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The Application of Knowledge Extraction in Business Classification to Identify Key Players

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ABSTRACT

The current research was conducted to apply knowledge extraction in the classification of jobs to identify the key role players using a mixed method (qualitative and sufficient data). The application of expert systems or decision support systems based on organizational data is increasing in the selection and hiring of personnel. The data was derived from in-depth and semi-structured interviews with 17 subject experts in bank human resources, who were selected based on purposeful sampling.
Data analysis was done based on the Strauss and Corbin model in the form of open, axial, and selective coding in the Atlas TI8 software. The results showed that the classification of jobs for the key role players in public and private banks includes causal conditions (requirement of talent substitution, human resource management developments, and organizational challenges), intervening conditions (organizational limitations and fear and resistance), and contextual conditions (strengthens and drivers) strategies (developmental, supportive and creating) and short-term and long-term consequences are among the components of the job classification model for the key role players in public and private banks. Next, based on the database with the CART method, the data mining of job classification was done. Regarding the performance of the model, it showed variance values of 311.92 and a risk value of 288.19. The predictions in the model explained 28.9% of the differences observed in the variable "employment status of A employees' category". **©authors**

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1. Introduction

HR professionals typically consider the skill level, effort, and responsibility required for a job, as well as the working conditions (Expósito-Casas et al., 2022). From this perspective, the most crucial positions are those occupied by highly skilled, diligent, responsible, and efficient employees. There is a shortage of skilled individuals to fill crucial and strategic roles within the organization, which has significantly hindered the company's capacity (Appadoo et al., 2020).

For an organization to successfully implement a competency-based approach to human resources, it is crucial to identify key individuals and their respective competencies, and then develop a comprehensive model to describe these competencies. Competencies are necessary to achieve the organization's competitive advantage. The competencies approach will be useful in motivating employees to develop their skill sets (Kabwe et al., 2019). This approach can be used in various working conditions and can help individuals prepare for organizational change (Hirschfeld et al., 2019). The absence of competency models has a significant impact on workforce development. To effectively assess individuals, it is essential to have standards in place. Without these standards, it becomes difficult to identify training needs and goals, measure performance gaps, and ensure that training programs adequately address actual performance requirements (Traicoff et al., 2019).

Competence refers to the essential behaviors needed to attain the desired level of performance (Rathmann et al., 2020).

Meanwhile, the ineffectiveness of the methods used to identify and classify employees during the process of choosing, selecting, and promoting them is attributed to the failure to utilize collected data and information, as well as the failure to identify hidden relationships within them. In the process of data mining human resources information, the awareness regarding personnel recruitment is determined. This accurate information serves as the foundation for managers' decision-making when selecting suitable personnel (Hajiheydari et al., 2017).

Therefore, advances in information technology affect employee selection and human resource management.

Companies that recognize the significance of effective management and the quality of their key human resources and key players, as well as those that prioritize taking care of their employees and key positions, should utilize data mining methods for accurate diagnosis and informed decision-making (Lent et al., 2000).

The use of expert systems or decision support systems, based on organizational data, in the selection and hiring of personnel is increasing (Akhavan Kharazian et al., 2017). One of the main methods for identifying key positions is by identifying key employees and key players. Internal and external sources (Horváthová et al., 2020). In this regard, there is a need for the organization to examine the relationships between employee data and their work performance. This examination will help establish effective recruitment channels and suitable screening criteria to identify the best talents during the selection stage for various job tasks (Kaffash et al., 2017). Job performance, length of service, and resignation are considered the main work behaviors that impact the quality of human resource performance (Malik et al., 2014). Collecting data on these factors in both the long and short term is effective. Sustainable management and the quality of positions and key players depend on the effectiveness of talent management methods (Manresa & Escobar Rivera, 2021).

In examining career data mining trends, certain organizational positions may hold potential strategic importance. However, currently, these positions offer little opportunity for competitive advantage as everyone's performance is already at a high level (Schlosser, 2015). In this regard, identifying the data milestones recorded for each position can be effective in human resource transformations (Murcia et al., 2022).

