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Development of New Information Systems with the Involvement of Artificial Intelligence for the Men and Women's Work: A Methodical Approach to Assessment and Selection of the Optimal

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ABSTRACT

The main purpose is to create a new effective methodical approach for assessing the selection of the optimal information system with the involvement of artificial intelligence to enhance the efficiency of men and women's work in organizations. The object of study is information systems used in the work of organizational activities in various companies. The research methodology involves the use of the BOCR method, which allows evaluating different alternatives in the development of information systems based on various comparison criteria. As a result of the conducted research, key criteria and two forms of information systems for comparison were presented. The evaluation results showed that according to the BOCR criteria, the most optimal information system is the one that uses artificial intelligence solely for analytical processing without data collection and analysis. The innovativeness of the research results is revealed in the proposed approach to evaluation and comparison. The study has limitations in the form of not considering the specificity of differences in the work of men and women in the context of thinking. Future research prospects should focus on gender issues in evaluation.

1. INTRODUCTION

In the rapidly developing modern digital space, the relevance and importance of updating information systems during organizational activities in companies cannot be overestimated. Therefore, this kind of need is driven by several critical factors that affect a company's efficiency, competitiveness, and ability to innovate. Integrating artificial intelligence into these updated systems is not just a trend, but a strategic imperative to stay ahead of an increasingly complex and dynamic business environment. Today, technological advances and market digitalization have changed the way businesses operate. Traditional information systems, once capable of supporting organizational needs, are now often unable to cope with the volume, velocity and variety of data generated by modern business activities. Thus, updating these systems ensures that companies can manage and process data more efficiently, leading to improved decision-making processes. Using artificial intelligence, organizations can automate routine tasks, gain valuable insights from data analytics, and improve the customer experience through personalized services. It should be noted that the ability of artificial intelligence to learn and adapt over time means that these systems can constantly improve their performance, increasing operational efficiency. Moreover, cybersecurity threats have become more sophisticated, requiring updated information systems to include the latest security technologies. Artificial intelligence plays a critical role by offering enhanced threat detection and response capabilities in real time, thereby protecting sensitive information and maintaining stakeholder trust. The updated system, powered by artificial intelligence, can identify patterns indicative of cyber threats that may be missed by traditional security measures, providing a robust mechanism to protect against potential kinks.

The competitive environment in various industries also highlights the importance of system updates. In a market where differentiation is key to attracting and retaining customers, companies equipped with the latest technology can offer excellent products and services. It should be noted that artificial intelligence allows for the creation of innovative solutions that can significantly improve the customer experience, such as personalized recommendations, fast response times and interactive support systems. Not only does this help maintain a competitive advantage, but it also helps increase customer loyalty and open up new revenue streams. In addition, the legal and regulatory environment is constantly changing, with new requirements emerging as governments and industry bodies respond to technological advances and societal challenges. Updated information systems, especially those incorporating artificial intelligence, can more effectively

enforce these evolving regulations. Artificial intelligence can automate monitoring and reporting processes, reducing the risk of non-compliance and associated financial penalties or reputational damage. Finally, employees themselves benefit from updated information systems with the integration of artificial intelligence. These systems can take care of repetitive and time-consuming tasks, allowing employees to focus on higher-value work that requires creativity and problem-solving skills. This not only improves productivity, but also increases employee satisfaction and engagement as workers feel their skills are being put to better use.

We can note that the relevance and importance of updating information systems and integrating artificial intelligence into organizational activities is obvious. These updates enable companies to efficiently process and use data, improve security, maintain competitiveness, ensure compliance, and improve employee efficiency and satisfaction. Ignoring this imperative can leave companies ill-prepared to cope with the complexities of today's business world, ultimately impacting their growth and sustainability.

The main purpose is to create a new effective methodical approach for assessing the selection of the optimal information system with the involvement of artificial intelligence to enhance the efficiency of men and women's work in organizations. The object of study is information systems used in the work of organizational activities in various companies. The structure of the article includes a literature review, a description of the methodology, a presentation of the results, their comparison and conclusions.

