

COMPETENCY-BASED HUMAN RESOURCE MANAGEMENT (CBHRM) METHODS IN OCCUPATIONAL SAFETY AND HEALTH: REVIEW, APPLICATIONS, AND CONTRIBUTION

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Abstract

A comprehensive review of the existing literature revealed multiple definitions of CBHRM, leading to confusion in the description of CBHRM practices and their implementation in the workplace. This study aims to clearly understand the essential characteristics of competency-based human resource management (CBHRM) in the workplace and its causes and effects. This study conducted a systematic literature review using different databases, focusing on English-language articles published between 2018 and 2024. The defining features of CBHRM in OHS include recruitment and selection, training and development, performance appraisal, reward system, and career planning. CBHRM practices in the workplace include organizational factors, individual factors, and human resources. CBHRM outcomes in the workplace include employee, organizational, and financial outcomes. This study contributes to a comprehensive understanding of CBHRM in the workplace that benefits HR managers.

Keywords: competence, human resource management, literature review, Occupational Health.

Introduction

Human resources play an essential role in determining the success or failure of an organization. Effective management of human resources is essential for the survival and progress of the organization. The quality of the organization's human resources largely determines the success of its operational processes (1). To enhance employee performance, organizations need human resources with unique skills and abilities aligned with the organization's vision and mission. Therefore, setting work standards as a reference point is essential to compare actual performance with expected results (2).

Competence is the ability to effectively perform a task or task based on the necessary skills, knowledge, and work attitude. Assessing the level of competence is essential to understand the degree of success expected, whether it falls into the "good" or "average" category. Required competencies serve as a basis for evaluating job performance. With their unique characteristics, human resources need continuous development of their competencies. The competence of human resources is of great importance because it represents human capital and acts as an active factor in the organization's development. In addition, the competence of human resources is a critical factor in effectively managing organizational resources (3).

Competency-based human resource management (CBHRM) is considered a critical strategy to ensure proper recruitment and development of employees. It is widely recognized as an essential component in various organizations. CBHRM establishes a strong link between employees' competence and organizations' overall success (4, 5).

Since the 1990s, Competence-Based Human Resource Management (CBHRM) has been integrated into human resource management (6). It adopts a competency-based approach in various HRM practices, including recruitment and selection, training and development, and performance appraisal and compensation. Unlike traditional HRM, which focuses on job activities, CBHRM emphasizes individuals and their knowledge, skills, and attitudes. By incorporating competencies into the framework, CBHRM enhances organizational productivity by identifying the critical distinctions between exemplary and average performers and subsequently working towards closing those gaps (7).

CBHRM serves as the basic framework in organizations to guarantee accurate human resource planning. It aims to ensure sufficient competent employees to meet organizational needs (8). In addition, CBHRM is recognized for its effectiveness in empowering line managers to achieve desired results and motivating all employees to increase competence. It serves as the cornerstone of effective workforce management (8).

Despite the critical role CBHRM plays in organizations, there is considerable confusion surrounding its definition and implementation. There is no consensus on the nature of CBHRM and how it should be effectively practiced (9). The present study investigated competency-based human resource management in workplaces. The primary purpose of this study was to investigate the characteristics, advantages, and disadvantages of CBHRM used in OHS. In particular, the fields and industries in which these techniques are used have also been examined.

Methods

The present study, as a literature review, was conducted in 2024 to combine articles that provide important insights to OHS researchers the articles from 2018 up to now were reviewed. The review of the papers was done according to the PRISMA checklist. A systematic electronic search was done in PubMed, Science Direct, Scopus, and PLOS ONE. The collection of articles from databases was done using proper research keywords “human resource management,” “competence,” “competence management,” “competency-based management,” and “competency-based human resource management”). Only organizational and industrial literature was considered for data collection in this study. The keyword search encompassed paper titles and abstracts, resulting in significant irrelevant material. To address this issue, the search was narrowed down to titles only. The inclusion criteria consisted of studies written in full-text English that examined the measurement of CBHRM, its determinants, and/or predictors. Both qualitative and quantitative studies were eligible for inclusion.

