

The Integration of AI on Workforce Performance for a South African Banking Institution

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Abstract— *Artificial Intelligence (AI) advanced technologies are growing and changing many industries. This paper will assess the relationship in which artificial intelligence impacts the performance of the workforce in a South African bank. The research explores the aspects that contribute to which a worker has improved productivity and performance through the adoption and use of artificial intelligence. The research considers the aspects of artificial intelligence toolset and their influence on the workforce performance. In addition, the paper assesses these aspects as to how they contribute towards the productivity with considerations to the integration of analytical and organized strategies that advance the workforces performance. The purpose is to improve the workforce's quality performance in the banking institution of South Africa. The research has applied the descriptive statistics with the use of frequency distribution tables and graphical representations to analyze and present the information on the variables. The outcomes are evaluated with regards to the descriptive statistics and inferential statistics based on the variables which show that artificial intelligence has a relatively strong impact on workforce performance. Therefore, it is essential and recommended for banks to integrate them. The next frontier for shared services may be far more exciting, incorporating greater computing power and artificial intelligence into robotics, so that the lines between human judgment and automation become blurred.*

Keywords— *artificial intelligence, robotics, banks, workforce's performance, machine learning, operations*

I. INTRODUCTION

A. Background of the Study

The use of artificial intelligence (AI) to manage the workforces has become increasingly popular [1]. AI is referred to as the capability of a robot or machine to possess cognitive, learning, reasoning and higher problem-solving skills [2]. Some concepts that have been adopted to describe the application of AI to manage workforces include algorithm management [3]. AI dates back to the 1950's, and has been applied in various industries including the financial institutions as a way to achieve competitive advantage and to increase market share [25]. The financial institutions which are inclusive of banks have become one of the largest adopters of AI into their systems and processes since it has been noted that is one of most the significant factors which has the ability to impact the performance of the workforces relating to their capability to advance the productivity of the organization by working coherently with innovative intelligent devices which ultimately benefits the banks effectiveness and efficiency both financial and non-financially [4], [8].

The human resources are recognized as the highly vital resources of most organizations, and they are known to be major contributors to any organizations productivity and

performance. Therefore, it has come to the attention of the management to improve the skills and abilities of their workforces to ensure that they adapt to the rapidly changing modern world [5]. Three factors are often considered crucial to assess if management practices in an organization are successful they include: work satisfaction, work meaningfulness, and workforce retention [1]. Banks have established organizational missions and objectives to achieve and as a way to continuously accomplish them, they as well have to ensure that they remain competent in the market by having workforces who have acquired the relevant technological competencies, skills, knowledge, training, adaptability, flexibility and creativity to process data efficiently. The workforce's competencies in utilizing and operating intelligence advance robotics plays a crucial role in the bank because they possess potential to assist and improve the workforce's performance in approaching and handling various work tasks timely, and accurately [6]. However, there may be several barriers which may hinder the workforce's adoption to AI such as the traditional work systems, processes, organizational culture, government policies and so forth. The adoption of AI can benefit a large number of the workforces who possess inadequate capabilities, skills, knowledge, training and competencies in performing their work tasks precisely, and within a specified time period [7].

Recently, it has been noted that when an organization trains and develops its workforces with the use of advance technologies, it can improve their productivity while reducing their work stress and frustrations that are associated with their inability to operate and handle advanced intelligent machines [8]. A large number of employees end up leaving their jobs and resigning because they feel incompetent to perform their work tasks whereas they are facing continuous challenges in understanding how to use the advanced intelligent machines that are part or related to their daily work activities [9]. However, it is also noted that when an employee learns about how to engage and navigate around the new advanced technologies, their level of commitment and obligation towards their day-to-day work increases as well as their rate of involvement and participation is relatively enhanced which enables them to complete their work tasks timely and properly as required [10]. Many researchers have described training as an efficient process of attaining knowledge, abilities, skills and the behavior that is required to satisfy the necessities of the specific work [11]. Furthermore, the advantage of the development and training of the banks workforces capabilities on AI can positively impact their professional career and assist them to adapt to the uncertain futuristic situations [12].