2. LITERATURE REVIEW

The theoretical underpinnings of information systems and the critical role of knowledge management within organizational contexts are extensively discussed by Baskerville and Dulipovici [1], who provide a foundational framework for understanding the dynamics of knowledge within the realm of information systems management. This discussion is complemented by Todoshchuk et al. [2], who examine the modeling of information systems for personnel management, emphasizing the transition to Industry 5.0 and the implications for economic security. The transition to Industry 4.0 and the anticipation of Industry 5.0 significantly impact organizational performance, as explored by Dalenogare et al. [3]. Their research highlights the anticipated benefits of integrating advanced technologies, including artificial intelligence, into industrial operations. Similarly, Stachová et al. [4] delve into the necessity of external partnerships in education and development to navigate the challenges posed by these industrial evolutions.

The criticality of information security within the context of updated information systems is explored by Lo et al. [5-7]. These studies collectively underscore the need for a robust security risk assessment process, considering the interdependencies between controls and the application of multicriteria decision-making methods for enhanced security measures. The specific role of artificial intelligence in revolutionizing staffing search and recruitment processes is detailed by Borisova et al. [8], while Giebe et al. [9], explore its use as a sustainable instrument for customer loyalty in the banking and finance sector. These perspectives offer insight into the multifaceted applications of AI across different organizational functions. The literature also addresses gender stereotypes and differences in managerial positions and decision-making processes, as studied by Mihalčova et al. [10, 11]. These studies provide a crucial context for considering gender issues in the evaluation and implementation of new information systems.

Kryshtanovych et al. [12] introduce a graphical language-based approach for database modeling, which aligns with our study's innovative use of graph theory for representing the BOCR criteria in assessing information systems. This methodological innovation underscores the importance of visual tools in facilitating the understanding of complex data and criteria.

Sylkin et al. [13] explore the financial security of engineering enterprises, emphasizing the importance of anti-crisis management as a foundational step for integrating new technological solutions, including AI-driven systems . This perspective is crucial for understanding the preconditions necessary for the successful implementation of AI in the business sector. Alazzam et al. [14] further this discussion by developing an information model for e-commerce platforms that addresses modern socio-economic systems' needs in the context of global digitalization and legal compliance . Their work underlines the importance of adapting to digital transformations in a legally compliant manner, a factor critical for the deployment of AI in various sectors.

In assessing the impact of institutional dynamics on regional development, Bazyliuk et al. [15] provide insights into the methodological and practical aspects of comparing publishing and printing activities in Ukraine . Their approach to evaluating institutional dynamics offers a framework that can be applied to understanding how AI-driven information systems might influence different industry sectors. Arora and Bhardwaj [16] specifically address the role of artificial intelligence in collaborative information systems, highlighting AI's potential to foster innovation and efficiency in educational and business settings. Krupa et al. [17] evaluation of e-business performance in tourism introduces a novel information system model suited for the digital era , providing a specific example of how AI can enhance sector-specific outcomes. Legal considerations, as discussed by Saleh et al. [18], focus on the management of cryptocurrency assets within national security systems , pointing out the legal intricacies involved in adopting new technologies like AI in sensitive area.

Methodological approaches to fostering creative thinking in students of creative professions, as explored by Kryshtanovych et al. [19], and the choice of business management strategies in the face of changing commercial activities, by Alazzam et al. [20], both contribute valuable perspectives on the adaptation and strategic planning necessary for integrating AI into educational and business practices. Lastly, Kronivets et al. [21] delve into the legal foundations for using artificial intelligence in educational processes , emphasizing the need for clear legal frameworks to support AI's effective utilization.

Building on the foundation laid by Lee, Kwon explores the dynamic interplay between ethical awareness and AI in contemporary society. Kwon's study underscores the pivotal role of education in fostering an ethical AI culture, one that is cognizant of the nuanced impacts of AI on different segments of the workforce. Kwon's research is particularly relevant to the discourse on gender inclusivity, as it sheds light on the need for ethical education programs that address and mitigate biases inherent in AI systems. Such biases, if unchecked, can perpetuate stereotypes and inequalities in the workplace.

Kwon advocates for a holistic educational approach that equips individuals with the tools to critically assess AI technologies, fostering environments where men and women can coexist and thrive without discrimination or bias [22, 23].