Screening

We explored the articles' titles, abstracts, and keywords. At this step, irrelevant and non-English articles, books, journals, conference articles, and unpublished articles were excluded. The articles were classified based on PRISMA on an Excel sheet using the following dimensions:

- Authors
- Year of publication
- Title of article
- Country
- Field of study
- Type of organization
- Research questions/objectives
- CBHRM model
- Variables
- Instrument
- Main findings
- Limitations

In the second phase, the articles were categorized based on the CBHRM application model and their related fields. Subsequently, the analysis of the articles included an examination of the statistical results of the applied field and the evaluation of the distribution of articles. Any study that has not measured human resource management, predecessors, or consequences was removed from the analysis. Figure 1 shows the research method used in this study.

Results

Search Results

Using the search strategy, the initial search identified 472 potential articles from the databases between 2019 and 2024. After identification and screening, 439 articles were removed because of date, document type, source type, language, and off-topic, and 25 articles were included in the study.

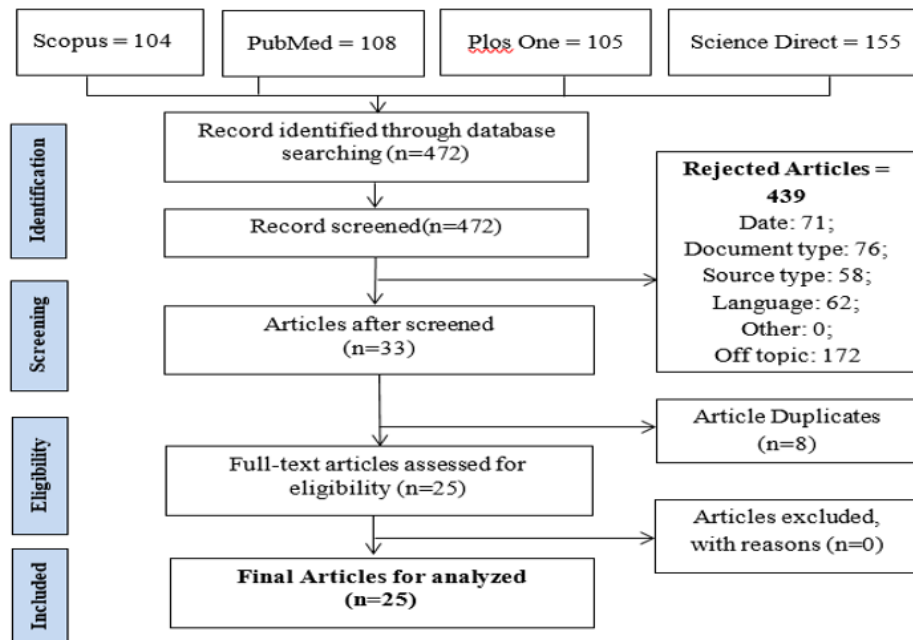


Figure 1. PRISMA Flow Diagram

Analytical Findings

The following is a review of essential definitions and concepts for Competency-based Human Resource Management in the work environments discussed in various studies.

Definition of Competence

As the literature has been identified, the definition of competence differs between the US and British approaches. In the US approach, "competence" is a person's essential behavioral characteristics that help superior performance (10, 11). On the other hand, the British approach defines "competence" as the ability to perform activities in a particular job (12). These two approaches are complementary and have led to a multidimensional understanding of individual-level competencies by the late 1990s (13). The interpretation of the concept of competence depends on the viewer's perspective (6). However, for this study, competence refers to interconnected knowledge, skills, and attitudes that are shown as behavior and enable individuals to perform their duties effectively in the organization (14, 15).

Competence refers to the essential characteristics of behavior, including the motivations, personal characteristics, self-concept, values, knowledge, and skills of people who show superior performance, as Otoo (16). As mentioned by Tarigan & Setiawan, it is related to what people can do, not what they may potentially do (17).

