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ORGANIZACIJA

Organizacija (Journal of Management, Informatics and Human Resources) is an interdisciplinary peer-reviewed journal which is open to contributions of high quality, from any perspective relevant to the organizational phenomena.

The journal is designed to encourage interest in all matters relating to organizational sciences and is intended to appeal to both the academic and professional community. In particular, journal publishes original articles that advance the empirical, theoretical, and methodological understanding of the theories and concepts of management and organization. The journal welcomes contributions from other scientific disciplines that encourage new conceptualizations in organizational theory and management practice.

We welcome different perspectives of analysis, including the organizations of various sizes and from various branches, units that constitute organizations, and the networks in which organizations are embedded.

Topics are drawn, but not limited to the following areas:

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Revija je zasnovana tako, da spodbuja zanimanje za različne vidike v zvezi z organizacijskimi vedami in je namenjena tako akademski kot strokovni skupnosti. Revija objavlja izvirne članke, ki spodbujajo empirično, teoretično in metodološko razumevanje teorij in konceptov managementa in organizacije. Pozdravljamo tudi prispevke iz drugih znanstvenih disciplin, ki spodbujajo nove koncepte v organizacijski teoriji in praksi. Objavljamo članke, ki analizirajo organiziranost z različnih vidikov, so usmerjeni na organizacije različnih velikosti in iz različnih sektorjev, na enote, ki sestavljajo organizacije, in na mreže, v katere so organizacije vpete.

Teme so pokrivajo predvsem naslednja področja:

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- management človeških virov (kot so organizacija in razvoj zaposlenih, vodenje, ustvarjanje vrednosti s pomočjo človeških virov, organizacijski pojavi na delovnem mestu itd.);
- vodstveni in podjetniški vidiki izobraževanja;
- poslovni informacijski sistemi (kot so digitalno poslovanje, sistemi za podporo odločanju, poslovna analitika itd.);
- podjetniški inženiring (npr. organizacijsko oblikovanje, upravljanje poslovnih procesov, paradigme preoblikovanja podjetij itd.);
- članki, ki analizirajo organizacijsko uspešnost in prizadevanja za izboljšanje le-te.

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Artificial Intelligence Models and Employee Lifecycle Management: A Systematic Literature Review

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Background and purpose: The use of artificial intelligence (AI) models for data-driven decision-making in different stages of employee lifecycle (EL) management is increasing. However, there is no comprehensive study that addresses contributions of AI in EL management. Therefore, the main goal of this study was to address this theoretical gap and determine the contribution of AI models to EL management.
Methods: This study applied the PRISMA method, a systematic literature review model, to ensure that the maximum number of publications related to the subject can be accessed. The output of the PRISMA model led to the identification of 23 related articles, and the findings of this study were presented based on the analysis of these articles.
Results: The findings revealed that AI algorithms were used in all stages of EL management (i.e., recruitment, on-boarding, employability and benefits, retention, and off-boarding). It was also disclosed that Random Forest, Support Vector Machines, Adaptive Boosting, Decision Tree, and Artificial Neural Network algorithms outperform other algorithms and were the most used in the literature.
Conclusion: Although the use of AI models in solving EL management problems is increasing, research on this topic is still in its infancy stage, and more research on this topic is necessary.

Keywords: *Artificial intelligence, Deep learning, Machine learning, Human resource management, Employee lifecycle, PRISMA, Systematic literature review*

1 Introduction

Innovations, new technologies, and the Covid 19 pandemic have posed new challenges to human resource management (HRM). These changes have not only required a new set of skills for employees, but also affected the way tasks are performed, and have intensified the platform economy and the emergence of platform workforces (Illéssy, Huszár, & Makó, 2021; Makó & Illéssy, 2020). In addition, information systems have greatly facilitated the processes of storing and collecting data related to individuals, which provide the basis for decision-making about the organization's workforce. Many statistical models are proposed in the literature for analyzing this information, but with the prevalence of artificial intelligence (AI) models, the use of these models in HRM has become common. Two features of AI models distinguish them from statisti-

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cal models and have made the use of these models more popular than statistical models. Their first feature is the high performance of these models in nonlinear and noisy data (Ardabili et al., 2019; Nosratabadi, Szell, et al., 2020). The second feature is that these models have the ability to learn from the data to improve their performance. In other words, machine learning and deep learning models, which are subsets of AI models, are able to identify trends in data, even nonlinear and noisy data, during the training phase to classify the data or predict the behavior of phenomena based on identified patterns (Nosratabadi, Ardabili, Lakner, Mako, & Mosavi, 2021; Nosratabadi et al., 2020). Therefore, the AI models have been used to take advantage of these features and to find appropriate solutions to problems in different stages of HRM. However, there is no integrated and comprehensive study in the literature that identifies which HRM problems are addressed by AI models. Therefore, the present study was conducted to bridge this gap in the literature using a systematic review study to determine how AI has been able to help HR managers. In order to evaluate the contribution of AI in HRM, the present study uses the employee lifecycle (EL) model. The EL model is actually an HRM model that explains all the different life stages of the workforce from the time they are hired to the time they leave the organization. Inspired by this model, the present study aims to identify contributions of AI models to each stage of the EL management. Therefore, the research questions that the present study intends to answer are:

- What AI models have been used in each stage of EL?
- What human resource problems have AI models been used to solve?
- What data sources have been used to test AI models?

This research contributes to the HRM literature and AI literature. The findings of this study provide HR managers with suggestions for selecting the appropriate AI model to address issues related to each stage of HRM. In the continuation of this article, first the methodology used in this article is described in detail and then the findings of this article are presented in order to answer the research questions, which is accompanied by a discussion on the findings and the conclusion.

2 Literature Review

Machine learning is driving an explosion in AI capability, helping software make sense of the messy and unpredictable real world. Today, machine learning is used in various sciences and can examine a large amount of data and discover certain trends and patterns that are unknown to humans. On the other hand, with the help of machine learning, there is no need for humans to intervene directly in every step of the project process. Therefore, the machine can make predictions on its own and also improve its algorithms to increases accuracy and efficiency. These algorithms perform well in examining multidimensional and multivariate data in dynamic or unknown environments.

Today, AI algorithms are expanding widely in organizations. These algorithms can promote and improve the organization's performance Olan et al. (2022) and prevent problems in the organization. When a system breaks down, it imposes huge costs such as time, productivity, and money to the business, machine learning and deep learning algorithms make it possible to quickly identify the cause of a problem and also predict the problems and solve them. On the other hand, with artificial intelligence algorithms, suitable data can be prepared for detailed analysis on important business decision criteria. For example, the behavior of different groups of buyers can be deeply investigated and better offers can be made to them (Jiang et al., 2022) to increase customer satisfaction. In an online store, one of the metrics is the amount of time a customer spends on a particular product page and AI here provides advanced analytics. In addition, AI can help predict organizational resource planning. By searching among the collected data, AI can make predictions that increase the ability of the organization. It also identifies seasonality in the business and make recommendations on increasing or decreasing production accordingly. Another application of AL in organizations is that it helps organizations to identify their behavioral patterns by considering the history of customers and predict how much of what type of product they should produce in the future (Jiangang et al., 2022). On the other hand, with the help of AI, it is possible to simplify sales (Irfan, et al, 2022), accounting (Leitner-Hanetseder et al., 2021), inventory (Praveen, Farnaz, & Hatim, 2019) etc., and create a centralized platform for managing customer relations (Deb, Jain, & Deb, 2018), as well as the product and sales life cycle (Ren, Patrick Hui, & Jason Choi, 2018). One of the important considerations of AI in organizations is to identify new opportunities for sales and marketing. Artificial intelligence and machine learning allow a business to not only identify the buying behavior of customers (Jiang et al., 2022), but also investigate what each person is willing to buy. AI can identify processes that cause unacceptable energy consumption in the organization or are mechanically inefficient, thereby helping to reduce energy consumption and resource wastage (Giaglis, 2001).

Organizations face different challenges for HRM, whether it is during recruitment, or during the collaboration with the employee, or when the employee's relationship with the organization is to be terminated for any reason (Susmita and Singh, 2022). Human resource is the key asset of the organization, which is known today as organizational capital. Organizations seek to attract the best and most suitable people in the organization, carefully implement the socialization process and familiarize employees with the basic principles and the main culture of their organization, as well as the necessary training on how to do the job (Morozevich et al., 2022). These are to keep the capabilities of the employees up to date and prepare them to adapt to the work environment. On the other hand, compensation is one of the most important measures of HRM in creating motivation in employees. An effective compensation system can make the employee feel a sense of belonging to the organization and consider the organizational goals as part of their own goals. Therefore, employee lifecycle management is brought up and its importance becomes necessary. The EL model proposed by Peisl and Shah (2019) is an HRM model that explains the challenges of human resource management at different stages of a workforce's life from the time he/she is recruited to the time he/she leaves the organization. This model constitutes of five stages of recruitment, on-boarding, employability and benefits, retention, and off-boarding.

In this model, the recruitment phase includes all the processes that lead to the recruitment of a new employee. Recruitment is the process of searching, evaluating and bringing in new talents when a specific job position is vacant. This Process begins when an employee resigns, or a new position is created to meet the needs of the company. Therefore, recruitment is a need-based procedure that occurs only when there is an immediate need for it. This usually involves advertising a job vacancy and letting people know that the company is looking for a worker/employee with a particular talent or skill. At on boarding stage, the staff is provided with the necessary information and tools to be more efficient and integrate into the culture of the organization (Khayer Zahed, Teimouri, & Barzoki, 2021). Onboarding or aligning new employees in the company is the process of adapting these people to the company's activity process as well as its organizational culture. It also includes providing the tools and information needed to increase the productivity of the workforce in the team. According to Peisl and Shah (2019), the next stage of an EL is employability and benefits. Employability refers the ability to retain the employee and, if necessary, "move" him/her to a new job and role in the same organization to meet new job needs, and benefits mean how to assign financial and non-financial benefits to employees in order to create a sense of belonging and commitment to the organization. Retention refers to the mechanisms by which HRM seeks to maintain the employees and their potentials. Employee retention depends on a combination of factors including flexible working conditions, professional development opportunities, and company culture, and more. The last stage of an EL is called off-boarding, in which the employee, for various reasons such as finding a new job, retirement, dismissal, personal reasons, stops working with the organization.

3 Methodology

In this study, four criteria were set to ensure finding the maximum number of articles related to AI models used in HRM (see Figure 1). The first criterion is to use Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method to obtain final articles. The PRISMA is an evidence-based systematic literature review method that consists of four stages (1) identification (2) screening, (3) eligibility, and (4) inclusion (Moher, Liberati, Tetzlaff, & Altman, 2010) to systematically maximize the possibility of finding the most relevant articles. The second criterion is the selection of databases in which the search for articles took place. For this purpose, two databases, i.e., Scopus and Web of Science, were used. Scopus covers 42,180 journals, conference proceeding, and book series and web of Science includes 21,894 journals, books, and conference proceedings while, the overlap rate of articles in these two databases is 99.11% (Singh, Singh, Karmakar, Leta, & Mayr, 2021). The third criterion for accessing the maximum number of related articles is the use of appropriate keywords. Table 1 summarizes the literature search strategy implemented in this study. It is worth mentioning the search inquiry took place among article title, abstract, keywords.

Table 1: Literature search strategy

Query Terms
• "human resource*" OR employee OR "human capital" OR staff OR HR OR HRM
AND
• artificial intelligence OR AI OR "machine Learning" Or "deep learning"

The fourth criterion used in this study to validate the path to find articles ready for review is the use of a multidisciplinary approach when searching for articles. This approach allows the search for keywords in all journals of different disciplines and this search is not restricted to certain journals or specific categories of journals.

The present study names the articles that were eventually identified for the review as the study database. As mentioned above, the PRISMA model was used to form the study database. Figure 2 summarizes the PRISMA model steps performed in this study. In the identification step, the keywords presented in Table 1 were searched in Scopus and Web of Science databases. It should be noted that this search was conducted in August 2021 and no time limit was considered for it. However, the search for articles was limited to original English-language articles in journals or conference proceedings. This means that in this search, articles written in another language, review articles, as well as documents that were either a book or a chapter of a book were removed. The output of the first stage resulted in the identification of 6753 articles. In the screening phase, a copy of duplicate articles found in both databases was removed. The output of this step was to identify 6050 unique articles. The second screening step examined the titles and abstracts of the papers and excluded those that were irrelevant. At this point, the criteria for keeping relevant articles were that they should use an AI model to address a problem in HRM. This step resulted in the identification of 580 relevant articles. Eligibility is the third step of the PRISMA and the whole text of the output articles from the screening step is thoroughly examined in this step, and only those articles that are absolutely relevant to the research's aim advance to the inclusion phase. Following a thorough examination of the complete text of 580 articles, 23 relevant articles were identified and advanced to the inclusion stage. The inclusion step resulted in the creation of the study database, which now contains 23 papers and is ready for further analysis.

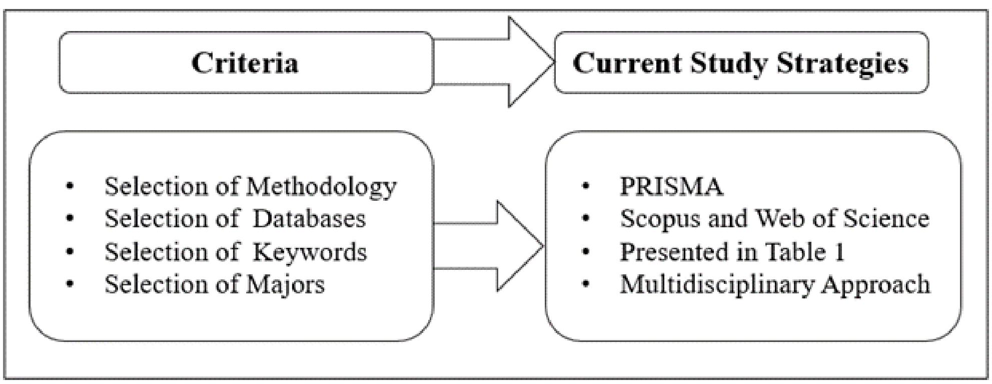

Figure 1: The current study strategies to validate the findings

4 Findings and Discussion

Figure 3 depicts a trend of publications using AI models to solve a problem related to HRM. Findings disclosed that the use of AI models in the field of HRM is very new as the first article was published in 2014. The present study found 23 related articles in the literature, of which 14 were journal articles and 9 were conference papers.

21 unique sources have published the articles (i.e., 14 journals and 9 conference proceedings) from which Journal of 'Automation in Construction' and 'ACM International Conference Proceeding Series' in 2018 have published 2 articles on this topic. The full list of these journals and conference proceedings is given in Table A1 in the Appendix.

The articles found by the PRISMA method were analyzed from three aspects, and their findings are presented in the form of three subsections below. First, it was determined what problems the AI models were used to solve. In the next subsection, the articles were analyzed in terms of data sources. That is, it revealed what kind of HR data AI algorithms have been implemented on. Finally, AI algorithms that have been used in different phases of the EL management have been reviewed and the models whose performance has been repeatedly confirmed in the literature have been explained.

4.1 Applications of Machine learning models in Human Resource Management

Once an employee arrives, he or she embarks on an adventurous journey and goes through various stages in his/her employment lifecycle. HRM experiences different challenges at each stage of the EL. Table 2 categorizes the

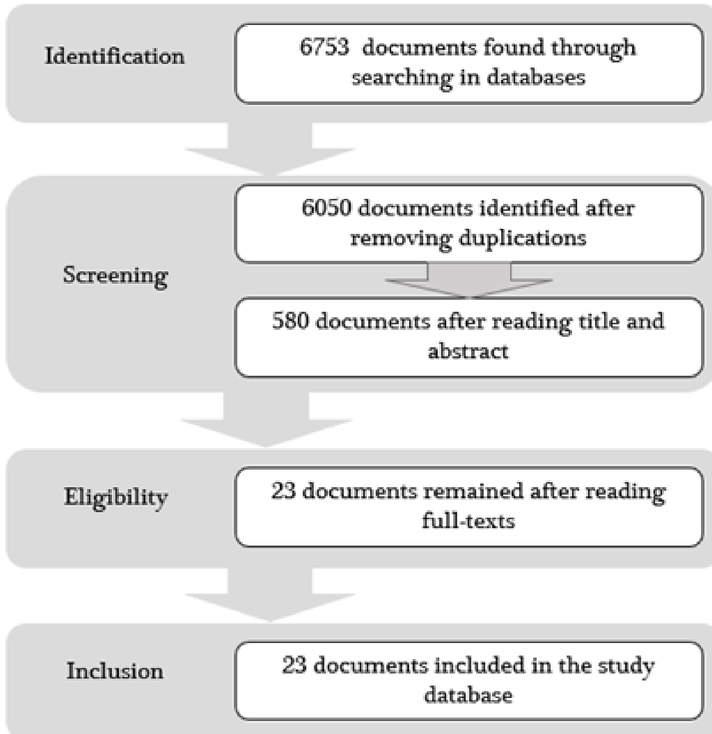

Figure 2: Systematic selection of the study database using PRISMA

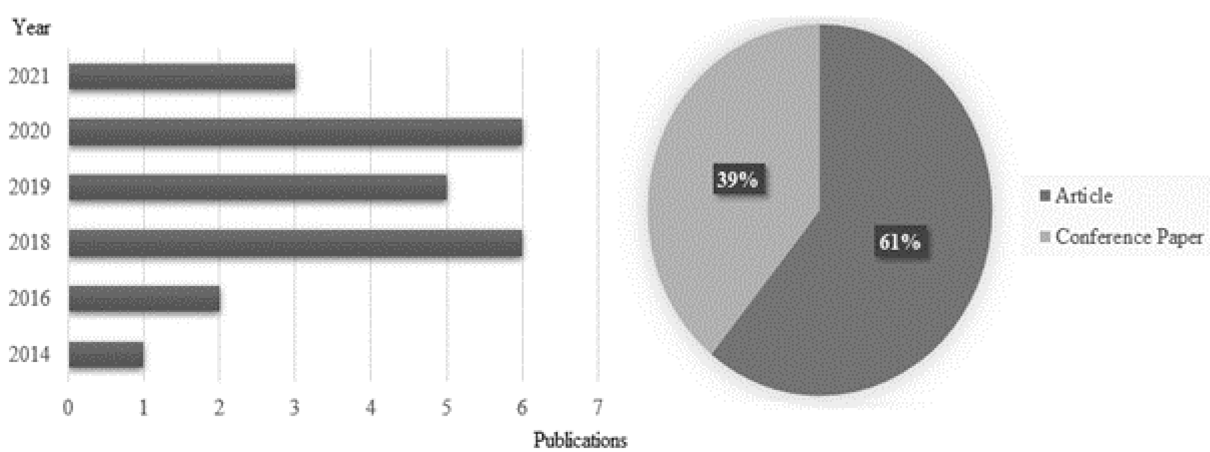

Figure 3: Categorizing the reviewed articles by year of publication and document types

reviewed articles based on the problem they addressed at each stage of the EL. Although the distribution of articles is almost the same at different stages, the share of articles dealing with employee attrition and off-boarding has been higher.

4.1.1 Recruitment

The most important challenge of the recruitment phase is identifying and selecting the right person who, firstly, has the most skill matching with the job and, secondly, has the necessary commitment to continue working. Recruitment, training and retaining an employee is very costly and employees become the intellectual capital of the organization and therefore, replacing them will be very difficult and costly for the organizations. Hence, Chuang et al. (2020), N. Li et al. (2016), Xie (2020), and Zaman et al. (2018) have tried to provide models that optimize the process of recruiting and selecting the right person for the job. Chuang et al. (2020) consider recruitment as a multiple-attribute decision-making (MADM) problem and use a rough set theory (RST) model to optimize staff recruitment by prediction of person skill match. Because they believe that the previous models were based on human judgment and taste, but the use of MADM makes hiring employees more purposeful and objective. They use performance data from a Chinese food company to test the model. Zaman et al. (2018) applied a decision tree (DT) classification technique model to predict the degree to which job skills and staff skills match in order to recruit talent. To do so, they used the data available on users' LinkedIn to test the model. N. Li et al. (2016) develop a K-nearest neighbors (KNN) model to predict skill match of the potential candidates. They also proved the accuracy of their proposed model using UCI Machine Learning Repository data. Xie (2020) designs a hybrid machine learning model of Latent Factor Model-multi Grained Cascade Forest (LFM-gcForest) to measure the degree to which employees' skills and job required skills are matched. They used secondary data from Africa Health Placements to test the model. The findings of this study showed that the LFM-gcForest model plays an important role in the HR recruitment system in the intelligent manufacturing industry.