Therefore, based on data-driven patterns for identifying human resource categories, a job should meet the dual criteria of strategic impact and performance change in order to qualify as an A position (Lauermann et al., 2017). From these two defining characteristics, a number of other characteristics can be derived. For example, position A has the potential to significantly increase income or reduce costs, which sets it apart from positions B and C (Asplund, 2020).

In order to identify key players, access potential talents, and design appropriate screening criteria for various job functions, it is necessary to create a data mining framework to analyze human resource data. This framework should utilize a decision tree to extract rules between the profiles of job applicants and their work behaviors. In other words, the organizational goals specify the information that should be inputted and the components that should be outputted in order to predict the work behaviors of the applicants, including their job performance and maintenance, in the data mining system.

Finally, by following the process outlined in the organization's data-driven job classification system, it is possible to achieve optimal staffing levels by exclusively hiring "player A" and eliminating all "players C" throughout the organization. The main purpose of data mining in organizational job classification is talent management, which involves identifying critical roles within the organization and filling those positions with skilled individuals or talents (Vaiman et al., 2015). A perfect match between player "A" and performance is assumed to provide a level of quality that is worth investing in (Chow et al., 2012).

Consequently, based on the HR database, organizations implement "high potential" programs to identify, develop, and retain their most talented employees, commonly referred to as "A" players (Bacanli, 2016). Resource-oriented and transparent data collection in high potential (HiPo) programs can serve as a motivating factor for employees to work harder, with the goal of becoming part of a group of "A" players. Evidence in this field regarding the power of the HRM system and attribution theory, which examines the impact of high-potential programs on the attitudes and behaviors of "B" players, suggests that other employees utilize different information and contextual cues to form attributions about these programs. In addition, research has shown that an employee's motivational profile, specifically their advancement motivation and power motivation, plays a significant role in shaping data related to them. These programs also highlight the impact of an employee's motivational profile on their commitment and organizational citizenship behaviors (Mau et al., 2018).

Therefore, it can be said that job classification is a well-known tool that human resource managers use to effectively manage today's organizations. These organizations are made up of employees with diverse characteristics and expertise.

The classification of jobs will enable these managers to respond quickly and effectively to the dynamics of the competitive environment, giving their organization a competitive advantage. In this context, data mining is a solution for refining organizational data to identify the status of employees. Recognizing data through data mining results in extracting valuable information about the distribution status of organizational resources, including employees.

Based on the provided information, this research aims to explore the application of Knowledge Extraction in job classification models for the primary role players in public and private banks. The study seeks to answer the question of how data mining techniques can be used to uncover hidden patterns in the organization's data, specifically related to the current status of employees.

2. Literature Review

The importance of knowing key role players has been mentioned in various studies (Nene, 2020), as well as the use of data mining methods in determining key role players (Madanchian & Taherdoost, 2022; Nomnga & Ngqulu, 2021; Khanyile et al., 2023). There is limited information available on the field of talent management and the

identification of key players (Qazi et al., 2021). Many aspects regarding its importance, understanding, and defining its consequences are overlooked in the literature. The significance of talent management sub-branches, such as strategic human resource management, organizational behavior, and human capital, requires conceptualization, encouragement, and an understanding of organizations to accept the paradoxes of talent. This is necessary to create a more nuanced approach in practice (Vardi & Collings, 2023). Due to technological advancements and the utilization of technological tools, HR functions are now being carried out using machine learning techniques. This has resulted in a reduction in the workload and pressure on human resources, while simultaneously increasing the efficiency of HRM work. HRM, including recruitment, talent management, preventing brain drain, and improving the accurate management of HR, has undergone tremendous changes with the advent of data mining methods in the field. These changes have been analyzed by various researchers. (Research, 2017; Li, 2017). The use of data mining algorithms in matching human positions for evaluating human resources helps managers choose or replace employees based on their knowledge and predictive abilities. For example, a model of employee turnover based on a gradient descent algorithm and BP neural network provides companies with an opportunity to solve problems and enhance the retention rate. Studies in this field show that the influence of machine learning (ML) in the field of human resources is expanding and has a high potential to improve efficiency and performance (Zhu, 2021).