Definition of Human Resource Management

The term "human resources" refers to the individuals within an organization, as explained by Boon et al. (18). When managers have human resource responsibilities, they aim to facilitate individual help to achieve organizational goals, as Mitchell et al. (19). The importance of human resource efforts stems from the fact that humans have a constant presence in every organization. They set goals and seek innovation to achieve

organizational goals and purposes. According to Wright and Ulrich (2017), human resource management is an area of public management that covers various aspects of planning, organizing, implementing, and controlling processes in production, marketing, finance, and employees (20). Human resources play a growing vital role in achieving the company's goals, which leads to the regular collection of various human resource research experiences and findings known as management (21). Human Resource Management includes a set of knowledge on how effective human resources are managed.

Definition of Competence-Based Human Resource Management (CBHRM)

Gunawan et al. emphasized that workforce quality significantly affects an organization's success (22). As highlighted by Tarigan & Setiawan, human resource management is essential in organizations (17). It goes beyond administrative tasks to focus on developing the potential of human resources for nurturing creativity and innovation. As Otoo pointed out, proper human resources are essential for organizations to provide exceptional and valuable services (16). According to Tarigan & Setiawan, each member's order and commitment are critical to achieving productivity (17).

Literature shows many definitions of the concept of CBHRM. However, CBHRM can be understood as applying HRM practices, which connect a competence model to the competencies needed to perform job roles in an organization. This reflects the change in the traditional human resource management approach, which primarily relies on job descriptions and task analysis, towards a more individual-centered approach that emphasizes people (23). CBHRM adopts a view that aligns employees' goals and behaviors with organizational goals. This model recognizes that employees' needs may vary in different organizations and affect their perception and evaluation of HRM practices (6).

Dimensions

The literature review reveals various dimensions of CBHRM, as outlined in Table 1. In this study, we compared and analyzed the terms across these dimensions and their respective underlying meanings. The dimensions of CBHRM were categorized into five distinct attributes, namely (1) recruitment and selection, (2) training and development, (3) reward system, (4) performance appraisal, and (5) career planning.

Recruitment and Selection

Recruitment and selection include procedures to attract people with appropriate competence conditions for requesting intra-organizational posts and choosing the most appropriate candidate for a specific role and organization (5). Competence acts as a basis for comparing the capabilities of the servants. However, it is essential to note that the recruitment and selection processes are different for the managers and staff (24). When selecting candidates for linear manager posts, senior executives and human resources professionals must first clarify the effective employees in the organization and use competence models to ensure that the right people are in the correct position (6). This process may include bureaucratic procedures that can add to the complex process (25). On the other hand, bureaucratic procedures may not be involved when hiring and selecting personnel. The recruitment process can be relatively simple if the servants show their knowledge, skills, and attitudes (26).

Traditional HR management identifies people who meet the requirements specified in the job description. The candidate's educational background, work experience, and other relevant qualifications are assumed to demonstrate the candidate's ability to perform the assigned job duties successfully (27). Competency-based HRM evaluates the applicant's decision-making process by evaluating their demonstrated skill in performing job-related tasks. It compares the applicant's skills and talents to competency models that identify the characteristics of highly successful or exemplary performers in their specific work areas (27).

Training and Development

Training and development involves improving the skills, knowledge, and attitudes required for specific job roles in an organization. This is critical for organizations striving for improvement (23, 28). A competency-based education and development system focuses on developing employees' competencies to enhance their performance in their respective roles. The system also includes a self-reflection process for personal development among personnel (14). As a result, HR can develop programs that align with the future needs and demands of the workplace. In traditional HR management, the process is either vague or ambiguous. Competency-based HRM develops individual competencies to achieve exemplary performance and adapt to change (27).

Reward System

The reward system is designed to motivate and encourage employees to increase their performance. This is an essential strategy to ensure practical work and fair recognition of diligent efforts (29). The system is designed to provide rewards based on an employee's merit in the workplace rather than on position or job title. Human resource managers are essential in creating, administering, and efficiently distributing the reward scheme (5). Rewards may include salary, incentives, bonuses, health insurance, job security, bonuses, coupons, and other similar benefits (24, 30). In addition, the attractiveness of the reward plan is a factor that can attract new talents to the organization (31) and is also the primary motivation for people to apply for specific job positions. The more attractive the reward scheme, the more likely the number of applicants will increase (32). Work analysis and job descriptions are crucial in traditional HR management as they are fundamental elements. They are the building blocks for various HR activities such as recruitment, selection, orientation, training, rewards, performance evaluations, and personnel development (27). In Competency-based HRM, competencies are the characteristics and skills people use to achieve successful and outstanding performance. These competencies are the basic principles or the basis of human resources activities (27).