Table 2: Categorizing the reviewed articles by their solution in employee lifecycle

	Employee Lifecycle				
	Recruitment	**On-Boarding**	**Employability and Benefits**	**Retention**	**Off-Boarding**
Sources	Chuang, Hu, Liou, and Tzeng, (2020), Xie (2020), Zaman, Kamal, Mohamed, Ahmad, and Zamri (2018), N. Li, Kong, Ma, Gong, and Huai (2016)	X. Li et al. (2021), Kaewwiset, Temdee, and Yooyativong (2021), Liu, Li, Wang, and He (2019), Akhavian and Behzadan (2016), Colomo-Palacios, González-Carrasco, López-Cuadrado, Trigo, and Varajao (2014)	Singer and Cohen (2020), Jayadi, Jayadi, and Firmantyo (2019), Liu, Wang, et al. (2019), Long, Liu, Fang, Wang, and Jiang (2018)	Zhe and Keikhosrokiani (2021), Moyo, Doan, Yun, and Tshuma (2018), Jebelli, Khalili, Hwang, and Lee (2018)	Jain, Jain, and Pamula (2020), Fallucchi, Coladangelo, Giuliano, and William De Luca (2020), Anh et al. (2020), Khera and Divya (2018), Yadav, Jain, and Singh (2018), Liu et al. (2018), Zhao, Hryniewicki, Cheng, Fu, and Zhu (2018)

All these studies, in turn, have attempted to use AI models to measure the degree to which an individual's skills match the skills needed to work so that they can assist HRM in making decisions about hiring people. Hence the following proposition can be derived from these findings:

P1: AI models help HRM in job-person skills match prediction.

4.1.2 On-Boarding

The findings revealed that there are studies in the literature that have used machine learning and deep learning models to address problems in the on-boarding stage of EL. In general, studies related to this stage of EL have focused more on staff training. For instance, Kaewwiset et al. (2021) and Liu, Li et al. (2019) use random forest (RF) model to enhance and personalize staff training and to predict the potential growth of employees in the workplace. Using secondary data from the HRM information system database and interpersonal environment factors, Liu, Li, et al. (2019) develop a quantitative model that predicts an employee's growth rate at different stages of employment. Findings of this study showed that relationships with colleagues and the quality of relationships with people are very important and necessary for employee development. Using the Artificial Neural Network (ANN) model, Colomo-Palacios et al. (2014) also propose a model that can anticipate the competencies required by members of software development teams and subsequently suggest related development programs.

Besides training purposes, two other articles were found that developed quantitative models using machine learning models for the management of working people. In order to manage occupational health and safety, for example, X. Li et al. (2021) developed the Multi-task Cascaded Convolutional Networks (MTCNN)-MobileNet- Long Short-Term Memory (LSTM) model, which allows them to monitor workers' health and generate personalized safety and health alerts for workers in high-risk jobs. Akhavian and Behzadan (2016) also develop an ANN model that is able to track workers body movements by tracking their smartphones, to examine the behavior and the state of construction workers.

These studies disclose that the main purpose of using machine learning and deep learning models at this stage of the EL was to identify the skills needed by the person to design personalized training programs and predict employee growth rates. Therefore, the second proposition of this study is presented as follows.

P2: AI models help HRM in staff training planning.

4.1.3 Employability and Benefits

In the employability and benefits stage of EL, articles are categorized that focus more on issues related to staff promotion. Liu, Wang et al. (2019), for example, used the Adaptive Boosting (AdaBoost) model to examine the promotion and advancement of employees in the workplace, and tested this model in data from a state-owned enterprise in China. Long et al. (2018) also use the RF to develop a model for predicting employee promotion and use data from a Chinese state-owned enterprise to test the model. Findings of this study show that job experience (by year), number of positions held and the position level (i.e., seniority level) in the organization are the factors affecting staff promotion. Jayadi et al. (2019) develop a Naive Bayes (NB) classification method to predict employee performance. Utilizing the available data from 310 employees from the KAGGLE database in 2019, Jayadi et al. (2019) proved that their proposed model has a good power to predict employee performance. In addition to these studies, Singer and Cohen (2020) use the Classification and Regression Trees (CART) model to design a model for the prediction of the absence of employees and the service compensation system in order to prevent the absence of employees of a Brazilian company. These studies have used AI models to help HRM to predict employee performance and predict employee promotion. Therefore, the third proposition of this research is designed as follows.

P3: AI models help HRM in employee promotion prediction.

4.1.4 Retention

The articles categorized in the retention mainly focus on the issues of work quality and employee well-being. In other words, these articles consider the creating proper working conditions as employee retention requirements. Zhe and Keikhosrokiani (2021), for example, use the extreme learning adaptive neuro-fuzzy inference system (ELANFIS) model to develop a model for predicting the mental workload of knowledge workers (i.e., Delft University of Technology students). To manage the well-being of employees and their mental health, Jebelli et al. (2018) also uses an Electroencephalography (EEG) device (for the data collection) and the Support Vector Machine (SVM) model (for the data analysis) to design a model to predict the stress of construction workers. In addition, Moyo et al. (2018) use multinomial logistic Regression (MLR) model to develop a model for predicting the length of practice of employees in the health sector. In fact, they came up with a quantitative model that has the ability to accurately predict how long health care workers will stay in their jobs. A look at the objectives of these articles reveals that they try to predict the level of stress, mental and physical health of employees by using machine learning models so that they can use them in managing and improving work quality and employee well-being. Therefore, the fourth proposition of this research is written as follows.

P4: AI models help HRM in work quality management.

4.1.5 Off-Boarding

Predicting off-boarding and factors affecting employee attrition has been one of the most important trends in the HRM literature. There are studies that have tried to use machine learning models to predict employee attrition. Jain et al. (2020), for example, claim the RF model to be the best model for predicting employee attrition. Khera and Divya (2018) used the SVM model to predict employee attrition and tested the model by archiving employee data (including 1,650 employees) from three Indian IT companies. Fallucchi et al. (2020) use the Gaussian Naïve

Bayes (GNB) classifier model to analyze how objective factors affect employee attrition and test the predictive accuracy of their model using IBM analytics data that includes 35 features and 1,500 samples. Yadav et al. (2018) compare the accuracy of RF, AdaBoost, DT, Logistic Regression (LR) and SVM models to create accurate and reliable models that optimize the cost of hiring and retaining quality staff. They report that DT outperforms other models in prediction of attrition in their dataset. The findings of this article showed that salaries and other financial aspects and promotions are not adequate incentives for retaining employees. On the other hand, since employee turnover costs are high in organizations, Zhao et al. (2018) using the Extreme Gradient Boost (XGBoost) model provide a model for predicting employee turnover. To analyze the model, they employed data from an IBM database and a bank database (9089 bank employees and 1470 IBM employees). Liu et al. (2018) also compare the accuracy of LR, Support Vector Classifier (SVC), RF, and Adaboost in prediction of employee turnover. Besides, Anh et al. (2020) combine SVM, LR and RF models to develop a model to predict future employee churn. They test the accuracy of their model on the data of 1470 employees of an organization. These findings show that AI models have the ability to predict employee attrition and employee turnover and HR managers can use these models to identify the effective causes of employee attrition so that they can avoid the high costs that the outflow of human capital imposes on the organization. Subsequently, the fifth proposition of this study is designed as follows.

P5: AI models help HRM in employee attrition prediction and employee turnover prediction.

4.1.6 Contributions of AI Models to Employee Lifecycle Management

The findings of this study illustrated that the use of AI predictive models in HRM is increasing, and these models provide managers with appropriate and approved tools through which they can cope with the challenges in each stage of EL. In this study, five propositions were designed based on the purposes for which an AI model was used. A summary of these proposals is given in Figure 4. The stage of recruiting and selecting the right person for a task is one of the most important stages of HRM and managers face many challenges to select the right person. According to the first proposition of this article, AI models can help managers in deciding to choose the right person for the task by predicting the degree to which the skills of the individual are matched with those skills needed for the job. Job and task dynamics, innovations, the use of new technologies, changes in organizational strategies are some of the factors that impose new requirements on employees to perform tasks. The second proposition of the present study clarified that at this stage, AI models have the ability to propose personalized training programs to develop the skills of individuals by examining personal skills and required skills. Creating motivation and a sense of commitment in employees is another important challenge of HRM. Therefore, managers design reward and promotion systems through which employees can perform their best performance in the organization. The third and fourth propositions of this research refer to these issues and state that AI models can both predict the performance and promotion of employees and can help managers in managing the

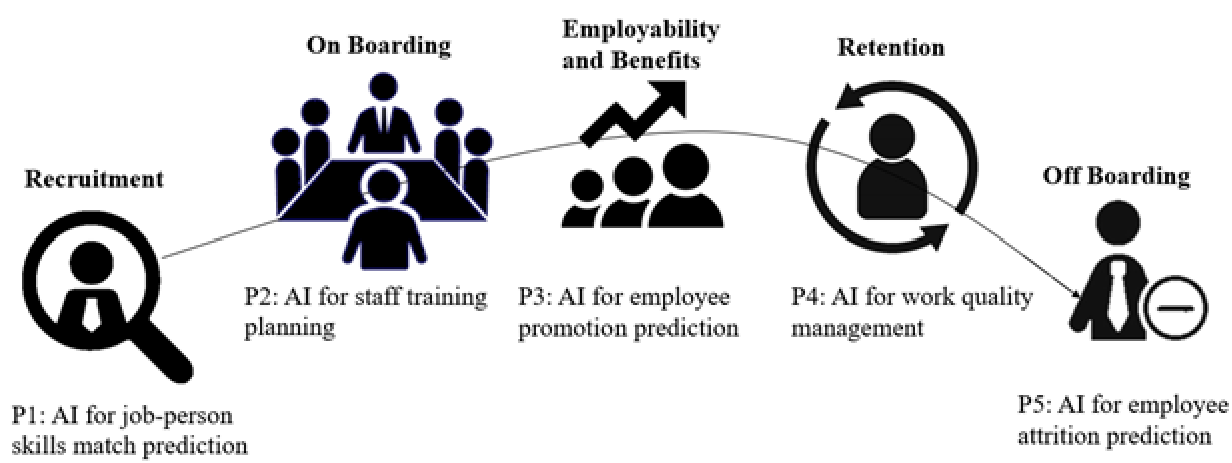

Figure 4: Contributions of AI models in different stages of employee lifecycle

quality of work. Up to this point in EL, organizations have spent a lot of money on recruitment, training, promotion and retention of the employees, and the employees are the intellectual capital of the organization and losing them will be very costly for the organizations. Hence, managers try to minimize and manage employee attrition. In this regard, the fifth proposition of this study shows that AI models can help HR managers in managing the attrition of employees by predicting the factors affecting employee attrition and employee turnover.

4.2 Data Sources

One of the most important issues in implementing AI models is the data. In other words, it is very important where the data source comes from. It is revealed that the articles to test their proposed models used both primary data (collected through case studies, observations, user profiles on social media, and questionnaires) and secondary data (which have been collected from databases such as Kaggel.com, UCI Machine Learning Repository, IBM Analytics, and past records of a case study). Figure 5 shows the taxonomy diagrams of data sources.

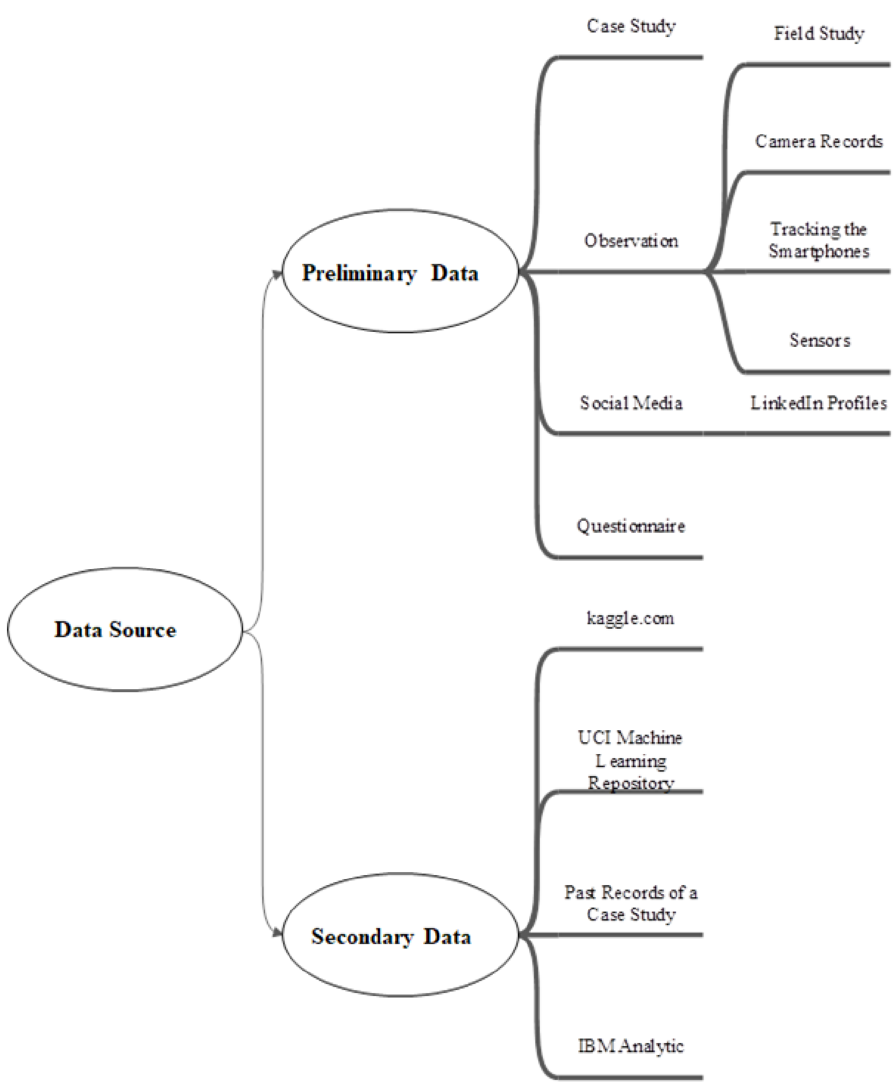

Figure 5: A taxonomy of data sources used for AI models to solve a human resource management problem

Table 3: Machine learning models used in human resource management literature

Methods	Source	Methods	Source
AdaBoost	Liu, Wang, et al. (2019), Yadav, Jain, and Singh (2018), Liu et al. (2018)	LR	Fallucchi et al. (2020), Anh et al. (2020), Liu, Wang, et al. (2019), Liu, Li, et al. (2019), Yadav et al. (2018), Liu et al. (2018), Zhao et al. (2018), Akhavian and Behzadan (2016)
ANFIS	Zhe and Keikhosrokiani (2021)	LSVM	Fallucchi et al. (2020)
ANN	Zhao et al. (2018), Akhavian and Behzadan (2016), Colomo-Palacios, González-Carrasco, López-Cuadrado, Trigo, and Varajao (2014)	MLR	Moyo et al. (2018)
DT	Kaewwiset, Temdee, and Yooyativong (2021), Jain, Jain, and Pamula (2020), Fallucchi et al. (2020), Zaman et al. (2018), Moyo et al. (2018), Yadav et al. (2018), Zhao et al. (2018), Akhavian and Behzadan (2016)	MLP	Singer and Cohen (2020), Liu, Li, et al. (2019)
ELANFIS	Zhe and Keikhosrokiani, (2021)	MTCNN-MobileNet-LSTM	X. Li et al. (2021)
Fed-GRU	X. Li et al. (2021)	NB	Singer and Cohen (2020), Jayadi et al. (2019), Moyo et al. (2018), Zhao et al. (2018)
Fed-LSTM	X. Li et al. (2021)	NB-MB	Fallucchi et al. (2020)
Fed-SWP	X. Li et al. (2021)	Ordinal CART	Singer and Cohen (2020)
GBoost	Zhao et al. (2018)	RF	Kaewwiset et al. (2021), Singer and Cohen (2020), Jain et al. (2020), Anh et al. (2020), Liu, Wang, et al. (2019), Liu, Li, et al. (2019), Yadav et al. (2018), Long et al. (2018), Liu et al., (2018), Zhao et al. (2018)
GNB	Fallucchi et al. (2020)	RST	Chuang et al. (2020)
KNN	Singer and Cohen (2020), Fallucchi et al. (2020), Zhao et al. (2018), Akhavian and Behzadan, (2016), N. Li et al. (2016)	SVC	Liu et al. (2018)
LDA	Zhao et al. (2018)	SVM	Kaewwiset et al. (2021), Jain et al. (2020), Fallucchi et al. (2020), Anh et al. (2020), Khera and Divya (2018), Yadav et al. (2018), Zhao et al. (2018), Jebelli et al. (2018), (Akhavian and Behzadan (2016)
LFM-GcForest	Xie (2020)	XGBoost	Singer and Cohen (2020), Zhao et al. (2018)

4.3 Artificial Intelligence Models

A closer look at the models used among the reviewed articles shows that these articles, in total, examined the performance of 26 different models (see Table 3). The procedure has been that each article first examines the performance of several models and then introduces the model that had the highest accuracy (or the lowest level of error) as the main model of that article. In this article, in the findings and discussion section, we only reported the model that had the highest performance. In the end, it was found that 16 of these models presented in Table 3 had the lowest level of error and their higher performance was repeated among different articles.

Table 4 summarizes the AI models and their applications in the various stages of HRM. In other words, these sixteen models outperformed other models in data related to HRM. RF is a model whose high performance has been confirmed in three different stages: on-boarding (Kaewwiset et al., 2021; Liu, Li, et al., 2019), employability and benefits (Long et al., 2018), and off-boarding (Jain et al., 2020; Liu et al., 2018). In addition, the SVM is another model whose high performance has been proven to address retention (Jebelli et al., 2018) and off-boarding (Khera & Divya, 2018) issues. Another model whose performance has been approved in more than one stage of the EL is the Adaboost model, whose performance has been approved in the stages of employability and benefits (Liu, Wang, et al., 2019) and off-boarding (Liu et al., 2018). DT is also another model that its high performance is proved in two stages of EL, i.e., recruitment (Zaman et al., 2018) and off-boarding (Yadav et al., 2018). The rest of the models have been examined only in one stage of the EL stages, but among them is the ANN model whose performance in the on-boarding stage has been examined and confirmed by two different studies (Akhavian & Behzadan, 2016; Colomo-Palacios et al., 2014). Therefore, a short introduction to these 5 models (i.e., RF, SVM, AdaBoost, ANN, and DT) are provided as follows. 4.3.1.

Table 4: The models with the higher performance in human resource management data

Models	Employee Lifecycle				
	Recruitment	On-Boarding	Employability and Benefits	Retention	Off-Boarding
RF		✓	✓		✓
SVM				✓	✓
AdaBoost			✓		✓
DT	✓				✓
ANN		✓			
XGBoost					✓
ELANFIS				✓	
GNB					✓
KNN	✓				
LFM-gcForest	✓				
MLR				✓	
MTCNN-MobileNet-LSTM		✓			
NB			✓		
Ordinal CART			✓		
RST	✓				
LR					✓

4.3.1 Random Forest (RF)

By mixing a set of weak learners to generate a stronger learner, random forests offer an enhancement over the basic decision tree structure (Breiman, 2001). In other words, RF is an ensemble model. To optimize algorithm performance, ensemble techniques use a divide-and-conquer strategy. Random forests are constructed by building a number of decision trees, using bootstrapped training sets and selecting a random sample of m predictors as split candidates from the entire set P predictors for each decision tree.

4.3.2 Support Vector Machines (SVM)

SVM is often used as a discriminative classifier to categorize fresh data samples. The fundamental principle of SVM is to design a hyperplane that divides n-dimensional data into two classes and maximize the geometric distance between the nearest data points, referred to as support vectors. Notably, practical linear SVM often produces comparable results to logistic regression (Raschka, 2015).

4.3.3 Adaptive Boosting (AdaBoost)

Boosting is a machine learning technique that is based on the concept of combining several very weak and faulty prediction rules to create a highly accurate prediction rule. AdaBoost, an acronym for Adaptive Boosting, is a meta-algorithm for statistical categorization. The output of the other learning algorithms (referred to as 'weak learners') is merged into a weighted sum that reflects the boosted classifier's final output. AdaBoost is adaptive in the sense that it adjusts succeeding weak learners in favor of cases misclassified by prior classifiers. It may be less prone to overfitting than other learning algorithms in neural certain cases (Schapire, 2013).

4.3.4 Decision Tree (DT)

The decision tree approach is a supervised technique that uses a tree-like structure to construct classification or regression models. DT is very powerful (Friedman, Hastie, & Tibshirani, 2001) and it can manage missing values and mixed features (Efron & Hastie, 2016), and it is capable of automatically selecting variables (Efron & Hastie, 2016).

4.3.5 Artificial Neural Network (ANN)

Neural networks, also known as multi-layer perceptron, are used to imitate the human nervous system's processes. A neural network in its simplest form is a single perceptron. The input values, associated weights, bias, activation functions, and calculated output are all required components of a perceptron. To solve difficult issues, a neural network may comprise several layers between the input and output. Given sufficient hidden units, networks are a universal approximation technique capable of modeling any smooth function to any desired degree of accuracy (Murphy, 2012).

5 Conclusions

The integration of technology with HRM has provided the basis for the use of AI models in the management of EL processes. In different stages of HRM, a lot of data is generated that data-driven decision-making approaches use this data to optimize all stages of the EL, from the recruitment stage to the off-boarding stage. It was found that employee attrition and the management of off-boarding stage is a stage on which more research has been done. This indicates the value that employees, which are the intellectual capital of the organization, have for an organization. Most of the articles published at this stage of the EL focus on predicting the factors influencing employees' decision to leave the organization. Intellectual capital belongs to the employees and with their departure from the organization, the organization loses this capital, while it has spent a lot of money on the development of HR. Hence, the loss of manpower is very costly for organizations, especially if the costs of recruiting and training new staff are added to it. However, less research has been done on the retention phase, which requires more attention from researchers.

