The application of Artificial Intelligence in Employee Appointment Process: Opportunities and Challenges in the Zimbabwean Travel Industry

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Abstract

The employee appointment process should be the first organisation to achieve sustained competitive advantage through the implementation of artificial intelligence that has been trending for some time. This study seeks to understand the application of artificial intelligence in employee appointment process, its opportunities, and challenges in the Zimbabwe Travel Industry. The primary mandate of the study was to understand employee appointment activities that can be transformed by artificial intelligence. The study determined the challenges of using artificial intelligence in the employee appointment process. The investigator obtained data through telephone interviews that were conducted with 15 participants from the Zimbabwe Travel Industry. The study employed judgemental, convenient and snowball sampling. The study found that there is low use of artificial intelligence in the employee appointment process, but there are activities that can be undertaken by artificial intelligence that include a chat box to handle recruitment queries, screening of CVs, scheduling of interviews and carrying out of online psychometric tests. Expensiveness, lack of skills, loss of jobs, cultural and ethical implications where found to be challenges associated with the use of artificial intelligence in the employee appointment process. Efficiency, effectiveness, enhanced candidate experience and organisation brand were found to be benefits of employing artificial intelligence in employee appointment process. The study recommends partnerships to be developed among travel firms, higher and tertiary education, and technology enterprises to develop artificial intelligence software that can cost-effectively meet the needs of recruiters.

Keywords: Artificial intelligence, employee appointment process, recruitment, selection

Introduction

Artificial intelligence has much potential to transform industries, and artificial intelligence is seen as the karma of humans. Artificial intelligence is ushering in a new era of enhancing efficiency and effectiveness in industries. According to Rao *et al.* (2019), artificial intelligence can enable several activities including human capital management activities. However, in the developing world artificial intelligence is a new phenomenon which still has a lack of evidence and documentation. The employee appointment process is an indispensable human capital management activity (Kapur, 2020). It is too important to be overlooked when blending human capital management activities with artificial intelligence as it is focused on acquiring the right people to give an organization a sustained competitive advantage. It is critical that organizations engage, qualified and capable staff, and it is the foundation for organizational survival and success. Hence, it is critical to understand the nature and the application of artificial intelligence grin the recruitment and selection process.

Globally, the use of artificial intelligence has been viewed as a positive development in recruitment and selection. HRPA (2017) survey reveals that 84% of firms worldwide believe that artificial intelligence is essential in the recruitment and selection process, and 32% of the firms were prepared to adopt artificial intelligence for recruitment and selection purposes. Muris (2021) states that 52% of human resource managers worldwide believe that artificial intelligence is critical in job matching. Artificial intelligence has a reputation of promptly matching candidates to the right job. Santangelo & Pini (2022) observes that artificial intelligence has been handy worldwide in the acquisition of talent from the globalised talent pool. Forbes (2022) articulates that artificial intelligence enhances candidate experience. DBS bank uses a virtual recruitment bot to screen candidates, and this has shortened the screening process, improved job the application rate and the bot responds to candidate queries (Forbes, 2022). In as much, artificial intelligence has been in use globally and has enhanced recruitment and selection, it is pivotal to understand the application of artificial intelligence in the employee appointment process in Zimbabwe.

In North America, 22% of enterprises use artificial intelligence in their recruitment and selection process (Tambe, 2019). In the United States, Bersin & Chamorro-Premuzic (2019) observe that artificial intelligence gamified recruitment and selection. Artificial intelligence is less subjective in recruitment and selection, as compared to using people to screen and interview people. In the United States, Artificial intelligence has been used to interview people for positions (Park *et al*, 2015). The interview bot uses a predictive model that aggregates scores assigned to facial expressions, speed, focus, anxiety, and excitement, and automatically rank candidates according to their scores. In addition, psychometric tests have been gamified and automated using Balloon Analogue Risk Test (Perveen *et al.,* 2016). In Chile, AIRA recruiting ranks resumes making organizations easily screen candidates, and detects false CVs. The major advantage of artificial intelligence in the United States is that it appoints the right candidate using limited time and resources. However, Dustin (2018) states that artificial intelligence is susceptible to algorithmic bias. Artificial intelligence relies on historical data which may be biased. For example, at Amazon women were overlooked when recruiting for tech-jobs, and this was because the data was biased towards men (Dustin, 2018). It is against this background that this study seeks to understand the application of artificial intelligence in the employee appointment process in Zimbabwe, a country which less technologically advanced than the United States of America.