Performance Appraisal

Performance appraisal, also known as performance review and appraisal (33), is the systematic process of evaluating various aspects of an employee's job, including their attributes, characteristics, performance, related behavior, and outcomes. This evaluation process aims to provide feedback to enhance competency and performance. Using a competency-based performance appraisal, there is a shared understanding of the criteria that will be assessed (6, 32). In traditional HR management, the goal is to minimize costs while providing performance feedback to people. This includes deciding on salary increases, promotions, and other related matters (27). In competency-based HRM, people are evaluated based on competency frameworks matching their job responsibilities. They receive constructive feedback that helps them improve towards achieving exemplary performance (27).

Career Planning

Career planning includes making informed decisions about one's career path, charting career growth paths, and taking actions to promote personal and professional development. Sometimes, career planning is also known as succession planning. The distinction between career planning and succession planning is that career planning helps employees identify and acquire necessary competencies for future development based on competency analysis (34, 35). This system enables employees to assess needed competencies, compare them to their existing competencies, and identify potential positions that align with their future career aspirations (36-38). On the other hand, succession planning is a process in which organizations focus on key positions that are expected to become vacant and prepare for a smooth transition to the next generation of leaders in those positions. The organization may groom the right candidate and provide them with support and growth opportunities. Alternatively, the organization may hire specifically for a temporary position to promote the individual to the desired position.

Table 1. A summary of reviewed articles

Row	Authors (year)	Title	Country	Field of Industry	Dimensions of CBHRM					Instrument
					Recruitment And Selection	Training And Development	Reward System	Performance Appraisal	Career Planning	
1	Tariq Rafique et al. (2024)	Enhancing Organizational Performance Through Competency-Based Human Resource Management: A Novel Approach To Performance Evaluation	Pakistan	General Organizations	No	No	No	Yes	No	Survey and Interview
2	Ai-Yong Zhu et al. (2024)	Subjective learning gain from a simulation based health management course: a mixed methods study	China	Health Management	No	Yes	No	No	No	Survey and Interview
3	Zulmi Ramdani et al. (2024)	Competency-Based Human Resources (HR) Development in the Digital Era	Indonesia	Digital and Technology Sector	Yes	Yes	No	No	Yes	Survey
4	Stephanie Vaughn et al. (2023)	Inside Looking Out: Updated Competency Model for Professional Rehabilitation Nursing Practice	Usa	Health Care System	No	No	No	Yes	No	Not Mentioned
5	G V Epikhina et al. (2023)	An analysis of the theoretical and methodological aspects of the competency-based approach in personnel management: directions for modification	Russia	Maritime	No	No	No	Yes	No	Not Mentioned
6	Pingfen Li et al. (2023)	AMOS-based Analysis of Community Cadres Crisis Management Competency	China	Not Mentioned	No	Yes	No	No	No	Survey and Interview
7	Kaouthar Mlaouhi et al. (2022)	Use of Competency Management Methods and Tools in roject-based Organizations	France	Project-based Organizations	Yes	No	No	No	No	Survey
8	Sitong Wang et al. (2022)	A Study on Nurse Manager Competency Model of Tertiary General Hospitals in China	China	Health Care System	Yes	No	No	Yes	No	Interviews
9	Fejfarová M., et al (2022)	Employee Training And Development and Competencybased Approach: any Relationship?	Czech Republic	Automotive Industry	No	Yes	No	Yes	Yes	semi-structured interviews
10	Dr. Amin Mohamed Amin Abd El Motalieb (2021)	Competency Based Human Resources Management (Case study)	Dubai	An Organization	Yes	Yes	Yes	Yes	No	79-item survey