The findings of this study also revealed that not only machine learning models (such as SVM) and Deep Learning models (such as ANN) have contributed to HRM decision-making, ensemble models (such as RF) and hybrid models (such as Adaboost) have also been developed to address HRM problems. Ensemble models are models that combine two or more machine learning models to increase the predictive power, while hybrid models combine an optimization model with a machine learning or deep learning machine model to increase the accuracy of the model.

Findings of the present study contribute to the literature of HRM and AI using a systematic review of the literature and by providing the state-of-the-art of advancements of AI models in EL management. Organizations, especially HR managers, can use the findings of this study to easily select the appropriate AI model to address the challenges of each stage of the EL and use the benefits and high performance of these models in their decisions. On the other hand, this study provides a foundation for future research. Within the HRM practices, 'retention' and 'off-boarding' represent two extreme challenges for HR managers. Searching new models of 'work' and 'employment' or the 'new-normal' of work and employment in the post-Covid pandemic period, there is a growing need to better understand the ‘practice/process of the new model of work (i.e., remote work, telework, etc.). The necessity of new models of work does vary importantly by sectors of economic activities, reflecting the importance of ‘physical proximity’ syndrome. In addition, the mainstream of HRM literature focuses almost exclusively on the ‘Standard Employment Relations’ (SER) practice but neglects the fast-growing share of the Non-Standard Employment Relations (Non-SER) - this is the so-called ‘prevarication of work’ (e.g., grate majority of the web-based platform work mentioned in the conclusion too - practiced in the form of non-SER or in an entrepreneurial status). Therefore, the use of AI models to address these challenges is also suggested for future research

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Modeli umetne inteligence in upravljanje kariere zaposlenih: sistematičen pregled literature

Ozadje/namen: Uporaba modelov umetne inteligence (AI) za odločanje na podlagi podatkov v različnih fazah upravljanja kariere zaposlenih (EL) narašča. Vendar pa ni celovite študije, ki bi obravnavala prispevke umetne inteligence pri upravljanju EL. Zato je bil glavni cilj te študije osvetliti to teoretično vrzel in ugotoviti prispevek modelov AI k upravljanju EL.
Metode: Ta študija je uporabila metodo PRISMA, model sistematičnega pregleda literature, da bi zagotovila dostop do največjega števila publikacij, povezanih z obravnavano temo. Rezultati modela PRISMA so pripeljali do identifikacije 23 povezanih člankov, ugotovitve te študije pa so bile predstavljene na podlagi analize teh člankov.
Rezultati: Algoritmi AI so bili uporabljeni v vseh fazah upravljanja EL. Pokazalo se je tudi tudi, da so algoritmi Random Forest, Support Vector Machines, Adaptive Boosting, Decision Tree in Algoritmi umetne nevronske mreže boljši od drugih algoritmov in so bili najpogosteje uporabljeni v obravnavanih študijah.
Zaključek: Čeprav se uporaba modelov umetne inteligence pri reševanju problemov upravljanja EL povečuje, so raziskave na to temo še vedno v povojih in potrebnih je več raziskav.

Ključne besede: *Umetna inteligenca, Globoko učenje, Strojno učenje, Upravljanje človeških virov, Življenjski cikel zaposlenih, PRISMA, Sistematični pregled literature*

Appendix

Table A1: A summary of reviewed articles in this study

Authors	Year	Source title
Li X., Chi H.-L., Lu W., Xue F., Zeng J., Li C.Z.	2021	Automation in Construction
Teoh Yi Zhe I., Keikhosrokiani P.	2021	Applied Intelligence
Kaewwiset T., Temdee P., Yooyativong T.	2021	2021 Joint 6th International Conference on Digital Arts, Media and Technology with 4th ECTI Northern Section Conference on Electrical, Electronics, Computer and Telecommunication Engineering, ECTI DAMT and NCON 2021
Singer G., Cohen I.	2020	Entropy
Chuang Y.-C., Hu S.-K., Liou J.J.H., Tzeng G.-H.	2020	Technological and Economic Development of Economy
Jain P.K., Jain M., Pamula R.	2020	SN Applied Sciences
Xie Q.	2020	Enterprise Information Systems
Fallucchi F., Coladangelo M., Giuliano R., De Luca E.W.	2020	Computers
Anh N.T.N., Tu N.D., Solanki V.K., Giang N.L., Thu V.H., Son L.N., Loc N.D., Nam V.T.	2020	International Journal of Sensors, Wireless Communications and Control
Jayadi R., Firmantyo H.M., Dzaka M.T.J., Suaidy M.F., Putra A.M.	2019	International Journal of Advanced Trends in Computer Science and Engineering
Liu J., Wang T., Li J., Huang J., Yao F., He R.	2019	Conference Proceedings - IEEE International Conference on Systems, Man and Cybernetics
Liu J., Li J., Wang T., He R.	2019	Proceedings - 5th IEEE International Conference on Big Data Service and Applications, BigDataService 2019, Workshop on Big Data in Water Resources, Environment, and Hydraulic Engineering and Workshop on Medical, Healthcare, Using Big Data Technologies
Khera S.N., Divya	2019	Vision
Kamaru Zaman E.A., Ahmad Kamal A.F., Mohamed A., Ahmad A., Raja Mohd Zamri R.A.Z.	2019	Communications in Computer and Information Science
Moyo S., Doan T.N., Yun J.A., Tshuma N.	2018	Human Resources for Health
Yadav S., Jain A., Singh D.	2018	Proceedings of the 8th International Advance Computing Conference, IACC 2018
Long Y., Liu J., Fang M., Wang T., Jiang W.	2018	ACM International Conference Proceeding Series
Liu J., Long Y., Fang M., He R., Wang T., Chen G.	2018	ACM International Conference Proceeding Series
Zhao Y., Hryniewicki M.K., Cheng F., Fu B., Zhu X.	2018	Advances in Intelligent Systems and Computing
Jebelli H., Khalili M.M., Hwang S., Lee S.	2018	Construction Research Congress 2018: Safety and Disaster Management - Selected Papers from the Construction Research Congress 2018
Akhavian R., Behzadan A.H.	2016	Automation in Construction
Li N., Kong H., Ma Y., Gong G., Huai W.	2016	International Journal of Advanced Manufacturing Technology
Colomo-Palacios R., González-Carrasco I., López-Cuadrado J.L., Trigo A., Varajao J.E.	2014	Information Systems Frontiers

Table A2: Acronyms

Acronym	Explanation
AdaBoost	Adaptive Boosting
ANFIS	adaptive neuro-fuzzy inference system
AI	Artificial Intelligence
ANN	Artificial Neural Network
DEMATEL	Decision Making Trial and Evaluation Laboratory
DT	Decision Tree
EL	Employee Lifecycle
XGBoost	Extreme Gradient Boosting
ELANFIS	Extreme Learning Adaptive Neuro-Fuzzy Inference System
Fed	Federated Learning
GRU	Gated Recurrent Unit Neural Network Framework
GNB	Gaussian Naïve Bayes
GBT	Gradient Boosting Trees
HR	Human Resource
HRM	Human Resource Management
KNN	K-Nearest Neighbors
LFM	Latent Factor Model
LDS	Linear Discriminant Analysis
LSVM	Linear Support Vector Machines
LR	Logistic Regression
LSTM	Long Short-Term Memory
gcForest	Grained Cascade Forest
MLP	Multi-Layer Perceptron
MLR	Multinomial Logistic Regression
MADM	Multiple-Attribute Decision-Making
MTCNN	Multi-Task Cascaded Convolutional Networks
MB	Multivariate Bernoulli
NB	Naïve Bayes
Ordinal CART	Ordinal Classification and Regression Tree
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RF	Random Forest
ROS	Random Over-Sampling
RST	Rough Set Theory
SER	Standard Employment Relations
SVC	Support Vector Classifier
SVM	Support Vector Machine
SWP	Smart Work Packaging

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Tracing Management Fashions in Selected Indices: A Descriptive Statistical Study

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Background and purpose: Although management fashions have been discussed for nearly 30 years, a certain amount of time had to pass before the discussions were based on factual data. This research mainly aims to trace management approaches in some selected international indices over nearly half a century. In this study, the basic question of how the historical course of management fashions has developed has been answered by following the development course.
Methods: The Descriptive Statistical method was preferred in the study because of its suitability to the subject's essence, the purpose of the research, and the research question's answer. The research was carried out based on the data collected about management trends by scanning the Web of Science and Scopus databases covering 1975-2020.
Results: Management fashions follow rapid adoption, implementation, disappointment, and abandonment. Research results; show that the lack of knowledge and awareness of management fashions poses a significant waste of time and intellectual capital. This determination is crucial, especially for young researchers and new generation managers.
Conclusion: In conclusion, it can be said that while new approaches that have tangible counterparts and can be grounded continue, approaches that do not have concrete counterparts disappear, causing a waste of time and mental effort.

Keywords: *Management trends, Management fashion, Management fads, New management, Management thinking*

1 Introduction

Management fashions are techniques and practices that are very popular; like all fashions, they are rapidly disappearing in popularity and are extremely popular when they appear but quickly cause disappointment (Miller et al., 2004). However, every effort made in scientific activity can continue its existence as long as it finds an application area and has an accurate response. The importance of scientific activities, especially in a technical and rational field such as management, is measured by their operational value (Abrahamson, 1996; Bondarouk et al., 2019; Klincewicz, 2017; Piazza and Abrahamson, 2020). If any scientific activity is not just for intellectual enthusiasm, the activity in question must have a corresponding response in practical life. In this study, fashion approaches are examined through some selected indexes. Although many kinds of research have been conducted on fashion approaches in management, it is seen that the analysis of these approach-

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es is not included in this study for about half a century. In this respect, it can be argued that this research has the importance of filling the gap in the literature and contributing to practice and theory. It is important to follow the course of the interest shown in the subject to make a sound evaluation of management trends. For this purpose, it can be argued that answering how management trends have progressed in major international indexes in half a century and keeping a projection for future studies will contribute to the literature and practice.

Although some criticisms about management fashions parallel the emergence of fashion approaches, some indicators emerged based on factual data. This research is important in seeing the course of the management fashion process after meeting this requirement. It can be claimed that this aspect of the research will make a significant contribution to the literature and practice. Based on the half-century experience of management fashion, this study's results confirmed that fashion concepts progress in the form of continual adoption, application, insistence, disappointment, and abandonment despite the inaccuracies. There is still the risk of the emergence of fashionable approaches, which fashion industry makers have put forward and controversial management gurus as well-intentioned, resulting in disappointing time, labor, and cost losses in a relatively short period (Madsen et al., 2017; Madsen, 2020; Bondarouk et al., 2019; Zorn, 2017). It is necessary to carefully read the history of management theories against the said risk and look at the phenomenon of fashion approach with the possibilities of philosophy of science.

Recently, when the management literature is examined, we generally encounter a "New Management Approaches" jungle. When subjected to a deep analysis, rhetoric, expressed as new management approaches today, means nothing other than renaming the traditional conceptual framework with "metaphorical neologies." Discussing a rhetorical change in management approaches rather than innovation is better. About sixty years ago, Koontz expressed the result of his curiosity about being different as "The Theories of Management Changed" (Koontz, 1961). It is a manipulation, if not scientific, to highlight one of the features of the already known management approaches as if there were no precedents (Tutar & Sarkhanov, 2020). A management industry is revealed with new management approaches, CEOs, management gurus, and young academicians who are the actors of this industry, who are not able to analyze the subject in-depth, exploit this industry (Jackson, 2001; Huczynski, 2012; Jackson, 2001; Greatbatch & Clark, 2005). New management approaches are inadequate in science's philosophy (Abrahamson, 1996). New management fashions continue today as a tool of exploitation of "management gurus" who devoted themselves to producing new management knowledge.

Management fashions are embraced with great hope from the illusion that corporate performance and efficiency will increase (Spell, 2001; Piazza & Abrahamson, 2020; Klincewicz, 2017). When management fashion approaches are examined carefully, it is seen that two issues stand out. The first is "impermanence," and the other is "enthusiasm." According to Abrahamson (1996), attempting to apply "fashion" and "whim" in a technical and rational area such as management may cause various problems and then abandon it with disappointment. Management fashions, which find a living space for themselves due to rootlessness and lack of philosophy, continue as a tool of abuse. A "fashion approach industry" based on fashion approaches is an industry with great interest in its media, gurus, consultants, and business schools. Scientific methods and reliable scientific information are not easily encountered in the industry's so-called approaches in question. New management approaches or fashions rely on classical organizational theory concepts and principles, although their past has been denied under the postmodern paradigm's influence.

The main purpose of this study, which examines the emergence, reasons for adoption, dissemination patterns, disappointment, and abandonment adventures, which are presented in the management literature and spreading especially among young academicians and practitioners, is to raise awareness about fashion approaches (Newell et al., 2001; Collins, 2013; Williams, 2004; Abrahamson, 1991). Spending time and intellectual capital for these approaches, sometimes expressed as guru discourse, metaphoric neologism, or "enthusiasm for management" because it has no scientific and factual counterpart, wastes time and mental labor. This study's main purpose is to draw attention to the factors that affect the emergence of management fashion literature and contribute to the purification of the so-called approaches to management fashion in the literature. For this purpose, 46 years of data on management trends obtained using Web of Science and Scopus databases were analyzed with a Descriptive Statistical study. With the findings obtained from the data mentioned above, it is aimed to answer the basic question of how management trends have followed a course for half a century and to answer the following sub-questions:

- What are the factors that cause management fashions to emerge?
- How is the course of management trends in the period under study?
- What measures can be taken against the management fashion approach?

2 Literature Review

2.1 Fashion Approaches in Management Literature

Management fashions have become very popular in recent years, both regarding the spread of fashion approaches and criticism of management fashions (Clark, 2004; Czarniawska, 2005; Newell et al., 2001; Sturdy, 1997; Swan, 2004). In these criticisms, researchers criticize management fashion approaches by seeing the futile effort of "reinventing the wheel." Some researchers defend these approaches to better wheel rotation (Sturdy, 1997; Newell et al., 2001). Management fashions are initially seen as the basic tool to be innovative, functional, effective, and efficient and increase organizational performance (Rossem & Veen, 2011). This approach tries to replace the traditional management paradigm with new management approaches for efficiency and performance. For example, management fashions deal with competitive conditions in turbulent environments, overcome problems encountered in entering the market, overcome economic crises, or prevent customer losses. However, although this intention has led to the rapid adoption of fashionable approaches, it is not enough to sustain it. This rapid adoption process, defined in the literature as "management fads and fashions," is soon abandoned, disappointingly, with various doubts about these approaches' validity (Carson et al., 1999; Ryan & Hurley, 2004; Christensen & Michael, 2003). Therefore, managers must be subjected to a more critical analysis of management fashions and be more cautious about new approaches to avoid disappointment.

The key determinant of whether any management approach is a "management fashion" is the number of articles published on that topic and the trend followed. If a management approach has been discussed over 3-5 years, and the number of articles produced on that subject has decreased significantly, this approach is most likely a management fashion (Ponzi & Koenig, 2002). Some management fashions and fads compiled by Furnham (2004) and arranged in rough chronological order from the 1950s to the 1990s are Management by Objectives, Matrix Management, Theory Z, One-Minute Management, Management By Wandering Around, Total Quality Management Business Process Reengineering, Delayering, Empowerment, 360-Degree Feedback, Reengineering, Reorganization, and Teamwork. In this study, some of the fashionable approaches were examined in line with the research's purpose. Especially in the 1980s and 1990s, analyzes were made on the main management fashions such as Quality Circles, Total Quality Management, and Restructuring of Business Processes to increase product quality. For example, Quality Circles were seen in the early 1980s as a means of competition in other industrialized countries to close the quality gap with Japan, and it spread rapidly like an epidemic, ignoring cultural and other factors in Japanese business systems. This management technique has been adopted without hesitation to achieve greater quality and labor productivity. For example, it is seen that between 1980 and 1982, 90% of Fortune 500 companies adopted the Quality Circle technique (Ponzi & Koenig, 2002; Lawler & Mohrman, 1985). However, more than 80% of Fortune 500 companies that adopted the Quality Circles approach in the early 1980s gave up the fashion approach by 1987 (Ponzi & Koenig, 2002).

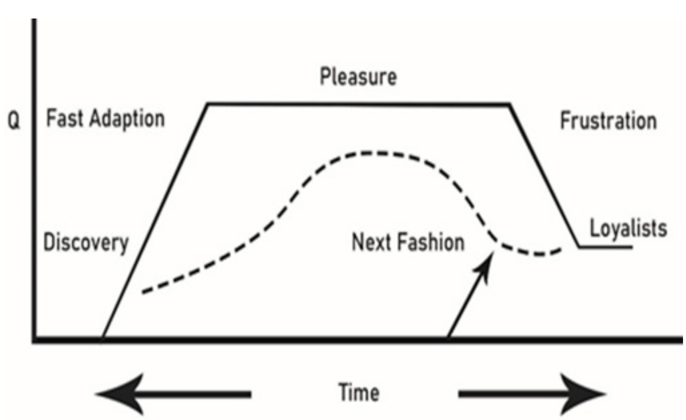


Figure 1: Life Cycle of Management Fashion. Source: Ettorre, 1997: 34

Abrahamson (1996) confirmed with his studies that the quality circle approach is a management fashion. Obtaining the article numbers from ABI Inform, Abrahamson drew a ten-year trend line representing articles that include “Quality Circles” in the title or abstract. Abrahamson’s findings revealed that the Quality Circles movement had a bell-shaped pattern. The model shows a rapid growth starting in 1978 and returning in 1982 (Ponzi & Koenig, 2002). Abrahamson’s (1996) study shows that publications on Quality Circles peaked in five years. Considering the life cycles of Total Quality Management (TQM) and Business Process Restructuring, it is understood that these are not different from other fashion approaches (Ponzi & Koenig, 2002). The debate is whether Total Quality Management is an approach with its essence, a systematic and theoretical framework like other contemporary management approaches. There is no consensus on whether total quality management is a program, a management tool, or a management approach.

Management fashions are criticized for not paying attention to context and interpretation, approaching technical knowledge and science as if they approach commercial products, not defining human roles correctly in the management fashion market, and being an abused tool. For example, management fashions are criticized for offering a specific terminology or jargon instead of knowledge, having difficulties developing a common understanding of techniques, containing ambiguities and paradoxes, and lacking systematic and poor technical aspects (Carson et al., 1999; Dedeoğlu, 2008; Amount, 2009). Also, since management fashions are not based on a factual basis, it is seen that they usually do not have their concepts; instead, they try to express themselves with contentless rhetoric and metaphoric neologism. The management fashion market is so lively that it is approached with irony to the concept of management, a rational and technical field, by being influenced by postmodern thought approaching events with irony.

The absence of a philosophical tradition of management thought has a share in this. Today, neo-capitalism radically transforms work and business life, and the labor market is being restructured based on flexibility, temporality, fluidity, and adhocracy (Tutar & Sarkhanov, 2020a). The new understanding, embodied with features such as continuous and rapid change, being short-term, transient, and saving the day, substitutes short-term for being long-term in every field, and temporality for permanence (Bauman, 2005). This process rapidly dissolves the past into stable and stable structures, causing a comprehensive deformation in the social field. Flexibility and transience in business life create a suitable ground for the spread of fashion approaches.

While traditional management thought has mental-logical explanations and a philosophical basis, strange approaches can arise because the management fashions approach lacks a philosophical basis. Although management has an interdisciplinary character, the interdisciplinary feature of contemporary management approaches is weak. There is uncertainty about the limits of fashion approaches. However, it is not easy to think together with science and uncertainty. The main purpose of science is to eliminate uncertainties based on scientific data. That is to guide uncertainty. A scientific effort is made to describe, understand, explain, or preface. However, management fashions approaches are too vague to fall into these categories.

2.2 The Reasons for the Emergence of Management Fashion

The cultural, economic, and social changes that occurred during the transition from an agricultural society to an industrial society and an information society led to new techniques and management approaches. Shortly after Business Management thought they started to be handled with a scientific approach with F. Taylor, fashion approaches gradually emerged. Especially in the 1980s, the production conditions and the developments in the field of information technologies, shaped by globalization, contributed to creating a suitable environment for fashion approaches by rapidly changing traditional organizational structures. Although this rapid change led to a paradigm change in management approaches, this paradigm change also formed a suitable ground for developing fashion approaches (Uğurlu, İbrahimoğlu & Ayas, 2013; Bao & Tan, 2009; Spell, 2001). This radical change process was exploited by management gurus, young academics in business schools, and management consultants and paved the way for fashionable management approaches.

The adoption and spread of management fashions represent a radical deviation from the traditional understanding of management. It often creates a high motivation and excitement during the adoption phase. When this excitement is lost, it is criticized that management fashions mean nothing more than presenting existing approaches, management principles, and theories with new rhetoric. The promise will produce definitive solutions to management problems in management fashions, and the ambiguity of the language used causes these approaches to be adopted with great enthusiasm (Madsen et al., 2017; Madsen & Slatten, 2019). Simultaneously, the fact that it is based on descriptions of what to do with authoritarian and imperative expressions causes it to be quickly adopted by managers who seek practical solutions. The simple expression of the basic assumptions on which fashion discourse is based and its slogan-like style facilitate the adoption and spread of these approaches. The simple expression of the basic concepts on which fashion approaches are based, the excessive use of slogans (the snake that cannot change its skin dies) and abbreviations (TQM, HRM, CRM, MbO, etc.) are other reasons that facilitate its adoption.

