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Review

The Impact of Artificial Intelligence on Organizational Justice and Project Performance: A Systematic Literature and Science Mapping Review

Xinran Zhang [1], Maxwell Fordjour Antwi-Afari [2], Yongcheng Zhang [3,*] and Xuejiao Xing [4]

[1] Department of Mechanical, Aerospace and Civil Engineering, Faculty of Science and Engineering, University of Manchester, Manchester M13 9PL, UK
[2] Department of Civil Engineering, College of Engineering and Physical Sciences, Aston University, Birmingham B4 7ET, UK; m.antwiafari@aston.ac.uk
[3] Department of Construction Management, Huaiyin Institute of Technology, Huaian 223003, China
[4] Department of Investment, School of Finance, Zhongnan University of Economics and Law, Wuhan 430074, China
* Correspondence: cquzhych@hyit.edu.cn

Abstract: By adopting a systematic literature and science mapping review, this paper aims to explore the impact of artificial intelligence (AI) on organizational justice and project performance. A total of 47 bibliographic records from the Scopus database were analyzed. The results revealed the annual publication trends of research articles and relevant peer-reviewed journals in the studied domain. It was found that while AI technology has made significant progress in several fields, its application areas in project management and organizational justice are still relatively low. Moreover, it objectively discussed the co-occurrence analysis of keywords, co-authors, countries/regions, and documents in the fields, revealing the current research topics. The main research topics include the (1) AI's influence on organizational justice, decision analysis, and digital transformation, (2) fostering organizational justice and AI's role in enhancing project performance, and (3) improving organizational performance approaches. Furthermore, this paper proposed research gaps and future research directions, including (1) advancing business intelligence strategies, (2) unlocking AI technology potential on organizational justice and project performance, (3) the adaption of cultural, diversity, environmental, and social factors, (4) the impact of AI on complex and challenging leadership styles, and (5) developing a comprehensive understanding of the agile framework. The findings of this paper could contribute to a better understanding of how AI shapes project/construction management and organizational justice, providing practical solutions for innovative development for researchers and policymakers.

Keywords: artificial intelligence; organizational justice; project performance; people and organizations; literature review; science mapping

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1. Introduction

As a product of the fourth industrial revolution, artificial intelligence (AI) is applied in all aspects of life [1–3]. With the development and innovation of technology, the role of machines has become increasingly complex in different areas of human organizations and social projects [4]. In the past, machines were seen as useful tools for production or use, but now they play a more critical role in product and service delivery [5]. Through automation, intelligence, and data-driven decision making, machines offer potential benefits of efficiency, accuracy, and personalization [6]. However, there is a need to recognize the changes and challenges brought about by these developments and take steps to avoid the negative impacts of the application of AI.

Organizational justice refers to the perception and evaluation of fairness, justice, and morality in the treatment and handling of others by members within an organization [7]. It

involves the perception of whether individuals treat others fairly and justly in the process of resource allocation, decision making, power operation, information transmission, and interaction in the organization [8]. Many previous studies have shown that organizational justice has a positive impact on both organizations and employees, which can effectively improve project performance [9–11]. Yu et al. investigated the relationship between job performance and employees' characteristics such as professional identity, emotional labor, and perceived organizational justice [12]. They found that the employees' perception of organizational fairness had a direct impact on job performance. When employees perceive that the organization is treating all employees fairly and that the organization's decisions are fair, they perform better. Employees are mostly concerned about justice. As such, employees who put more time and energy into their jobs tend to be more concerned about whether they are paid and treated fairly in their units.

Understanding the pivotal role of organizational justice in influencing project performance, Suliman and Kathairi identified a positive correlation between organizational justice and employees' work commitment and performance [13]. The provision of organizational justice not only motivates employees to remain loyal to the organization, but also enhances their overall work performance [14]. Additionally, Yang et al. and Zhang et al. found that organizational justice contributes to reducing burnout levels among construction project managers, consequently improving project performance [15,16]. These previous studies focused on the impact of organizational justice on project performance and underscore the significance of further research in understanding and fostering a sense of organizational fairness.

Through algorithms and technologies, AI can allocate resources fairly according to individual abilities and contributions, avoiding the unequal distribution caused by perceived bias [17], which will affect project performance [18]. Concurrently, AI systems can collect and analyze employee performance data to provide accurate and objective feedback, which is not affected by human subjective factors [19]. This helps to establish a fair performance evaluation system and provides employees with fair opportunities and rewards [20]. However, when applying AI technologies, organizations need to ensure the accuracy, reliability, and impartiality of algorithms and data, as well as oversight and review to ensure that the use of AI technology does not introduce new elements of injustice.

In a large research and development project at the International Business Machines Corporation (IBM), AI technology was widely used to improve the project's perception of justice and performance. The project involved multiple teams and complex workflows, requiring efficient collaboration and resource allocation. According to the IBM research report, 90% of employees agree or strongly agree that AI has effectively improved organizational equity and thus project performance [21]. Also, Deloitte also pointed out that 82% of employees believe that the use of AI technology will improve their performance and job satisfaction [22]. Thus, the realization of organizational justice through AI makes employees believe that working in an enterprise with reasonable resource allocation and fair performance judgment can effectively improve their work enthusiasm. By using machine learning techniques, AI can automatically screen and evaluate candidates' abilities and backgrounds based on objective criteria and data, reducing human bias in recruitment. In addition, the use of AI in recruitment saves managers' time while ensuring fairness. It was reported that the recruitment review time was reduced by 88% through the use of AI technology [23].

Existing review studies have been conducted on organizational equity and project performance. For example, Unterhitzenberger and Bryde reviewed the impact of different dimensions of organizational equity on project performance and introduced the positive impact of key success factors on project performance as mediators [24]. Lim and Loosemore proposed that organizational justice is a key factor in achieving positive organizational citizenship behavior in construction projects [25]. They reported that the practice of interpersonal justice can establish a positive work environment that promotes cooperation, information sharing, and personal commitment, thereby driving successful project implementation. Palaiologos et al. explored employee satisfaction as a measurement standard

and studied the different dimensions of organizational justice in Pakistani government organizations on employee satisfaction [26]. In addition, they also divided employees into new employees and old employees for satisfaction research. The positive influence of organizational justice on employee satisfaction was also reported.

However, most of the extant literature only focuses on distributive justice, procedural justice, and interactional justice [27–31]. Thus, only few dimensions of organization justice have been studied. With the enrichment of theories, organizational justice can be expanded to more dimensions. Moreover, the existing literature on AI's involvement in organizational justice development and improving project performance has not yet been conducted. This paper seeks to fill these research gaps by conducting a systematic literature and science mapping review of the application of AI technology on organizational justice and project performance, so as to provide a stronger theoretical foundation.

This paper aims to conduct a systematic and science mapping review of published articles on the impact of AI application on organizational justice on project performance from 2011 to 2023 (years inclusive). This paper focuses on the impact of AI in organizational justice on project performance, reviews the entire development framework, and suggests future research trends. Based on the adopted methods, the important impact of AI on project performance is summarized. This paper extends the original theoretical framework, using a systemic framework and visual charts to present and summarize relevant knowledge. The specific research objectives are:

1. analyzing annual publication trends and peer-reviewed journals related to AI impacts on organization justice and project performance;
2. applying a science mapping approach to objectively analyze the relevant keywords, co-authors, countries/regions, and documents analyses;
3. summarizing mainstream research topics on AI applications on organization justice and project performance; and
4. proposing research gaps and future research directions of AI applications on organization justice and project performance.

2. Research Methods

This review paper adopts a systematic literature review method based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The PRISMA method proposes protocols to be followed when searching, selecting, and analyzing the existing scientific literature, as well as a checklist to validate the process. This procedure allows the literature documents to be conducted in a methodical, transparent, and exhaustive manner to minimize bias and provide reliable results [32,33]. Following the systematic literature review, a science mapping approach was conducted to transform the complex academic information into visual charts through scientific visualization technology. It helps researchers to better understand the evolution of the academic field, current challenges, and future development directions [34,35]. Also, the science mapping approach can reveal the correlation and intersections between different disciplines, promote interdisciplinary research cooperation, and knowledge integration and innovation [36,37]. The science mapping review approach is a graphical representation of how areas of knowledge, documents, or authors relate to each other [38,39], and there are various software techniques available for bibliometric mapping analysis [40]. In addition, it often involves using tools to map trends and networks for keywords, authors, and references [41]. Figure 1 shows the process of collecting data by combining a systematic literature review (i.e., PRISMA guidelines) and a science mapping approach (i.e., VOSviewer version 1.6.15).

2.1. Search Strategy

The reason for choosing the Scopus database is mainly because it is a comprehensive academic literature database, which covers a wide range of subject areas and many academic publications [42]. It covers many subject areas such as natural science, social science, engineering technology, and medicine. Therefore, for science mapping reviews

that involve interdisciplinary research, the Scopus database provides a comprehensive literature database that can cover literature information in multiple subject areas. Given the studied topic, the search queries were divided into three main keywords such as artificial intelligence, organizational justice, and project performance.