Row	Authors (year)	Title	Country	Field of Industry	Dimensions of CBHRM					Instrument
					Recruitment And Selection	Training And Development	Reward System	Performance Appraisal	Career Planning	
11	Lina Daouk-Öyry et al. (2021)	Evidence-Based Management Competency Model for Managers in Hospital Settings	Lebanon.	Health Care System	No	Yes	No	No	No	semi-structured interviews
12	Bruno Henrique Rocha Fernandes et al. (2021)	Competence Management Models in Leading Brazilian Organizations	Brazil	95 Brazilian Organizations	No	No	No	Yes	Yes	Not Mentioned
13	Mohamad Nasaruddin Mahdzir et al. (2021)	Integrating Competency Based-Management into Individual Development Plan For University Staff	Malaysia	University Staff	No	Yes	No	Yes	Yes	Survey
14	Zeplin Jiwa Husada Tarigan et al. (2021)	The effect of competency management on organizational performance through supply chain integration and quality	Indonesia	Manufacturing Companies	No	No	No	Yes	No	Survey
15	Andrej JERMAN et al. (2020)	Conceptual Key Competency Model for Smart Factories in Production Processes	Italy	Automotive Industry	-	-	-	-	-	Semi-Structured Interview
16	Kristina Sedyastuti et al. (2020)	Human Resources Competency at Micro, Small and Medium Enterprises in Palembang Songket Industry	Indonesia	SMEs	-	-	-	-	-	Survey and Interview
17	Rahmat Sabuhari et al. (2020)	The effects of human resource flexibility, employee competency, organizational culture adaptation and job satisfaction on employee performance	Indonesia	Finance Company	No	No	No	Yes	No	Survey
18	O Y Frolova et al.	The personnel competence qualification formation in the agroindustrial complex production systems: managerial aspect	Russia	Agroindustrial Complex Production Systems	No	No	No	Yes	No	Not Mentioned
19	Petra Horváthová et al. (2019)	Methodology proposal of the creation of competency models and competency model for the position of a sales manager in an industrial organisation using the AHP method and Saaty's method of determining weights	Czech Republic	An Industrial Organisation	Yes	Yes	No	Yes	No	Survey and Interview
20	Mohammad Mahoud et al. (2019)	Studying Human Resource Competency Models in Multiple Construction Project	Iran	Construction Projects	No	Yes	No	Yes	Yes	Interview

Row	Authors (year)	Title	Country	Field of Industry	Dimensions of CBHRM					Instrument
					Recruitment And Selection	Training And Development	Reward System	Performance Appraisal	Career Planning	
21	Milena Vainieri et al. (2019)	Explaining performance in health care: How and when top management competencies make the difference	Italy	Health Care System	No	No	No	Yes	No	Survey
22	Hidehiko Adachi et al. (2019)	The effects of training managers on management competencies to improve their management practices and work engagement of their subordinates: A single group pre- and post-test study	Japan	Finance Company	No	Yes	No	No	No	semi-structured interviews
23	Tao Chen et al. (2019)	How do project management competencies change within the project management career model in large Chinese construction companies?	China	Construction Company	No	No	No	No	Yes	survey
24	Jimmy Kansal et al. (2018)	Development of a competency model for enhancing the organizational effectiveness in a knowledge-based organization	India	A Knowledge-Based Organization	No	Yes	No	Yes	Yes	Interviews
25	Frank Nana Kweku Otoo (2018)	Human resource management (HRM) practices and organizational performance	Ghana	Hotel	Yes	Yes	No	Yes	Yes	Survey

Antecedents

Due to the lack of quantitative research supporting the identified antecedents, we have not investigated them extensively in detail. However, through the literature review, we have identified seven factors categorized into three themes: organizational factors (Organizational size, Organizational culture, The number of employees, and Type of organization), individual factors (HR manager's competence, Personal characteristics of top managers) and human resource policies (HRM policy).