Ignoring Japanese business discipline and diligence, the illusion that Total Quality Management is behind Japanese success has led to the rapid spread of this approach to other countries and business schools around the world (Abrahamson & Fairchild, 1999) (Van Der Wiele et al., 2000; Longo & Cox, 1997). Although management fashions have not yet been sufficiently tested, they are still seen as an indicator of achieving a sustainable competitive advantage, extending the life of fashion approaches. On the other hand, the commercialization of management knowledge in management information markets is another compelling reason for the spread of fashionable approaches. Scientific activities require intense curiosity, patience, perseverance, great effort, and mental and intellectual capacity. On the other hand, management fashions are so-called scientific activities disguised as scientific. Unfortunately, management fashions prepared more theoretically oriented to practice various disappointments (Miller & Hartwick, 2002; Longo & Cox, 1997). Although management fashions do not have operational value and theoretical basis, they embellish the narrative with rhetoric and enrich it with a metaphorical neologism that creates an attraction and causes it to be adopted rapidly.

2.3 General Features of Management Fashions

Many factors play a role in the emergence and spread of fashion approaches. As shown in Figure 1 above, we can express the general characteristics of management fashions implemented in the form of rapid adoption, absorption, disappointment, and sustaining life with the support of loyal viewers and the factors that cause them to spread as follows:

They were produced with a simple and average intellectual capacity. Therefore, the emergence of fashion approaches is easy to understand and quick to spread, as they are produced with a limited intellectual capacity and low mental labor. It is generally adopted quickly, not requiring deep academic knowledge and mental proficiency. Although it contains many rhetorical and metaphorical neologisms, it applies few scientific and factual concepts.

It is inspiring and descriptive. Managerial fashion approaches are not analytical thinking and logical inference, but they have been designed for the market rather than the scientific mind because they are produced with commercialization. The language of fashion approaches is not generally open to interpretation and expresses itself in strict propositions. It has a normative and imperative style, not questioning. Statements are simple and descriptive.

Assumptions are based on raw imagination, not creativity. Management trends promise high productivity, motivated and high-performance employees, and satisfied consumers for practitioners. Unfortunately, these expressions used in the adoption phase of fashionable approaches are not credible and soon disappoint. Their lifetimes depend not on their content's strength but the management gurus' status and reputation.

It claims to be suitable for every situation and every environment. Because management fashions are produced with ignorant courage, it claims to be a suitable recipe for any occasion and at any time. Fashion approvers claim that the approach they produce has precise solutions to every event and phenomenon. However, the "contingency approach," which assumes that there cannot be an appropriate approach for every situation and all times, claims that there can never be general management principles. Although many of these approaches are produced for a specific company, they believe they are valid for all businesses.

Lack of theoretical foundation. Scientific activities must be based on a principle, a model, a theory, or a scientific law. Since the fashion approaches are unfortunately not put forward on a theoretical basis, their assumptions are unfounded. The fact that they are not based on scientific principles or theory causes the illusion that they have a large operational possibility.

Conformity to the spirit of the times. Management fad approaches are often articulated in a style appropriate to the times' spirit to legitimize management's role. Fashionable approaches that give the impression that they are suitable for every environment and situation are unsuitable for a scientific test and an effective management practice.

Management trends are often produced and propagated by management gurus who do not know management's theoretical foundations. Gurus are highly manipulative people who believe they have the right recipe for every problem. Academics who are easy to follow are often disappointed when they see that fashion approaches have no real-world counterpart. However, young academicians and loyal followers who have not sufficiently digested management theories cause the prolongation of management fashions.

3 Material and Methods

3.1 Design

The theoretical basis of this research was made according to the critical literature review technique. The "descriptive statistics" technique was used in the research method. In such studies, it is very important to do the research in the form of a critical literature review in terms of contributing to the literature. A literature review is mostly used for investigation studies, estimations and statistical results. The scanning method can also be classified within itself.

These; can be in the form of scanning the existing literature through documents, archival analysis and scanning the literature on the web. Clear connections are established between the literature review and the research's purpose, questions or hypotheses (Hartley, 2008; Padem, Göksu, & Konaklı, 2012; Adams et al., 2007). It is critically examined that needs to be studied in a critical literature review. Critical literature review forms the basis of descriptive research. Descriptive research aims to portray an organization, individual, group, situation or phenomenon.

Descriptive statistics are concerned with collecting, interpreting and summarizing data. Descriptive statistics enable the data to be converted into information and used in the decision-making process using several numerical and (or) graphical methods, and descriptive statistical technique is used to analyze numerical data. The main purpose of descriptive statistics is to summarize the data with the help of tables and graphs and to reveal a data group consisting of many values. Since descriptive statistics summarize the information in a dataset using numerical and graphical methods, it is a suitable technique for the main purpose of this research (Özsoy, 2010; Spiegel & Stephens, 2013; Gürsakal, Oğuzlar, & Gürsakal, 2019). The descriptive statistics technique was used in this research because it is suitable for the research and easy to explain the problem.

3.2 Results and Discussion

This study analyzed the data on fashion approaches in Descriptive Statistical courses from 1975-2020. The course of fashion approaches since 1975 has been visualized and quantified with tables and graphics. It is important to follow the historical adventure of fashion approaches, frequently used in management today, to keep a future projection. Since it is impossible to examine many fashion approaches in one article in this study, only total quality management, reengineering, quality circles, and management by objectives, matrix management, and theory Z fashion approaches have been emphasized in the period examined here. In the study, 24,306 publications in the Web of Science (WoS) database indexed SCI-EXPANDED, SSCI, A & HCI, CPCI-S, CPCI-SSH, ESCI, and 36,697 scientific publications in the Scopus database between 1975 and 2020 were examined. The main fashion approaches were chosen in the study, and the number of publications by year was shown. The number of publications on management fashion approaches in Web of Science and Scopus databases is given in table 1.

Table 1: Number of Publications Regarding Fashion Approaches in Web of Science and Scopus Database (1975-2020)

Years	**1975-1983**		**1984-1992**		**1993-2001**		**2002-2010**		**2011-2020**		**Total**	
Approaches	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**
Total Quality Management	0	0	224	296	645	977	190	361	354	624	**1413**	**2258**
Reengineering	2	0	60	57	1235	1511	654	993	815	1137	**2766**	**3698**
Quality Circles	71	129	149	237	29	102	26	66	18	57	**293**	**591**
Management by objectives	76	70	12	20	4	12	7	17	22	32	**121**	**151**
Matrix management	15	17	11	21	6	9	7	7	6	14	**45**	**68**
Theory Z	50	18	20	21	2	4	2	2	1	1	**75**	**46**

Total Quality Management

The Web of Science database on Total Quality Management, one of the fashionable approaches in the period examined, shows that the first publication on this fashionable concept was in 1985. In the first phase of the period under consideration (1975-1983), no publication was made on TQM. As shown in Table 1, the number of publications in the following periods increased rapidly in line with the rapid adoption of fashion approaches and began to decline. By 2020, a total of 1413 publications will be made. In the same period, the total number of publications made in Scopus on TQM is 2258. The data from the databases show that in the 1993-2001 period, TQM was the peak of the approach. During this period, 645 publications were made in WoS and 977 in Scopus. Between 2002 and 2010, 190 publications were made in WoS and 361 in Scopus. From 2002-2010, 354 publications were made in WoS and 624 in Scopus.

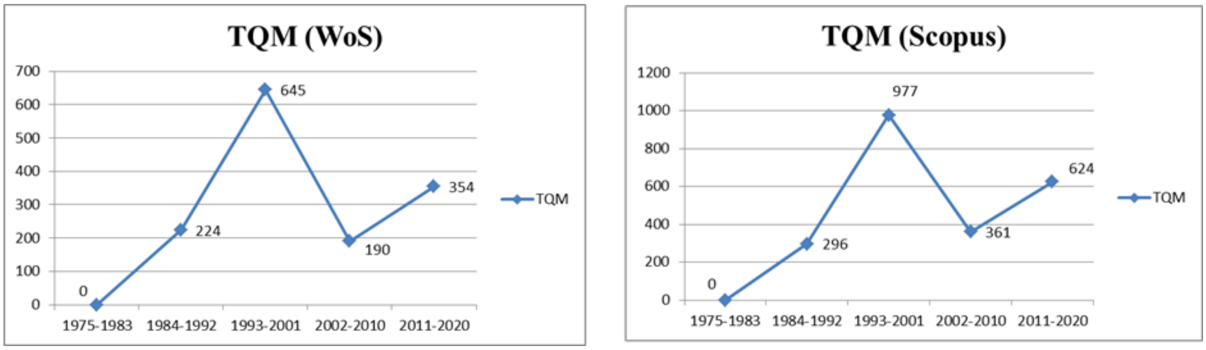


Figure 2: TQM development course in WoS and Scopus databases between 1975-2020

In Figure1, there was a rapid increase in publications on Total Quality Management from 1993-2001. It is seen that there is a rapid decline in TQM for the period of 2002-2010 as well as other fashionable approaches. However, it has been observed that there has been a low-slope rise since 2010. It is understood that similar trends are followed in both Webs of Science and Scopus. It can be argued that the increase here may have resulted from the insistence of those with a high level of loyalty to fashion approaches.

Reengineering

As with other management fashions, reengineering has emerged with great promise that innovation and process reengineering will contribute to sustainable development. Due to global environmental changes and increasingly stringent environmental legislation and competition, reengineering has become the primary goal of enterprises (Verbič et al., 2009). However, it did not go from being a management fashion to a new one after a short time. Reengineering, the findings obtained from the Web of Science and Scopus database data show that the situation is not different from other fashion approaches. Two reengineering publications were published in the first phase of the period under consideration (1975-1983). In the following periods, the number of publications increased rapidly in line with the rapid adoption of fashion approaches, and by 2020, 2766 publications were published on the Web of Science and 3698 in Scopus. The peak point of the publications on the reengineering fashion approach is the period 1993-2001. During this period, 1235 publications were published on the Web of Science and 654 in Scopus. From 2002-2010, publications decreased by about fifty percent, becoming 654 on the Web of Science and 993 on Scopus.

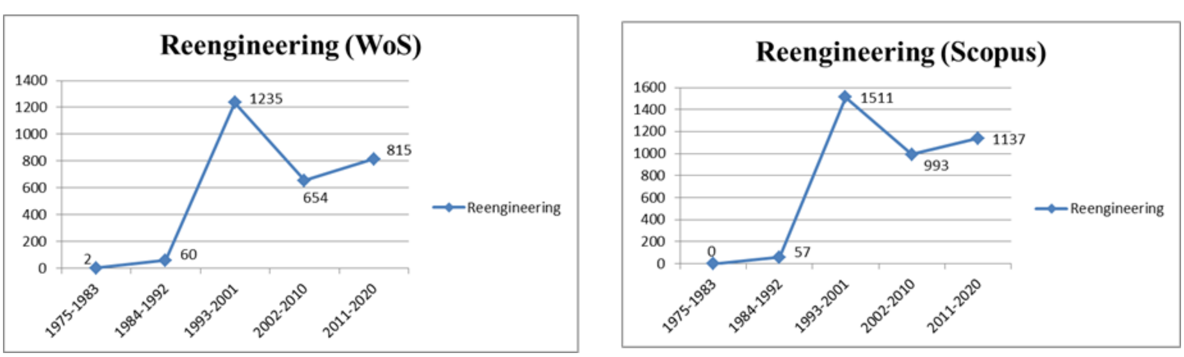


Figure 3: Reengineering development progress in WoS and Scopus databases between 1975-2020

While the reengineering fashion approach followed a horizontal course from 1975 to 1992, there was a rapid adoption process in line with fashion trends. There appears to be a rapid decline from 2001 to 2100 and then a slight increase in interest.

Quality Circles

The WoS database on Quality Circles, one of the fashionable approaches examined, shows that this fashionable concept is not different. From 1975-1983, 71 publications were made on Quality Circles. In later periods, less attention was paid to this fashion approach, and by 2020, 18 publications were published on the Web of Science and 57 in Scopus. Interest in this fashion approach decreased expense; by 2002-2010, it decreased to 26 publications on the Web of Science and 66 in Scopus.

Unlike other fashion approaches, the Quality Circles fashion approach seems to be disappointing in an earlier period. Looking at the Web of Science and Scopus databases, it is understood that the Quality circles fashion approach was adopted in 10 years and then abandoned quickly with disappointment when the expected benefit could not be obtained.

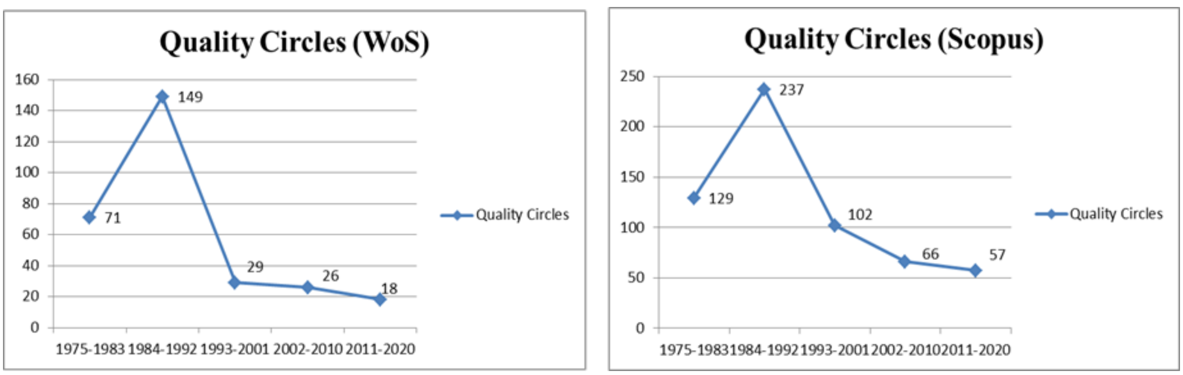


Figure 4: Quality circles development course in WoS and Scopus databases between 1975-2020

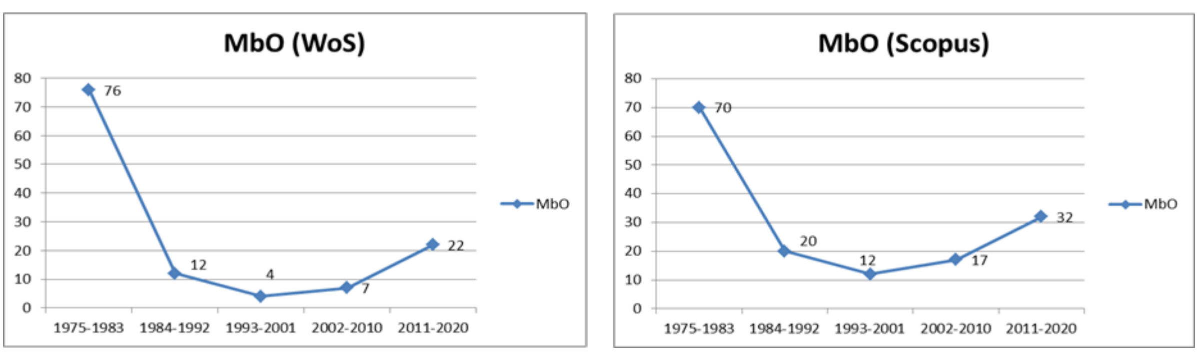


Figure 5: MbO development progress in WoS and Scopus databases between 1975-2020

Management by objectives

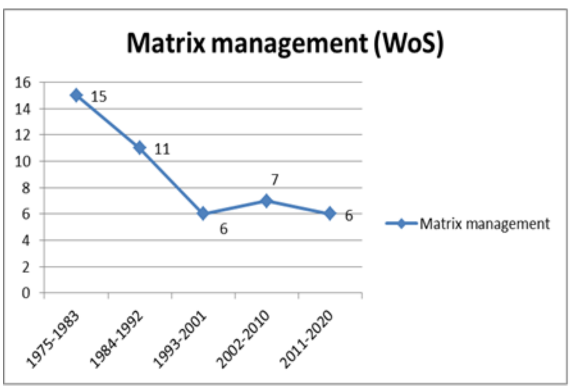
Regarding the Management by Objective fashion approach, the Web of Science and Scopus databases and Scopus databases show that this fashion concept's situation is not different from other fashion approaches. From 1975-1983, 76 publications were published on Management by Objectives in Web of Science and Scopus, and 70 in Scopus. In the following periods, the number of publications decreased rapidly, and by 2020, 22 were published in Web of Science and Scopus and 32 in Scopus, resulting in disappointment.

Looking at the graphs above, researchers have not shown much interest in the MbO fashion approach since its emergence. It appears disappointing before it can go through a rapid adoption phase, as observed in other fashion approaches. In the MbO fashion approach, it is understood that similar trends are followed in both WoS and Scopus.

Matrix management

In the period examined, 15 publications were published in Web of Science and Scopus, and 17 in Scopus on Matrix Management, one fashion approach. This approach has not observed the rapid adoption of many publications' fashion approaches. Interest in this approach has been decreasing steadily, with 6 Web of Science publications and 14 publications in Scopus in 2020. In this fashion approach, 1984-1992 is the peak point of the number of publications. After this period, the number of publications decreased rapidly, and by the year 2002-2010, it went down to seven publications on the Web of Science and Scopus and Scopus. From 2011 to 2020, the interest in six Scopus in Web of Science and Scopus increased slightly and reached 14.

It is understood that researchers approach matrix management with this fashionable approach with some hesitation. However, the Scopus database has shown slight interest in this fashion approach after 2010.



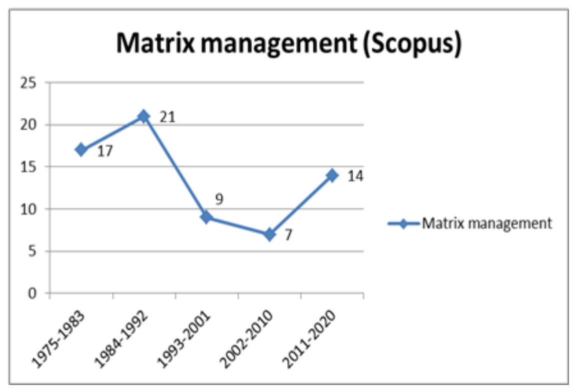


Figure 6: The development course of matrix management in WoS and Scopus databases between 1975-2020

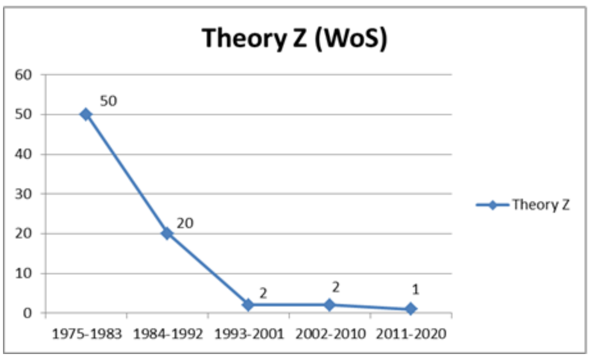
Theory Z

Data on Theory Z in Web of Science and Scopus and Scopus database show that this fashionable concept is not different. Between 1975 and 1983, 50 publications on Theory Z were published in Web of Science and Scopus, and 18 in Scopus. In later periods, the number of publications in SCOPUS followed the same trend in Theory Z in line with the rapid adoption of fashion approaches, and by 2020, it decreased to one publication in Web of Science and Scopus and one publication in Scopus. 1984-1992 is the peak point of the Theory Z fashion approach publications. Twenty-one publications were made in Scopus during this period, and in 2002-2010, 2 publications were made in WoS and Scopus.

It is seen from both Webs of Science and Scopus and Scopus databases that people's interest in the fashion approach developed by William Ouchi is weak from the beginning. However, this so-called approach continues to occupy students' agenda in business schools today, as included in management books.

Table 2 below shows the data obtained from the Web of Science and Scopus and Scopus databases regarding the not fashionable approaches described as "new management approaches." In the period examined in the table, human resources instead of personnel management concept draw attention to the scarcity of publications on personnel management. However, it is observed that human resources management publications are increasing daily. Unlike fashion approaches, it is seen that non-fashion approaches tend to increase regularly in Web of Science and Scopus and Scopus databases. It is observed that there is a regular increase in publications on strategic human resources management, which is one of the new management approaches, and talent management. The 360-degree feedback approach, on the other hand, has shown a steady increase, especially due to the increasing interest in organizational democracy. Personnel empowerment, which has risen as a requirement of human-oriented approaches, stems from the expectation of higher performance in human resources.

Since teamwork is an important management technique applied in all periods of history with the expectation of synergy, it is understood that the interest shown in teamwork continues. Since teamwork is necessary for jobs people cannot do alone, it is expected to increase interest in this subject. The strategic management approach continues to be important in administering states and managing institutions and organizations throughout history. With the globalization trend and the opportunities provided by the developments in information and communication technologies, the necessity of doing business in different parts of the world and benefiting from external resources (outsourcing) is increasing. Outsourcing has content close to the concept of "supply" in terms of meaning. Unlike fashion approaches, new management approaches present traditional management approaches as a new management approach with minor differences. Interest in such approaches continues today, as new management approaches have traditional roots.