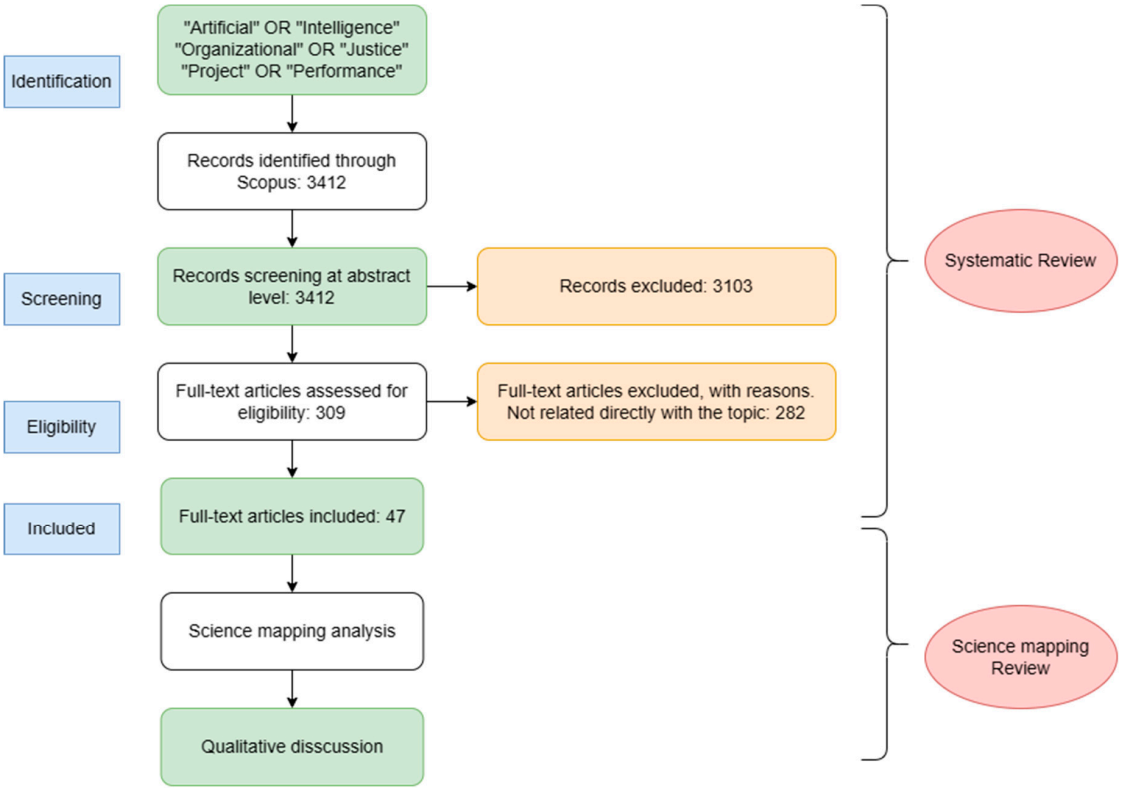

Figure 1. Process of collecting data through a systematic and science mapping approach.

2.2. Selection Criteria

The search queries used for the literature search in the Scopus database are ("Artificial" OR "Intelligence") and ("Organizational" OR "Justice") and ("Project" OR "Performance"). After the search strategy, 3412 literature documents were obtained. Several literature selection criteria were conducted. First, this paper only selected literature documents written in "English". Second, since this review paper is based on research and analysis conducted for the project management domain, the research area is limited to "engineering". Third, the document type was limited to "article". Next, the source type was limited to "journal", the literature whose publication stage is "final" was selected, and the studied period was from 2011 to 2023. With the aforementioned selection criteria, the literature documents were narrowed down to 309 articles.

2.3. Selection Process

A total of 309 articles were examined for titles, abstracts, and keywords in Scopus. Articles were excluded if they (a) focused on a single keyword without clarifying the relationship and impact of the three main keywords [43]; (b) were based on national economic levels and did not provide guidance for specific project management and performance [44]; (c) only focused on the development of AI technology, and did not involve the impact of project performance [45,46]; (d) had no reference to organizational justice/equity [47,48]; and (e) had no relationship in the project management field [49].

2.4. Data Extraction and Quality Assessment

Individual articles were assessed by two reviewers for a quality assessment after the inclusion and exclusion criteria were applied, and unrelated articles were excluded from the paper. The data (e.g., keywords, authors, countries, etc.) of the remaining articles were analyzed in detail. These exclusion criteria only allow the selection of the literature that mentions the impact of AI on organizational justice/equity and project performance for this paper. This reduced the number of articles from Scopus from 309 to 47. Therefore, the final number of articles included in the systematic review was 47. The number of articles rejected at each stage of the above exclusion process is shown in Figure 1.

2.5. Science Mapping Analysis

How AI technology affects organizational justice and project performance is a multidisciplinary research class. Therefore, it is difficult to quantitatively characterize the overall research field through manual literature analysis. In addition, manual analysis, while potentially insightful and enlightening, can lead to biased assessments of the knowledge structure and is often limited by subjective interpretation [50]. To avoid these limitations, this paper also adopts the science mapping review approach (i.e., knowledge domain visualization or mapping method) to conduct a systematic quantitative analysis of the impact of AI on organizational justice and project performance. It requires the use of the domain visualization toolkits. VOSviewer is a bibliometric software that can analyze the keywords, authors, institutions, and countries as the main research objects, and uses mathematical statistics and other research methods to conduct a quantitative analysis. Compared with other bibliometric analysis software, VOSviewer has a stronger visualization effect. In addition, the analysis function of the software is more comprehensive. Therefore, VOSviewer is selected for this paper to visually analyze the impact of AI technology on organizational justice and project performance and to explore domain clustering and hot trends. Four types of science mapping analysis and visualization were performed. They are (1) keyword co-occurrence; (2) the co-occurrence of co-authors; (3) the co-occurrence of countries/regions; and (4) document citation analysis.

2.6. Qualitative Discussion

The qualitative discussion is the final step in scientific mapping analysis and focuses on an in-depth assessment of the scientific contributions of AI in key research areas of organizational justice and project performance. This step will integrate the results of scientific mapping into a comprehensive discussion and analysis of the main research topics, research gaps, and future research directions of this studied field.

3. Results

3.1. Selection of Relevant Peer-Reviewed Journals and Annual Publication Trends

The methodology for the literature selection, as detailed in Section 2, is utilized in the examination of chosen articles from peer-reviewed journals. Table 1 lists the peer-reviewed journals related to AI technology on organizational justice and project performance. As shown in Table 1, a total of 38 peer-reviewed journals were identified from the selection strategy. The top eight peer-reviewed journals are the *Journal of Construction Engineering and Management*, *IEEE Transactions on Engineering Management*, and the *International Journal of Technology*, *Policy and Management*, *Journal of Civil Engineering and Management*, *Journal of Cleaner Production*, *Journal of Management in Engineering*, *Kybernetes*, and *Sustainability (Switzerland)* accounted for 36.17% of all articles published in the studied domain.

Figure 2 presents the annual publication trends of the AI research literature in the areas of organizational equity and project performance. This graph graphically presents the distribution of the number of research articles on the fairness and performance of AI applications in organizational and project management over different years. The chart highlights instances in which significant research activity occurred in a given year. As can be seen from the data, the year with the highest number of publications was 2022,

when a total of 12 research papers were published in this field. This is followed by nine publications in 2023 and six research papers in 2019. This data trend reflects a clear trend of increasing interest and attention in incorporating AI into the areas of organizational equity and project performance year by year. There may be many reasons for the increase in the number of research papers from different years. The number one reason is the continuous development of AI technology, making its application in areas such as organizational management and project execution more practical and beneficial. In addition, the growing recognition that AI can help reduce bias and promote fairness within organizations may also be a factor in the rise in research interest.

Table 1. Relevant peer-reviewed journals.