Consequences

Research has provided evidence of the effects of CBHRM, which we have analyzed and organized into three broad categories:

- employee outcomes (personal traits, skills, knowledge, attitude, motivation, behavior)
- organizational outcomes (job satisfaction, retention, involvement, commitment, engagement, performance, reputation, attractiveness)
- financial outcomes

Discussion

Examining the trend of publications is an essential indicator of knowing the process of scientific development of a subject. The present study examined articles published from 2018 to 2023 that focused on evaluating CBHRM in OHS. As seen in Figure 2, 2019-2021 is the peak of publications in the field of CBHRM in OHS. In 2018, the lowest number of CBHRM in OHS papers were published. Based on our results, 3.83 papers per year were published. Most reviewed studies did not have a sufficient standard or provide a specific model for CBHRM evaluation. Therefore, they were excluded from the study process. On the other hand, many studies were systematic review articles not examined in the present study.

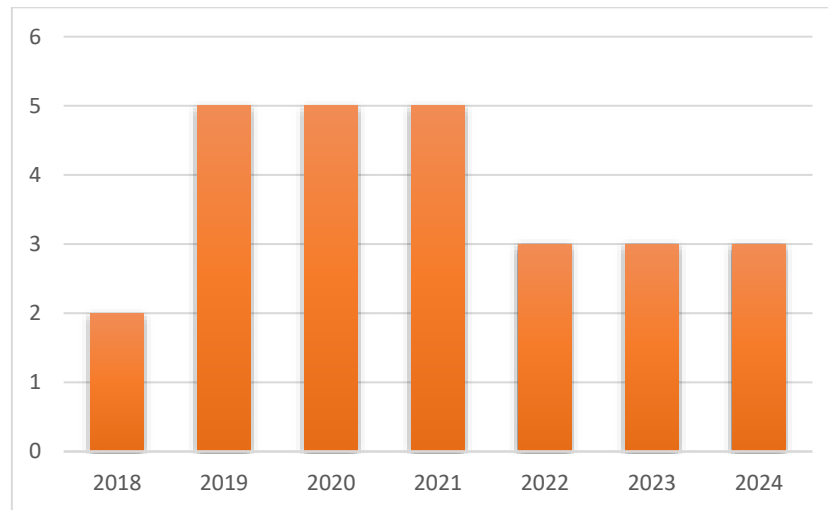


Figure 2. Distribution of papers by year of publication

As can be seen in Table 2, 43.5% of the studies collected the data using semi-structured interviews. 39.1% of the studies used surveys, and 17.4% used semi-structured interviews and surveys.

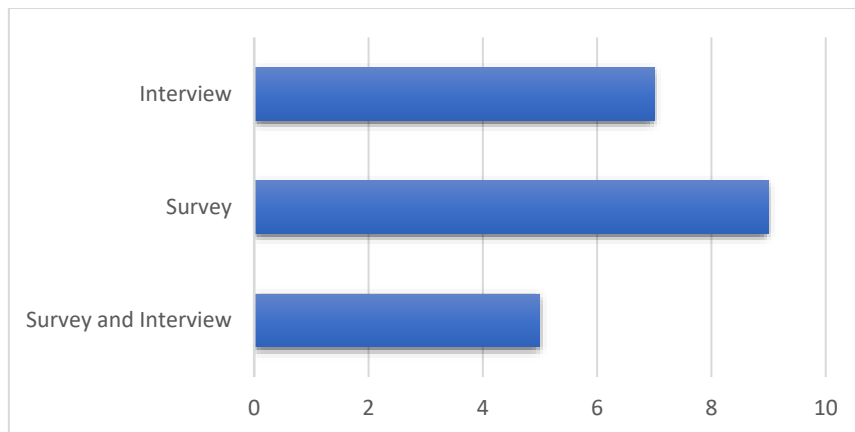


Figure 3. Instruments used to assess the CBHRM

As the literature review results showed, the CBHRM model had five dimensions. Based on the results, 26.1% of studies investigated Recruitment and Selection, 47.8% Training and Development, 8.7% Reward System, 69.6% Performance Appraisal, and 30.4% Career Planning. In recent studies conducted in the CBHRM field, Performance Appraisal has received more attention than other dimensions. The Reward System has received less attention than others. This review shows that organizations should consider all dimensions of the model to manage human-based competence in their organization effectively.