World Economic Forum (2020) reports that 80% of firms in different sectors in Europe use artificial intelligence. Black & van Esch (2020) note that in UK chats bots are used to analyse candidate online history. Activities on social media platforms such as Twitter, Facebook and LinkedIn are used to analyse whether a candidate is the most suitable or not (Oracle, 2021). In pre-recorded interviews in France, artificial intelligence is used to rank interviews by doing video analysis of content, tone of voice, choice of words and facial expressions (Wilfred, 2018). However, Davenport (2019) posits that there is a lack of trust in deploying recruitment and selection in America. Most countries in Europe are vastly developed, and it is important that the problem at hand is investigated in Zimbabwe a country with different socio-economic environment.

Asia has been in the driving seat in terms of the adoption of artificial intelligence, and 61% of companies in Asia are using artificial intelligence (Rykun, 2019). Most companies use third party artificial intelligence software such as Omnidocs and Ezieka (Soni, 2022). By March 2019 artificial chatbox Goldie had been deployed in most Asian Countries (Kshetri, 2021). This chatbox answers queries from candidates allowing human resource managers to attend to

other tasks. Harambe's artificial intelligence tool helps unemployed Asian to find jobs (Argawal & Avey, 2020). WeChat recruiting in China, allows candidates to review, apply and share jobs (Kshetri, 2021). Talkpush's chatbox asks interview questions and hands over the process to human resource manager for the final decision (Soni, 2022). DBS chatbox Jim (Job Intelligence Maestro) in Singapore conducts gamified psychometric tests and interviews (Haper, 2018). Ajinga's Talent Experience links unemployed people to HR managers in China (Soni, 2022). Kshetri (2021) asserts that artificial intelligence in China has enlarged the recruitment pool and makes recruitment process quick and effective. However, Argawal & Avey (2020) are concerned with loss of jobs as a result of the application of artificial intelligence in Asia. Hence, it was critical to assess the application of artificial intelligence in employee appointment process, in Zimbabwe a country which differs from countries in Asia.

The application of artificial intelligence is still in its infancy stage in Africa. Access Partnership (2021) reports that artificial intelligence improves quality, efficiency and effectiveness in recruitment and selection in Sub-Saharan Africa. However, Saka *et al.* (2022) believe that artificial intelligence only delivers if it is properly implemented. Access Partnership (2021) notes that sub-Saharan Africa faces challenges in adopting artificial intelligence in terms of having limited artificial intelligence skills, limited broadband coverage, and ethical issues. Price Waterhouse Cooper (2022) reports that Africa will experience loss of jobs if artificial intelligence is adopted. In Zimbabwe, there have been limited studies on the application of artificial intelligence, and there is no study on this the application on employee appointment process. The travel sector is inconsistent in terms of use of artificial intelligence in recruitment and selection. Organisations in the travel sector have had challenges in employee appointment process. This has resulted in them blending the traditional methods of recruitment and selection with artificial intelligence. However, this has seen them experiencing same challenges of low productivity amongst new recruits. There are no clear policies in terms of adoption of artificial intelligence in the recruitment and selection. This study will serve as documentation of views and trends on the application of artificial intelligence in the Zimbabwean Travel industry.

Problem Statement

Recruitment and selection are critical in ensuring that the organisation has the right calibre of employees that can ensure the organisation's survival and competitive advantage. The specific problem is that despite use of artificial intelligence in employee appointment process, Zimbabwe Travel Industry is failing to recruit employees who fit organisation performance culture. The consequences of this has been low productivity and profitability, and this has resulted in high labour turnover.

Research Objectives

The study was guided by the following objectives:

i. To determine the extent to which organisations in the Zimbabwean Travel Industry have adopted artificial intelligence in their appointment process.
ii. To identify employee appointment activities that can be transformed using artificial intelligence in the Zimbabwean Travel Industry.
iii. To determine challenges of using artificial intelligence in employee appointment process in the Zimbabwean Travel Industry.
iv. To establish benefits of using artificial intelligence in the employee appointment process in the Zimbabwean Travel Industry.