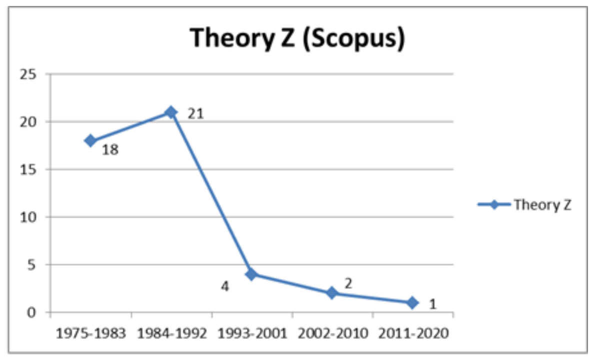


Figure 7: The development course of theory Z in WoS and Scopus databases between 1975-2020

Table 1: Number of Publications Regarding Fashion Approaches in Web of Science and Scopus Database (1975-2020)

Years	1975-1983		1984-1992		1993-2001		2002-2010		2011-2020		Total	
Approaches	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**	**WOS**	**Scopus**
Personnel Management	195	89	124	113	58	74	39	73	116	175	**532**	**524**
HRM	36	42	213	226	379	460	644	1150	1595	2438	**2867**	**4316**
Strategic HRM	1	1	19	25	43	39	51	97	131	164	**245**	**326**
Talent Management	0	0	0	0	0	2	45	120	471	694	**516**	**816**
360-degree feedback	0	0	0	0	31	35	29	40	30	38	**90**	**113**
Employee Empowerment	0	0	9	12	26	33	15	36	56	102	**106**	**183**
Teamwork	137	192	251	313	519	778	751	1430	2201	2726	**3859**	**5439**
Strategic Management	69	51	286	212	331	348	448	700	1012	1381	**2146**	**2692**
Outsourcing	0	0	29	27	641	892	1972	3888	3183	4644	**5825**	**9451**

4 Discussion and Conclusion

While the criticism of management fashion and fashions has continued for about 30 years, the production of new management fashion continues. It can be said that the increasing criticism of management fashion in the international literature has reduced the interest shown in fashion approaches. Approaches without tangible and operational value are quickly abandoned due to disappointment. These results also answer the research question of how the historical course of management trends has developed. As has been said, new approaches are not based on objective reality and a scientific basis. Objects subject to sense experience determine the subject of knowledge. Human knowledge is limited to visible and directly experienced objects. If there is human knowledge, there is a reality to which this knowledge corresponds. However, in management fashions, the situation is not bye. For this reason, management fashions, mostly produced with neological expressions and concepts that do not have a counterpart in nature, emerge as approaches that can be grounded and do not have concrete counterparts. Management fashion approaches that have no scientific and operational value, management fashions that only waste time and mental effort; Organizational Silence continues with trendy concepts such as organizational citizenship, Job Burnout, Anti-productive Work Behaviors, Psychological Contract, Organizational Commitment and Organizational Trust (Under & Gerede, 2021; Al-Madadha et al., 2021; Lubbadeh, 2021; Huy et al., 2020; http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/1388Akkaya, 2020).

Theoretical implications. A critical approach to management fashion approaches will contribute to a better understanding of this approach. It can be argued that this will benefit from contributing to which area the intellectual and scientific mind and labor should focus. Otherwise, approaches with no operational value and equivalent fields cannot go beyond intellectual enthusiasm. It is seen that there are generally constructive, destructive, and understanding-oriented criticisms about fashion approaches. For example, criticisms made under Abrahamson and his influence often use derogatory or even insulting language towards fashion approaches (Abrahamson & Eisenman, 2001; Ramsay, 1996; Kieser, 1997; Benders & Van Veen, 2001; Jackson, 2001). It is the confusion between the concept of management fashions and the concept of "management ideology." This situation causes the criticism of management ideologies to be directed to management fashions. Another aspect is that while management ideologies are based on the claim that they have social concerns, management fashions are more directed towards individual benefit (Parush, 2008; Chiapello & Fairclough, 2002; Anthony, 2005). This situation hinders studies from understanding management modes. The main rationale for constructive approaches to management fashions is that what has been done is not "reinventing the wheel" but making it turn better.

Over the past three decades, new management approaches and management fashions have attracted great attention in management circles worldwide. Quality circles, TQM, restructuring of business processes, learning organizations, and many other fashionable concepts were eagerly addressed and implemented by academics and practitioners. However, disappointingly, these approaches were soon abandoned due to their low operational value (Parush, 2008). Management fashions spread by academia, consultants, and management gurus quickly disappeared as they spread. It should be noted that many researchers, especially Abrahamson, played a role in this (Abrahamson, 1996; Benders & Veen, 2001; Czarniawska, 2005; Czarniawska & Joerges, 1995; Huczynski, 1993; Jackson, 2001; Kieser, 1997; Micklethwait & Wooldridge, 1996; Røvik, 1996). The criticisms made by these researchers have been effective in keeping young researchers away from management fashions. When Abrahamson (1996) classified the management fashion process as "management fashion setters" and "management fashion users," this situation led to a cautious view of management fashions and a move away from fashion approaches after a short time.

Management fashions were not justified during the examined period, causing disappointment in these approaches. Management fashions could not confirm the scientific assumption that the best approach or theory should be verified by practice. For example, in 2002, Harvard Business Review magazine announced that approximately 60% of companies implementing thousands of customer relationship management systems do not meet their customers' expectations. Although the management fashion approach was presented as a solution by the "fashion setting organizations" (consultancy firms, management gurus, academicians) under uncertain conditions, it was understood that this was not valid in the end. Also, cultural and social-psychological factors have led to prudent behavior in adopting and using a management innovation. Fashion approaches that appeal to emotions rather than the mind quickly caused disappointment in such a technical and rational area as management.

Practical implications. On the one hand, impatient managers who want to overcome the uncertainties of business life and, on the other hand, sloppy and scientific researchers who want to publish easily and reach their career goals quickly play an important role in the spread of fashion approaches. Another problem is that far from philosophical depth, management gurus pollute the literature with metaphorical neologies. These research results and international literature confirm this claim. Today, it is possible to understand the efforts of organizations to make their employees more productive and to increase their personal development and professional competencies. However, all these good intentions cannot justify the production of unscientific literature based on management fashions.

Moreover, it is not possible to institutionalize the principles and rules regarding management fashion approaches, and institutional success, efficiency and effectiveness cannot be achieved with such approaches. Achieve success and competitive advantage for the institution; It can be possible with better marketing activities, developing financial control systems and using technology more efficiently. Organizational efficiency and effectiveness are impossible with fashionable approaches unless organizational innovation, marketing innovation, process innovation and effective human resource management (Guest, 1987; Tichy, 1981; Wright & McMahan, 1992). The ever-expanding market requires intense collaboration agreements, increased consumer expectations and technology transformations. In addition, businesses make great efforts to survive in a politically and economically turbulent environment. Strategic management and other new approaches play an important role in adapting to rapidly changing environmental conditions, especially after the 1980s (Morgan and Strong, 1998; Panagiotou, 2003). It may be possible to provide high performance, sustainable growth, opportunity and competitive advantage within the framework of strategies to be determined according to contemporary developments. Management is a rational activity, and it is not following the rational nature of management activity to place hope and trust in fashionable approaches, such as fashion approaches, which are emotionally dominant and without content.

Limitations and accommodation for future research. This research is research that covers a certain period. Research is also limited to the Web of Science and Scopus databases. Results may differ in different national databases. In addition, if scholar google and other databases are included in the process, different results can be obtained. Contribution to the discussion can be made by making national and international comparisons. In future research, the subject can be examined with quantitative, qualitative and mixed research methods and meta-analysis. Research should also be supported by real data on fashion approaches' operational value and practical value. The reasons for the success and failure of successful companies in a certain period can be associated with fashionable approaches. In addition, the factual data that fashion approaches do not give a positive result in the field can be searched.

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Sledenje modi v managementu na osnovi izbranih indeksov: deskriptivna statistična študija

Ozadje/namen: Čeprav se o načinih vodenja in managementa razpravlja že skoraj 30 let, je moralo preteči nekaj časa, preden so razprave lahko temeljile na dejanskih podatkih. Cilj te raziskave je predvsem izslediti pristope vodenju in managementu v nekaterih izbranih mednarodnih indeksih v zadnjem skoraj pol stoletja. Osnovno raziskovalno vprašanje študije je, kako se je razvijal zgodovinski tok mode v managementu.
Metode: V študiji je bila uporabljena deskriptivna statistična metoda - zaradi njene ustreznosti bistvu subjekta, namenu raziskave in odgovoru na raziskovalno vprašanje. Raziskavo smo izvedli na podlagi podatkov, zbranih o trendih upravljanja s analiziranjem podatkovnih baz Web of Science in Scopus za obdobje 1975-2020.
Rezultati: Moda vodenja in managementa sledi ciklu: hitro sprejemaneje, izvajanje, razočaranje in opustitev. Rezultati raziskav kažejo, da pomanjkanje znanja in zavedanja o modi vodenja predstavlja veliko izgubo časa in intelektualnega kapitala. Ta ugotovitev je ključna predvsem za mlade raziskovalce in menedžerje nove generacije.
Zaključek: Medtem ko se novi pristopi, ki imajo oprijemljive protipostavke in jih je mogoče utemeljiti, nadaljujejo, pristopi, ki nimajo konkretnih protipostavk, izginjajo, kar povzroča izgubo časa in duševnega napora.

Ključne besede: *Trendi menedžmenta, Moda menedžmenta, Modne muhe menedžmenta, Novi menedžment, Razmišljanje menedžmenta*

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Psychological Capital and Organizational Performance: The Mediating Role of Organizational Ambidexterity

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Background and purpose: Today's dynamic environment is increasingly pressuring public organizations to be simultaneously flexible and efficient. The purpose of this study was to examine the mediating role of organizational ambidexterity in the relationship between psychological capital and the perfor-mance of public organizations that have bureaucratic limitations to their activity and are not as competitive as the private sector.
Methods: A questionnaire was developed and distributed among the employees of Management and Planning Organizations in 31 provinces in Iran, and a total of 373 questionnaires were returned. The data was analysed using CFA to validate the measures, and then the mediating effects of organi-zational ambidexterity was tested.
Results: The results indicated the significant relationship between psychological capital and organizational performance (B=0.55) and the positive mediation effect of organizational ambidexterity on this relationship (0.333).
Conclusion: The findings can help managers of public organizations to enhance their organizational perfor-mance by strengthening psychological capital and ambidexterity.

Keywords: *Organizational ambidexterity; Psychological capital; Organizational performance; Public Organizations*

1 Introduction

The rapidly changing and increasingly competitive business environment has driven organizations to focus on efficient activities in the short and long term and gaining competitive advantages (Cao et al., 2009). In addition to the for-profit sector, these changes have also challenged government agencies to improve their ability to adapt to the environment. However, government agencies have high degrees of centralization and bureaucracy and are subject to various laws that put them under immense pressure to create stability and maintain balance. Meanwhile, due to environmental pressures in the service sector, the only way for these organizations to adapt is to develop their ability to simultaneously exploit existing assets and capabilities while exploring new, fundamental capabilities (Markides, 2013). This means that ambidexreity may be helpful to better adapt with the environment. Ambidexterity is the combination of both efficiency-oriented and noveltyoriented innovation practices (e.g., exploitation and exploration) for short-term success and long-term survival (Clauss, 2021).

While various studies have highlighted the important role of organizational ambidexterity in the growth and survival of organizations and its positive effect on organizational performance (Kauppila & Tempelaar, 2016; Junni et

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al., 2013; Gibson & Birkinshaw, 2004), these studies have mainly focused on the private sector (Smith & Umans, 2015). There are very few studies on ambidexterity and performance in the public sector (Cannaerts et al., 2020; Ghanizadeh et al., 2020) with mixed results (Junni et al., 2013). Some studies have found a positive relation-ship (Gibson & Birkinshaw, 2004; Lubatkin et al., 2006), some a negative relationship (Atuahene-Gima, 2005) and some a contingent effect (Lin et al., 2007).

Public organizations face pressures for greater innovation and meeting pre-determined tar-gets (Plimmer et al., 2017). However, engaging in both innovation and optimization activities simultaneously can create tensions between them (Gieske et al., 2020), which requires public organizations to be ambidextrous. However, there is evidence suggesting that a U-shaped relationship exists between ambidexterity and performance (Yang & Atuahene-Gima, 2007), while a number of studies have found no relationship (Venkatraman et al., 2007). The dearth of evidence has led some to view ambidexterity as a public sector problem (Lee et al., 2012) and even question whether public organizations in general can be ambidextrous. While the term organizational ambidexterity itself may not have been used in the context of the public sector, its com-ponents have been considered in the literature (Smith & Omans, 2015). According to Bryson et al. (2008), public organizations can have the capacity and opportunity to adopt ambidextrous structures and cultures (Bryson et al, 2008), since environmental pressure for delivery of new services in the public sector force these organizations to innovate similar to the private sector. But in public organizations such as Iran's Ministry of Management and Planning, which is a highly centralized and beurucratic organization, ambidexterity is defined not by organizatrional performance, but also by the management's ambidexterious behavior. Organizations affiliated with the Ministry of Management and Planningin all the provinces of Iran have the same structure, but with different managers who must carefully adapt to environmental changes. Therefore, their ambidexterity could be considered for prediction of organizational level ambidexterity.

Individuals and managers are a key element in exploration and innovation in the public sector. Studies have shown that individuals play a fundamental role (Raisch et al., 2009) and that the characteristics, capabilities, and behaviors of the members of the organization should be considered to better understand organizational ambidexterity (Kauppila & Tempelaar, 2016). Managers of organizations in particular provide an important context for exploration and exploitation through their decisions and actions (Gibson & Birkinshaw, 2004). They play a more sig-nificant role than environmental forces in determining organizational outcomes, and their bounded rationality is reflected in their decisions and consequently organizational outcomes (Smith & Umans, 2015). Similar to the private sector, the managers and employees of public organizations work in a competitive environment and have to keep pace with changes in the environment. Psychological traits of these individuals are an important driver of innovation. For this reason, organizations are increasingly focusing on the psychological needs and psychological capital of their employees (Qiu et al, 2015). Psychological capital goes beyond human and social capital and is positive associated with work motivation and performance (Larson & Luthans, 2006) and could be a key factor in individual and organizational ambidexterity and improve performance through efficiency and innovation. Therefore, this study aims to consider the psychological capacities of individuals and managers as a useful approach to enabling public organizations to become ambidextrous through individual ambidexterity. In other words, the ambidexterity of public organizations should be expressed by the explorative and exploitative behaviors of the managers.

2 Theoretical Framework and Hypotheses

2.1 Organizational ambidexterity and psychological capital

Organizational ambidexterity challenges managers in organizations (Jansen et al., 2008). Managers play a crucial role in achieving organizational goals by allowing the organization to redeploy resources efficiently and effectively while pursuing new opportunities or respond to threats quicker than competitors (Hodgkinson et al, 2011). Together with the environment, they create an important context for ambidextrous behavior (Lavie et al, 2010) and should be able to flexibly shift between exploration and exploitation (Good & Michel, 2013), reconcile conflicting demands, balance seemingly contradictory forces in the organization (Jansen et al., 2008), and serve as the main driving force behind ambidexterity (Jansen et al., 2009). This role of managers and employees in public organizations is far more complex than in the private sector. Public sector actors are not only limited in terms of authority and decision-making, but also have different organizational missions that are not primarily related to competition with other organizations. Moreover, the managers of public organizations are accountable to various politi-cal and community stakeholders and thus operate under a great deal of pressure, which makes their ability to foster ambidextrous behavior much more important. This could be challenging as public organizations are under pressure to innovate (Nowacki & Monk, 2020) and public sector employees tend to resist innovation (Gieske et al., 2020). A review of the literature on innovation in the public sector shows that most studies have focused on the antecedents of innovation and less attention has been paid to its actual outcomes (Gieske et al., 2019).

Adopted from Gibson and Birkinshaw (2004), Fiset and Dostaler (2017) suggest four ambidextrous behaviors (initiator, cooperator, broker, and multitasker) and explain how to create an organizational structure for ambidexterity to align and adapt at the individual level. Individual differences underpin the ambidextrous behavior of the members of the organization (Kauppila & Tempelaar, 2016, 2016; Raisch et al., 2009) and understanding them is essential to under-standing ambidextrous behavior at the individual level (Raisch et al., 2009). However, achieving individual ambidexterity is very difficult, since innovation and optimization require completely different structures and capabilities that can create conflicting challenges for each individual (Eisenhardt et al., 2010). These challenges affect emotions and, consequently, individual performance is affected because factors such as positive reinforcement, positive affect, and attitudes of employees (including managers) affect their performance (Luthans, 2002), and individual performance is a function of individual ability and motivation (Wright et al., 1995). However, despite documented role of emotions, there is still little known about what accounts for individual ability to manage conflicting demands (Eisenhardt et al., 2010) and the psychological characteristics that can be used as predictors of these behaviors have not received much attention (Kauppila & Tempelaar, 2016).

Luthans has developed the theory of psychological capital to explain how the psychological capacities of individuals can be measured, developed, and managed to enhance both individual and organizational effectiveness (Newman et al., 2013). Research suggests that high psychological capital can trigger innovative behaviors in the workplace (Avey et al., 2010) and look for alternative pathways to achieve goals when faced with obstacles. They actively work on creative ideas to solve problems and look at problems and opportunities from different angles (Zhou & George, 2003), and have the willpower to overcome the risks and challenges of failure. These individuals feel in control of their destiny, show resilience in the face of problems and adversity, expect positive incomes, develop innovative ideas (Sweetman et al., 2011), and pursue new and creative approaches to problem solving (Peterson & Byron, 2008).

Ambidexterity in public organizations such as government agencies is mostly influenced by the managers who play a key role in the decision-making process and in balancing the environmental pressure to explore and the internal pressure to exploit. They need to be more self-efficacious to have more work control and make better decisions (Narangerel & Semerci, 2020), a characteristic that is associated with their psychological capital. By being open to organizational change, individuals with high psychological capital are able to develop new paths to achieve goals, have a positive outlook on the future, and adapt to changes and problems (Youssef & Luthans, 2007). Psychological capital allows individuals to move beyond the challenges and setbacks that are inherent to creative work (Sweetman et al., 2011). In addition, psychological capital helps explain the behavioral differences between individuals and managers which could be useful for predicting resistance to or support of innovation (Ghanizadeh et al., 2020). Due to their positive affective and cognitive appraisals, individuals with high psychological capital persevere in the face of problems, find and implement more constructive and useful solutions to problems, and view the outcomes of their effort in a more positive light. Therefore we can expect the following:

H1: Psychological capital has a positive effect on organizational ambidexterity.

2.2 Ambidexterity and organizational performance

The performance of public organizations is a multi-dimensional construct (Andrews et al., 2010), which is evaluated based on criteria such as efficiency, effectiveness, quality, responsiveness, and legitimacy toward stakeholders (Yang & Panday, 2007). Public organizations are concerned about competitiveness, fiscal sustainability, the growing demands of citizens, and lowering of costs (Rinaldi et al., 2015) and need to adapt to changes to maintain legitimacy, improve performance, and create value (Damanpour et al., 2009). Of course, situations may arise where it is not possible to maintain or improve public service performance without breaking with established practices (Hartley et al., 2013). Tackling these challenges and the complex and evolving mix of technical and social factors require innovative ideas and unconventional approaches (Eisenhardt et al, 2016), since they are perceived by individuals as new (Rogers, 1995) and represent discontinuity with the past (Osborne & Brown, 2011). In addition to improving the performance of public organizations as an intangible organizational resource, innovation is increasingly recognized under new public management as a means for effectively addressing social challenges such as growing citizen expectations, globalization, and demographic and climate change as well as boosting economic growth (Cannaerts et al., 2020). Innovation in the public sector can take place in delivery, coordination, regulatory, and analytical areas (Lodge & Wegrich, 2014).

However, public organizations face tensions between pressures for innovation (Plimmer et al., 2017) and the demand for efficiency and accountability (Hartley et al., 2013). Instead of increasing their innovation capacity, managers of public organizations tend to focus on improving the ability of public servants to deliver, regulate, and coordinate tasks (Lodge & Wegrich, 2014) and streamlining internal and external operations to optimize efficiency (Nowacki & Monk, 2020). Bureaucracies have traditionally been organized around exploitation of existing resources and capabilities, and are often incompatible with explorative activities that produce innovation (Boukamel & Emery, 2017). They are characterized by centralized decision-making, standardized work processes, and high levels of specialization, and their structure stimulates exploitation, while suppressing innovation (Cannaerts et al., 2016). Hence, public organizations have always faced challenges in improving performance through innovation (Osborne & Brown, 2011). However, the public sector is urged to innovate and at the same time enhance efficiency and lower costs (Pollitt & Bouckaert, 2004) since relying on formal organizational routines is not enough to improve performance (Brown & Duguid, 1991). Public organizations must be both efficient and innovative to overcome today's challenges (Cannaerts et al., 2016) and finding the right balance between exploitation and exploration is essential to improving organizational performance (March, 1991).