B. Research Objectives and Questions

The objective of this research is to assess the impact of AI on workforce performance in a retail bank in South Africa.

Stemming from the main objective of the study, the following are the specific objectives of the study: (1) To establish the influence of AI on workforce's performance, (2) To evaluate the impact of AI on workforce's motivation including satisfaction, (3) To inspect the impact of AI on the capabilities of the workforce, (4) To analyze the impact of AI on the development of workforce, (5) To appreciate the necessity of AI in the bank

Based on the research objectives delineated above, the following research questions were asked in order to achieve the objective of the study: (1) Is there a significant relationship between workforce productivity and AI? (2) Is there a relationship existing between AI competencies and employee performance? (3) Is there a relationship that exist on employee AI development and workforce motivation and satisfaction? (4) Is there a relationship that exist on workforce performance and AI knowledge? (5) Is there a relationship that exist on workforce performance and AI capabilities?

C. Significance of the Study

The research is crucial for the overall banks adoption of artificial intelligence for workforce performance because the workforces serve as essential resources to carry out various tasks in the bank. The workforce performs various tasks such as transforming the banks inputs into outputs which are a desired service for the customers. If the workforces are not equipped with necessary capabilities and competencies to work with intelligent machines of the future to carry out their work activities therefore, the organizations ability to maintain competitive advantage will be at risk. The effect of a bank failing to adapting to the advance technological innovations, such as AI is further discussed in this study.

D. Scope of the Study

This study is restricted to workers of the retail banking institution in South Africa. Given the time limitations that ultimately makes it difficult to perform the study in a broader perspective with the inclusion of other banks in other regions. With regards to this research a limited number of contributors in an executive level and below will be involved in the research. The participants of the research were sampled by the use of a Stratified Random Sampling.

E. Limitation and Delimitation of the Study

This research will focus only on the respective bank in South Africa; therefore, the results will not affect other banks located in other areas of the continent including other banks of the country where this type of challenge exists. The research results will only consider the bank; therefore, they are not applicable to other financial institutions that are having a related problem. The research not disclose the name of the bank, the titles of the workforce and their work descriptions due to the fact that a number of workforces do not prefer to disclose their credentials and other sensitive information such as their personal details.

II. LITERATURE REVIEW

A. AI Intergrated with Banking Workforces

Research suggests that the advancement of technology

could be disruptive, yet, it primarily represents a substantial opportunity. In addition, banking institutions can adopt advanced technologies which can reignite the productivity, growth, innovation and job creation. Banking institutions that would not give their workforces appropriate development opportunities to adapt to the continuous changing technological world, are at facings risks related to the failure of sustaining their business market shares and competitive advantage. They would therefore, fail to satisfy the constantly changing needs of their customer's which would ultimately lead to an organization collapsing and losing customers [13]. To be specific, developing the workforces supports them to adapt to market changes, and equips them with relevant advanced technological capabilities to be ahead of their market competitors [9].

Technological advancements of the fourth industrial revolution that are used in banking institutions such as AI, machine learning, robotics, deep learning and others play a crucial role in the accomplishment of the banks visions and goals by integrating with the interest of the bank and workforces. The workforces are considered as the most crucial asset of the bank therefore, banks who develop their workforces for the future by engaging them with the advanced innovative technologies can increase their productivity [9]. The technological advancements and workforce development are critical functions for maintaining and sustaining a competitive advantage for any organization [14]. Figure 1, shows a strategical perspective of AI [15].