Literature Review

Artificial Intelligence

The term artificial intelligence was first used in 1955 (Soni, 2022). Since its first usage, the term has grown in terms of use, and on Zimbabwean Google version around 1.1 billion results are shown. "Artificial intelligence is a constellation of technologies that enable machines to act with higher levels of intelligence and emulate human capabilities to sense, comprehend, and act" (Access Partnership, 2021:3). According to Muris (2021), artificial intelligence is the ability of machines to replicate human intelligent behaviour. These machines have ability to navigate the environment and solve challenges like humans would normally do. In other words, artificial intelligence is the creation of human like intelligence in machines. Artificial intelligence is the ability of human machines to carry out tasks smartly. These machines have the ability to logically reason, process natural language, communicate, plan, and perceive. In addition, over time these machines can learn and adapt to situations just like humans do. Examples of artificial intelligence include self-driving cars, virtual travel booking, smart assistants and marketing robots. The rationale behind the usage of artificial intelligence is that they increase efficiency and are cost-effective. In a nutshell, artificial intelligence refers to machines such as computers and robots performing tasks that can only be performed by human intelligence. These computers and robots (machines) are tailored, programmed, or have commands that allow them to solve specific problems and also to make decisions based on historical data.

Artificial intelligence is closely related to machine learning and deep learning. Machine learning is the application in artificial intelligence that has the ability to learn from experience performs tasks that it is not programmed to do (Macini *et al.*, 2020). These computers and robots learn and improvise using historical data. The cloud-based historical data makes it easier for machines to learn, adapt and navigate hurdles without the necessary programming. On the other hand, deep learning is a subset of machine learning with artificial neural networks that have algorithms modelled to function like the human brain (Lee, 2018). In other words, deep learning is an imitation of how the brain functions. Like how the human brain functions robots and computers with deep learning can make sense of photos, videos audio. For example, a self-driving car with deep learning can recognize a stop sign and a giveaway sign. Machine learning and deep learning are important as they allow machines to do labour-intensive work effectively and efficiently.

Employee Appointment Process

Grobler *et al* (2019) define employee appointment process as the locating, attracting, and selecting of applicants to fill job openings. Hatfield *et al* (2016) contend that employee appointment process involves numerous steps to ensure that the best candidate fills the job opening. According to Briscoe *et al* (2012) employee appointment process involves attracting qualified job seekers to form an applicant pool, in which the best suitable candidate is to be selected. The employee appointment process involves job analysis, job description, job specification, posting the job advert, interviewing, and making a job offer (Price, 2011).

Job analysis is the process of investigating the tasks, responsibilities and duties that make up a job (Grobler *et al*, 2016). It involves analysing the level of decision-making, working conditions, and machines operated on (Briscoe *et al*, 2012). A number of job tools can be used to come up with a job analysis (Armstrong, 2010). Some of the tools include observation,

interviews, and questionnaires (Price, 2011). Appleby (2014) notes that job analysis is important in the employee appointment process as its information help in the creation of job adverts that include job description and job specification. Armstrong (2014) contends that job analysis can improve recruitment decisions.

A job description is a written summary of activities performed on a job (Grobler *et al*, 2019). Information from a job analysis is used to construct a job description (Armstrong, 2014). Price (2011) argues that a job analysis may also include information on working conditions, reporting structure and equipment the job incumbent will use. Briscoe *et al* (2012) argue that a job description is important in the employee appointment process as it will be included in the job advertisement.

Fisher *et al* (2019) note that job specifications outline the specific knowledge, skills and abilities that are required to perform a job. According to Armstrong (2010) a job specification may also include personal and physical characteristics that a job seeker should possess in order to fill in the vacant post. A job specification is compiled using information from job analysis (Price, 2011). Grobler *et al* (2019) contend that a job specification is essential in the employee appointment process as it will be included in the job advert.

Armstrong (2010) notes that the posting of a job advertisement includes the drafting of a combination of a job specification and a job description. Price (2011) also argues that the job advert should be attractive and explanatory to the job seeker. Armstrong (2014) says that the recruiter should choose the best medium to communicate the job opening. Some of the sources include newspapers, radios, televisions, and e-recruitment tools. Grobler *et al* (2015) posit that for the effectiveness of the employee appointment process, the organisation should use a recruitment tool which is readily accessed by the job seekers.