Journal Name	Number of Relevant Articles	% Total Publications
Journal of Construction Engineering and Management	3	6.38%
IEEE Transactions on Engineering Management	2	4.26%
International Journal of Technology, Policy and Management	2	4.26%
Journal of Civil Engineering and Management	2	4.26%
Journal of Cleaner Production	2	4.26%
Journal of Management in Engineering	2	4.26%
Kybernetes	2	4.26%
Sustainability (Switzerland)	2	4.26%
Acta Polytechnica Hungarica	1	2.13%
Advanced Science Letters	1	2.13%
Brazilian Journal of Operations and Production Management	1	2.13%
Buildings	1	2.13%
Buildings and Cities	1	2.13%
Computers and Industrial Engineering	1	2.13%
Construction Innovation	1	2.13%
Eastern-European Journal of Enterprise Technologies	1	2.13%
Electronics (Switzerland)	1	2.13%
EMJ—Engineering Management Journal	1	2.13%
Engineering Proceedings	1	2.13%
Expert Systems with Application	1	2.13%
Frontiers in Built Environment	1	2.13%
IEEE Engineering Management Review	1	2.13%
International Journal of Applied Systemic Studies	1	2.13%
International Journal of Construction Management	1	2.13%
International Journal of Emerging Trends in Engineering Research	1	2.13%
International Journal of Information Management Data Insights	1	2.13%
International Journal of Management	1	2.13%
International Journal of Performability Engineering	1	2.13%
International Journal of Scientific and Technology Research	1	2.13%
International Journal of Sustainable Construction Engineering and Technology	1	2.13%
International Journal on Advanced Science, Engineering and Information Technology	1	2.13%
Journal of Engineering and Technology Management—JET-M	1	2.13%
Journal of Engineering, Design and Technology	1	2.13%
Journal of Integrated Design and Process Science	1	2.13%
Journal of System and Management Sciences	1	2.13%
Reliability: Theory and Applications	1	2.13%
Research Technology Management	1	2.13%
Tehnicki Vjesnik	1	2.13%
Total	47	100.00%

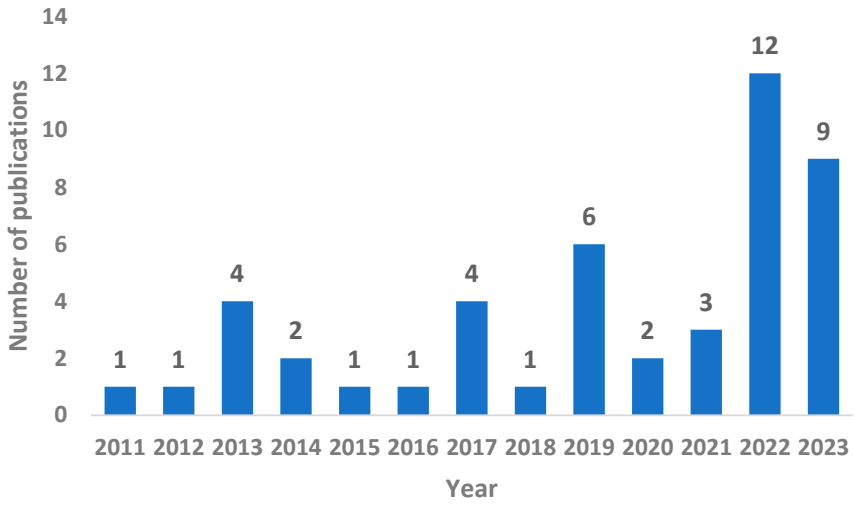

Figure 2. Number of publications in each year.

3.2. Keywords Co-Occurrence Analysis

Keywords can help researchers more accurately locate and identify articles related to their research topics. Keywords are terms that reflect the main content of an article and play an important role in literature retrieval [51]. Through keyword co-occurrence analysis, this paper constructs and maps the knowledge domain of AI on organizational justice and project performance. By using "author keywords" as the unit of analysis in VOSviewer, "full count" as the counting method, and setting the minimum number of keyword occurrences to two, only 23 keywords out of a total of 232 met the threshold. It is worth noting that the threshold selection is based on multiple experiments with other parameters to generate the optimal cluster. Some keywords with similar contextual meanings were further investigated, for example, (1) "artificial intelligence" and "artificial intelligence (ai)" and (2) "organizational performance" and "organizational. By conducting a keyword analysis survey, "performance" can eliminate general keywords or combine keywords with similar meanings. Finally, the keyword co-occurrence analysis network obtained 19 items, 5 clusters, 28 links, and 33 link strengths, as shown in Figure 3.

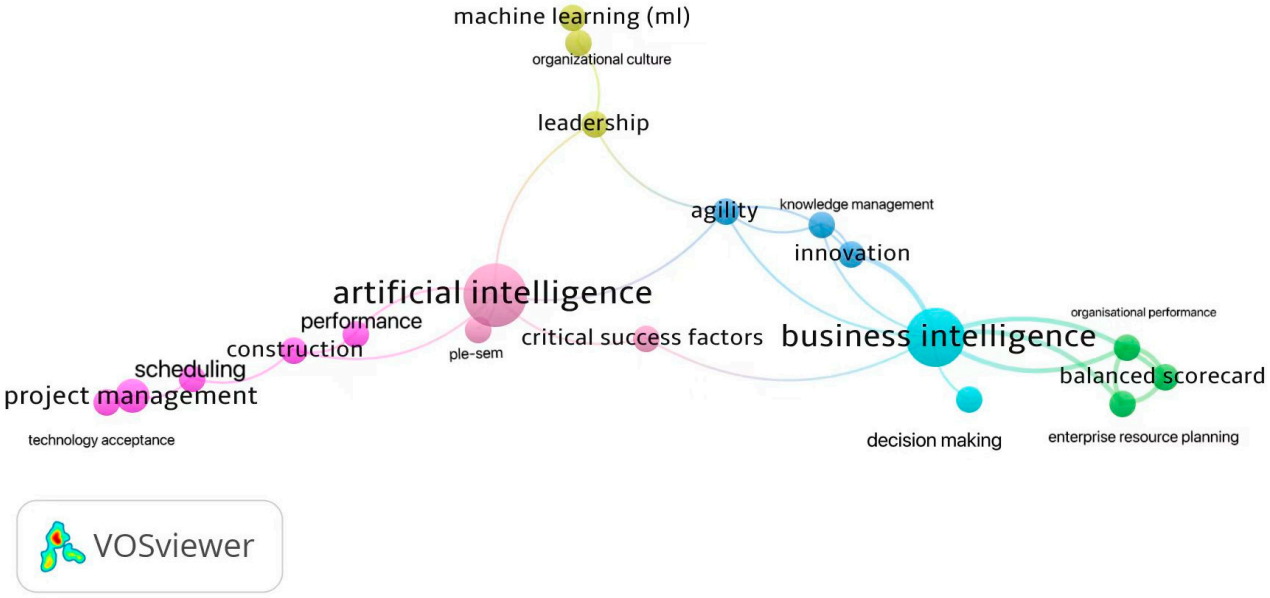

Figure 3. A network of co-occurring keywords related to the impact of AI on organizational justice and project performance.

As shown in Figure 3, author keywords such as "artificial intelligence", "business intelligence", "innovation", "leadership", and "project management" have larger font sizes. This indicates the frequency with which these keywords were used in previous research in the research area studied. The distance and connection lines in Figure 3 show the relationship between a pair of keywords. For example, the keyword "artificial intelligence" is closely related to partial least squares structural equation modeling (PLS-SEM), organizational performance, and critical success factors. As can be seen from the different colors shown in Figure 3, the authors' keywords can be divided into five main keyword clusters, which represent the mainstream knowledge areas of AI in organizational equity and project performance-related research:

1. The evolution of new technologies, particularly the integration of business intelligence tools with advanced AI and ERP systems, holds the potential to significantly enhance global businesses by ensuring information accuracy, compliance, and promoting effective management decisions, thereby driving organizational efficiency and corporate performance. The way in which the evolution of new technologies will affect global business is through the use and application of business intelligence tools to provide information accuracy and compliance, so as to promote management decisions, and improve organizational efficiency and corporate performance [52–54]. Business intelligence (BI) systems are integrated with existing enterprise resource planning (ERP) systems to improve an organization's decision-making capabilities [55,56]. AI has the potential to reduce operational costs, increase efficiency, and improve customer experience. To effectively introduce AI decision making within an organization, an appropriate approach needs to be taken during the formation of project teams [57–60].
2. By integrating AI-based and fuzzy neural network techniques to identify organizational capabilities that have a significant impact on organizational performance by reducing the data dimension, thus enabling architectural organizations to simultaneously assess their capabilities and predict multiple organizational performance indicators, researchers can adapt it to a variety of architectural contexts [61–63].
3. In the construction sector, a focus on organization-specific research is reshaping project management, creating jobs, simplifying recruitment practices, and innovating solutions that promote organizational equity and improve project performance. Dome-specific AI has been unable to meet the needs of real society for the application of AI, and now it is gradually developing in the direction of organization-specific AI research [43,64–66]. AI is reshaping and redefining project managers in organizations, creating millions of jobs for employment, providing easy recruitment methods, and providing innovative applications to a variety of issues that promote organizational equity and improve project performance [67–70].
4. By analyzing the impact of different leadership styles and organizational factors on organizational flexibility and adaptability, leaders can shape employees' perceptions of organizational fairness, which can influence work motivation and project performance, while also improving operational efficiency, reducing costs, and improving customer experience. The use of AI technology can help analyze the influence of leadership styles and organizational factors on organizational flexibility and adaptability, and help leaders influence employees' perception of organizational fairness through different leadership winds, thus affecting employees' work motivation and project performance [71,72]. AI technology has the potential to reduce operational costs, increase efficiency, and improve customer experience [73,74].
5. Conscious teams build agile teams and improve performance, as well as strengthen employee fairness awareness to enhance security and further improve performance. Leveraging AI technology, a deliberate team formation can cultivate an agile, cohesive, and equitable team, harnessing individual strengths for a synergistic impact that enhances project performance [75]. Integrating an AI-driven analysis to enhance employees' fairness perceptions not only fosters a sense of security among team mem-

bers, but also bolsters project performance effectively [76,77], thereby intertwining agility with intelligent team dynamics.