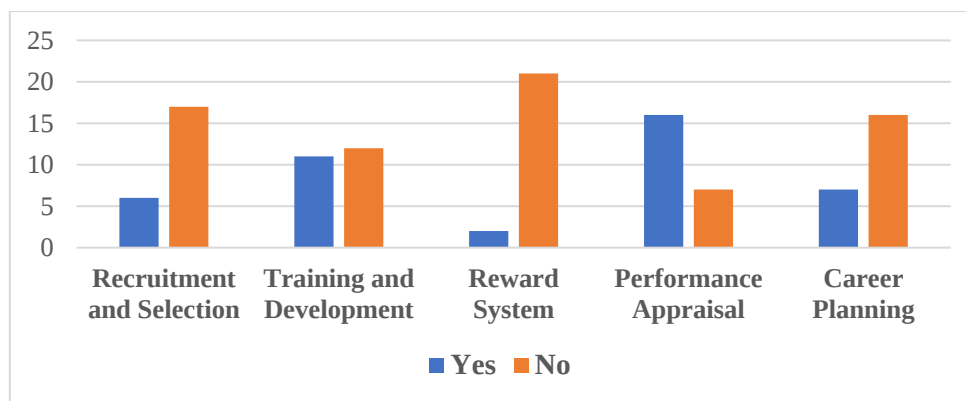


Figure 4. Distribution of the CBHRM model's dimensions

The results showed that organizational factors were examined 67 times, Individual Factors 9 times, and Human Resource Policies 6 times in the studies. Among the organizational factors, ORGANIZATIONAL SIZE was examined in 82.6% of the studies and accounted for the most statistics. The results are shown in Figure 5 and Figure 6.