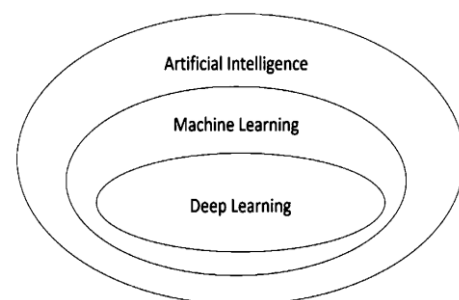


Figure 1: A strategic view of AI

The impact of AI is significant to any organization and therefore, from a bank's perspective the implementation of AI can enhance the processes and operations of the bank. From the workforce's perspective, AI is critical with regards to the process of carrying out work tasks, development of futuristic skills, employee performance and professional career enhancement [16]. A number of aspects are involved in the adoption of AI such as the transformation of the systems, transformation in the organizational culture, the capabilities and skills of the workforce, the organizational policies and regulations and others [14]. The development of the workforces for AI integration can improve the capabilities, knowledge, skills, competencies and other traits towards the enhancement of workforce performance and efficiency of the bank.

The banks of today and other organizations have developed other mechanism to reskill their workforces because the education system does not properly prepare its employees for the specific job descriptions in the companies. This has however, led to the workforces possessing limited skills, capabilities and knowledge necessary to occupy the relevant open job vacancy in the labor market, after they

complete their qualifications and leave higher learning institutions to the corporate world. The banking industry technological advancements and workforce development are essential resources for the improvement of overall bank's performance and productivity. Many services which are rendered by the bank are intangible, and they involve the workforce's efforts in the transformation of inputs to a final service that will be offered to a client to consume immediately and simultaneously. The value and quality of the service rendered to the client is measured through the ability of the workforce to provide the service that will satisfy the client [17].

B. The Role of AI on Human Resources

There has been research done previously based on managers influence on the workforces and it has been discovered that the major impact would be related to how the workforce executes various work tasks which can be measured in terms of productivity, effectiveness, turnover, and the ability to demonstrate motivation [18]. The workforces would perform at their level best when they are knowledgeable and competent in their ability to interact with advanced technologies that are related to their work. In addition, inclination or trust also contributes to their consistent efforts given that they will be compensated by the executive. Workforce performance is influenced by a variety of factors such as working environments, technology, knowledge, and manager relationship, work preparedness and improvement opportunities, employer stability, general social networking relations, methods for remunerating the workforces, and so forth. Among each one of those variables that influence workforce performance, certain competences and adoption of AI are of most extreme significance in this modern era of advanced intelligent technologies. Moreover, some research showed that AI in banks can be significant and critical to management and workforce for execution of overall organizational productivity improvement [16]. With that being noted, innovative utilization of advanced AI can enhance the achievement of efficient practices and ultimately improve organizational processes and operations. These sorts of practices can help the workforce to perform various activities within shorter time frames, more accurately, properly with less errors [19]. Figure 2 shows the four significant roles that AI plays in HRM [29].

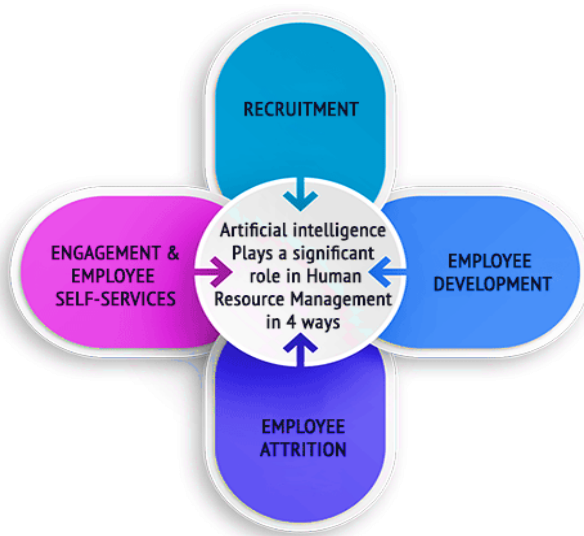


Figure 2: Four significant roles that AI plays in HRM.

In the globalization and digital era, the working environment requires the workforce to be equipped with new sets of relevant innovative skills in order to perform various activities that are linked to use of the fourth industrial revolution advanced technologies which include AI toolset such as robotics, machine learning, Big Data, IoT and so forth [20]. It is important that organizations such as banks change cautiously and adapt to the digital ecosystem. It is additionally significant for the organizations to meet and present new opportunities involving new technologies such as intelligent robots on how they interact with people since the transformation towards the future has been noted and yet to be realized on the working environments that includes the physical, biological and digital influences that drive change in the present business environment [20]. In the examination of the rapidly changing workplaces, the truth remains that many organizations existing nowadays have been completely transformed, consequently it is progressively significant for the executive team to present new innovative strategies of creating a solid and tough connection between the organization and the workforces efforts working towards the objectives and satisfying the consistently changing needs of the customers [21].