Individual ambidexterity is a key factor in organizational performance (Kammerlander et al., 2015) that helps organizations overcome the structural inertia caused by the focus on exploitation, while preventing excessive exploration that is without results (Levinthal & March, 1993). Despite the emphasis of new public management on establishing exploration units in public organizations (Boukamel & Emery, 2017;) and despite the initial research on ambidexterity in the public sector (Smith & Umans, 2015; Plimmer et al., 2017; Gieske et al., 2019), there is little evidence on how public organizations can simultaneously balance efficiency and innovation (Smith & Umans, 2015) and little insights as to the conditions under which it can emerge in the public sector (Umans et al., 2020). While focus on optimization can improve the current performance of public organizations and allow them to provide existing services at a lower cost and with higher efficiency, pressures from the external environment require them to engage in explorative activities.

Although ambidexterity is a useful concept for understanding the non-financial outcomes of public organizations (Umans et al., 2020), it is difficult to explain its effects on performance (Junni et al., 2013). Disagreements seem to stem from the context in which it is studied, and the relationship between ambidexterity and organizational performance needs further investigation, especially in the public sector. Therefore, the second hypothesis is developed as follows:

H2: Organizational ambidexterity has a positive effect on organizational performance.

2.3 Mediating role of organizational ambidexterity

Psychological capital is an individual's positive appraisal of circumstances and probability of success based on motivated effort and perseverance (Luthans et al., 2007;). It gives individual the conviction to face challenges and difficulties and to recover from setbacks. Psychological capital contributes to an individual's organizational performance. However, the way in which psychological capacities transform into tangible outcomes such as high productivity and better organizational citizenship behavior is often mediated by other factors . For example, psychological capital helps individuals balance exploration and exploitation (Gibson & Birkinshaw, 2004) and enables them to mobilize their affective, cognitive, and positive organizational behavioral resources to organizational citizenship behavior and to achieve organizational goals (Pouramini, Fayyazi, & Yahyavi Ghasem Gheshlaghi, 2018). From this perspective, psychological capital helps improve performance by enhancing ambidexterity, and ambidexterity acts as a mediator between contextual factors and organizational performance to encourage behaviors needed to improve performance (Gibson & Birkinshaw, 2004). Employees with high levels of psychological capital are more resilient to tensions, conflicts, and stress and can make better decisions. Therefore, they will be more adaptive to change and make the right optimization decisions, which can ultimately lead to high behavioral ambidexterity and better performance.

Patel et al. (2013) showed that ambidexterity mediates the relationship between high-performance work systems and firm growth, and that firms with such systems achieve higher performance through ambidexterity (Patel et al., 2013). In addition, ambidextrous behavior has been shown to mediate the relationship between career adaptability and performance and facilitate effective service delivery (Affum-Osei et al, 2020). Ambidexterity also mediates the relationship between ambidextrous organizational culture and innovation outcomes (Wang & Rafiq, 2014), human resource flexibility and performance (Úbeda-García et al., 2017), and management team behavioral integration and performance (Lubatkin et al., 2006). Therefore, it can be assumed that:

H3: Organizational ambidexterity mediates the relationship between psychological capital and performance.

Given this background, the present study follows the conceptual model shown in Figure 1 in which the psychological capital of employees strengthens organizational ambidexterity and organizational ambidexterity improves the performance of public organizations.

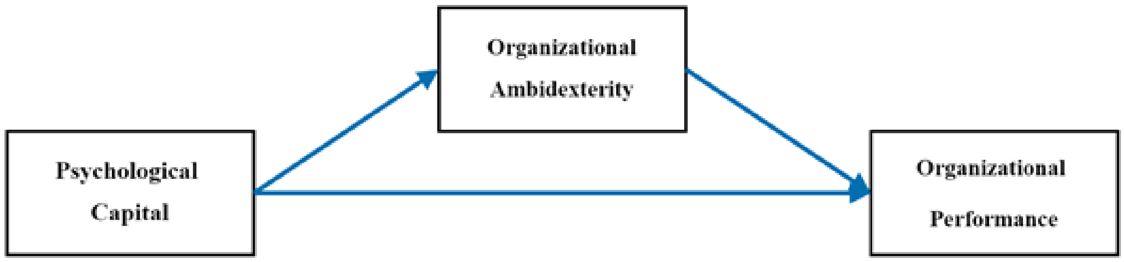

Figure 1: Conceptual model

3 Methodology

3.1 Sample and Procedure

The participants of this study are the managers of Management and Planning Organizations in the 31 provinces of Iran, which are responsible for planning and budgeting and should continuously evaluate the performance of their respective organizations and ensure that budget targets are met. These organizations are bureaucracies with centralized decision-making. Therefore, due to the similarity of tasks and uniformity of structures throughout the country, simple random sampling was used to select the participants in each province. To this end, the middle and top managerial of each organization was used for sampling (N = 644). Then, the questionnaire was emailed to the managers of each organization between March and May 2021Finally, 373 participants returned the questionnaire, of whom 68.4% were male and 31.6% female; 6.2% had a doctoral degree, 64.6% had a master's degree, 27.1% had a bachelor's degree, and 2.1% had an associate degree or lower; 58% were in the 40-50 years age group, and none of the participants was below 30 years of age. The Kaiser-Meyer-Olkin (KMO) index was 0.932 and chi-square was 3272.918, which indicate sample size adequacy.

3.2 Measures

3.2.1 Organizational ambidexterity

Ambidexterity is considered a paradox whereby its components, i.e. exploration and exploitation, create persistent and conflicting demands on an organization (Koryak et al., 2018). We used individual ambidexterity to measure organizational ambidexterity, because in public organizations that are highly centralized and bureaucratic, it is the ability of managers to behave ambidextrously that determines the organization's approach to exploration and exploitation, and it is the managers' innovative behavior that promotes creative and explorative activities in the organization. Therefore, we argue that organizational ambidexterity in government agencies is driven by the ambidextrous behavior of managers.

In the present research, ambidexterity is assessed using the questionnaire of Sharma et al. (2020), which consists of 10 items, 5 for exploration and 5 for exploitation, rated on a 5-point Likert scale. Examples of items in this section are "Our organization bases its success on its ability to explore new methods", and "Our organization continuously improves the reliability of its services." The items are rated from 1 for "Completely Disagree" to 5 for "Completely Agree". The Cronbach's alpha for the two subscales are 0.88 and 0.857, respectively.

3.2.2 Psychological capital

Psychological capital is one of the important concept in positive psychology that focuses on individual strengths and performance improvement in different aspects of life (Youssef & Luthans, 2007). In addition to the four main components of psychological capital, namely hope, efficacy, resilience, and optimism, many other positive psychological resources such as creativity, gratitude, spirituality, and courage can be included in the measurement of psychological capital (Luthans & Youssef, 2017). These eight components are adopted in the present research: 6 items for efficacy, resilience, optimism, and hope (Luthans et al., 2007a) with a Cronbach's alpha of 0.89, 0.89, 0.89, and 0.88, respectively; 12 items for courage (Norton & Weiss, 2009) with a Cronbach's alpha of 0.877; 6 items for gratitude (McCullough et al., 2002) with a Cronbach's alpha (0.82); 22 items for spirituality (Delaney, 2005) with a Cronbach's alpha of 0.94; and 4 items for creativity (Jaiswal & Dhar, 2015) with a Cronbach's alpha of 0.93. These items are rated on a 5-point Likert scale from 1 for "Strongly Disagree" to 5 for "Strongly Agree". Examples of items in this section are: "I feel confident in representing my work area in meetings with management"; "At the present time, I am energetically pursuing my goals"; "I can get through difficult times at work because I've experienced difficulty before"; "I always look on the bright side of things regarding my job"; "I am grateful to many people"; "I tend to face my fears"; "I believe that all living creatures deserve respect"; "I seek new ways to solve problems."

3.2.3 Organizational performance

Organizational performance can be defined as the actual results of an organization as measured against its intended outputs. In the present research, organizational performance is measured using the scale of Gieske et al. (2019) with six items. Examples of these items are: "we deliver more quality against similar costs and time"; and "stakeholders are satisfied with the organization". These items are rated on a 5-point Likert scale from 1 for "Strongly Disagree" to 5 for "Strongly Agree". A Cronbach's alpha of 0.856 has been obtained for this scale by Gieske et al. (2019).

4 Results

4.1 Analysis results

Smart PLS and SPSS 20 were used to analyze the data. Before testing the hypotheses, the validity of the instrument was evaluated using convergent validity and discriminant validity. In addition, confirmatory factor analysis (CFA) was used to evaluate the measurement model.

Several goodness of fit indices such as relative fit index (RFI), normed fit index (NFI), and comparative fit index (CFI) that have been suggested for structural equation modeling (SEM) (Kline, 2015) were used to evaluate the fit of the proposed model. Table 1 shows the measures of central tendency and dispersion as well as the correlation of the variables.

Table 1: Correlation index between variables

	Mean	SD	1	2	3	4	5	6	7	9	9	10	11	12
1 Exploration	18.672	4.154	—											
2 Exploitation	18.337	4.033	.767**	—										
3 Ambidexterity	37.010	7.695	.942**	.938**	—									
4 Efficacy	24.209	5.107	.307**	.380**	.365**	—								
5 Hope	23.643	4.413	.390**	.384**	.412**	.688**	—							
6 Resilience	23.270	4.271	.454**	.422**	.466**	.591**	.648**	—						
7 Optimism	22.839	4.096	.575**	.428**	.480**	.509**	.604**	.652	—					
8 Gratitude	23.396	4.677	.313**	.315**	.334**	.546**	.600**	.587**	.570**	—				
9 Courage	44.766	6.850	.441**	.438**	.468**	.585**	.589**	.650**	.581**	.554**	—			
10 Spirituality	86.490	15.452	.414**	.444**	.456**	.697**	.700**	.622**	.568**	.632**	.628**	—		
11 Creativity	16.265	3.214	.352**	.362**	.380**	.477**	.484**	.434**	.393**	.438**	.498**	.553**	—	
12 PsyCap	264.882	39.371	.487**	.500**	.525**	.803**	.822**	.788**	.733**	.760**	.800**	.917**	.641**	—
13 Performance	22.367	4.770	.659**	.628**	.685**	.301**	.380**	.348**	.391**	.340**	.353**	.409**	.341**	.450**

** Correlation is significant at the 0.01 level (2-tailed).

4.2 Discriminant validity of constructs

First, CFA was performed to test the construct validity of psychological capital, organizational ambidexterity, and organizational performance. To this end, two models were selected and compared. First, first-order CFA was performed and the results showed the validity of the eight components of the psychological capital (efficacy, hope, resilience, optimism, gratitude, courage, spirituality, and creativity) (NNFI = 0.95, CFI = 0.94 , NFI = 0.94, RMSEA = 0.042), the mediator variable organizational ambidexterity (NNFI = 0.94, CFI = 0.90, NFI = 0.91, RMSEA = 0.048), and the dependent variable organizational performance (NNFI = 0.91, CFI = 0.92, NFI = 0.90, RMSEA = 0.022), indicating that the model is a good fit.

In the second path, the structural equation model of the research was evaluated using standard errors and all factor loadings are greater than 0.05 (NNFI = 0.99, CFI = 0.99, NFI = 0.98, RMSEA = 0.056), thus confirming the overall fit of the model. In addition, divergent validity was tested by comparing the average variance extracted (AVE) for each construct with the square of correlation coefficients. AVE for each construct was greater than the square of the related correlation coefficients, indicating the divergent validity of the constructs. We also used Harman's single-factor test to check for common method bias, and the results showed that all correlation coefficients did not exceed 0.90 and that there was no common method bias. Table 2 shows the overall reliability of the constructs and the factor loadings, and Table 3 shows the results of the validity test.

Table 2: Validity of the constructs and factor loadings of the items

Construct	Items	Loading
PsyCap NFI = 0.94 IFI = 0.96 CFI = 0.94 Chi-square = 32.41 RMSEA= 0.042 Cronbach's α = 0.966	Efficacy	.815
	Hope	.809
	Resilience	.751
	Optimism	.653
	Gratitude	.758
	Courage	.745
	Spirituality	.836
	Creativity	.663
Organizational Performance NFI = 0.90 IFI = 0.92 CFI = 0.834 Chi-square = 10.55 RMSEA = 0.022 Cronbach's α = 0.966	My organization has improved performance over the last five years for my work field on:	
	Efficiency (results remain the same or improve against lower costs)	.696
	Quality (quality increases against similar costs and time)	.736
	Effectiveness (we reach our goals more effectively)	.795
	Collaboration (we reach our goals better by combining them with the goals of others)	.694
	Legitimacy (stakeholders are satisfied with the organization)	.664
	Future-proofing (we can face the future with confidence and expected future developments are included in policies and plans)	.645
Ambidexterity NFI = 0.91 IFI = 0.91 CFI = 0.90 Chi-square = 62.66 RMSEA = 0.048 Cronbach's α = 0.891	Exploration	.596
	Exploitation	.579

Table 3: Validity test results

Subscales	CR	AVE	MSV	ASV
PsyCap	0.952	0.714	0.276	0.276
Ambidexterity	0.898	0.470	0.469	0.469
Performance	0.836	0.462	0.469	0.336

Table 4: Assessment of the structural model

	R^2	Q^2	F2	VIF
Organizational Performance	**0.569**	0.439	0.428	1.000

In the present study, SmartPLS 3.0 is used to examine the theoretical framework. Prior research reveal that the PLS technique is the best in handling both complex large and simple models, and there is no need to meet the normality criteria (Hair et al. 2016).

Cross-validated redundancy (Q2) as a measure of predictive relevance was used in this study to measure the effects of latent variables. All values must be greater than 0, and Table 4 shows that the present study satisfies this criterion.

VIF values are also considered as the reciprocal of tolerance. The resultsshow that all VIF values are less than 3.30 (Table 4). Therefore, the data set is not subject to common method bias.

In this study, the value of the coefficient of determination (R2 = 0.569) indicates that psychological capital and organizational ambidexterity together explain 46.9% of the variance in organizational performance (Table 4).

4.3 Hypothesis testing

Table 5 provides the results of testing the hypotheses. Regarding the first hypothesis, the results indicate the positive effect of psychological capital on organizational ambidexterity (F = 141.336, p = 0.000), and R indicates that this effect is significant (R = 0.525).

According to the results in Table 4, the second hypothesis for the positive effect of organizational ambidexterity on organizational performance is confirmed (F = 327.963, p = 0.000) at the 99% confidence interval (CI).. The results also indicate the significant effect of the components of organizational ambidexterity (exploration and exploitation) on organizational performance (R coefficient of 0.659 and 0.628, respectively). The relationship between exploration and organizational performance (B = 0.757) was stronger than the relationship between exploitation and organizational performance (B = 0.743). Table 4 also shows the effects of the mediator variable.

Table 5: Structural model results

Variable	B	SE	t	P
PsyCap on Performance	.55	.006	9.717	0.000
Ambidexterity on Performance	.425	0.23	18.110	0.000
Exploitation on Performance	.743	.048	15.535	0.000
Exploration on Performance	.757	.045	16.891	0.000
Variable	**Value**	**SE**	**Z**	**P**
Indirect effect and significance using normal distribution Sobel	0.333	0.044	7.534	0.000
Variable	**M**	**SE**	**LL95%CI**	**UL95%CI**
Bootstrap results for indirect effect Effect	0.537	0.054	0.425	0.640
Note: N = 373 Bootstrap sample size = 1000, LL = lower limit, UL = upper limit, CI= confidence interval				

Testing the significance of indirect paths using bootstrapping and the Sobel test showed that organizational ambidexterity sig-nificantly mediates the relationship between psychological capital and organizational performance at the 95% CI (LL = 0.425; UL = 0.640).

5 Discussion

Previous studies on organizational ambidexterity have mainly focused on the development of this ability at the organizational and team levels (Gibson & Birkinshaw, 2004), but this study sought to gain a deeper understanding of the psychological factors that underlie different behaviors among individuals and explore the relationship between the contexts of individual behaviors and development of ambidexterity in the organization.

The results showed that psychological capital can have a direct impact on the components of organizational ambidexterity, which is consistent with Kauppila and Tempelaar (2016). For example, Kauppila and Tempelaar (2016) highlight the significant role of psychological capital, including efficacy, in the capacity of individuals for ambidextrous behavior, because high levels of efficacy promotes ambitious goal-setting and greater effort, thus helping individuals to manage the challenges associated with paradoxical orientations and conflicting work demands. This is consistent with the findings of Katou (2021), with one difference in that Katou shows that ambidexterity is affected by human capital, which is itself positively influenced by the dynamically changing environment. This indicates the importance of acquiring and strengthening capabilities for public sector organizations that enable individuals and managers to be effective in both optimization and innovation and gain mastery in dealing with existing tensions (Gieske et al., 2019) and the changing environment to achieve higher productivity. As another component of psychological capital, hope encourages individuals to persevere toward goals and redirect paths toward them if necessary. Especially in public organizations, past successes can give individuals greater hope in innovative ideas and help them better enforce laws in the face of change.

As expected, ambidexterity was associated with higher levels of perceived performance. This is consistent with previous studies that have found the positive effect of ambidexterity on performance (e.g., Junni et al., 2013; Plimmer et al., 2017; Gieske et al., 2019). Of course the level of analysis and the method of measurement can affect the relationship between ambidexterity and organizational performance (Junni et al., 2013). In public organizations, performance is defined as achieving public goals effectively and efficiently, while preserving present and future quality of public services and maintaining legitimacy among stakeholders (Verbeeten, 2008). Even when faced with diminishing financial resources, public organizations are expected to continuously improve the quality of their services to maintain public confidence (Pablo et al., 2007). Organizations that are able to simultaneously pursue exploration and exploitation are more likely to outperform those that focus on one of these at the expense of the other (Tushman & O'Reilly, 2013), because it will inevitably create problems and tensions (Gibson & Birkinshaw, 2004) that undermine long-term performance (Floyd & Lane, 2000). Lack of functionality of rules promotes ambidextrous behavior, while compliance burden is negatively associated with ambidexterity (Sharma et al., 2020). While public organizations are required to comply with the rules regardless of their burden, lack of functionality can stimulate search for new paths and more innovative approaches.

The results of the present research also showed the significant positive relationship between the components of ambidexterity and performance. This finding is consistent with the results of Gieske et al. (2020), and Gieske et al. (2019). To fulfill employee obligations, organizations not only must increase their performance in providing existing services, but also need to innovate (Nowacki & Monk, 2020). Acquiring and strengthening capabilities enable public organizations to both optimize and innovate and deal with existing tensions more proficiently (Gieske et al., 2019). Organizations with limited resources are more in need of balancing explorative and exploitative activities (Cao et al., 2009; Junni et al., 2013), which is essential to improving organizational performance (Damanpour et al., 2009). This is extremely challenging in public organizations that are accountable for government budgets, which could encourage them to focus more on exploitation than innovation to meet budget targets and avoid conflicts or even penalties. However, in a dynamic environment, excessive exploitation reduces the ability of the organization to effectively adapt to changes (Wang & Li, 2008) and in general. As such, performance improvement in the public sector largely depends on innovation, which does not receive enough attention in the current organizational discourse (Choi & Chandler, 2015; Osborne & Brown, 2011; Gieske et al., 2019) and requires a shift from overexploitation to ambidexterity.

According to the present findings, exploration has a stronger effect on performance than exploitation, which is inconsistent with the results of a number of studies. Damanpour et al. (2009) found that optimization has a stronger effect on performance than innovation, implying that public organizations often try to enhance their performance through continuous improvement of policies, processes, techniques, and services rather than by engaging in innovation due to its perceived risks and higher transaction costs (Damanpour et al., 2009; Gieske et al., 2019). The literature disproportionately emphasizes innovation, while the potential cost or risks are underestimated (Choi & Chandler, 2015). Public organizations usually have a high degree of formalization, which is positively associated with exploitative innovation, but not with explorative innovation (Jansen et al., 2006). These organizations have well-designed procedures, facilitate performance, encourage employee commitment, and reduce role conflict and ambiguity. Research on the effect of formalization on ambidexterity has yielded mixed results (Junni et al., 2015). Nonetheless, the positive effect of innovation is noteworthy and directly affects organizational performance as an organizational capability (Lin & Chen, 2007).

The results of this study also showed that organizational ambidexterity not only affects organizational performance directly, but also mediate the relationship between psychological capital and organizational performance. Psychological capital is a key construct in positive psychology, which focuses on the positive aspects of individuals instead of what is wrong or dysfunctional with them (Luthans et al., 2006) and improves performance and adaptability relying on the strengths of individuals and the organization (Luthans et al., 2007b; Pouramini, Fayyazi, & Yahyavi Ghasem Gheshlaghi, 2018). Psychological capital affects individual productivity and can be a source of competitive advantage for organizations (Pouramini, Fayyazi, & Yahyavi Ghasem Gheshlaghi, 2018). It is also positively associated with organizational performance (Luthans & Youssef, 2017), and this effect is reinforced by ambidexterity. Our findings in this regard are consistent with the results of Patel et al. (2013), Úbeda-García et al. (2017), and Affum-Osei et al. (2020), which have confirmed the mediation effect of ambidexterity on various organizational outcomes. As Gibson and Birkinshaw (2004) have argued, ambidexterity is not only an organizational capability, but also a meta-capability that mediates the relationship between various contextual features and organizational performance. Ambidexterity is a vital mechanism (Affum-Osei et al. 2020) that creates new capacities for the organization while strengthening other beneficial relationships. The overall model of the effect of psychological capital and ambidexterity on organizational performance is consistent with Katou (2021), who found that human capital management practices constitute an antecedent of organizational ambidexterity and organizational performance constitutes a consequence.