Table 2 shows the number of keyword occurrences and the strength of each node. As shown in Table 2, among all the keywords in the list, "artificial intelligence", "business intelligence", and "organizational performance" are the most frequently used keywords. It shows that they have been widely studied in the application field of project management organization and personnel. The number of links refers to the number of links between a node and other nodes, excluding duplicate links, while the total link strength refers to the total number of occurrences between a node and other nodes, including repeated co-occurrences [78]. It is worth noting that the author keywords listed in Table 2 follow a ranking of the total link strength. For example, business intelligence has a total link strength of 11, indicating a strong correlation between "organizational performance" and agility.

Table 2. List of selected keywords and relevant network data.

Keywords	Occurrences	Average Publication Year	Links	Average Citations	Average Normalized Citations	Total Link Strength
Business intelligence	8	2019	8	4.5	1.03	11
Artificial intelligence	9	2021	7	2.78	0.60	8
Organizational performance	4	2021	4	2.75	0.44	5
Agility	2	2022	5	5	1.49	5
Innovation	2	2022	4	4.50	1.26	5
Balanced scorecard	2	2014	2	5	0.26	4
Enterprise resource planning	2	2014	2	5	0.26	4
Construction	2	2017	3	19.50	0.92	3
Knowledge management	2	2020	3	6	1.54	3
Leadership	2	2020	3	4	1.02	3
Project management	3	2016	2	12	0.94	2
Scheduling	2	2013	2	24.50	0.81	2
Performance	2	2021	2	2	0.53	2
PLS-SEM	2	2020	2	13.50	1	2
Critical success factors	2	2021	2	2	0.50	2
Organizational culture	2	2021	2	3	0.64	2
Technology acceptance	2	2023	1	5.50	2.95	1
Decision making	2	2023	1	1.50	0.42	1
Machine learning (ML)	2	2023	1	0	0	1

This paper aims to present the changes in keyword co-occurrence networks over time by using the overlay visualization function of VOSviewer. Figure 4 illustrates the timeline of the co-occurrence network of keywords. At the beginning of the study period from 2011 to 2013, previous research focused on using techniques such as data mining to analyze project performance, such as project completion, efficiency, decision quality, etc. [79,80]. The AI technology is mainly applied to analyze the key factors affecting project management performance and in what form. From 2014 to 2016, the existing literature focused on the development of business intelligence systems, such as life cycle assessment methods, to optimize the project management process with the help of AI technologies [81]. The development of AI technology has driven the application of various evaluation tools in project management, and this phase focuses more on optimizing and analyzing various existing processes and frameworks using AI techniques. From 2017 to 2018, in project management, especially in the issue of people and organizations, research began to focus on exploring the impact of people's emotions and feelings on project performance [82–84]. Organizational justice, as an important indicator affecting employee emotions, is considered in the scope of project management performance. Concomitantly, the reference to AI promotes the development of project managers and organizational

management theories. From 2019 to 2020, the importance of human resource management in project management has gradually become prominent, and many articles focus on how to improve project performance with the help of AI and intelligent systems, including risk attitude, team building, salary management, and other aspects. It also involves research on the relationship between the organizational members' perception of fairness and performance [69,75,85]. The importance of innovation, performance improvement, and organizational justice in organizational success is emphasized. The newly published literature highlights the application of AI in project management, the role of organizational justice in project performance, and the impact of employee engagement on organizational success. Moreover, machine science is used to study the key factors in these fields. Although intelligence business is generally favored in digital transformation and contributes to human and organizational justice in project management, research shows that it may reinforce inequality and be affected by data bias, thus affecting the positive effect of organizational justice on project performance.

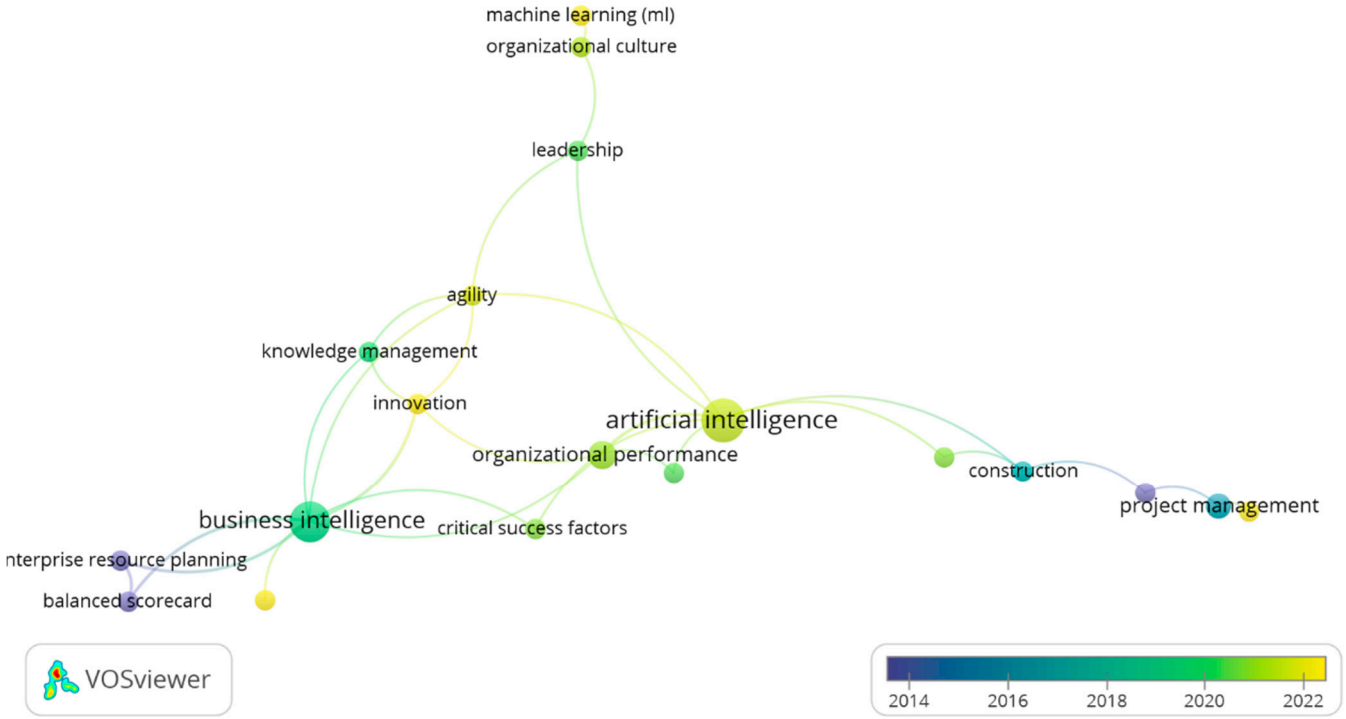

Figure 4. A network of co-occurring keywords timeline related to the application of AI on organizational justice and project performance.

3.3. Co-Author Co-Occurrence Analysis

Given that bibliographic records cover information such as author names, using VOSviewer is an appropriate choice when presenting leading researchers in the field studied. In this paper, the author's minimum references and minimum citations are set to 1 and 12, respectively. Thus, out of 121 authors, 28 authors met the criteria.

As shown in Figure 5, the links between authors in this particular field are centered around their respective research articles, linking different authors together. However, we can observe from the figure that the connection between the authors of each article is not very obvious. This may imply that the relatively small number of interrelated publications requires more in-depth investigation and wider dissemination. Figure 5 shows that despite signs of research exchange in this area, there is still room for development in the co-authorship relationship.