Despite the growing attention and scientific interest in the development of HRM, the data processing procedure for it remains unclear. Knowledge orientation based on organizational data affects the identification of HR (Shah Hosseini & Janati Far, 2022).

The application of data mining in HR, such as the use of the CART model, can help create an optimal model for classifying and selecting HR in an organization (Azar et al., 2009). Wowczko (2015) showed that he introduced a simple yet effective method for monitoring skill needs. This method is based on k-NN classification and information extraction from textual datasets. It aims to determine effective ways of knowledge discovery in order to identify HR talents.

Indeed, the shortage of skilled employees to fill crucial positions during gaps remains a concern (Moore et al., 2019). Therefore, organizational strategies are necessary to develop employees and create a broader pool of future internal talent base, ideally using Inclusive Talent Development (ITD) (Asplund, 2020). However, in the talent management literature, talent development is primarily emphasized due to its significance in nurturing high-potential employees, commonly referred to as "A" employees. While C employees are ignored or even recommended for termination. Due to the emphasis on the elite group that utilizes the exclusive talent development (ETD) approach, organizations often overlook the inclusion of employees who are underserved in terms of skills, jobs, and status (Clarke & Scurry, 2020).

According to research conducted by the University of Pennsylvania, foreign hires earn 18-20% more than domestic hires in the same position (Kaliannan et al., 2022). As such, organizations prefer to hire top talent from external sources when needed or select high-performing individuals from their own elite talent pool if they must consider internal candidates. According to Schlosser (2015), citing The Human Capital Benchmark database, foreign hires make up to 66 percent of positions filled at organizations with an average headcount of 595 full-time employees. The main idea of this theory is that instead of focusing on the competitive business environment to gain a market position or superiority over competitors and threats, organizations should prioritize their internal resources and potential.

The most important positions are those held by the most skilled, hardworking, responsible, and efficient employees. There are many "A" players who are incredibly open to new ideas and willing to utilize their knowledge to overcome obstacles and create

innovations (Nina, 2019). What motivates high-performing individuals in a government agency are opportunities for discovery, recognition, fewer constraints, and increased freedom. Consequently, products designed exclusively for the government often struggle to perform well and face challenges in securing funding. Traditional investors tend to be cautious about the lengthy and complex government sales cycles. In order to develop talent management and identify the potential of key employees, the involvement of senior human resource experts and skilled individuals can greatly benefit from demographic economic models to address the requirements of a progressively diverse workforce (Gronbach, 2021). In the following table, the relevant models of decision trees in the selection of human resources are discussed.

Table 1. *Previous models in the field of data mining in the selection of human resources*

Author	Data mining technique	Purpose of model
Azar et al. (2009)	CART method	Suitability of jobs and employees
Akhwan Khorazian et al (2018)	DEA and CART methods	The optimal employment pattern
Lukovac et al. (2017)	Fuzzy neural network	Human resources management
Zhu et al. (2017)	Time series based on long-term data	Job suitability of employees
Expósito-Casas et al. (2022)	CART method	Optimizing the selection of employees
Karatop et al. (2015)	Fuzzy neural network	talent management
Strohmeier, S., & Piazza (2013)	decision tree	Selection of employees

According to the mentioned studies, it can be said that the knowledge of HRM has been effectively transferred from the theoretical aspect to its advanced level in academic circles. But unfortunately, there are gaps in both the national and practical domains.

Therefore, the classification of jobs in this research is an attempt to address the gap that exists from both a theoretical and practical standpoint in the field of HRM in public and private banks. It is considered one of the most crucial components of the HR development system. Unfortunately, in our country, Iran, there is still a lack of a systematic process for classifying jobs, implementing and evaluating the process, despite the presence of many scientists and experts working in the field of education and human resources. Additionally, there are occasional gaps in the process. There are many differences in this process, particularly in the area of evaluation and its significance. In this research, while stating previous approaches to the field of employee classification, selection of human resources, and the use of data mining in HRM, efforts are made to develop previous models and an optimal model with a data-oriented approach and emphasis on choosing the best technique. Data mining should be provided according to the organization's data bank.