C. Impact of AI on Workforces Performance

Many organizations have achieved large advancement by completely complying to their business procedures and processes through the development of programs that will provide the relevant capabilities and opportunities for workers to use innovative technologies such as AI [14]. The International Federation of Robotics added that the inspiration of workforces and their efficiency can be advanced by exposing them to learning opportunities on how to work with intelligent robots so that the performance is improved on the execution of business operations [22]. The whole accomplishment of organizational effectiveness strongly depends on how the organization keeps its workforce involved and engaged in order for them to carry out their assigned tasks effectively and efficiently. The perceptions that workers have with respects to their interaction with AI impacts their approach and perspective towards their work. AI management systems are based on theories. AI management systems seek to promote worker engagement by directing, monitoring, and rewarding and/or punishing employee's actions. Moreover, the responsibility of the management towards their organizations is additionally assessed on how they develop the skills and competencies of their workforces [1].

The American Society for Quality (ASQ) has made some reference to the total quality management (TQM) approach, which centers around the capacity of the organization to provide the necessities for workforce development, and the provision of relevant opportunities for knowledge, growth and new sets of competencies [23]. In return, the integration of AI with the workforce sought to respond by improving the quality of the processes of which ultimately will improve the quality of the services that are rendered to the customers hence their motivation and satisfaction towards their organizational processes and their work. Various studies related to the effectiveness and efficiency of the workforces have demonstrated that the technological framework has a significant impact on how workforce accomplish their jobs by providing them with the opportunity to perform their work inventively and innovatively [24].

Many organizations have automated their organizational processes, but the demand of workforce creativity and inventiveness is still prominent to this day. Numerous banks across the world including Singapore, China, United States, Japan and others have utilized AI in their systems (for example deep leaning and machine learning) to analyze large amounts of data, detect fraudulent activities and to keep track of customer transactions [19]. While observational research has demonstrated that AI has the capacity to provide assistance to the workforce performance improvements in carrying out their work tasks. The tipping point of AI would be, to have an intelligent robot as part of the corporate board of directors [19]. In addition, the research that was conducted by the World Economic Forum reported that about 45% of the study participants suggested that by the year 2025 the tipping point would have been reached [9]. Table 1, shows the positive and negative impacts that are predicted from the implementation of AI [19]. The positive impacts include, decisions which will be driven by data, which are taken rationally and possess lower biasness, the enthusiasm for irrationally will be eliminated, the structural bureaucracy will be re organized, the structural bureaucracy will be re-organized, creativity and innovation will be enhanced in work, energy independence, there will be more advancement medical sciences, and disease eradication, and higher productivities are expected. In contrasts, the negative impacts include: anonymous accountability, replacement of work by intelligent robotics and automation, the increase of cybercrime, becoming unintelligible due the increasing dependence on machines, improved inequality as a result of access to AI, failure of the algorithms across many fields, and critical danger to humanity and ethics. Beyond intelligent robots, AI has the ability to learn and reason from past situations and experience in order to deliver input and automate complex and sophisticated futuristic decision-making processes, which makes it simpler and much quicker to reach accurate decisions based on data and previous experiences [20].