Given the outcomes of our research, several gaps within the existing literature become apparent, particularly in the context of developing and evaluating new information systems with the involvement of artificial intelligence (AI) for enhancing organizational efficiency. These gaps highlight areas where further scholarly investigation could provide significant contributions to the field. Here, we outline the main gaps (Table 1).

Table 1. The main gaps in literature

Integration of AI for Analytical Processing Without Data Collection	**Methodological Approaches to Information System Evaluation**
Our findings suggest the optimal information system leverages AI solely for analytical processing, sidestepping traditional data collection and analysis methods. This highlights a gap in the literature regarding the exploration of AI's role in analytical processes exclusive of data collection	The utilization of the BOCR method for evaluating information systems, particularly with AI integration, is relatively underexplored in current literature. While there are studies on decision-making frameworks and multicriteria decision analysis, the specific application and benefits of the BOCR method in the context of AI-integrated systems require further exploration
Comparative Studies of Information System Forms	**Practical Implications of AI Integration Beyond Efficiency**
The comparative analysis of different forms of information systems, as facilitated by our research, reveals a gap in side-by-side evaluations of systems with varying degrees of AI involvement	While our study focuses on the efficiency gains from AI integration in information systems, there is a broader gap in understanding AI's comprehensive impact on organizational outcomes beyond efficiency, such as innovation capability, employee satisfaction, and ethical considerations

In summary, the literature review establishes a solid foundation for our research by drawing from a diverse array of scholarly contributions. These works collectively highlight the evolving landscape of information systems management, the pivotal role of artificial intelligence in organizational activities, and the critical importance of security, gender perspectives, and methodological innovations in assessing and selecting optimal information systems.

3. METHODOLOGY

At the outset, our research aimed to devise a new, effective methodical approach for evaluating and selecting the most suitable information system that incorporates AI to augment the work efficiency of both men and women within organizational contexts. The primary focus was on information systems operational within diverse company settings, emphasizing their role in organizational activities.

Central to our methodological framework is the application of the BOCR method, a comprehensive evaluative tool that facilitates the analysis of alternatives in decision-making processes. BOCR stands for Benefits, Opportunities, Costs, and Risks, providing a multidimensional framework to assess various information system developments. This method allowed for a holistic evaluation of the potential impacts of different information systems on organizational efficiency, considering both the positive and negative aspects associated with each option. To enrich the analytical depth of our research, we incorporated the Delphi method, an iterative process involving a panel of experts. These experts were solicited for their insights and judgments regarding the assessment of different information systems using the BOCR criteria. The Delphi method facilitated a structured communication process, ensuring the convergence of expert opinion towards a consensus on the most effective information system. This approach was instrumental in validating the BOCR analysis, providing a robust foundation for our evaluative criteria.

A novel aspect of our methodology was the application of graph theory to visually represent the relationships and comparative assessments of the BOCR criteria. By constructing graphical models of the criteria, we could visually depict the interconnections and relative weights of Benefits, Opportunities, Costs, and Risks associated with each information system alternative. This graphical approach not only enhanced the clarity of our comparative analysis but also provided a unique perspective on the evaluative process, facilitating a more intuitive understanding of the complex criteria at play.

BOCR has four key criteria by which two objects are compared (in our case, these objects are information systems). Then which of the systems shows itself better and is the most optimal. The method used can be presented in several stages: note that first it was necessary to determine what is being compared and with what. To do this, two variables are set in our case, further in the text they will be denoted as M. And it is among them that we determine the most optimal one and use the BOCR criteria. Each letter in the name of the method is an abbreviation denoting a criterion by which we compare the opinions of the involved experts in where and by what criterion a particular change is better and where worse.

The selection and definition of key criteria for evaluating the information systems were central to our methodological approach. We identified a set of specific metrics for each BOCR component, tailored to the context of AI integration within organizational settings. These criteria were designed to capture the multifaceted impacts of AI on operational efficiency, cybersecurity, innovation potential, regulatory compliance, and workforce dynamics.

4. RESULTS OF RESEARCH

Thus, it has the following sequence in assessment: problem formation; building a hierarchy of factors to assess benefits, opportunities, costs and risks; determination of global priorities for each of the four hierarchies according to its system of criteria; application of convolution formulas for calculating BOCR-estimates.