3. Research Method

The current research was conducted using a mixed-inductive method, incorporating the data theory method of Strauss and Corbin (2008) Grounded Theory, as well as the data mining method.

To conduct the coding process, all the interviews in the AtlasTI 8 software underwent necessary checks, and the desired concepts were extracted (Glaser, 2017).

Labeling of codes has been done based on the interviews. Then the appropriate codes for each semantic unit were written and classified based on semantic similarity.

The researcher has made an effort to consider people's perspectives on the given answer in order to minimize the potential for unwanted exploitation. In the entire coding process, the researcher has adhered to theoretical sensitivity which is one of the principles of data theory research, and has done this to enrich the research as much as possible. Sampling was done by snowball method. The participants in the current research are subject matter experts, including 17 senior managers from private and state banks in the country.

In the following, based on regression and data-oriented methods in R software, the classification and testing of extracted codes based on the organization's database has been done. R software provides tools that implement a wide range of data processing and mining techniques to enhance its

effectiveness. For example, terms can be analyzed, texts can be parsed using different frequency measures, or job vacancies can be divided into distinct job groups using different classification and clustering algorithms.

A detailed discussion of data mining is beyond the scope of this article, which is aimed at labor market professionals. The private and public bank databases, which are based on qualitative technique codes, are used as input for data mining techniques and tools. The data mining method used in this research is the same method proposed by Asensio et al. (2018). This method consists of four steps. First of all, estimate the initial model using the CART method. The dependent variable will be "job status," and the predictors will be the items and indicators from the questionnaires described in the previous section.

Then, using CART, the importance of each employee is determined, and as a result, category A is assigned to the employee group.

4. Findings

To address the research questions concerning the categorization of jobs for initial role players in public and private banks across various sections, such as causal factors and intervening context, Table 2 presents the central and open coding of these factors.

Table 2. *Axial coding of job classification*

Open coding	Secondary coding	Axial coding	Paradigm
Change in the thinking of the bank's senior human resources managers	Talent succession thinking	Need to replace documents	Causal conditions
Future-oriented succession management			
Increasing responsiveness			
Long-term positive attitudes towards bank human resources			
Transformation in the talent management and succession management system of the bank			
Systematic identification of strategic organizational positions			
High demand for employment in banks	Talent demand management		
The need to attract competent people			
Pre-employment communication with job applicants			
New employee retention techniques			
Lack of talented people to be recruited in the bank			
The main competition for attracting talent			
Improving key activities			
Dynamics of the competitive environment	Developing a competitive approach	Changes in human resource management	
Increasingly competitive approaches			
Improving competitive advantages			
The unpredictability of the business environment			
Alignment of human resource management measures with developments			
Competitiveness of human resource management			
Capital approach to human resources of banks	Professional human capital		
Strengthening professional qualifications			
Strengthening trust-based interaction			
Automation of human resources processes			
Strengthening human resource information systems			
Development of social networks			
Discover and create intranet opportunities			
Increasing the attraction of technological human capital			
Pressure from strategic stakeholders	Political challenge	Organizational challenges	
Expediency of political managers			
Increasing the rate of policy change			
Party and group interests of managers			
Influence of power levers			
Increasing the level of expectations of stakeholders from the performance of human resources	The challenge of human resources		