TABLE I. POSITIVE IMPACTS AND THE NEGATIVE IMPACTS OF AI

Positive Impacts	Negative Impacts
Decisions driven by data, which are taken rationally and possess lower biasness	Anonymous accountability
The enthusiasm for irrationally will be eliminated	Replacement of work
The structural bureaucracy will be re-organized	Cybercrime
Creativity and innovation will be enhanced in work	Becoming unintelligible
Energy independence	Improved inequality
There will be more advancement medical sciences, and disease eradication	Failure of the algorithms
Higher productivity	Critical danger to humanity and ethics

The competencies of highly skilled workers will perhaps be enhanced when their work performance is integrated with AI. One of the techniques that can adopted to improve the workers commitment, motivation and engagement to AI is to provide them with continuous training and access to advanced

technology [25]. The AI framework is based on the expectation hypothesis, which recommends that the workforce is certain to be inspired to perform well when they have noticed that there are futuristic factors that are associated with their work, of which may improve their professional career and development of skills [26]. At the end of the day, the factors of AI framework which include for example: perception, learning and reasoning contributes to performance by connecting the skills and abilities of workers to the abilities of the intelligent robot. By doing so the objectives and goals of the organization can be effectively achieved [27]. In spite of the fact that technology can motivate workforces, the management executives should also utilize this as a strategical tool to develop their workforce to improve their competency levels. Should this occur, there is a certain transformation that the adoption of AI would be broadly implemented in the organization [2]. In a research conducted by HRD scholars, stated that management executives should have a strategy on how to go about the implementation of AI. Such technological advancements ought to be applied carefully and should be utilized constantly for organizational continuous improvements [28]. They are likewise regarded as expensive, and they have the ability to prompt positive practices in the long run. The workforce who can understand and work well with their work advanced technology are moreover prepared to have a higher impression of their labor, their working situation and the executive management that is in charge. In this way, there is a necessity for the bank to actually put forth an attempt to demonstrate to the workforce that their skills and development are of major consideration to the bank and that the technological capabilities of their workforce towards the bank is profoundly esteemed [9].

This thought is additionally emphasized by the World Economic Forum 2018 report, which included that the empowerment of the workforce on AI to the organization has an optimistic connection towards expanding the skills and abilities of the worker into the achievement of long term organizational competitive advantage [9]. The financial institutions require workforces that are both competent and inspired, given their hard work, client fulfillment and total quality management would likewise be influenced [30]. The relational influences that exists amongst banking workforce and the clients is the most important drive to ensure that a customer's needs are completely satisfied and fulfilled. The relationship developed between the workforces and technological innovation may prompt an extension in the quality creation forms on the bank's items and services. Exactly when a high perspective on huge worth is practiced, thus, it will be by then that the clients' needs will be satisfied, hence getting more business for the banking institution [29].

III. THEORETICAL FRAMEWORK

A. AI toolset and Workforce Performance:

This determines AI toolset as an independent variable. In independent variable, AI embraces a variety of factors such as data, recognition, natural language processing, machine learning, robotics learning, planning, perceiving, problem solving, decision making and others. These are the factors which make up artificial intelligence. This research determines workforce performance as a dependent variable. In dependent variable workforce performance has a variety of factors such as capabilities, motivation, satisfaction, competencies, and development which ultimately impacts the

quality of work and work achievement, learning opportunity, challenging work and career development.

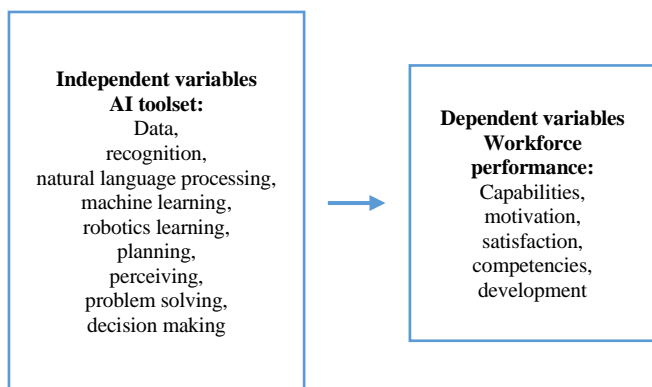


Figure 3: Conceptual framework of the study showing the relationship between the AI toolset as an independent variable and workforce performance as a dependent variable.