Boxal *et al* (2007) posit that after receiving the applications the organisation should shortlist candidates for interviews. Martin (2013) contends that interviews are a popular method of selecting the best candidate. Armstrong (2014) also argues that interviews involve a physical dialogue between the interviewer and the interviewee. Boxal *et al* (2017) share that an interview panel which includes the immediate supervisor and the human resources management team carry out interviews. Interviews are criticized for being expensive and time consuming (Price, 2011). However, interviews involve face-to-face interaction between the employers and potential employees, which aid in the evaluation of all the candidates.

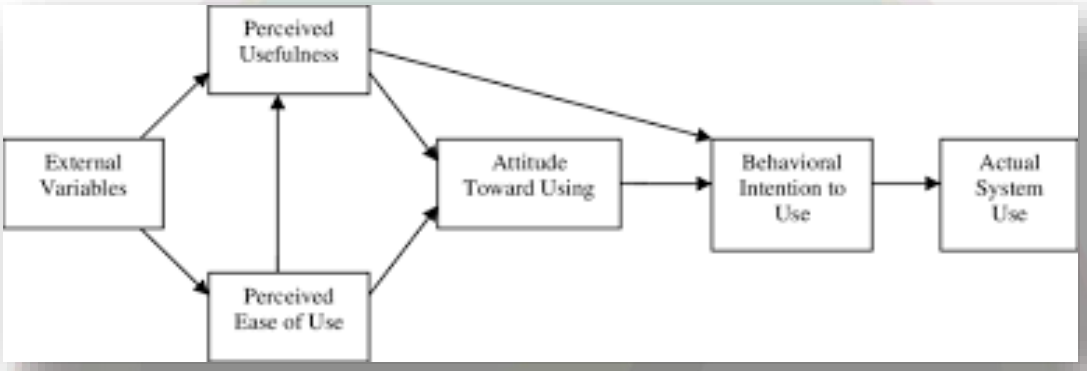
Brewster (2014) shares that after the interviews have been conducted the organisation decides about the best candidate to fill the job opening. The offer usually includes the job position and the benefits the job incumbent will be receiving (Appleby, 2014). The candidate will either accept or decline the job offer (Armstrong, 2014). In case the candidate declines, the organisation should offer the job to the next best candidate (Price, 2011). According to Boxal *et al* (2017) once the job offer has been accepted the employee appointment process is complete.

Technology Acceptancy Theory

Davies (1989) propounded the technology acceptance theory in uncovering the underlying reasons for acceptance of IBM products by clients (Yusoff *et al.*, 2018). The theory explains why customers would use certain technologies over others (Urhiewhu & Daniel, 2015). According to Technology Acceptance theory, there are two major explanations to the

acceptance of artificial intelligence. These explanations are perceived usefulness and perceived ease of use. Enterprises are likely to use artificial intelligence in the employee appointment process if they are efficient and effective (useful). If artificial intelligence is useful but complex, organisations may not use it in employee appointment process.

Figure 1: Technology Acceptance Model (Urhiewhu & Daniel, 2015)



Extracted from Kapu (2020)

In other words, for recruiters to utilise artificial intelligence it should be very useful. Artificial intelligence should derive a maximum benefit to the recruiting organisation by limiting resources and time, at the same time appointing the right person. Artificial intelligence should be easy to use for both the recruiter and job seeker. In a nutshell, the use of artificial intelligence requires less effort for both the recruiter and job seeker. Technology acceptance theory was opted for as a theoretical framework because the theory has been tested and was found valid in a plethora of societies and found to have high levels of parsimony (Rao *et al.*, 2017; Kapur, 2020). This motivated the researcher to use it in explaining the use of artificial intelligence in the employee appointment process.

Innovation Diffusion Theory

In addition to technology acceptance theory, this study was guided by the innovation diffusion theory. Innovation diffusion theory was propounded by Rogers (2000) to explain why technology is adopted (Bloom & Bengtson, 2017). The theory shows that technology is diffused in terms of four elements, and these are social systems, time, communication channels and innovation. In addition, adoption behaviour is depended on complexity, compatibility, triability, social norms and observability. This theory is different from technology acceptance theory, as it goes beyond perceived ease of use and perceived usefulness. The study used innovation diffusion theory because it has been used in many studies and its five constructs and four elements have been found to have positive impact on adoption of technology in business environments (Murphy, 2018). In a nutshell, artificial intelligence can only be embraced by organisations in the Zimbabwean industry if its less complex, its compatible, has been tried and tested, has been observed and is in sync with Zimbabwean social norms.