Lack of human resources demand management policy			
Increasing the rate of change in human resource policies			
Instability and instability of group A			
Development of human resources virtual environments			
Reducing investment in human resource development			
Desire to maintain the status quo	Process limitations	Organizational limitations	interfering factors
Imbalance of power			
Default job evaluation patterns			
Non-cooperation of those in power			
Increasing external interventions			
Inefficiency of the performance appraisal system cycle			
Wage payment system in the bank			
Closed cycles of post distribution and organization power			
Centralization in the power of the banking system	Structural constraints		
Administrative bureaucracies in the field of resources			
Management system inefficiency			
Limitations of the rules			
Strict spirit of decent people	Content restrictions		
Financial limitations			
Lack of support resources			
Lack of competency models	risklessness	Fear and resistance	
Financial losses from the departure of key employees			
Precautionary behaviors of employees			
Feeling insecure			
Resistance to group A	Resistance to acceptance		
Conflict of interests between the forces of group A			
Weak self-confidence group B			
Political behavior of groups B and C			
Improving internal capital management	Facilitators	Amplifiers	Substrate factors
Ability to manage complexities			
Added value of human resources			
The quality of enthusiastic and interested force			
Acceptance of middle layers of creative talents			
Synergy within the organization			
Human resource training skills			
Merit-oriented organizational culture	Motivational elements		
The extent of trust-based interaction			
Understanding merit selection based on qualifications			
Informing employees of their abilities			
Strengthen the sense of hope			
Strengthen the feeling of security			
Increased perceived organizational support			
Job Satisfaction	Accompanying	the drivers	
Strengthening stakeholder participation			
Increasing the self-efficacy of group B			
Strengthen communication literacy			
Desire for professional development			
Continuity and stability of worthy people			
Collective learning management			
Supporting the culture of knowledge exchange	Vision making		
Privacy protection			
Capital approach to human resources			
Understanding new opportunities			
Demand management in a competitive environment			
Developing intragroup cohesion			
Discovering the active capacities of key employees	Internal organization	Development	Strategies

Talent search mechanism from human resources		strategy	
Strategic management of talent flow			
Controlling negative emotions among employees			
Recruiting and maintaining skilled and efficient people			
Creating a source of qualified employees			
Strengthening internal forces			
Strengthening the identity of key forces			
Supporting creativity and organizational dynamics			
Developing the professional qualifications of Group B employees			
Improving training skills of human resources			
Development of social networks of human resources			
Strengthening the motivational potential of jobs			
Matching the identified talent and the existing position	External organization		
Identify critical operational situations			
Creating incentives to attract capable people outside the organization			
Trying to attract technological human capital			
Organizing competitive events at the national-transnational level			
Easing the rules of recruitment of key forces			
Creating performance evaluation models of key forces			
Human resource demand management	Care management	Supportive strategy	
Pathology of job evaluation model			
Attention to the needs of key employees			
Strengthening the culture of meritocracy			
Retention of key employees			
Revision of the current job classification system	review		
Motivating active human resources			
Strengthening succession policies			
Increasing investment in human resources development			
Reviewing the process of attracting and promoting key employees			
Revision of bank rules and regulations			
Reengineering the human resources performance evaluation system			
Sustainable policies for embedding talent knowledge	Key business policy	Creation strategy	
Merit-based pay to employees in key jobs			
Creating learning opportunities from group A			
Development of a job classification model based on group A activity			
The policy of stability of key forces in sensitive jobs			
Modeling the experiences of retired key employees	Organizational memory		
Strengthening the middle circles of key businesses			
Record important events and key employee performances			
Educating key jobs			
Development of scenarios related to the future of key jobs			
Strengthening attitudes and positive self-evaluation of key employees	Protecting the position of employees, A	Short term	Consequences
Improving the position of Group A employees			
Retain key employees			
Sharing the tacit knowledge of key businesses	Key employee relations		
Socialization of key employees			
Attracting new sources of key employees			
Increasing the balance in the power of key employees			
Creating common ideals	Modifying the staff management procedure, A	long time Axial coding Need to replace documents Changes in human resource	
Strengthening capital attitude to human resources			
Improving succession in the bank			
Continuous recruitment of expert staff			
Attracting creative talents			

Improving key activities		management	
Productivity through human resources			
Improving competitive advantages			
Improving the quality of human resources			
Modifying the job classification system	Correcting the classification of jobs Secondary coding Talent succession thinking Talent demand management		
Strengthening professional qualifications			
Internal crisis control			
Strengthening the competitive creativity of human resources			
Development of social responsibility of the bank			
Improving the position of group A in the classification of jobs			
Improving the incentives of human resources in classification			
Cultivation of group A force in the bank			
Competition in group B employees			

The identified codes were identified using he Strauss-Corbin Foundation data method. The validity of the qualitative data was obtained and confirmed based on the Kappa index of 0.826.