We denote the BOCR criteria accordingly:

1. B (Benefits): B1 (correspondence to work areas); B2 (compliance with the development strategy); B3 (information security).

2. O (Opportunities): O1 (novelty); O2 (prospect); O3 (new

effect).

3. C (Costs): C1 (financial costs); C2 (labor costs); C3 (technical costs).

4. R (Risks): R1 (risks are normative); R2 (technological risks); R3 (financial risks).

Along with this, we compare different forms of information systems with the addition of artificial intelligence (M) according to each of the BOCR criteria:

M1. Total AI Involvement Information System (TAIIS). The Total AI Involvement Information System (TAIIS) represents a comprehensive integration of AI across all organizational functions, from operations and customer service to strategic decision-making and HR processes. In this system, AI technologies, including machine learning, natural language processing, and predictive analytics, are deeply embedded, automating a wide range of tasks and providing advanced analytical capabilities to inform business strategy and operations.

M2. Partial AI Involvement Information System (PAIIS). The Partial AI Involvement Information System (PAIIS) integrates AI capabilities in specific, targeted areas of operation, such as customer service through chatbots or data analysis for market trends. This system retains significant manual input and decision-making processes, with AI supporting rather than leading these functions. AI is utilized to automate routine tasks, analyze data to inform decisions, and enhance user experiences without fully automating all processes.

Now let's build a hierarchy according to each BOCR criterion (Figure 1).

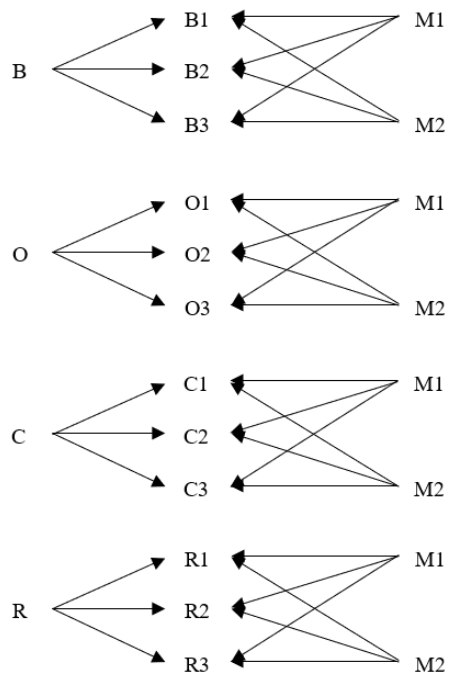

Figure 1. The hierarchy according to each BOCR criterion

Next, a comparison is necessary according to Eq. (1):

$$\frac{n(n-1)}{2} \tag{1}$$

where, n is the number of cases at one of the levels. In this case, we can compare for each BOCR criterion through experts the effectiveness of each of the proposed information systems with the use of artificial intelligence (all experts were provided with two systems M with artificial intelligence for familiarization):

$$\begin{aligned} (1)\ \mathrm{B} &= \begin{pmatrix} 1 & 1/8 & 1/6 \\ 8 & 1 & 2 \\ 6 & 1/2 & 1 \end{pmatrix} \\ (2)\ \mathrm{O} &= \begin{pmatrix} 1 & 4 & 1/6 \\ 1/4 & 1 & 8 \\ 6 & 8 & 1 \end{pmatrix} \\ (3)\ \mathrm{C} &= \begin{pmatrix} 1 & 1/3 & 3 \\ 3 & 1 & 4 \\ 1/3 & 1/4 & 1 \end{pmatrix} \\ (4)\ \mathrm{R} &= \begin{pmatrix} 1 & 3 & 1/8 \\ 1/3 & 1 & 5 \\ 8 & 5 & 1 \end{pmatrix} \end{aligned} \tag{2}$$

It should be noted that the figures presented in matrices 1-4 are the result of a pairwise comparison of two or more changes and criteria using the selected method. For this purpose, the evaluation system used is presented in Table 2.