Challenges of Artificial Intelligence

There are a plethora of challenges associated with the use of artificial intelligence in the employee appointment process. One of the major challenges of artificial intelligence is that it results in unemployment (Kshetri, 2021). With the use of artificial intelligence, a limited number of human resources staff will be required for the purposes of recruitment and selection. In addition, artificial intelligence requires a lot of computer power, software, and hardware. Some ordinary businesses do not possess such resources, and do not have the capital to acquire them (Muris, 2021). Furthermore, Murphy (2018) is of the view that use of artificial intelligence requires technological expertise. Most human resources management staff do not possess these skills, and without such skill sets will result in hardships in using artificial intelligence. Another challenge of artificial intelligence has to do with privacy and security issues (Macini *et al.*, 2020). Information used in recruitment and selection is not secure, and susceptible to any criminal conduct. In addition, recruitment and selection requires human judgement in terms of determining behavioural fit of candidates, and this may not be available with artificial intelligence.

Research Methodology

The main thrust of this investigation is to understand the application of artificial intelligence in employee appointment process in the Zimbabwean Travel Industry. In order to gain a deep understanding of the problem at hand, the study adopted an explorative research design. Explorative research design was used to understand the problem at its setting. In addition, the research participants were key informants, human resource practitioners and IT specialists from three travel organisations in Harare, Zimbabwe. The research used convenient, judgmental, and snowball sampling. Participants who were present for an interview and had the knowledge of the problem at hand were interviewed. At no point were participants coerced to participate in the study. Interviews were conducted via telephone, this was critical as it allowed interviews to be conducted anywhere-anytime, and most importantly flexible for both the researcher and participants. At the 15th participant interviews were stopped as no new information on the problem at hand was being brought. Participants were now repeating the same information that had been given by participants who were interviewed before them.

Data trustworthiness, credibility, confirmability, and transferability were ensured through time sampling. Participants were initially interviewed on the 1st and 2nd of November 2022, and second interviews were conducted on the 11th and 12th November 2022. The purpose of the second interviews was to establish whether or not participants were consistent. Interview participants gave the same responses for both interviews meaning that the study is confirmable, credible, transferable, and trustworthy. Ethics were not an issue as participants were autonomous agents who could withdraw from the study anytime. The study was made up of 6 female and 9 male participants. There were more men than women participants in the study, although women had a significant representation to make the results for this study generalizable to both genders.

Results and Discussion

The study found that there is low usage of artificial intelligence in the employee appointment process in the Zimbabwe Travel Industry. Artificial intelligence is limited to resolving enquiries amongst applicants during the recruitment process, and for receiving CVs and resumes using the applicant tracking system. This finding resonates with Saka *et al.* (2022)

observation that too much reliance on European and Asian technology has thwarted usage of artificial intelligence in Zimbabwe. Artificial intelligence is expensive to develop and implement and given the economic quagmire in Zimbabwe companies are struggling to develop and adopt them in the employee appointment process. However, this study found that they are an array of activities in the employee appointment process in which artificial intelligence can be used. One of these activities is development of a chat box automatically handles recruitment and selection queries. Participant III indicated that:

"Robots can be used to handle queries from job seekers on the advertised post, the nature of the job and the location…."

This finding is consistent with observations by Park *et al.* (2015) in USA, and this may be because queries from job seekers require less human judgement and can be efficiently handled by robots. In addition, this investigation found that artificial intelligence can be utilised in the screening of CVs and resumes, and this is also consistent with studies in Asia (Argawal & Avey, 2020; Haper, 2018). Candidates may be asked to send CVs using a specific template which will make it easier for specific software to organize and screen them. The study also observed that artificial intelligence can be used for scheduling of interviews and conducting online psychometric tests. Participant VI stated this:

"Psychometric tests can be gamified online to enhance candidate experience…"

This finding is similar to Black & van Esch (2020) observations in UK that artificial intelligence is critical in scheduling interviews and conducting automated psychometric tests. Again, these activities do not need a higher degree of human judgement and therefore can be handled by artificial intelligence.

The other enquiry of this investigation was on the challenges of using artificial intelligence in employee appointment process. The participants were at pains to show that artificial intelligence is expensive to develop and adopt. Participant XII said this:

"Artificial intelligence systems and technologies are expensive to acquire and use this software for our companies battling for survival in Zimbabwe……. hence, we end up using traditional systems."