Fig 1. *Cloud coding in software*

The main steps of data mining to discover knowledge are:

- Definition of the problem
- Building a database related to data mining
- Data search
- Preparing data for modeling
- Building the model
- Model evaluation
- Building a vantage model

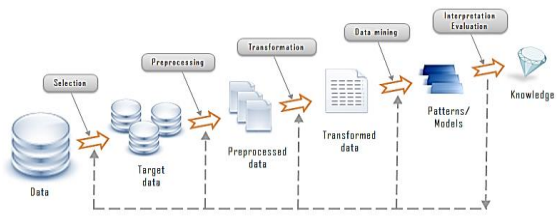

Fig2. *Knowledge discovery process (Expósito-Casas et al., 2022).*

In the CART method, after the tree is formed, an algorithm called pruning complexity cost is used to prune it. The complexity cost of pruning is considered a function of the number of leaves and the classification error rate.

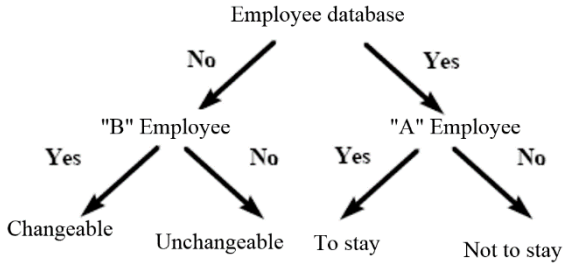

Figure 3. *Tree pruning for staff classification*

The data was analyzed using the decision tree approach. From the available algorithms, we chose the CART (Classification and Regression Tree) algorithm. This binary division provides an estimate of the relative importance of each independent variable. As we are working with a dependent variable measured at the scale level, the approach we are following corresponds to regression trees. In order to complete the analysis, we utilized the CHAID (automatic interaction detection) algorithm to identify the independent variables that interact significantly with the dependent variable. In the table, the components entered into the R software were specified to determine the algorithm.

According to the proposed model of the CART method, a combination of the most significant variables is presented. As detailed in the procedures section, to obtain this selection of variables, the results of applying

the CHAID and CART algorithms are combined. Table 3 shows the variables selected by the CART algorithm based on their normalized importance, with a minimum threshold of 10%. The table also presents the order of importance of these variables, considering the variance percentage. The CHAID algorithm also includes the interaction of this variable with the dependent variable.

Table 3. *The components entered into the R software*

Symbol	Component
M1	Need to replace talent
M2	Changes in human resource management
M3	Organizational challenges
M4	Organizational limitations
M5	Fear and resistance
M6	Amplifiers
M7	the drivers
M8	Development strategy
M9	Supportive strategy
M10	Creation strategy
M11	Short-term outcome
M12	Long-term outcome

This nonparametric technique enables regression trees to effectively evaluate the complexity of the data in a study, such as an employee classification study, that involves multiple levels of measurement. This allows for working on a single analysis without the need to rescale the original data (Asensio et al., 2018). They are also robust in the presence of outliers and missing values.