Table 2. Evaluation system based on BOCR criteria

Criterion	Assessment for Matrix Construction
Mark 1 (does not apply to diagonals)	If the variables being compared are equal
We mark 2	If one variable has advantages over the other in the comparison
We put 3	If a variable has a significant advantage over another
Let's denote 4	With an extremely critical advantage
5,6,7,8,9	In other cases, what distinguishes one change from another

This diagonal representation, where "1" signifies the relative importance or comparison of an element with itself, establishes a baseline for comparisons within the matrix. It reflects the principle that each element (Benefit, Opportunity, Cost, Risk) is equally important to itself, providing a starting point for the pairwise comparison process. This normalization is crucial for the integrity of the analysis, ensuring that the comparisons of elements against each other can be made on a consistent and objective basis. By doing so, it facilitates a structured and rational approach to evaluating the trade-offs and synergies among the BOCR factors, allowing decision-makers to systematically assess the multifaceted impacts of their choices.

Next (Table 3), since the hierarchy includes only 2 options for information systems using artificial intelligence and three criteria for each BOCR component, those options should also be compared for each of the criteria (3):

$$m * \frac{n(n-1)}{2} \tag{3}$$

where, *m* is exactly three pairs of comparison objects.

Next, it is necessary to determine the relative importance of the compared objects, but for this, first, according to the following Eq. (4):

$$ui = \sqrt[m]{\prod \prod aij} \tag{4}$$

where, *aij* is element *i* of row *j* of column of the matrix of pairwise comparisons of elements of the set, m is the number of cases at the same level.

Table 3. Comparison of information system options according to BOCR criteria

	Results	
B1	1	1/3
	3	1
B2	1	1/3
	3	1
B3	1	1/4
	4	1
O1	1	1/6
	6	1
O2	1	1/4
	4	1
O3	1	1/8
	8	1
C1	1	1/3
	3	1
C2	1	1/3
	3	1
C3	1	1/4
	4	1
R1	1	1/6
	6	1
R2	1	1/4
	4	1
R3	1	1/8
	8	1

Now we can calculate the relative importance Eq. (5) itself:

$$wi = \frac{ui}{\sum_{i=1}^{m} ui} \tag{5}$$

It should be noted, at the same time, that the importance value for each BOCR criterion should be evaluated. To do this, we multiply the data (2) (we denote them as A) by wi. For example, for B1, B2 and B3 we have wi: 0.08, 0.64 and 0.28, then we have the following Eq. (6):

$$\mathrm{B} = \begin{pmatrix} 1 & 1/8 & 1/6 \\ 8 & 1 & 2 \\ 6 & 1/2 & 1 \end{pmatrix} * \begin{pmatrix} 0.08 \\ 0.64 \\ 0.28 \end{pmatrix} \tag{6}$$

We do this for all other BOCR criteria and get the result in the form of Table 4.

Table 4. Results of comparison of BOCR with selected information systems

	wi	A*wi
	0.08	0.22
B	0.64	1.98
	0.28	0.85
	0.13	0.45
O	0.07	0.2
	0.8	2.4
	0.3	0.97
C	0.6	0.76
	0.1	0.26
	0.14	0.44
R	0.1	0.29
	0.75	2.4

Next, we have the following system of equations for calculating the weight of the proposed information systems with respect to criterion Eq. (7):

$$U_{Mi} = \sum wi * uij \tag{7}$$

Within the framework of the third stage of the BOCR assessment, a synthesis of the generalized priorities of alternatives in each of the four hierarchies was performed. As a result, it is M2 that prevails (Figure 2).