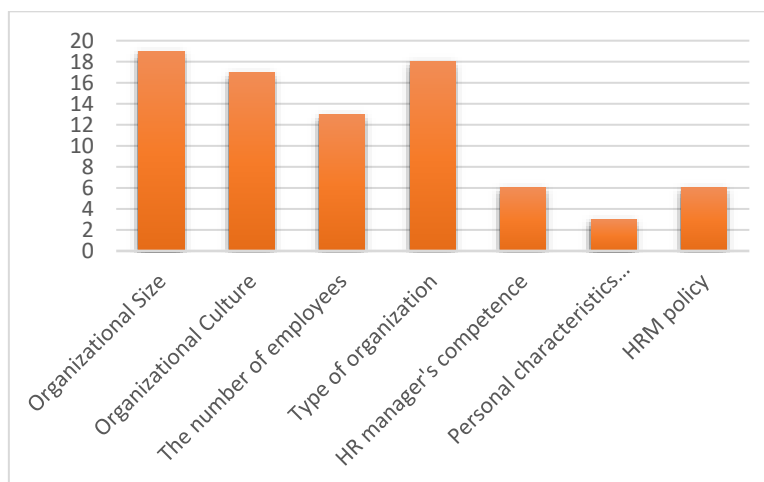


Figure 5. Distribution of Antecedents' dimensions

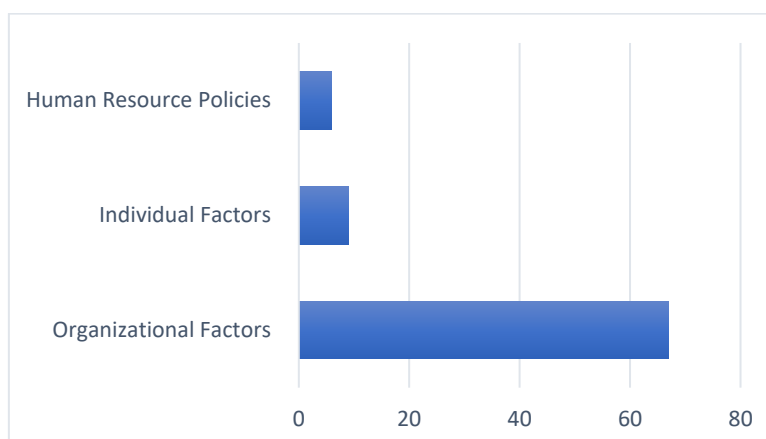


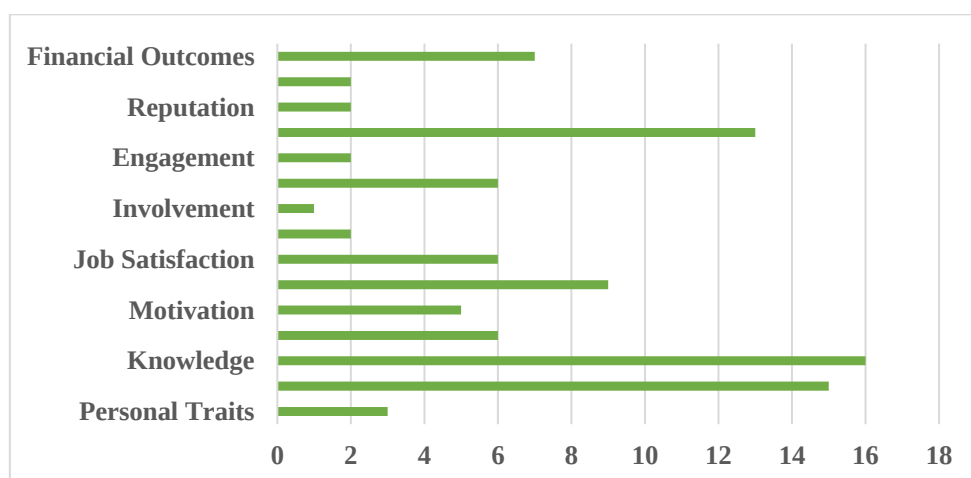
Figure 6. Distribution of the Antecedents' themes

The results of Table 2 show that using CBHRM models in the workplace literature review can positively affect employee outcomes, organizational outcomes, and financial outcomes.

Table 2. Outcomes of using CBHRM models in the workplace

Outcomes	Category	Findings	References
Employee Outcomes	Personal Traits	HRM practices contribute to the development of employee outcomes	(27, 39, 40)
	Skills		(27, 39-52, 57)
	Knowledge		(27, 39-43, 45-54, 57)
	Attitude		(41, 43, 46-48, 51)
	Motivation		(27, 41, 42, 48, 52)
	Behavior		(27, 40, 41, 44, 47, 48, 50, 52, 55)
Organizational Outcomes	Job Satisfaction	HRM has a significant influence on organizational outcomes	(27, 41, 48, 51, 54)
	Retention		(41, 53)
	Involvement		(27, 41)
	Commitment		(27, 40, 43, 45, 47)
	Engagement		(41, 55)
	Performance		(27, 41, 44, 54, 57, 58)
	Reputation		(41, 56)
	Attractiveness		(27, 41)
Financial Outcomes		Financial Outcomes are directly affected by HRM practices	(27, 39, 42, 45, 46, 48, 50)

Figure 7 shows the frequency of these categories in different articles. The results showed that among employee outcomes, skills had the highest frequency of reviews in the articles, and personal traits were less noticed. Among organizational outcomes, performance was the most repeated, and retention, involvement, engagement, reputation, and attractiveness were the least noticed. The results showed that financial outcomes were examined in only 30.4% of the articles.


Figure 7. The frequency of outcome categories

According to Figure 8, among the reviewed studies, 57 percent of them had investigated employee outcomes, 36 percent of organizational outcomes, and 7 percent of financial outcomes studies.



Figure 8. Frequency of outcomes

Conclusion

This study elaborates on the key features, causes, effects, and proposed connections of the concept known as CBHRM in OHS. CBHRM in OHS covers several critical aspects, such as recruitment and selection, training and development, performance appraisal, reward system, and career planning. Organizational factors, individual factors, and human resource policies often influence these characteristics. The implication of implementing CBHRM in OHS is that it ultimately leads to improved outcomes for employees, organizations, and finances. This analysis will help senior managers, HR managers, and line managers understand the concept and determine where responsibility lies in further refining the definition of CBHRM in OHS.

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