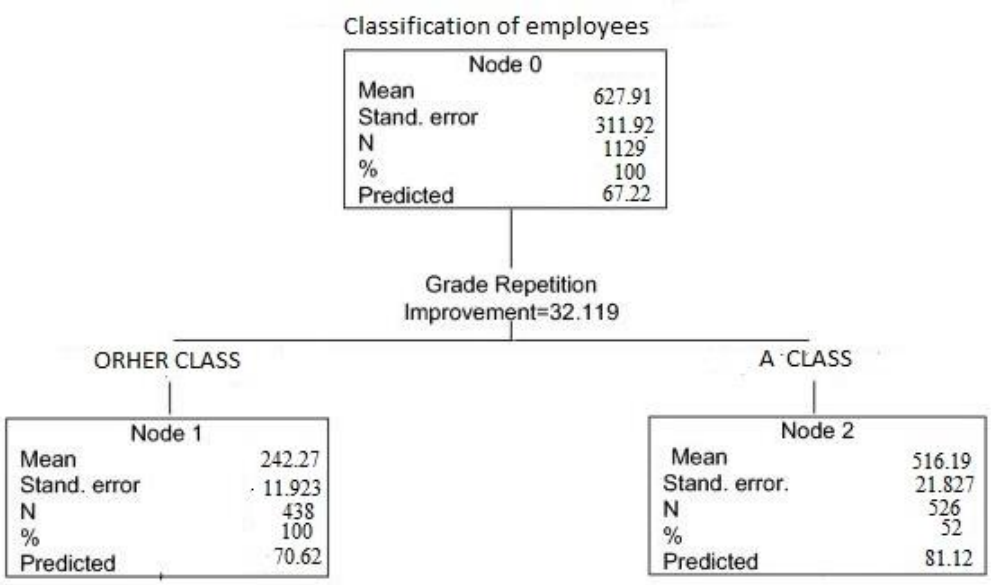

Fig4. *The final model of the CART method for job classification*

Regarding the model's performance, it exhibited variance values of 311.92 and a risk value of 288.19. The model's predictions explained 28.9% of the observed differences in the variable "employment status of category A employees". The overall predictive value of the model was 67.22%. The reliability level of the method is 75%, and it is valid.

5. Discussion

The aim of this research is to use knowledge extraction in the classification of jobs to identify the main players.

In the first step, the main components of job classification were identified with the foundation data method. The results of this research showed the causal conditions (need to replace talent, changes in human resource management, and organizational challenges), intervenors (organizational limitations and fear and resistance), platforms (strengtheners and drivers), strategies (developmental, supportive and creating) and short-term and long-term consequences are the components of the job classification model for the leading players in public and private banks. Murcia et al (2022), in designing the organization's strategy in the VARIO era,

pointed out the importance of talent identification and meritocracy.

Based on the 12 identified factors, the CART model was implemented. The results of the obtained model showed a 67% increase in the quality of the category A job classification system. Azar et al. (2009) also showed that organizations can use data mining and discover optimal patterns (based on the data recording process) in an effective process of finding and hiring employees, and finding talented and suitable people in the shortest time. and the cost of selection and recruitment, and while reducing the additional costs of recruitment, increase the retention rate of employees. Hajiheydari et al (2017), show that intelligent data-driven methods increase employee identification and selection by 47%. Therefore, the data mining method is preferable to traditional techniques. According to Kaffash et al. (2017), their study demonstrated that utilizing data mining techniques for data coverage analysis can enhance the efficiency of human resource management by over 50%.

Schlosser (2015) introduced the data-driven method as an organized approach to enhance the employee recruitment process. Based on the fuzzy neural network technique, Lukovac et al. (2017) demonstrated that human resource management, when based on organizational data, leads to long-term increases in organizational profits. Expósito-Casas et al. (2022), using the same method as the current research (CART technique), found an improvement in the selection of employees with a success rate of 59%.

6. Conclusion

Attracting and retaining talented employees is one of the primary concerns for organizations today, given the intense competition and the scarcity of highly skilled workers.

Due to the scarcity of talent, organizations are compelled to compete with one another in order to attract, motivate, and retain skilled individuals. This battle for talent appears to be never-ending. Therefore, organizations should develop specific strategies to retain talented employees. The design of employee development systems leads to improved job prospects for employees and ultimately enhances company performance and employee retention. But organizations are always afraid of losing their human resources and incurring losses. This is because every organization invests a significant amount of resources to train and develop its employees to achieve the desired level of productivity and efficiency. When valuable employees are lost, the organization also loses the skills, experiences, and investments that have been accumulated over years of effort. Human resources form the foundation of an organization's true wealth, and there exists a direct correlation between human capital and productivity within organizations.

It is suggested to utilize the key job evaluation model in the field of human resource management to enhance the components of the job classification model for the primary role players in pathology. In addition to this turning point, paying attention to the re-engineering of the performance evaluation system for human resources can yield significant results in developing the capabilities of key employees. In order to enhance organizational memory and knowledge, it is important to model the experiences of retired key employees and document important events and achievements of key employees. Additionally, strengthening the intermediate positions of key roles is crucial. These efforts motivate human resource management to develop and reinforce infrastructures. The performance of key employees. The results of this research can lead to a new approach in the development of human resource management, particularly in job classification for key employees and organizational leaders.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or

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