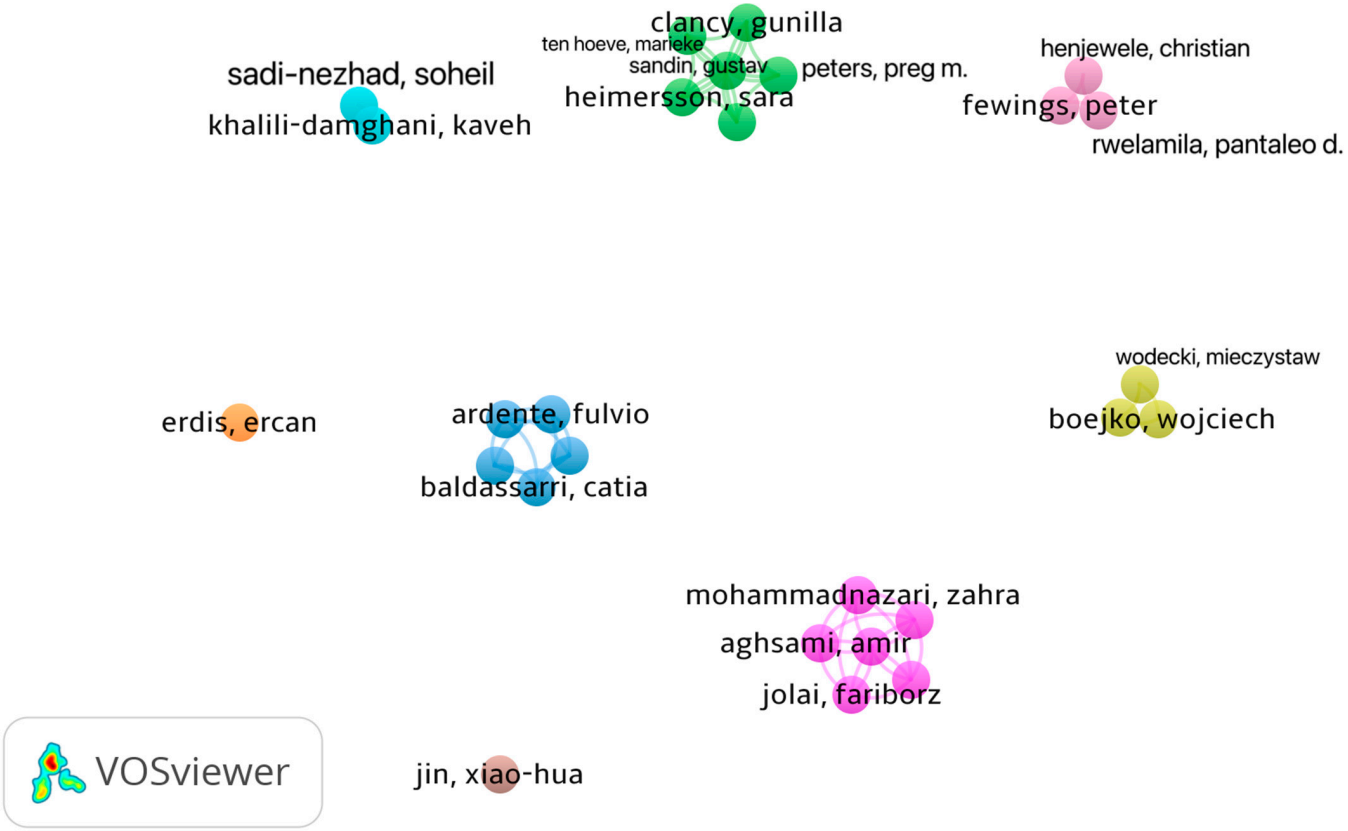

Figure 5. A network of co-author co-occurrence related to the application of AI on organizational justice and project performance.

The quantitative analysis of co-author co-occurrence in the research areas in Table 3 explores this situation in more depth. The table shows the strength of association between authors, which is measured by total link strength. From Table 3, it was found that in this field, Aghsami, A. had the most influence, as evidenced by the number of nominated citations they received. Meanwhile, the average publication year in Table 3 is when the authors have recently published their work, which helps us to understand their research activity. In this regard, Aghsami, A. is also among the most active researchers, demonstrating their ongoing contributions in the field. Further, by looking at research trends over the past decade (i.e., from 2013 to 2023), it can find about 24 authors who are the most active researchers (see Table 3) [86–89]. It is worth noting that in Figure 5, only the works of some scholars such as Aghsami, A. have focused on their research in the past three years. It shows the timeliness of research activities in this field, but also shows that AI is gradually affecting all aspects of project engineering. However, the opportunities for communication and collaboration between authors of different studies are relatively limited. The existence of this situation triggers deep thought in the research space of the application of AI in the field of project management in this paper. This limited co-authorship may be due to the novelty of the intersection of project management and AI, which requires more researcher input and in-depth collaboration. Therefore, future research can not only deepen in independent fields, but also encourages interdisciplinary cooperation, so as to promote the application of AI technology in project management to a more innovative and comprehensive development.

Table 3. A summary of co-author co-occurrence analysis.

Author Name	Total Citations	Normalized Citations	Average Publication Year	Average Citations	Average Normalized Citations	Total Link Strength
Aghsami, A.	18	3.67	2022	18	3.67	5
Alipour-vaezi, M.	18	3.67	2022	18	3.68	5
Jolai, F.	18	3.67	2022	18	3.69	5
Mohammadnazari, Z.	18	3.67	2022	18	3.70	5
Mousapour, M.	18	3.67	2022	18	3.71	5
Yazdani, M.	18	3.67	2022	18	3.72	5
Clancy, G.	25	2.88	2014	25	2.88	5
Heimersson, S.	25	2.88	2014	25	2.88	5
Peters, G. M.	25	2.88	2014	25	2.88	5
Sandin, G.	25	2.88	2014	25	2.88	5
Savantrom, M.	25	2.88	2014	25	2.88	5
Ten hoeve, M.	25	2.88	2014	25	2.88	5
Ardente, F.	16	1	2016	16	1	4
Baldassarri, C.	16	1	2016	16	1	4
Deese, K.	16	1	2016	16	1	4
Mathieux, F.	16	1	2016	16	1	4
Wehmann, C.	16	1	2016	16	1	4
Boejko, W.	31	1	2012	31	1	2
Hejducki, Z.	31	1	2012	31	1	2
Wodecki, M.	31	1	2012	31	1	2
Fewings, P.	28	1	2015	28	1	2
Henjewele, C.	28	1	2015	28	1	2
Rwelamila, P. D.	28	1	2015	28	1	2
Khalili-Damghani, K.	37	1.95	2013	37	1.95	1
Sadi-Nezhad, S.	37	1.95	2013	37	1.95	1
Erdis, E.	17	0.89	2013	17	0.89	0
Hou, C. K.	12	0.69	2013	6	0.35	0
Jin, X. H.	43	1	2011	43	1	0

3.4. Countries/Regions Co-Occurrence Analysis

This section discusses countries/regions' contributions in the field of AI research on organizational justice and project performance. Using VOSviewer as a scientific mapping tool, the minimum number of documents for a country and the minimum number of citations for a country were set to 2 and 25, respectively. A total of five out of 20 countries met this threshold.

Table 4 presents a quantitative analysis of countries/regions with active research areas. The countries/regions in Table 4 are arranged based on average normalized citations over the research period. The country with the highest output in terms of the number of articles published is India, followed by Malaysia, Iran, and the United States (Table 4). As indicated in Table 4, Iran has the highest number of total and normalized citations among the countries/regions. The average publication year in France is 2023, while the average publication year in Italy, the United States, and India is 2020. These findings show that the Asian region has a broader field of research into the impact of AI on organizational justice and project performance. In terms of average citations and average normalized citations, France contributes the most to the field. It is worth noting that AI has been a field of rapid development in the past three years, and more countries and regions may join the research to provide new solutions to project managers and organizational problems.

The world map in Figure 6 shows that India contributed the most research in this field, followed by Malaysia, the United States, the United Kingdom, Iran, and Italy. This finding echoes the ongoing interest in AI in project management and the widespread concern around the world. Businesses and organizations are increasingly interested in integrating AI into their project management practices. The study of AI in the field of project management is no longer limited to specific countries or regions. Academics, research

institutions, and businesses across the globe are devoting resources to exploring how AI can transform the planning, execution, and monitoring of projects. This wide range of interest and investment is expected to bring more cutting-edge research results in the future, and promote the integration of project management and AI.

Table 4. Quantitative summary of countries/regions' co-occurrence analysis.

Country/Region Name	Number of Articles	Total Citations	Normalized Citation	Average Publication Year	Average Citations	Average Normalized Citations	Total Link Strength
France	1	10	5.62	2023	10	5.62	1
Italy	3	33	7.46	2020.33	11	2.49	2
Australia	2	62	4.91	2016.5	31	2.45	1
Iran	4	64	9.16	2019	16	2.29	1
Denmark	1	22	1.91	2014	22	1.91	1
Sweden	1	22	1.91	2014	22	1.91	1
South Africa	2	42	2.4	2018.5	21	1.2	1
Germany	1	20	1	2016	20	1	1
Poland	1	36	1	2012	36	1	0
Turkey	1	20	0.95	2013	20	0.95	0
United States	4	28	3.8	2018	7	0.95	0
Malaysia	4	31	3.69	2019.5	7.75	0.92	0
United Kingdom	3	39	2.12	2020.33	13	0.71	1
India	5	10	1.3	2020.6	2	0.26	0
Taiwan	2	10	0.52	2013.5	5	0.26	0