Finally, psychological capital not only plays a crucial role in the implementation of ambidexterity, but is also among the factors that directly and indirectly contribute to organizational success. Public organizations need to identify and evaluate different dimensions of psychological capital in their managers and employees, and promote and develop them by implementing short and long-term programs. These organizations should also take full advantage of psychological capital in their attempt to achieve organizational ambidexterity, and consider it when appointing individuals to management positions, which will be crucial to improving organizational performance.

This study has a number of limitations. Firstly, it uses cross-sectional data, which means that it fails to capture the dynamic interplay between psychological capabilities and ambidexteity.

Secondly, our findings are limited by the nature of the sample, which consists of government organizationas with higly centeralized decision-making processes. The results may be different in future studies on other industries, e.g., in private companies with decentralized management systems.

Thirdly, the data on the independent variable (psychological capital), the dependent variable (organizational performance), and the mediating variable (organizational ambidexterity) was collected using the same survey. Although this is a common practise in the field, we tested for common method bias and found no cause for concern (Podsakoff et al., 2003).

Future researhers are encouraged to replicate the proposed model in other organizations that compete with others to survive.

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Psihološki kapital in organizacijska uspešnost: posredniška vloga organizacijske ambideksternosti

Ozadje: Današnje dinamično okolje vse bolj pritiska na javne organizacije, da so hkrati fleksibilne in učinkovite. Namen te študije je bil preučiti posredniško vlogo organizacijske ambideksternosti v razmerju med psihološkim kapitalom in uspešnostjo javnih organizacij, ki imajo birokratske omejitve pri svojem delovanju in niso tako konkurenčne kot zasebni sektor.
Metodologija: Razvit je bil vprašalnik, ki je bil razdeljen med zaposlene v organizacijah za upravljan-je in načrtovanje v 31 provincah v Iranu. Vrnjenih je bilo skupaj 373 vprašalnikov. Podatki so bili analizirani z uporabo CFA za validacijo ukrepov, nato pa smo testirali posredovalne učinki organi-zacijske ambideksternosti.
Rezultati: Rezultati so pokazali pomembno razmerje med psihološkim kapitalom in organizacijsko uspešnostjo (B=0,55) ter pozitiven mediacijski učinek organizacijske ambideksternosti na to razmerje (0,333).
Zaključek: Ugotovitve lahko pomagajo menedžerjem javnih organizacij izboljšati njihovo organi-zacijsko uspešnost s krepitvijo psihološkega kapitala in dvosmernosti.

Ključne besede: *Organizacijska ambideksternost, Psihološki kapital, Organizacijska uspešnost, Javne organizacije*

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Core Job Characteristics and Personal Work Outcomes: The Mediating Role of Critical Psychological States: Empirical Evidence from Northern Cyprus Hotel Sector

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Background and purpose: The purpose of this study is to investigate the relationship between core job characteristics (CJC) and personal work outcomes (OUT), as well as the roles of experienced meaningfulness of work (EMW) and experienced responsibility for outcomes of work (EROW) in mediating the CJC–OUT relationship. Specifically, this study attempts to examine the effectiveness of CJC in improving EMW and EROW and to shed light on the roles of EMW and EROW in enhancing the OUT of employees in the Northern Cyprus hotel sector.
Methods: This study adopted a quantitative approach to collect and analyze the data from 420 tourism stakeholders in Northern Cyprus hotel sector. A partial least squares (PLS) technique using Smart-PLS was applied to test the direct relationships within the research model and determine any mediating effects.
Results: The analysis revealed strong support for meaningfulness of work and experienced responsibility for outcomes of work acting as partial mediators in the relationship between core job characteristics and personal work outcomes. Moreover, core job characteristics was found to have a reasonable direct effect on personal work outcomes, experienced meaningfulness of work, and experienced responsibility for outcomes of work.
Conclusion: The current study points to the importance of including experienced meaningfulness of work and experienced responsibility for outcomes of work as mediating variables to understand better the relationship between core job characteristics and Personal work outcomes. Several theoretical and practical implications are included before pinpointing the directions of potential future studies that makeup on the evidence-based argument regarding the results of this study. Lastly, top management in hotel sector would benefit from job redesign because the results demonstrated that the core job characteristics have a positive effect on their work outcomes.

Keywords: *Core job characteristic, Experienced meaningfulness, work outcome*

1 Introduction

The role of human resource management is to organise and handle individuals within the workplace environment (Huang and Su, 2016). Within a real work environment, each person's work consists of several tasks or duties/roles and is dependent on specific circumstances that give a level of speciality to this work. On the other hand, individual personalities and preferences, by their very nature, vary from one person to another, and these differences usually

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lead to several attitudes and behaviours being expressed within the workplace environment. Under these complex conditions, the aim of management is to achieve optimal employee performance and business output (Grant, 2007). Thus, job design can be an invisible guiding hand that leads to making a vital connection between individuals' needs and management goals is not saturated (Baig and Zaid, 2020; Luz et al., 2018). Nowadays, the determination and distribution of tasks for every job within an organization play a vital role in attaining organizational goals by increasing employee performance (Tang et al., 2017). However, identifying and allocating such tasks is not easy and is considered a major organizational challenge (Siengthai and Pila-Ngarm, 2016). Moreover, when these tasks and duties are not distributed well, this can lead to negative effects instead of positive ones, and ultimately to failure in human resource management practices (Grant, 2007).

In this context, individual performance cannot be considered a luxury in any sector or organization. Instead, it is an essential issue for all modern, forward-thinking organizations and cannot be ignored. Abuhjeeleh et al. (2019) indicated that the five-star hotel workplace in particular suffers from several negative elements such as: low employee motivation, high work stress, conflicts of tasks among team members, instances of poor productivity, all of which are a result of not getting the appropriate job design for their tasks and because of some shortcomings in their managers' motivational practices. Consequently, Al-Hawary and Al-Smeran (2017) asserted that the shortcomings in job designs and motivational systems can negatively affect individual performance. Therefore, the following question arises: How can management give employees tasks and duties to meet organizational goals that will also improve employee satisfaction and achieve the optimal individual performance level?

The workers in a five-star hotel can have a positive effect on the overall image of the hotel. However, that is not all, their importance goes beyond the scope of their own job and can have several positive impacts within the wider tourism industry environment, such as increasing customer satisfaction with a destination maximising occupancy rate opportunities (Amin, 2016). The current study seems to be one of only a few empirical studies in the hotel sector in order to highlight job design as a useful non-material motivational tool. Why? Because, when hotel employees are internally motivated, they should offer a better service to their customers. In addition, how this aspect can be utilized to improve the sector. Lastly, evidence from the literature shows a clear shortage of empirical studies that focus on the role of job design and its relationship with motivation, especially in the context of Northern Cyprus and the hotel sector in particular (Krambia-Kapardis et al., 2016).

2 Literature Review

2.1 Core job characteristics

Hackman and Oldham first developed the CJC concept in their job characteristics model which they proposed in 1974 (Astrauskaite et al., 2015). According to Park's (2017) definition, CJC involves the factors that able to motivating employees internally. This means that under appropriate workplace conditions, employees are internally motivated to perform their roles effectively. The job characteristics model describes five job dimensions that are linked to positive personal- and work-linked results. The dimensions are job autonomy, feedback, task identity, task significance, and variety. A lack of these dimensions of CJC has been identified by Kim et al. (2020) as contributing to lower motivation, lower job satisfaction, reduced work quality, and higher absenteeism and staff turnover. It has also been reported by (Grant, 2007), that CJC has an ultimate impact on OUT, with psychological states acting as a mediator between job characteristics and OUT. Accordingly, the CJC concept has attracted immense interest among researchers who have sought to understand how CJC influence personal work outcomes and satisfaction in assigned functions (Wegman et al., 2018).

As this study focus on the linkage between CJC, three of the five dimensions of CJC have been chosen in the research model (i.e., skills variety, task identity, and task significance), because these three dimensions are considered to be closely associated with experienced meaningfulness comparing to autonomy and feedback dimensions which are linked with responsibility of outcomes and knowledge of results respectively (Hackman and Oldham, 1974). In this context, CJC has been defined in the work context as the condition where employees consciously think and feel certain things about their jobs, and it is these conscious thoughts and feelings that ultimately lead to personal work outcomes (Hackman and Oldham, 1974). The current study proposes that the possession of these CJC dimensions will largely influence the personal work outcomes (OUT).

According to Matilu and K'Obonyo (2018), CJC lead to success in outcomes of work when job satisfaction constructs, employee well-being, and employee competence are at play. However, there is limited research on the influences that job characteristics may have on the outcomes of the work of employees. Recently, Jasko et al. (2020) stressed that CJC are distinct, and their influence on the outcomes of work varies. Jasko et al. (2020) also pointed out that irrespective of the possession of similar CJC by a number of individuals, the job outcomes and success attributes will be distinct and unique to each of those individuals. Also, Matilu and K'Obonyo (2018) proposed that the link between CJC and job outcomes is only evident when satisfaction and motivation lead to lower staff turnover and absenteeism. These considerations led to the development of the following hypotheses:

H1: Core job characteristics positively affect personal work outcomes.

Work outcomes have been defined by Rudolph et al. (2017) as the process in which individual feedback or knowledge on the extent to which an individual has been successful in their work roles is evident. This can be identified from the information obtained from production rates or even customer satisfaction scores. Likewise, Černe et al. (2017) pointed out that the obtained feedback contributes to a high level of knowledge among employees about the results of their work. Where the employee is offered appropriate feedback regarding their results, the level of motivation would be improved.

Johari et al. (2018) introduced the idea that job characteristics' behavioural and attitudinal constructs are applicable in measuring OUT. This later affirmed this is because a job design consists of the CJC that significantly influences the outcomes of employees' job performed at work. The revised model of job design affirmed this proposition by Garg and Rastogi (2006), who noted that job characteristics are a significant implication for employee performance. Kataria et al. (2013) also argued that outcomes could be enhanced or improved when specific job roles offer improved autonomy and challenges to employees. It is nevertheless worth noting that because the CJC of employees vary significantly, they are critical antecedents for determining the final outcomes of work.

On the other hand, experienced meaningfulness of work in organizations is substantially a recent concept and, as yet, minimal research has been carried out with reference to this construct. Stein et al. (2019) defined this construct as work experienced as mainly being significant. Bailey et al. (2019) noted that all jobs could be experienced as more and less meaningful roles in terms of principle. The foundation of work meaningfulness stems from a distinct source and it includes developing and becoming an individualised authentic self, being of service to other people, and expressing full individual potential (Sleimi and Davut, 2015). Importantly, lack of EMW is identified by Martela and Pessi (2018) as the inexistence of control over and the inability to see individual work value.

Summing up the definitions proposed in other studies, Stein et al. (2019) identified EMW as inclusive of meaningfulness in work and OUT. EMW is used to focus on the quality of the work, focusing on how the work roles are implemented. From the above definitions of EMW, it is evident that there is a significant appreciation that the construct is identified by the feeling that the work is significant, leading to increased autonomy. The reasons for a lack of EMW have not been evaluated in depth. However, Bailey et al. (2019). found that a lack thereof is mainly the result of the existence of feelings of self-estrangement, powerlessness, and lowered intrinsic fulfilment. These forms of experiences are equally inclusive of feelings of being used for a purpose other than one's own, being given tasks/roles that are seen as 'pointless', unfair treatment, failure to be recognised, feelings of being isolated and there being an absence of a supportive relationship. According to Lepisto and Pratt (2016), the of a lack of EMW identified characteristics may often manifest as alienation (i.e., the sense of being separated from oneself and personalised control) or having a sense of anonymity (i.e., the presence of uncertainties and ambiguities pertaining to the basic value of an individual's role at work). The existing gap in past studies on EMW is primarily related to the fact that they focused on the concept of EMW and its lack as an equivalent aspect despite the two concepts being conceptually and significantly distinct Lips-Wiersma and Morris (2009).

In introducing the concept of EMW, Aguinis and Glavas (2019) noted that EMW can act as a mediating variable of job characteristics and the extent to which it plays this role leads to positive outcomes for employees, for their organizations, and for external stakeholders. Similarly, Pierce et al. (2009) found that EMW could influence CJC and OUT, but not primarily in terms of providing jobs with more meaningfulness, but rather in terms of allowing independent operations in complex and rich jobs. This supports Astrauskaite et al. (2015), who described the autonomy factor of the Hackman and Oldham job characteristics model as the freedom and discretion of employees in deciding on how to carry out their own work. Therefore, the following hypothesis were formulated as follows:

H2: Core job characteristics positively affect experienced meaningfulness of work.

H3: Internal experienced meaningfulness of work mediates between core job characteristics and personal work outcomes.

Barrick et al. (2013), reviewed the literature on CJC and EMW and found evidence that EMW triggers the task-specific motivation process that then influences the attainment of a variety of OUT. Therefore, the following hypotheses was constructed:

H4: Experienced meaningfulness of work positively affects personal work outcomes.

Hackman and Oldham (1974) defined EROW as the individual's ability to feel personally accountable for the outcomes or results of their work or assigned tasks. This means that, for EROW to be present, the employee needs to be offered some degree of freedom in the performance of their role/tasks. They must be allowed to utilise this freedom to make appropriate decisions on how best to perform their job in terms of making changes to processes and scheduling decisions. Van Yperen et al. (2016) described EROW as the extent to which a job offers substantial freedom, independence, and discretion to people to undertake their work activities and determine the procedures they apply in the implementation of their assigned tasks. Indeed, it has been noted that EROW is critical for establishing a successful sense of responsibility in employees (Daileyl and Kirk, 1992).

However, it is also essential to point out that EROW cannot exist in isolation as a single indicator; rather, it is also inclusive of latent constructs, such as resources. As affirmed by Johari et al. (2018), despite the majority of employees having the will to work within the broad constraints of an entity, they also require appropriate resources so that they can work with a certain amount of freedom. Furthermore, as evidenced by Gordon et al. (2018), job and personal resources are interlinked, with personal resources acting as an independent predictor of EROW. However, organizational resources are applied in the process of developing personal resources. This is more specifically identified in Batchelor et al. (2014) to include the critical psychological states detailing on EMW, gaining a professional responsibility for OUT. Therefore, the following hypothesis were constructed:

H5: Core job characteristics positively affect experienced responsibility for outcomes of work.

H6: Experienced responsibility for outcomes of work positively affects personal work outcomes.

Lastly, in testing the mediating roles of EMW and EROW on OUT, Aguinis and Glavas (2019) convincingly demonstrated that these two factors have moderating effects on OUT and CJC. In fact, when there is no direct link between CJC and OUT, this is an indication that there is no EMW or EROW. Based on the above, the following hypotheses was developed:

H7: Internal experienced responsibility for outcomes of work mediates between core job characteristics and personal work outcomes.

Based on the above discussion of the findings in the literature, a conceptual model was developed to attempt to reveal the relationship between CJC and OUT and whether EMW and EROW act as mediating variables between CJC and OUT. Figure 1 illustrates the conceptual model that guided this study and how the study hypotheses were related to the model.

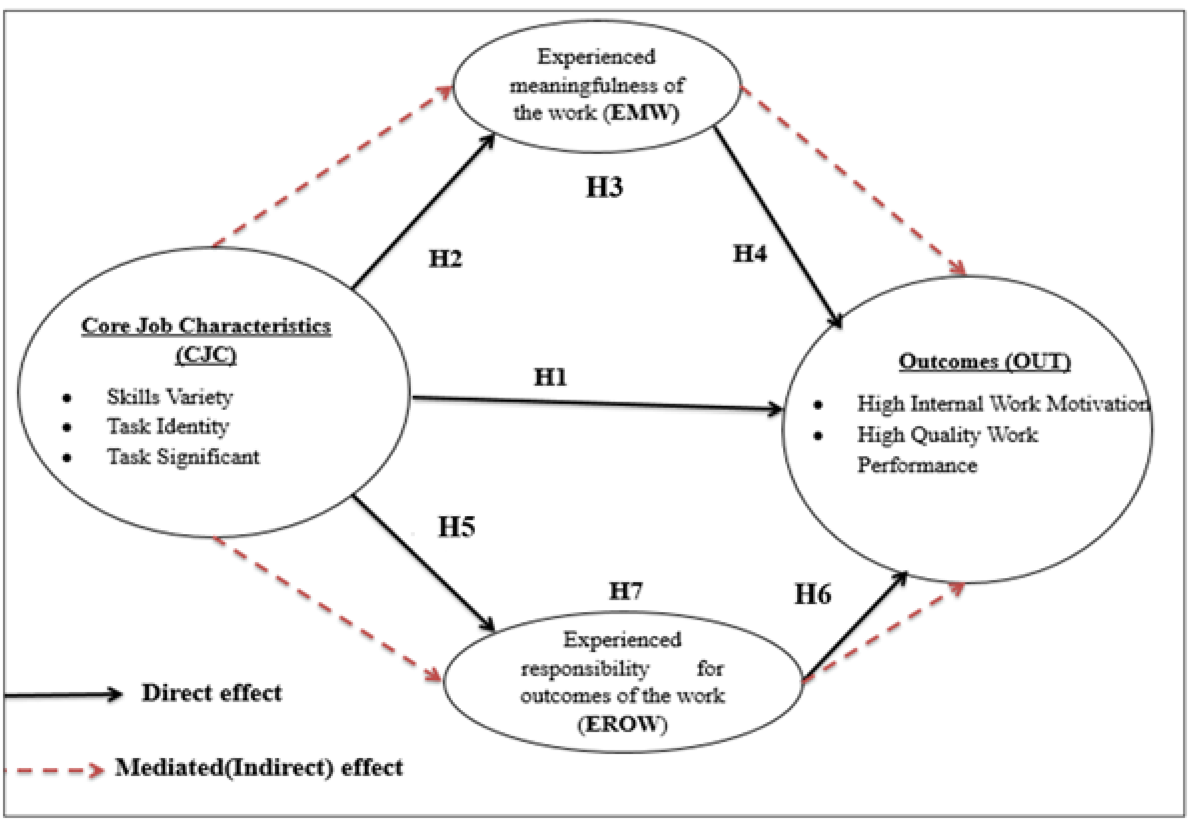

Figure 1: Conceptual research model

3 Methodology

This research aims to investigate the direct relationship between CJC and OUT and the indirect relationship through EMW and EROW in the context of Northern Cyprus. Regarding this aim, the positivism research technique was chosen as it is the best approach for causal\ impact relationships of a set of variables (Malhotra et al., 2017). Thus, deductive and quantitative mechanisms were chosen to collect research data; this indicates that the questionnaire represents the main tool for gathering the needed data due to its ability to make it easier for measuring variables relationships and to test the research hypothesis (Malhotra et al., 2017). A simple random sampling technique was used to determine the needed sample size. The population was 5930 potential respondents. According to Sekaran (2003, 2006), and relying on 95% confidence level and 5% margin error, 365 is the minimum sample size needed for this population size.

For this research, SMART PLS software has been selected due to its ability to deal with structural equation modelling (SEM) analysis (Hair et al., 2013). Lee et al. (2011) asserted that structural equation modelling (SEM) represents one of the best techniques to analyse business studies especially studies that contain a wide range of direct and indirect variables.

3.1 Questionnaire design

A survey questionnaire was employed to test the comprehensive model developed for this study. As this study relied on the job characteristics model by Hackman and Oldhman and for more measurement accuracy, all questionnaire items were adapted from Hackman and Oldham (1974) study and modified to be applicable for research scope and population nature. This process in fact can prove the reliability and validity of the research instrument (Sekaran, 2006). Before administering the questionnaire, several steps were undertaken to check its validity and consistency. First, a group of five academics experts reviewed the survey and proposed sides modifications. After that, a pilot test was conducted in which 30 completed surveys were analysed using SPSS v23 software to test the reliability of the instrument. In the pilot testing phase, the reliability test and the if-item-deleted test were used. The reliability test clarifies how closely questionnaire paragraphs are related to each other as a group. The if-item-deleted test allows the researcher to exclude any questions which harm instrument reliability. In addition, a Cronbach's alpha test was performed for each group of variables and the instrument as a whole, and it was found that all of the Cronbach's alpha values were higher than the lowest level of acceptance of 0.70 (Collis and Hussey, 2013; Sleimi, 2020). Thus, the internal consistency was acceptable for the instrument and for each group of questions related to one variable.

The final version of the survey contained 29 sentences (items) for assessing the research variables. Survey organization has four main variables namely: core job characteristics (CJC) 12-items, experienced meaningfulness of work (EMW) 4-items, and experienced responsibility for outcomes of work (EROW) 5-items, and personal work outcomes (OUT) 8 items. Respondents were requested to evaluate their opinion for each item using a 5-point Likert scale 1-strongly disagree and 5-strongly agree. The survey was written in the English language. It was not converted into Turkish language "Country Language" because it was judged that the potential respondents would mostly likely be fluent in the English language and would have sufficient experience in the tourism sector.