IV. METHODOLOGY

The research procedure follows a quantitative approach. A quantitative approach to research includes observing the attributes, or traits that are totally condensed to numerical values [29]. The goal is to collect numerical data based on an objective of perception while involving numbers. The research follows an empirical approach considering the primary information. In view of the manner of the current research, a mixture of organized survey questionnaire was adopted so as to gather appropriate data from a sample of 160 retail bank workforces. An overall of 180 workforces were randomly nominated from a retail bank in South Africa. The questionnaire was sent to participants at managerial level and below. The possible number of questionnaire participants is 500. Returned questionnaires were 165 and questionnaires in which were properly answered was 160.

A. Sources of Data

Both principal and subordinate data are utilized for the research. Principal data was gathered through the questionnaire which had multiple choice options given the case study approach, that was intended to analyze the objectives and hypotheses. The divisions where the survey was conducted included the Finance division, Human Resource division, Operation division and Clearing division. The names and employee roles of the banks were not disclosed due to ethical clearance consideration. It is the most cost efficient to collect information from participants. The survey questions contain about three parts namely demographical details, AI and workforce performance. The Likert 5 (five) Scale point was adopted for the study.

B. Data Analysis and Experimental Procedure

The study has adopted the descriptive and the correlation analysis for the purpose data analysis. After the perceptions had been gathered, the workforce performance was then analyzed from the data that was collected from the samples using data analysis tools such as SPSS, Microsoft Excel to assess the data. ANOVA was used as the analysis of the variance, t-test is one of the inferential statistics which will be used to determine if there is a significant difference between

the means of two groups. Cronbach's alpha was used as a measure of internal consistency of the study.

C. Hypothesis of the Study

The below listed hypothesis determines if there is a relationship which exists between AI and workforce performance.

H₀: A significant relationship does not exist on AI and workforce performance.

H₁: There is a significant relationship on AI and workforce performance.

H₀: A significant relationship does not exist on factors of AI and workforce performance.

H₂: A significant relationship exist on factors of AI and workforce performance

V. EXPERIMENTS AND RESULTS

A. Abbreviations and Acronyms

Certain specific terms have been abbreviated in this paper, such as:

AI which means "Artificial Intelligence",

HRM which means "human resource management",

Df which means "degrees of freedom",

SS which means "sample statistic",

MS which means "mean statistic",

F which means "F-test"

Regr. which means "regression"

TQM which means "total quality management",

n which means the "sample size",

N which means the "number of possible respondents from the bank",

e which refers to the "acceptable sampling error",

B. Equations

In this study the sample size is calculated through the Taro Yamane formula:

$$n = \frac{N}{1 + N \times (e)^2} \quad (1)$$

$$n = \frac{500}{1 + 500 \times (0.1)^2} \quad (2)$$

$$n = 83.33 \quad (3)$$

C. Research Findings and Analysis.

Biographical details of the participants will be discussed in the following section.

TABLE II. FREQUENCY DISTRIBUTION TABLE OF PARTICIPANTS SHOWING TO THEIR AGE GROUP

		Frequency	Percent	Valid %	Cumulative %
Valid	19-24	12	7.5	7.5	7.5
	25-29	36	22.5	22.5	30
	30-34	44	27.5	27.5	57.5
	35-39	32	20.0	20.0	77.5
	40-44	24	15	15	92.5
	45-49	8	5.0	5.0	97.5
	50-54	4	2.5	2.5	100
	Total	160	100.0	100.0	

Table II shows the age groups of the participants from the retail bank where the research was done. The table shows that many people who participated in the study the age ranges between 30-34.

TABLE III. FREQUENCY DISTRIBUTION TABLE SHOWING THE GENDER OF THE RESEARCH PARTICIPANTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	84	52.5	52.5	52.5
	Female	76	47.5	47.5	100
	Total	160	100		

Table III displays the gender of the participants from the retail bank where the research was done. The table illustrates that majority of the participants of the research were male.