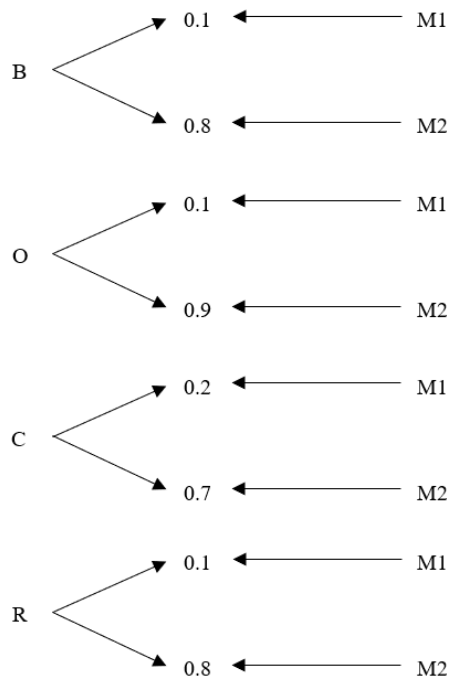

Figure 2. BOCR evaluation results for M variables

It was revealed that M2 is the most optimal today. The Partial AI Involvement Information System (PAIIS) emerges as a more advantageous choice for many organizations due to its inherent flexibility and adaptability in integrating artificial intelligence. This method allows companies to selectively implement AI in areas where it can provide significant value, ensuring a more manageable transition and enabling a focus on high-impact applications. PAIIS reduces the initial barriers to adoption, such as costs and the risk of operational disruption, making it a pragmatic approach for organizations at various stages of digital maturity. Moreover, the gradual integration facilitates a learning curve for employees, promoting skill development and adaptation without overwhelming the workforce. This strategic incorporation of AI fosters organizational resilience, minimizes resistance to change, and paves the way for a more tailored and effective utilization of technology to enhance operational efficiency and innovation.

The justification for deeper analysis into gender issues within future research prospects is well-founded. Gender influences a broad spectrum of organizational dynamics, including communication styles, problem-solving approaches, and preferences for technology use. As such, an information system that leverages AI for analytical processing must be critically examined through a gender lens to ensure it is truly optimal for all users. Without this consideration, there is a risk of developing systems that inadvertently favor one gender over another, thereby reinforcing existing disparities or creating new ones. Therefore, future research must delve into these gender issues, exploring how men and women's distinct interactions with AI-enhanced information systems can inform the development of more inclusive, efficient, and effective tools for organizational activities.

5. DISCUSSIONS

We delve into a comprehensive comparison of our research findings with the insights provided by key references in the field. This comparison not only underscores the uniqueness and innovation of our approach but also situates our contributions within the broader scholarly discourse on information systems, AI, and organizational efficiency. Our research's emphasis on enhancing the efficiency of both men and women's work in organizations through AI parallels exploration of factors influencing female participation in entrepreneurial activities. While their study highlights the importance of gender inclusivity in fostering employment creation, our findings extend this narrative by showcasing how AI-integrated information systems can be optimized to support gender-balanced efficiency in the workplace. This comparison underscores the potential of our AI-centric approach to contribute to gender equality in organizational contexts [24].

The roadmap and information system for implementing IT risk management presented by Berrada et al. [25] offer a framework for navigating the complexities of securing information systems. Our research complements this by providing a methodical approach to selecting optimal information systems that inherently consider the risks and benefits, including those associated with security. Our focus on AI for analytical processing without extensive data collection presents a novel angle on minimizing data-related vulnerabilities, enhancing the discourse on risk management in AI-integrated systems. Kholiavko et al. [26] comprehensive methodological approach to estimating the research component's influence on the information economy development offers valuable insights into the systemic evaluation of information systems. Our study's use of the BOCR method aligns with their call for comprehensive evaluation frameworks but diverges in its unique application to AI integration. By focusing on AI's role in analytical processing, our research adds a new dimension to methodological discussions in the information economy, suggesting a pathway for future investigations into the economic impacts of AI-driven systems.

The internal factors supporting business and technological transformation in the context of Industry 4.0, as discussed by Kohnová et al. [27] provide a backdrop against which our research findings can be evaluated. Our study extends the understanding of technological transformation by highlighting how AI can be methodically assessed and integrated into information systems for optimal organizational efficiency. This adds a practical dimension to the theoretical considerations of internal factors, emphasizing the strategic role of AI in navigating the challenges and opportunities of Industry 4.0. The exploration of IT and organizational change [28] alongside the systematic review of decision-making techniques in supplier selection [29], offer frameworks for understanding the dynamics of technological adaptation and decision-making in organizations. Our study builds on these discussions by illustrating a specific application of decision-making techniques (the BOCR method) in the context of AI-integrated information systems. This bridges the gap between the theoretical models of change and the practical methodologies needed for effective AI adoption.