3.2 Data collection

Data was collected in Northern Cyprus in 2020. The survey was targeted at some of the Northern Cyprus tourism stakeholders as the study community because they are the main players in shaping the marketing efforts for Northern Cyprus as a tourist destination. Accordingly, the study population consisted of managers of 3- to 5-star hotels in Northern Cyprus, sales and marketing directors of 3- and 5-star hotels in Northern Cyprus, and first-line employees of 3- to 5-star hotels in Northern Cyprus. This type of population was chosen because it consists of the most qualified people who can provide accurate information regarding the destination of Northern Cyprus.

A total of 700 sets of questionnaires were sent via email to hotel managers from the beginning of September 2020 until the end of December 2020. A total of 580 questionnaires were returned. Among the 580 retrieved questionnaires, only 420 were complete and were thus usable; this represents a response rate of 60%. The result showed that there was no substantial variance at $p < 0.05$, which indicated that non-response bias was not present.

4 Data Analysis and Results

4.1 Demographic data

Realizing the basic demographic statistics of the population is essential for carried by similar studies (Bouzari, 2012). Research data and regarding nationality composition showed that most of them come from the Republic of Turkey, then Africa and Asia (37.5%; 25.9%; 22.3) respectively. The findings indicating that a majority of the sampled expatriates are male 61.7% and 38.3 are female. About 41.6% of participants are less than 30 years old, 33% are between 31 and 39 years old, 18.3% are between

40 and 39 years and the residuals are 50 years old or more. Moreover, about 64.8% of the participants have bachelor's degrees; 24.6% have higher education degrees, while the rest have secondary certificates only. In terms of length of stay, 54.7% remain for 1-2 years in Northern Cyprus, 31% stay for less than one year while the rest stay for more than three years.

4.2 Hypothesized model

For this research work, SmartPLS3.2.7 software was employed to test H1 to H7. The structural equation modelling (SEM) technique was chosen due to its ability to deal with large numbers of variables and relationships (Hair et al., 2014).

Table 1: Results of the measurement model.

Reflective Constructs	Construct Items	Code	Item Loading	CR	AVE
Core job characteristics	The results of my efforts are clearly visible and identifiable.	TI1	0.787	0.916	0.553
	I make significant contributions to the final product or service.	TI2	0.756		
	The job provides me with the chance to completely finish the pieces of work I began.	TI3	0.812		
	The work is likely to significantly affect the lives and the well-being of other people.	TS1	0.838		
	This job is one where a lot of other people can be affected by how well the work gets done.	TS2	0.777		
	The job itself is very significant or important in the broader scheme of things.	TS3	0.758		
	The job requires me to do many different things at work, using a variety of skills and talents.	TV1	0.753		
	The job requires me to use a number of complex or high-level skills.	TV2	0.707		
	The job is not too simple or repetitive.	TV3	0.752		
Experienced meaningful-ness of work	The work I do in this job is very meaningful to me.	EMW1	0.835	0.889	0.668
	Most people in this job feel that the work is beneficial or vital.	EMW2	0.880		
	Most people in this job feel there is a great deal of personal meaning in the work they do.	EMW3	0.810		
	Most people in this job find the work very meaningful.	EMW4	0.736		
Experienced responsibility for outcomes of work	It is vital in this job for me to care very much about whether or not the work gets done right.	EROW1	0.836	0.911	0.673
	I feel a very high degree of personal responsibility for the work I do in this job.	EROW2	0.824		
	Most people doing this job feel that whether or not the job gets done right is clearly their own responsibility.	EROW3	0.777		
	Most people doing this job feel a great deal of personal responsibility for the work they do.	EROW4	0.814		
	Whether or not this job gets done right is clearly my responsibility.	EROW5	0.848		
Personal work outcomes	I feel a great sense of personal satisfaction when I do this job well.	HIWM1	0.832	0.918	0.588
	I feel good and happy when I discover that I have performed poorly on this job.	HIWM2	0.827		
	My own feelings generally are affected very much one way or the other by how well I do in this job.	HIWM3	0.820		
	My opinion of myself goes up when I do this job well.	HIWM4	0.766		
	The overall quality of the supervision I receive in my work.	HQWP1	0.731		
	I feel I should personally take the credit or blame for the results of my work in doing this job.	HQWP2	0.771		
	I often have trouble figuring out whether I'm doing well or poorly in this job.	HQWP3	0.785		
	Most people doing this job feel good or happy when they find that they have performed the work well.	HQWP4	0.758		

Note: CJC: Core job characteristics; OUT: Personal work outcomes; EROW: Experienced responsibility for outcomes of work; EMW: Experience meanengfullness of work; TI: Task identity; TS: Task significance; TV: Task variety; HIW: High internal work motivation; HQW: High-quality work performance.

Table 1 shows the results of the measurement model in terms of convergent validity (as shown by average variance extracted (AVE)), composite reliability (CR) and item (factor) loadings. In this research, the measurement model included 29 reflective indicators. The initial test showed that three out of the 29 model indicators, namely, TS4, TI4 and TV4, recorded loading values that were less than the minimum acceptable level. Therefore, these indicators were eliminated to enhance model validity and the reliability results (see Figure 2). The CR value indicates the level of internal consistency of the reflective constructs. The cut-off point for CR is 0.7. Hence, Table 1 shows that all of the constructs of the model recorded an appropriate level of internal consistency. As for convergent validity, which is indicated by the AVE value, this value ranges from 0 to 1. Statistically, it should be more than 0.5 to prove that every construct is correlated with its indicators more than the other constructs)Ramayah et al., 2016). Table 1 shows that all of the AVE values were more than 0.5. Therefore, every construct in the model was able to explain more than 0.5 of the variance of the related indicators. Hence, convergent validity was confirmed.

Discriminant validity is another important test that was conducted because it is used to test whether the indicators of a construct are correlated together more than with other indicators that belong to another construct (Henseler and Sarstedt, 2013). The Fornell and Larcker test was used to check for discriminant validity. This test is based on cross-loading values. The results of this test showed that the AVE value for the correlation of every construct with itself was higher than the values of the correlation with the other constructs (see Table 2). Thus, discriminant validity was approved.

Table 2: Fornell–Larcker criterion

Constructs	Core job characteristics	Experienced meaningfulness of work	Experienced responsibility for outcomes of work	Personal work outcomes
Core job characteristics	**0.779**			
Experienced meaningfulness of work	0.748	**0.856**		
Experienced responsibility for outcomes of work	0.743	0.824	**0.890**	
Personal work outcomes	0.734	0.793	0.814	**0.767**

In addition, the heterotrait-monotrait ratio (HTMT) test was utilised to discriminant validity. According (Henseler et al., 2015; Sleimi et al., 2020), every construct the HTMT table must have a value of less than 0.85. The results of the test showed that this was the case. Furthermore, the Stone–Geisser Q^2 coefficient, the coefficient of determination (R2) and the relative effect size (f 2) for each construct were determined, and all the results were found to be satisfactory.

The final step in evaluating the structural model is to examine the research hypotheses by assessing the path coefficients. The results of testing of the hypothesised direct effects are displayed in Figure 2.

It was observed that the proposed model predicted 74.7% of the variance for OUT, 56.2% of the variance for EROW, and 56% the variance for EMW, through the analysis of Smart-PLS 30. This indicated that all of the standardised path coefficients were significant. The results supported all the direct relationship hypotheses (H1, H2, H3, H4 and H5). Table 5 summarises the results of hypothesis testing for the direct effect of CJC on the dependent variables.

The results in Table 3 show that the relationships between CJC and EMW, EROW and OUT are positive, supporting H1, H1 and H3, respectively. The results also show that the relationships between EMW and OUT and EROW and OUT are also positive, supporting H4 and H5, respectively.

Regarding the mediation test, the results in Table 4 show that EMW mediates the nexus between CJC and OUT, thus supporting H6. Similarly, EROW mediates the nexus between CJC and OUT; hence H7 is also supported.

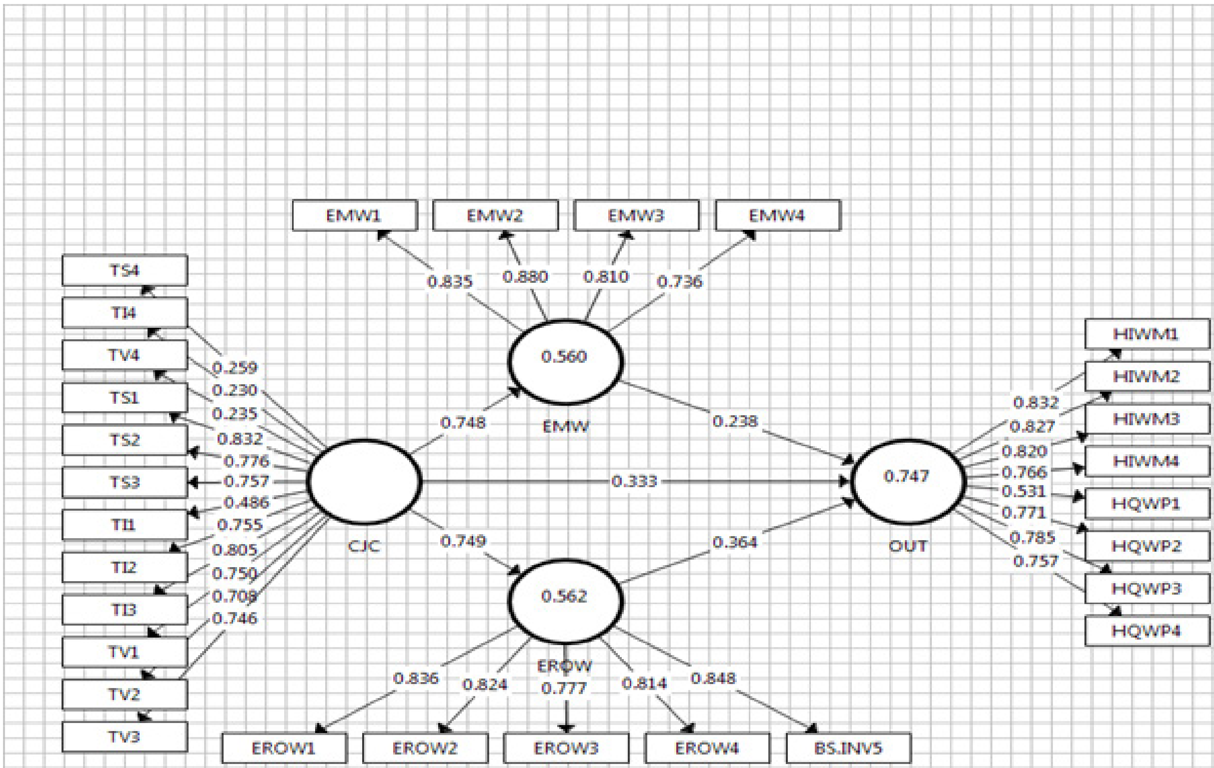

Figure 2: Measurement model

Table 3: Results of hypothesis testing of direct relationships

Path	(β)	Std. error	T-value	P-value	Result
Core job characteristics → Experienced meaningful-ness of work	0.743	0.027	27.960	0.000	Supported
Core job characteristics → Experienced responsibility for outcomes of work	0.743	0.029	25.511	0.000	Supported
Core job characteristics → Personal work outcomes	0.325	0.051	6.394	0.000	Supported
Experienced meaningful-ness of work→ Personal work outcomes	0.241	0.058	4.128	0.000	Supported
Experienced responsibility for outcomes of work → Personal work outcomes	0.370	0.062	5.987	0.000	Supported

Table 4: Results of mediation test (specific indirect effect)

Path	(β)	Std. Error	T- value	P-value	Result
Core job characteristics → Experienced meaningfulness of work→ Personal work outcomes	0.157	0.051	6.394	0.000	Supported
Core job characteristics → Experienced responsibility for outcomes of work → Personal work outcomes	0.398	0.039	11.794	0.000	Supported

5 Discussion

This research examined the nexus between CJC and OUT by investigating whether EMW and EROW play mediating roles in the CJC–OUT relationship. Based on the analysis, the results showed that there was a positive relationship between CJC and EMW (supporting H1). This finding supports Kim et al. (2020), which identified that CJC has a positive impact on motivation, job satisfaction, work quality, and lowers absenteeism and staff turnover. In a positive manner, Iqbal et al. (2018) identified that CJC directly influences employees' thinking and having specific aspects on their job roles eventually contributing to personal work outcomes such as job satisfaction and personal performance. The results also indicated that there was a significant relationship between CJC and EROW (supporting H2). This is in line with Gordon et al. (2018), who noted that job and personal resources are interlinked with personal resources being an independent predictor of EROW. It is these resources that are developed by integrating CJC in organizational operations.

In addition, a positive relationship was found between CJC and OUT (supporting H3). This finding supports Alkhateri et al. (2018), who found that CJC significantly impacts employee performance. Also, Garg and Rastogi (2006) noted that OUT is promoted through prioritising specific job functions because improving an event-specific job role generates improved autonomy and challenges for employees.

A positive relationship was also found to exist between EMW and OUT (supporting H4). Indeed, in the context of the Northern Cyprus hotel sector, this study asserted that EMW is a variable that can be identified as significantly affecting OUT, especially when direct and indirect effects are integrated (Abuhjeeleh et al., 2019). As noted by Martela and Pessi (2018), the significance of this relationship is particularly apparent where there is a lack of EMW, which occurs as a result of employees having a lack of control over their work and an inability to identify the value of their own work. Research results also supported Allan et al. (2018), who showed that EMW contributes to OUT through assisting others to contribute directly to the broader good of all stakeholders. This is done by creating a sense of meaning for an individual work function.

In addition, the current study also found a positive relationship between EROW and OUT (supporting H5). This finding is as expected because, as noted by Van Yperen et al. (2016), EROW influences the scope of existing freedom, independence and discretion of people in scheduling their job functions and in establishing relevant procedures to follow in implementing the allocated roles.

Finally, as regards the mediating roles of EMW and EROW in the CJC–OUT relationship, the results showed that both of these variables acted as mediators thus supporting H6 and H7, respectively. This finding is in line with Wegman et al. (2018), who noted that the psychological states of CJC lead to EROW and EMW that can increase internal work motivation, work quality and performance, and work satisfaction, and reduce absenteeism and staff turnover levels.

6 Concluding Remarks

6.1 Theoretical and practical implications

The current study has many implications for theory and practice. From the theoretical perspective, a wide range of studies have tested the direct relationship between CJC and OUT, but there is a comparative lack of research on the indirect relationship between these two variables. Therefore, the current study makes an important contribution to the literature by offering evidence to show that two mediating variables (ERW and EROW) have a productive impact on this relationship. Thus, this finding makes it more convenient for researchers to introduce other mediators to examine similar relationships and to build models to test those relationships in the future. A second theoretical contribution in this study is that the model proposed was proved statistically. So, it would be a helpful tool for researchers who may investigate and predict such relationships within different sectors to gain knowledge on some vital theoretical and practical implications that could enhance organizational outcomes. In short, such work could provide more evidence about the positive impact of CJC, EROW, and EMW on OUT. Furthermore, this research examined the mediating role of EROW and EMW between CJC and OUT. The result showed that CJC has a reasonable positive direct and indirect impact on OUT, as indicated by remarkable positive relationships within the research model. Therefore, these findings underline the need for more exploration of these issues in this under-exploited research area.

From a practical perspective, this study's findings are relevant to human resource managers, line managers, and administrators in organizations in the Northern Cyprus hotel sector. The varying mediation of EROW and EMW in the attainment of CJC implies a need to adopt distinct human resource management systems to capitalise on the different knowledge and capabilities possessed by employees, which could lead to the attainment of different outcomes of work. By adopting this approach, human resource managers and other administrators of the Northern Cyprus hotel sector would be able to identify the strategic contributions of each of their various departments; this would then guide them in the implementation of CJC for the appropriate personal work outcomes. Also, as the direct and indirect impact of CJC was found to have a substantial influence on OUT, the market environment in which the Northern Cyprus hotel sector operates should be given priority. Hence, it is recommended that the Northern Cyprus hotel sector organizations review their policies regarding the role of CJC in OUT. Part of this would include the job design strategies that appreciate and increase a job role's motivational potential. This is done by prioritizing job rotation, job enlargement, enrichment, and simplification. Through this, the employees would be more motivated to adopt a set of skills in their job positions instead of doing a single thing repeatedly. The findings of this study behove the top management of these organizations to develop new job designs that consider EROW and EMW. These two variables can play a vital role in gaining superior employee and business performance benefits. However, as it is not easy to make and implement such design in a developing economy, building a national strategy within Northern Cyprus could encourage the hotel sector to alter their tourism curriculum to smooth this process. For the line managers, the outcome of this report is applicable in ensuring that they can successfully evaluate the job and provide better engagement to preferable link the different departments by integrating their core job characteristics with an organization's objectives. In particular, this is done by working collaboratively with employees to create an appropriate phenomenon and situation for all stakeholders and eventually increase engagement and productivity. Hence, the line managers would approach their job functions by facilitating and recognizing today's working and equally developing future-based jobs.

6.2 Research limitations

When considering the above findings, it is also important to evaluate the limitations of this study. The first limitation involved the utilization of direct and indirect effect measurements based on specific calculations for the variables. Secondly, a questionnaire survey was used to acquire data to evaluate the impacts of the different variables on each other. The questionnaire was used as a subjective measurement. Different scholars make an assumption that the different measures are appropriate in regard to social science studies. Hence, as a best practice in the future, researchers should focus on using different measurements to assess the relationships among the different variables.

Nevertheless, the best practice would have been to adopt this questionnaire form in conjunction with objective measurements. This would have then led to more robust outcomes in line with the convergent and discriminate validity (Rojas and Widiger, 2014). Finally, based on the literature reviewed for this study, it is evident that a limited number of sources have examined the effect of CJC on EMW and that they have done so in from the perspective of the senior administration of organizations. Hence, as a future best practice, researchers could opt to explore different concepts of CJC.

Moreover, this study was cross-sectional. By focusing on the Northern Cyprus Hotel Sector, this research involved sourcing data from the population at one specific point on time. In this cross-sectional study, multiple variables at a particular point of time. Hence, this limitation is that the analysis was not causal or relational but only used to evaluate the relationship of CJC and OUT. Still, there is a comparative lack of research on the indirect relationship between these two variables. Hence, it is not possible to understand what would happen in the future in the Northern Cyprus hotel sector in the areas of ELW, CJC, and OUT.

6.3 Originality/value

The research model developed for this study provides some valuable insights for job design because it shows that the utilisation of suitable mediators can help in the attainment of successful outcomes of work in the Northern Cyprus hotel sector. Thus, the results of the study are valuable not only for researchers, but also human resource managers and executives in tourism who wish to develop job design practices to stay ahead of the competition in a hyper-competitive business environment. This research data was gathered from 3- to 5-stars hotels operating in Northern Cyprus. There is a possibility that data collected from such sectors or countries may yield different findings. Therefore, there is a need to prove these research results in other developing/developed countries' contexts to be sure that the effects of sector or country do not confound with existing findings.

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Ključne značilnosti delovnega mesta in osebni delovni rezultati: posredniška vloga kritičnih psiholoških stanj: empirični dokazi iz hotelskega sektorja Severnega Cipra

Ozadje in namen: Namen te študije je raziskati razmerje med ključnimi značilnostmi delovnega mesta (CJC) in osebnimi delovnimi rezultati (OUT), pa tudi vlogo izkustvenene smiselnosti dela (EMW) in izkustvene odgovornosti za rezultate dela (EROW) pri posredovanju odnosa CJC–OUT. Natančneje, ta študija proučuje učinkovitost CJC pri izboljšanju EMW in EROW ter osvetli vlogi EMW in EROW pri povečanju OUT zaposlenih v hotelskem sektorju Severnega Cipra.
Metodologija: Študija uporablja kvantitativni pristop za zbiranje in analizo podatkov 420 zaposlenih v hotelskem sektorju Severnega Cipra. Tehnika delnih najmanjših kvadratov (PLS) z uporabo Smart-PLS je bila uporabljena za testiranje neposrednih odnosov znotraj raziskovalnega modela in analizo posrednih učinkov.
Rezultati: Analiza je razkrila močno podporo smiselnosti dela in izkustveno odgovornost za rezultate dela, ki delujejo kot delni posredniki v razmerju med temeljnimi značilnostmi dela in osebnimi delovnimi rezultati. Poleg tega je bilo ugotovljeno, da imajo ključne značilnosti dela razumno neposreden učinek na osebne delovne rezultate, izkustveno smiselnost dela in izkustveno odgovornost za rezultate dela.
Zaključek: Študija kaže na pomen vključitve izkustvene smiselnosti dela in izkustvene odgovornosti za rezultate dela kot posredniških spremenljivk za boljše razumevanje razmerja med ključnimi značilnostmi dela in osebnimi delovnimi izidi. Vključenih je več teoretičnih in praktičnih implikacij, ki temeljijo na rezultatih te študije. Ugotavljamo, da bi najvišjemu vodstvu v hotelskem sektorju koristilo preoblikovanje delovnega mesta, ker imajo ključne značilnosti delovnega mesta pozitiven učinek na delovne rezultate.

Ključne besede: *Glavna značilnost delovnega mesta, Izkušena smiselnost, Delovni rezultat*

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CONTENTS - 3/2022

Založba Moderna organizacija