TABLE IV. FREQUENCY DISTRIBUTION TABLE SHOWING THE EDUCATIONAL LEVEL OF THE RESEARCH PARTICIPANTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No matric	1	0.6	0.6	0.6
	Matric	4	2.5	2.5	3.1
	Diploma	28	17.5	17.5	20.6
	Degree/Honors	76	47.5	47.5	68.1
	Master	44	27.5	27.5	95.6
	Doctorate	4	2.5	2.5	98.1
	Other	3	1.9	1.9	100
	Total	160	100.0	100.0	

Table IV illustrates the qualification levels of participants which were classified into classes. 0.6% had no matric, 2.5% have completed their matric and 2.5% have master's degrees, 17.5% have obtained their diploma, and 47.5% have obtained their degree or honors. The results therefore, show that a large number of the workforce have obtained their degree or honors.

TABLE V. DESCRIPTIVE STATISTICS OF THE ARITHMETIC MEAN FOR THE FACTORS OF AI AND WORKFORCE PERFORMANCE

Variables	Category	Mean	Standard Deviation
Capabilities,	Dependant	3.5	0.5163
Competencies	Dependant	5.5	0.3639
Development	Dependant	5	0.2426
Motivation	Dependant	4.5	0.3254
data	Independent	2.5	0.1213
recognition	Independent	4	0.8284
Natural language processing	Independent	3	0.8284
machine learning	Independent	5	0.4142
robotics	Independent	4.5	0.1213

Through the analysis of descriptive statistics and the arithmetic mean computation. Table V, shows that the means for the Workforce performance, competencies, development, data, recognition, natural language processing, machine learning, robotics which had the lowest value of 3.5 and highest value of 5.5. Outcomes from the descriptive statistics with regards to the mean and standard deviation show that the workforce's exposure to factors of AI are well although there can be some improvements. The statistical average for the total variables is moderate. Mean values of independent variable and dependent variables show that workforce performance is dependent on the data, learning robotics learning, planning, perceiving, problem solving, decision making when related with other variables. Mean values for capabilities is 3.5, competencies is 5.5, and development is 5 which are pointing out that workforce of the retail banking institution in South Africa relatively perform well when engaged with AI including.

TABLE VI. REGRESSION ANALYSIS

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change Statistics	
					F Change	Sig. F Change
1	0.3177	0.1016	0.2169	0.712686	0.83393	0.44481
1	0.363a	0.132	0.123	0.76083	0.74865	0.2548

a. Predictors: (Constant), workforce performance

Table VI, shows that the F-change is 0,8339 which is higher than the F – significant change which is 0.4448. In this way, the null hypothesis is rejected at 5% level of significance and furthermore the 1% level of significance. likewise emphasizes that there is a significant relationship among AI and workforce performance. R Square was 0.2169 which implies that about 78.31% was explained by the independent variables. From the statistics it noticed that there is a strong relationship among the dependent variable and

independent variable which implies that workforce performance relies upon AI.

TABLE VII. ANOVA TEST

	Regr.	Residual	Total		Intercept	6
<i>df</i>	1	81	82	<i>Coefficients</i>	5.15719	0.0301
<i>SS</i>	0.3273	323.7814	324.1087	<i>Standard Error</i>	0.89514	0.1427
<i>MS</i>	0.3273	7.3586		<i>t Stat</i>	5.76130	0.2109
				<i>P-value</i>	0.02564	0.8339
				<i>Lower 95%</i>	3.35314	-0.2576
				<i>Upper 95%</i>	6.96123	0.3178

The ANOVA test on Table VII shows the standard error which is 0.89514, the p-value is 0.02564. It recommends that, there is a noticeable relationship that exists between the dependent variable and independent variable is reliant on AI in the retail bank of South Africa.

TABLE VIII. T-TEST EMPLOYEES' PERFORMANCE OVER AND AI

	Workforce performance and AI
Mean	5.425532
Variance	7.510638
Observations	100
Pearson Correlation	0.128186
Hypothesized Mean Difference	0
t Stat	-0.9758
P(T<=t) one-tail	0.167134
t Critical one-tail	1.67866
P(T<=t) one-tail	0.334268
t Critical one-tail	2.012896

Correlation is significant at the 0.05 level (1-tailed).

