tools, on the other hand, are useful since they allow companies to identify the root causes of data problems when standards aren't satisfied. Teams can efficiently fix data quality concerns by doing a root cause analysis. As more and more firms incorporate automation and (AI) into their workflows, having high-quality data is essential for making the most of these tools. Data quality is important for more than just day-to-day business operations, however. "Garbage in, garbage out" is an ancient adage that is equally applicable to machine learning algorithms. The researchers may anticipate erroneous outcomes from an algorithm that is trained on poor data for prediction or classification (Frankenfield et al., 2020).

DEPENDENT VARIABLE

Project Management: In order to complete a project successfully and within the allotted time frame, budget, and other constraints, project management is essential. Included are critical responsibilities and activities that, if not met, will result in project failure (Frankenfield, 2022). The project's objectives, scope, and purpose were defined at the initiation phase of project management. A project charter outlining the project's goals, scope, and deliverables is necessary after identifying project stakeholders' needs and defining the project's objectives. After the project was started, the subsequent stage was the planning phase. In this phase, project managers set the stage for the project by creating an overview, creating a schedule, estimating resources, and creating a budget. To carry out, monitor, and manage the project, the project plan served as a guide. It also included making preparations for risk management in order to anticipate issues and provide remedies. The execution phase entails carrying out the tasks outlined in the project plan, managing the teams working on the project, and coordinating the available resources. The bulk of the work was completed here. Timely project completion and effective problem-solving depended on strong leadership, clear communication, and coordinated efforts at this point (Njuguna & Kakuta, 2021).

Relationship Between Data Quality and Project Management: The connection between the quality of the data and the management of the project is very necessary for the accomplishment of any project. When it comes to making educated choices, planning, and keeping track of the progress of a project, having access to data that is of high quality is vital because it gives information that is accurate, dependable, and up to date. In the field of project management, choices are often driven by data, including but not limited to timeframes, resource allocation, budget monitoring, and risk management. Poor decision-making, missed deadlines, excessive expenditure, and unanticipated dangers are all potential outcomes that may be brought about by data that is erroneous, incomplete, or out of date. On the

other hand, having access to high-quality data gives project managers the ability to properly monitor progress, effectively distribute resources, and guarantee that the project continues to proceed as the original plan. In conclusion, the quality of the data has a direct influence on the capacity to effectively manage projects, which serves to guarantee that goals are accomplished within the restrictions of time, cost, and scope that have been established (Papadakis & Tsironis, 2022).

Because of the above discussion, the researcher formulated the following hypothesis, which was analyse the relationship between Data Quality and Project Management.

H_{01}: There is no significant relationship between Data Quality and Project Management.

H_1: There is a significant relationship between Data Quality and Project Management.

Table 2: H1 ANOVA Test.

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39588.620	393	5655.317	1,075.769	.000
Within Groups	492.770	524	5.257		
Total	40081.390	917			

The findings of this inquiry will be significant. The value of F is 1075.769, demonstrating significance with a p-value of 0.000, which is below the alpha criterion of 0.05. This denotes the **"H_1: There is a significant relationship between Data Quality and Project Management"** is accepted and the null hypothesis is rejected.

DISCUSSION

Artificial intelligence (AI) has the potential to completely transform many areas of project management, according to the report. These areas include production, delivery, and manufacturing. The fact that AI is already making waves in fields as diverse as manufacturing and finance demonstrates its broad applicability and revolutionary promise. Out of all the responsibilities and functions of a project manager, the respondents rated project planning, risk management, and resource allocation as very important for a project's successful completion. The idea that future studies should concentrate on better approaches to project management was also brought up in the literature. In response to a question on project managers' familiarity with artificial intelligence (AI), participants offered examples including AI's ability to automate mundane jobs, analyse client data, and identify potential

risks and opportunities. Artificial into revolutions: I) like earlier technical revolutions offered a lot of promise for project management, but important issues were still not addressed. Data suggests that AI has the potential to completely alter the face of project management. Project managers will need to overcome a few obstacles before they can confidently supervise an AI-integrated, AI-automated, and AI-predictive future.

CONCLUSION

Using neural networks in project management has the potential to substantially enhance the project's efficacy and outcomes. Nevertheless, it was of utmost importance to address any possible ethical concerns and consider the impact of artificial intelligence on the job market. Due to the critical importance of addressing ethical problems, this thesis research has shown the effects of AI on employees. After reviewing the literature and conducting semi-structured interviews with Swedish and Greek project managers, it became evident that incorporating AI into project management calls for the development of new competencies and formal education for project managers. Various project managers' viewpoints on AI were exposed via the interviews. A lot of people were worried about how it would affect their job security and how much time it would take to train new workers. It was noteworthy to note that these second views highlight the need of effective transition management and people help throughout the shift. In addition, it became abundantly obvious that adopting AI for project management necessitated thinking about ethical concerns. Considerations of justice, transparency, accountability, privacy, and human oversight ranked highest among the ethical considerations. By prioritising the protection of individuals' privacy and the advancement of equality in decision-making, organisations may help ensure the ethical and responsible use of AI.

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