Lastly, the systematic bibliometric review by Bobrova et al. [30] and Bilan et al. [31] provide a broad overview of AI's role in organizational management, development, change, and culture. Our research findings contribute to this body of knowledge by detailing a specific, effective method for assessing and selecting AI-integrated information systems. By focusing on the practical implications of AI for organizational efficiency, our study offers insights into the transformative potential of AI within the nuanced contexts of management and culture.

Our research not only aligns with but also significantly contributes to the existing literature by providing a novel methodical approach to the assessment and selection of AI-integrated information systems. Our focus on AI's role in analytical processing, the use of the BOCR method for comprehensive evaluation, and the consideration of gender inclusivity in system optimization address key gaps in the literature. These contributions underscore the potential for AI to enhance organizational efficiency and offer a roadmap for future research in the field.

6. CONCLUSIONS

In this study, we embarked on an exploratory journey to develop and implement a novel methodical approach aimed at evaluating and selecting the optimal information system, with a particular focus on the incorporation of AI to boost the efficiency of both men and women in organizational settings. By delving into the operational dynamics of various companies and their reliance on information systems for organizational activities, our research utilized the BOCR method as a foundational methodology. This approach allowed us to systematically compare alternative information system developments against a set of diversified criteria, thereby highlighting the most effective solutions in terms of enhancing workplace productivity and decision-making processes. The conclusions drawn from our research are both enlightening and indicative of the path forward for integrating AI into organizational information systems. The analysis clearly demonstrates that the optimal information system, as per the BOCR evaluation criteria, is one that prioritizes AI for analytical processing tasks exclusively. This system type stands out for its efficiency in processing and analyzing large volumes of data without the need for manual data collection, thereby streamlining operations and enabling a more focused approach to data analysis.

Our findings reveal a significant leap in the methodological evaluation of information systems through the innovative use of AI technologies. By showcasing the superiority of AI-exclusive analytical processing systems, this research not only contributes to the academic discourse on technological integration in organizational settings but also offers practical guidance for companies seeking to enhance their information system capabilities. However, it's crucial to acknowledge the limitations encountered in this study, particularly the oversight regarding the gender-specific differences in workplace roles and how these differences impact the effectiveness of AI-integrated information systems. This gap underscores the necessity for future research to adopt a more nuanced lens, considering the varied cognitive and social dynamics that influence men and women's interaction with technology in professional environments.

Looking ahead, the prospects for further research are vast and promising. A critical area for future inquiry lies in the gender-specific evaluation of AI integration within organizational information systems. Such studies could provide deeper insights into how AI technologies can be

tailored to support the diverse needs and working styles of all employees, thereby fostering an inclusive and equitable workplace. In summary, this research marks a pivotal step towards understanding and harnessing the potential of AI in enhancing the efficiency of information systems in organizational settings. The methodical approach developed and tested in this study offers a robust framework for future explorations, laying the groundwork for the next generation of AI-integrated information systems that are not only optimal in terms of technical efficiency but are also sensitive to the complex human dimensions of the workplace. Building on the foundational research that identifies the need for gender-specific evaluation of AI integration within organizational information systems, a future methodological approach could leverage mixed methods research (MMR). MMR combines quantitative and qualitative research techniques, theories, and concepts to provide a comprehensive understanding of the research problem.

Addressing the limitations identified in your research concerning the lack of consideration for gender-specific differences in the context of artificial intelligence and information systems requires a nuanced, multifaceted approach. Future studies should endeavor to design inclusive research frameworks that explicitly incorporate gender as a variable. This involves ensuring that the sample population for empirical research maintains a balanced representation across genders, as well as diversity in job roles and organizational levels, to capture nuanced differences in how information systems impact individuals differently within organizational contexts.

Expanding the scope of literature review to include studies focusing on gender differences in technology use, cognitive styles, and decision-making processes can offer valuable theoretical insights. Incorporating findings from interdisciplinary fields such as psychology, sociology, and gender studies can enrich the understanding of gender-specific interactions with AI-enhanced information systems. Adjusting the evaluation frameworks, such as the BOCR method, to reflect gender-specific impacts by incorporating gender-specific criteria or weighting, can provide a more nuanced analysis of the benefits and challenges posed by these systems.

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