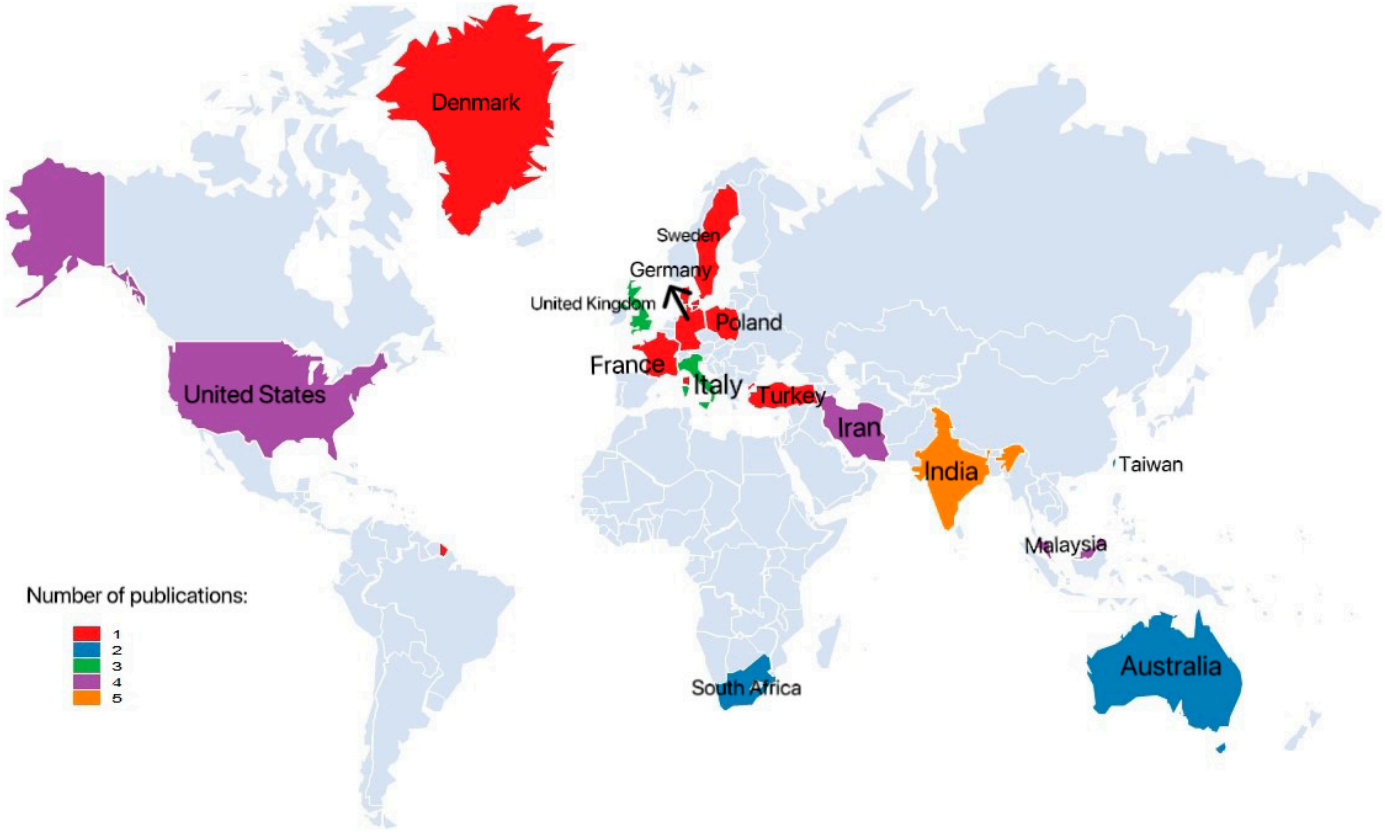

Figure 6. Citations by countries/regions' co-occurrence analysis.

3.5. Document Analysis

The literature analysis reveals the most prominent research topics in a particular field of study, which in turn enables a more comprehensive and systematic understanding of

the quantity and quality of references cited by other literature. This process helps to reveal cutting-edge trends and key issues in the research field and provides valuable clues and foundations for further academic exploration. This section aims to use VOSviewer as a scientific mapping tool to generate a literature analysis network of published articles on AI technology on organizational justice and project performance. The minimum number of references to a file was set to six, and 15 out of 47 files reached that threshold.

Highly cited articles closely related to this research field are presented in Table 5. As shown in Table 5, the top three most cited articles related to the application of AI on organizational justice and project performance during the study period were Jin (43 citations), Khalili-Damghani and Sadi-Nezhad (37 citations), and Boejko et al. (31 citations). La Torre et al. argued that AI has the potential to improve project efficiency, reduce costs, and support the formation of organizational project teams through innovative multi-criteria models and comprehensive metrics to better accept machine decisions and guarantee organizational justice, which is the most cited standardization in all other articles [73].

Table 5. Quantitative summary of documents analysis.

Documents	Title	Citations	Normalized Citations
Jin (2011) [60]	Model for efficient risk allocation in privately financed public infrastructure projects using neuro-fuzzy techniques	43	1
Khalili-Damghani and Sadi-Nezhad (2013) [79]	A decision support system for fuzzy multi-objective multi-period sustainable project selection	37	1.95
Boejko et al., (2012) [80]	Applying metaheuristic strategies in construction projects management	31	1
Rwelamila et al., (2015) [90]	Addressing the missing link in PPP projects: What constitutes the public?	28	1
Sandin et al., (2014) [86]	Making the most of LCA in technical inter-organizational R&D projects	25	2.88
Mohammadnazari et al., (2022) [61]	Prioritizing Post-Disaster Reconstruction Projects Using an Integrated Multi-Criteria Decision-Making Approach: A Case Study	18	3.67
Erdis (2013) [89]	The effect of current public procurement law on duration and cost of construction projects in Turkey	17	0.89
Baldassarri et al., (2016) [81]	Integration of environmental aspects into R&D inter-organizational projects management: Application of a life cycle-based method to the development of innovative windows	16	1
Enad al-qaralleh and Atan (2022) [71]	Impact of knowledge-based HRM, business analytics and agility on innovative performance: linear and FsQCA findings from the hotel industry	11	2.24
Goedert and Sekpe (2013) [87]	Decision support system-enhanced scheduling in matrix organizations using the analytic hierarchy process	11	0.58
Hou (2013) [56]	Four-pronged decision support framework for implementing industrialized construction projects	11	0.58
Escolar-jimenez (2019) [66]	Data-driven decisions in employee compensation utilizing a neuro-fuzzy inference system	10	2.38
Taofeeq et al., (2020) [85]	Government policy as a key moderator to contractors' risk attitudes among Malaysian construction companies	10	2
La Torre et al., (2023) [73]	Team Formation for Human-Artificial Intelligence Collaboration in the Workplace: A Goal Programming Model to Foster Organizational Change	9	5.14
Kim et al., (2017) [88]	Successful Facility Change-Management Practices for Retrofit Projects: Case Study in Lighting	8	2.46

Figure 7 shows the relationship between different documents. It can be seen that the relationship between documents is not large, which reflects that AI technology, as a new field, is penetrating various industries. The research on the impacts of AI technology on organizational justice and project performance management still needs to be investigated in depth.

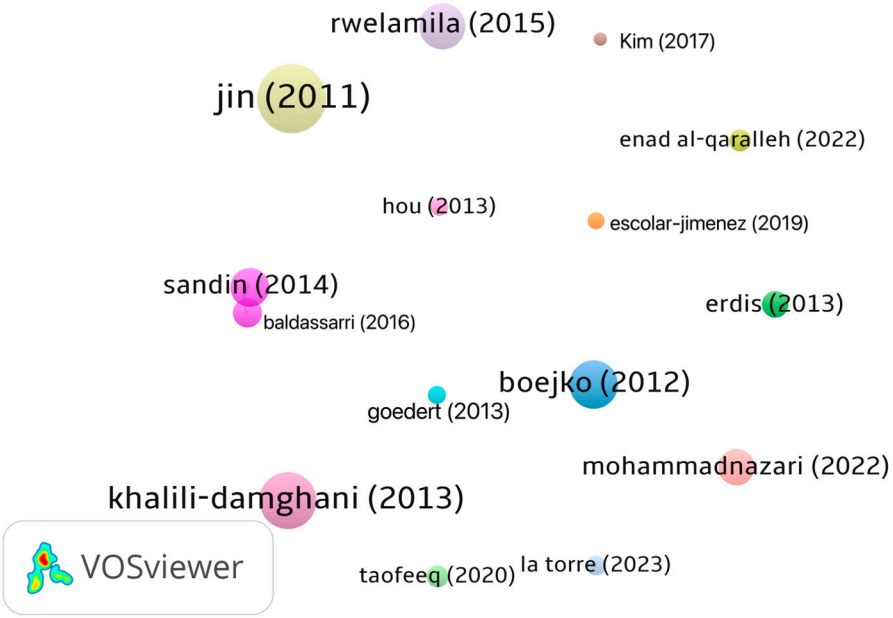

Figure 7. A network of document analysis related to the impact of AI on organizational justice and project performance.

4. Discussion

Through the adopted methods and in-depth qualitative discussion, the main research topics in the related research fields of the impact of AI on organizational justice and project performance are summarized. This comprehensive analysis helps to accurately locate the gaps and deficiencies in the current research, to clarify the development direction of future research.