This finding sustains Saka *et al* (2022), who said that it is expensive for African firms to develop and use artificial intelligence. The underlying explanation may be companies in Zimbabwe rely on Asian, European, and American imported technologies from companies such as IBM and this is expensive for them. The other challenge noted from interviews is lack of skills, and this is a common challenge in Sub-Saharan Africa as noted by Partnership (2021). This may be because HR professionals have basic IT skills, and do not possess sophisticated skills to develop and sustain artificial intelligence. The other reason may be that IT people are migrating to the diaspora for greener pastures. Furthermore, this investigation found that the use of artificial intelligence in the employee appointment process leads to loss of jobs. This finding is universal and is thus a global consequence of adoption of artificial intelligence (Dustin, 2018; Wilfred, 2018; Kshetri, 2021). As artificial intelligence takes over in employee appointment process, some human resource personnel will lose their jobs. Fundamentally this exercise unearthed that ethics and culture are negatively impacted by use of artificial intelligence in employee appointment process. Participant XV had this to say:

"We have a collectivistic culture which is propelled by face to face, and physical interaction…. this is vital also to discern in interviews to see whether the potential employee will fit to the organisation's culture."

This finding was inconsistent with Tambe (2018) conclusions that artificial intelligence enhanced culture in USA. The difference is because USA has an individualistic culture and Zimbabwe has a collectivistic culture.

The study was also tasked to understand benefits of artificial intelligence in employee appointment process at Zimbabwe Travel Industry. The study established that artificial intelligence enhances organisation efficiency and effectiveness in employee appointment process. This finding corroborates findings awash in literature (Davernport, 2019; Parveen *et al.*, 2016). It makes sense that as some employee appointment processes are automated, the process becomes fast, and the recruiter is able to meet the target. The investigation also found that the application of artificial intelligence in employee appointment process enhances candidate experience. It makes the whole journey of the job seeker exciting and inspiring. This finding was linked to the other finding of organisational branding. Participant XI explained this:

"Use of artificial intelligence makes job seekers to be inspired by the the application process, this brands the organisation to be the employer of choice…."

In other words, use of artificial intelligence excites candidates and will be willing to be part of the organisation. This is a universal observation as supported by Davernport (2019) in UK and Santangelo & Pini (2022) in UK. However, Zimbabwe is a developing country with few job seekers who are skilled in navigating artificial intelligence in appointment process. In as much artificial intelligence is critical in the employee appointment process, it is critical that job applicants are also tech-savvy.

Conclusion

This investigation showed that the application of artificial intelligence in the employee appointment process is at its infancy in Zimbabwe, and it is mostly a knee jerk reaction to Covid-19 pandemic. Regardless of the economic turmoil in Zimbabwe, there is need for organisations in the Travel industry to adopt artificial intelligence. Artificial intelligence is expensive to use in the employee appointment process in Zimbabwe. Therefore, partnerships should be developed between travel organisations, technology companies and higher and tertiary education institutions that can lead to the development of cost-effective artificial intelligence software for recruiters. Artificial intelligence was found to be applicable in terms of chat box for attending job queries, screening CVs, scheduling interviews, and conducting online psychometrics. The study recommends the usage of artificial intelligence in the employee appointment process including the actual carrying out of interviews, and the software ranks candidates in terms of responses and facial expressions. Artificial intelligence is beneficial in terms of efficiency and effectiveness, and, therefore, it is recommended for organisations in Zimbabwe to use it in employee appointment process. Artificial intelligence leads to loss of jobs, and HR practitioners should update their skills to safeguard their jobs. In terms of ethical and cultural implications the Government of Zimbabwe should come up with policies that guides recruiters in using artificial intelligence ethically and culturally. The study recommends similar studies to be conducted in other industries such as the manufacturing and mining sectors. The new knowledge from the study is that artificial intelligence in Zimbabwe

Travel Industry is being used but for preliminary stages in the employee appointment process, and that artificial intelligence is not compatible with the collectivist culture in Africa.

Recommendations

This study was carried out in the Zimbabwean Travel Industry, it will be useful to carry out similar studies in different settings. In addition, it will be vital that investigations on the impact of artificial intelligence on other human resources activities such as reward, training, development, and performance management.

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