Table VIII is one tale t-test, shows the variance of workforce performance is 7.510638 between AI and workforce performance which means that there is a significant relationship between AI and workforce performance. The outcomes of hypotheses testing are summarized in table IX.

TABLE IX. SUMMARY OF HYPOTHESIS RESULTS

	Hypothesis	Outcomes
H ₁	A significant relationship exists between AI and workforce performance.	Accepted
H ₂	A significant relationship exists between factors of AI and workforce performance.	Accepted

Hypothesis 1: Correlation results indicate that there is a relationship between AI and workforce performance (sig = 0.44481 r = 0.3177). R is the multiple correlation coefficients, between the predicated values of motivation the dependent variable and the independent variable. Adjusted R-square

shows that 0.1016 of the variance is explained by the independent variable which means 10.16% of the change in the dependent variable. Std. Error of the estimated is 0.89514 compared with the mean of the "Predicted" value of the dependent variable. The null hypothesis is rejected because the p value is less than threshold $\alpha = 0.05$

Hypothesis 2: Correlation results indicate that there is a relationship between factors of AI and workforce performance (sig = 0.2548 r = 0.363). R is the multiple correlation coefficients, between the predicated values of satisfaction the dependent variable and the independent variable. Adjusted R-square shows that 0.123 of the variance is explained by the independent variable which means 12.3% of the change in the dependent variable. Std. Error of the estimated is 0.76083 compared with the mean of the "Predicted" value of the dependent variable. The null hypothesis is rejected because the p value is less than threshold $\alpha = 0.05$.

The entire survey comprises of 100 Likert scale questions and the reliability analyses showed that the general reliability amount was higher than 0.8 and given that the Cronbach's Alpha's reliability measurement 0.901 therefore, the technique used in the study was highly reliable.

VI. CONCLUSION

The human resource is regarded the most crucial asset of any organization to maintain and sustain its competitive advantage in the market. Acquiring the right workforce and then retaining that workforce is one of the challenges to the organization. Also, equipping the workforce with the abilities to have competitive skills and competencies for the future is quite a challenge. However, the outcomes from this research assessed and determined the relationship between AI and workforce performance. Based on the outcomes of the Pearson Correlation Analysis, it illustrated that there was a positive relationship between AI and workforce performance and it also displayed a strong positive significance in the relationship between workforce performance and the factors of AI.

The outcomes of correlation matrix have accepted the hypothesis that there is indeed a significant positive relationship between AI, and workforce performance. The correlation matrix also strongly supported the hypothesis between workforce performance and AI. There are seven aspects included in the AI which are competencies, development, data, recognition natural language processing machine learning robotics. machine learning and robotics are highly significant factor that impacts workforce performance. As for workforce performance four factors are included such as development, motivation, satisfaction, and competencies among all of the four factors development and competencies are highly significant factors which impact workforce performance on AI integration. Concerning the outcomes of the research, we can conclude that AI is a significant tool that can be used to motivate workforces to perform work efficiently and effectively. If the retail banking institution of South Africa ensures that AI for the workforce is adopted and implemented properly it will increase their workforce's performance. Provided that there is strong relationship which exists between workforce performance and AI.

Automation, artificial intelligence, and digital technologies offer vast opportunities for South Africa to improve productivity and generate many new jobs. To take

advantage of this opportunity, the country should invest in talent transformation to develop the new skills required in the workplace of the future. It is critical for all stakeholders to work together to achieve this transformation. It is expected that talent transformation journey will unlock the strong potential of South Africa [30].

In this research after discussing about the facts and findings researchers' recommendations are as follows:

- This study provides an empirical indication of factor that affects the integration of AI and workforce performance that can improve the productivity of the banking institution in South Africa.
- AI training program should be created for workforces to develop competencies and capabilities.
- Continuous development programs are an essential tool for integrating AI and workforce performance.
- Every bank should implement it.
- The bank's existing AI implementation programs are effective but it should also work on enabling the workforce to improve their capability and deal with the advanced technological system.
- The bank should launch an AI integration and development program for their workforces so that they can easily adapt to the digital ecosystem.

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