4.1. Summary of the Main Research Topics on the Impact of AI on Organizational Justice and Project Performance

4.1.1. AI's Influence on Organizational Justice, Decision Analysis, and Digital Transformation

In the selected bibliographic data, AI is the leading research across a variety of fields as a core theme, delving into the complex relationships between organizations, projects, and technology, and their profound impact on important issues such as social justice, decision analysis, and digital transformation. This series of studies provided insights into the critical role of AI technology in modern project management and organizational challenges. Sharma et al. analyzed 70 cases related to smart cities, covering different critiques, power struggles, geography, and technologies [91]. Their study revealed that issues related to cross-cutting social justice received limited attention in these cases, underscoring the potential for incorporating machine learning technologies to better address and integrate social justice concerns. Insufficient focus on cross-cutting social justice issues in the smart city sector was highlighted, and a more holistic approach should be taken to address inequality and social justice issues to achieve more inclusive and equitable smart city development. La Torre et al. emphasized that digitization is an inevitable trend for any company in today's business world, and the simplicity of modeling and computation makes weighted global preference (GP) in multi-criteria decision analysis (MCDA) techniques a popular choice [73].

Especially when dealing with challenges involving conflicting standards, the application of advanced technologies such as AI has broad application prospects.

On the one hand, AI research focuses on domain-specific and organizational research; on the other hand, the importance of different factors in the AI adoption process changes at different stages, and the criticality of performance expectations is also emphasized. Dwivedi et al. employed bibliometric techniques to address various research questions and discovered that the primary research themes in big data research are domain-specific and organizational [64]. They highlighted a recent shift in focus towards organizational research within the realm of big data. Solaimani and Swaak used a necessary condition analysis (NCA) to find that the importance of different factors in the AI adoption process changes at different stages of adoption. Performance expectations were identified as the most critical factor, while top management support, technical capabilities and resources, ease of use, trading partner leverage, and organizational compatibility were also identified as success factors, but their importance varied at different stages of adoption [43]. Therefore, active support from top management, combined with principles of organizational justice, can help drive the successful expansion and deepening of AI adoption by promoting an adoption environment that is fair, just, and conducive to employee well-being. This practice of organizational justice helps build employee trust in the adoption of new technologies and enhances their loyalty to the organization, thus making an important contribution to the success of the adoption process.

Focusing on quality, robustness, and customer satisfaction in project selection is very important for project performance, and AI technology has great potential in decision support and digital transformation. Mohammadnazari et al. adopted a multi-criterion decision-making method (MCDM) to select the best method for project selection after a disaster [61]. In the study, artificial neural network (ANN) algorithms were used to predict the performance of the project. Their study suggests that the key criteria for post-disaster project selection are quality, robustness, and customer satisfaction and that this approach can be applied not only to the selection of post-disaster construction projects. This approach also hints at the potential of AI in decision support systems that can help organizations choose projects more intelligently and make real-time monitoring and adjustments as they are executed. It mentioned that the digital environment is being rapidly transformed due to the development of technologies such as AI, big data, blockchain technology, and cloud computing, indicating both an opportunity and a challenge for organizations [92–94]. The COVID-19 pandemic, in particular, has prompted many organizations to go digital rapidly, and digital technologies have become an opportunity to drive development.

The support of top management in the implementation of AI in the organization plays an essential role, and the different effects of different factors on project performance and the accuracy of different model methods also flourish because of the introduction of AI. Tjebane et al. used descriptive statistics to show that top management skills, decision support, and organizational costs are the highest ranked organizational factors in the South African construction industry, implying that these factors are important when implementing digital technology in organizations [58]. Oliveira et al. used different statistical and AI methods, including the Kriging method, the global preference (GP) method, the multiple linear regression (MLR) method, and the Bayesian network (BN), and found that different factors would have different impacts on project performance, and different model methods could provide accurate predictions and analyses [72].

4.1.2. Fostering Organizational Justice and AI's Role in Enhancing Project Performance

In different fields, including employee motivation, information management, and public participation, the establishment of a fair and just system to promote the realization of organizational justice and the use of AI technology has a positive impact on project performance. By paying attention to the fair treatment of technology, organization, and employees, project managers can motivate employees to actively participate in the project and improve their performance, which further promotes the realization of organizational

justice. Khan et al. used pairwise comparisons to evaluate the importance and ranking of factors under the three different backgrounds of technology, organization, and environment [95]. They found that if employees perceive that technical factors such as automation and cycle time are valued highly in projects, then they perform better. In addition, when organizational factors such as human resource utilization and agility are also treated fairly, then employees may be more motivated to actively participate in the project and show better results in terms of performance.

Tirmizi and Arif reported that each stakeholder seems to review only the parts they feel are relevant to them, without the overall ownership of the entire document or process, which can lead to the fragmentation of information and inconsistencies in project documentation [65]. This raises the possibility of using AI to improve the preparation of bidding and contract documents to increase efficiency and reduce errors. Escolar-Jimenez [66] emphasizes the importance of establishing a fair compensation system to attract, motivate, and retain employees, and uses intelligent algorithms to ensure fairness in employee compensation to enhance employee engagement and satisfaction. Rwelamila et al. highlighted the importance of ensuring that the public is properly considered and respected in PPP projects and that to achieve this, transparent decision-making mechanisms and appropriate stakeholder management strategies must be put in place to ensure that the public has a fair and equal position in projects [90].

4.1.3. Improving Organizational Performance Approaches

The research selected in this paper focuses on different aspects of organizational performance, including employee engagement, project performance, and organizational competitiveness and effectiveness. They highlight the critical role of organizational factors in improving performance and achieving successful project management, from organizational culture to resource allocation to the AI innovation and employee skills and training, and explore how improving these factors can contribute to an improved organizational performance. These studies provide organizations with valuable strategies and methods to achieve higher levels of performance and competitiveness. Al-Nammari et al. used UK NHS staff survey data collected over a five-year period from 2015 to 2019 to analyze the impact of nine organizational factors on employee engagement and found that safety culture was the factor most associated with employee engagement [76]. The findings have important implications for project managers, not only to increase employee engagement, but also to significantly improve project performance. By gaining a deeper understanding of how organizational factors affect employees, managers can make more targeted improvements to organizational culture, resource allocation, and decision-making processes to create a more engaging and stimulating work environment. Ismail and Muhammad mainly discussed the impact of AI-related innovation factors on organizational performance, including model construction, data sources, model evaluation, and the results of hypothesis testing [74].

These extant studies focused on organizational performance, highlighting the potential of different approaches and models to improve the project and organizational performance. Tiruneh and Fayek argued that the GA-MANFIS model provides insight into organizations and construction practitioners regarding future investment areas and strategic aspects to improve performance, as it can predict multiple performance indicators simultaneously without the need to develop independent models for each indicator [63]. Siripurapu introduced a new ranking function for use in project scheduling, which helps to determine the critical path and completion time of the project by expressing the expected time of the activity as a normal or clear number to improve project performance [96]. Tortia et al. explored the positive association between specific strategic human resource management (SHRM) practices and organizational performances, emphasizing the importance of these practices in improving project performances [68]. Dumitrașcu-Băldău et al. used ANN modeling to analyze the success factors of international projects. Among them, the team in the virtual environment has the greatest impact on the success of projects. Factors such as

organizational culture, project scope, and budget constraints are also considered to have an important impact on the success of international projects [97].

Through a literature analysis, it is found that supply chain integration, innovation management, team training, emotional intelligence, and the interpersonal competence of senior executives have positive effects on performance. Satpathy adopted a structural equation model (SEM) to study the relationship between information integration services (IIS), supply chain integration, and corporate performance, with supply chain integration having the most significant impact on corporate performance, highlighting the importance of innovation management for the continued competition and growth of organizations [59]. Land mentioned that many teams often assume that employees have the necessary knowledge of the project, but such assumption may lead to team inequality, suggested that team members' technical ability should be improved through collective team training, and stressed the importance of practical practice for team cooperation [75]. Singh argued that executives with higher intrinsic interpersonal competence (including learning ability, conceptual ability, relational ability, action ability, spiritual intelligence) exhibit higher levels of job performance in the Indian public sector manufacturing industry [98]. Chin and Yusof mainly focused on how to improve employees' emotional intelligence to improve job satisfaction and how it has an impact on enterprise performance [82]. They conducted an intermediary role of emotional intelligence to achieve a performance improvement and revealed how emotional intelligence acts as a bridge between employee satisfaction and enterprise performance.

4.2. Research Gaps and Directions for Future Studies

The widespread use of AI is changing the way organizations operate, having a positive impact on organizational justice and employee satisfaction, while also having a profound impact on project performance and driving organizations to the next level. As technology continues to evolve, AI has infiltrated every aspect of every organization, including the field of project management. First, AI had a positive impact on organizational justice [91]. In modern organizations, justice and equality are core values. By leveraging AI technologies, organizations can distribute resources, opportunities, and responsibilities more equitably, reducing the impact of subjectivity and bias. For example, in the recruitment process, AI can screen candidates by analyzing large numbers of resumes and interview performances, thus ensuring a fairer and merit-based selection process. This unbiased hiring practice not only enhances employees' trust in the organization, but also creates a better environment for diversity and inclusion, further increasing employee satisfaction.

In addition, AI can improve communication and collaboration within organizations, thus enhancing organizational justice [76]. With smart collaboration tools and automated processes, employees can more easily share information and collaborate on tasks regardless of location or time. This efficient way of working not only enhances the employee experience, but also ensures a fair allocation of decisions and resources.

In addition to its positive impact on organizational justice, AI technology also plays a key role in project performance. Project management is a key component of an organization's success, and the application of AI provides a whole new dimension to project management [73]. First, AI technology can accelerate the planning and execution process of projects, and through data analysis and prediction, it can help project managers better allocate resources, identify risks, and develop more effective strategies. This helps projects to be completed on time, reduce costs, and improve quality, thus enhancing project performance. Second, AI technology can also improve project monitoring and risk management. It monitors project progress in real-time and identifies potential issues, enabling project managers to react quickly. This helps mitigate potential negative impacts and ensures that the project runs smoothly. In addition, AI technology also plays a key role in project decision making. It can analyze large amounts of data, provide decision support, and provide intelligent recommendations to project managers. This helps make more informed decisions, reduces uncertainty, and increases the success rate of projects.

While AI technology has many positive effects in terms of organizational justice and project performance, there are also some potential drawbacks and challenges. The introduction of AI may involve multiple challenges and considerations such as data privacy and ethical issues, risk of unemployment, technology dependency and risk, cost and resource requirements, technological challenges, and culture and change management. Figure 8 illustrates the outline of the current research gap and the future development based on the selected literature.

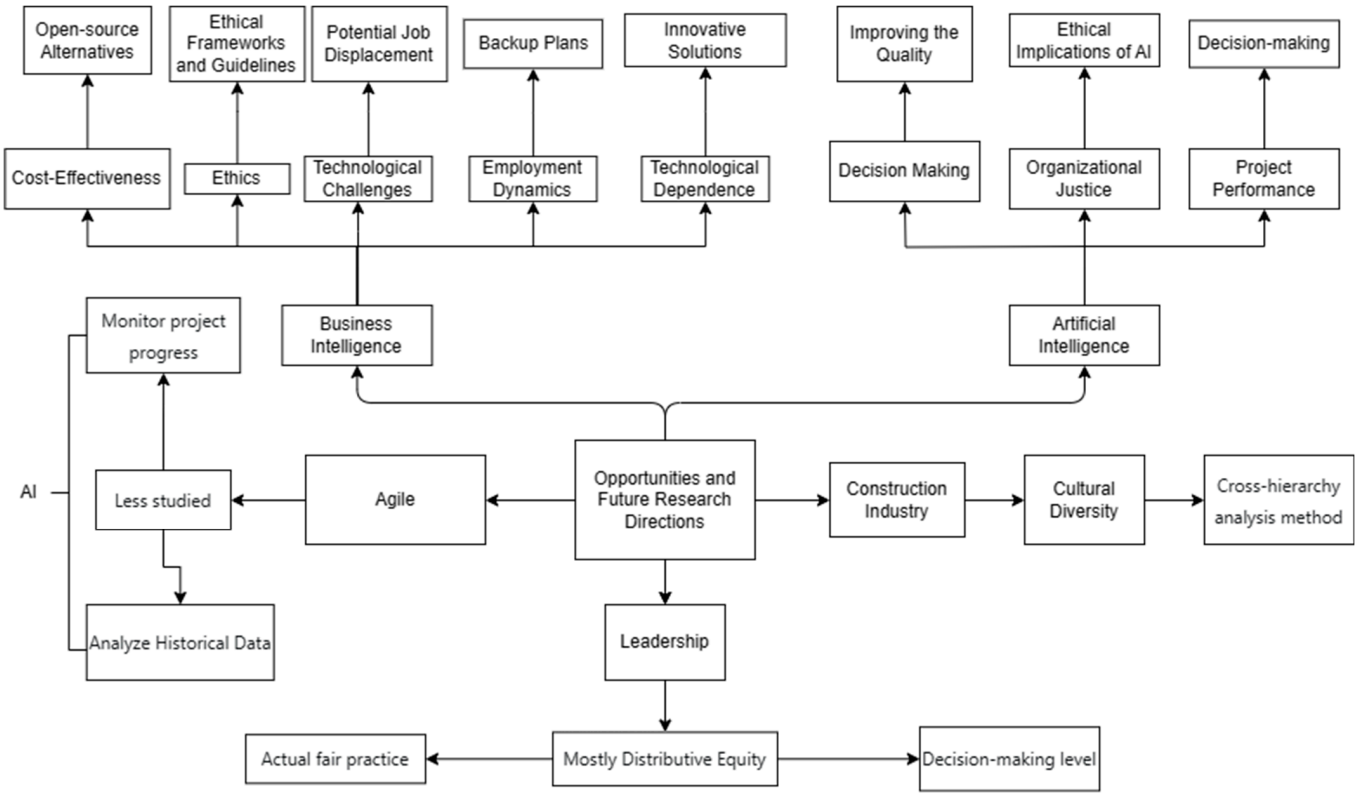

Figure 8. Outline of the research gap and further study suggestions.

4.2.1. Advancing Business Intelligence Strategies

Business intelligence (BI) has seen significant growth and adoption across various industries in recent years. It has become an indispensable tool for organizations to extract valuable insights from data to help make informed decisions. However, in this widespread implementation and utilization, there remain several unaddressed research gaps, indicating areas for further exploration and investigation.

One prominent research gap relates to ethical considerations surrounding project management. With the increasing use of large amounts of data and technology in project management, it is necessary to delve into the impact of these practices on ethical principles [58,91]. Privacy concerns, data protection, and responsible data use are becoming increasingly important in project management. Ensuring that project management techniques are consistent with ethical standards, laws, and regulations is critical to protecting sensitive information and ensuring project benefits. Researchers should delve into the development of ethical frameworks and guidelines related to project management to address issues such as bias in project decision making and the ethical use of the AI algorithms.

Another important area of research concerns the potential impact of project performance and organizational justice on employment dynamics. While project performance and organizational justice can improve productivity and resource utilization, the application of automation and AI technology in project management can pose risks to traditional project management roles. Therefore, it is necessary to examine in depth how project

performance and organizational justice practices affect the job market, including potential job replacement, increased skill needs to adapt to new technologies, and new positions that may be created as a result of project performance and the adoption of organizational justice techniques [66,68,72,99]. An in-depth understanding of these dynamics will help organizations and policy makers better respond to the changing employment environment.

In addition, in the field of project management, the problem of technology dependence also needs to be further studied. For organizations that rely heavily on project management systems, there are risks of project delays and wasted resources if these systems fail or suffer damage [100]. Therefore, research should focus on strategies to mitigate these risks and ensure project business continuity. Investigating backup plans, disaster recovery mechanisms, and diversified project management decision-making processes can help reduce over-reliance on technology, thereby improving the resilience and sustainability of project management.

In the field of project management, the cost aspect also constitutes a significant research gap. While project management tools and techniques offer significant benefits, the initial investment, ongoing maintenance, and licensing costs associated with them can be a considerable burden [43,58,61,73,74,92]. Further research should focus on the cost-effectiveness of adopting project management solutions for small and medium-sized projects or organizations, and how to optimize the return on investment. Research can examine pricing models for project management tools, open-source alternatives, and cloud-based project management services to provide valuable insights into cost management and help project management decision makers better weigh investment versus return.

Issues such as the integration of project data, data quality, and the scalability of systems can pose significant obstacles to the effectiveness of project management. As a result, scholars can delve into innovative solutions, best practices, and emerging technologies that address these technological challenges to improve the accessibility and efficiency of project management. This will help ensure that the project can proceed as planned and reduce potential problems and delays, thereby increasing the success and effectiveness of the project.

Similarly, in the field of project management, issues related to culture and change management are a key area of study. The successful implementation of a project management approach often requires cultural change within the organization and active employee engagement [64,73,76]. Therefore, research should focus on the challenges of managing change, fostering a project-oriented culture, and developing strategies that are aligned with project management goals and values. This will help ensure the smooth implementation of the project management methodology, increase the acceptance of project management by the organization, and ultimately enhance project performance.

4.2.2. Unlocking AI Technology Potential on Organizational Justice and Project Performance

The impact of AI on organizational justice is an important area of research. Organizational justice emphasizes equal experience for employees within the organization. However, the widespread use of AI may lead to some potentially unequal and unjust situations [58,66,91,99]. For example, using AI to screen resumes during the hiring process could lead to the spread of gender, race, or other biases. In addition, AI decision-making systems may introduce potential inequities in employee promotion, pay distribution, and rewards and punishments. Therefore, there is a need to delve into how AI affects organizational justice and propose solutions to ensure that the application of AI does not exacerbate inequalities and injustices.

Second, the potential impact of AI technology on project performance is also an area of concern for research. Project performance is one of the key factors in the success of an organization, and the application of AI technology can significantly improve the efficiency and quality of projects [59,66,68,97]. However, AI may also introduce some challenges, such as the risk of job losses from automation, technology dependency, and ethical issues.

Therefore, further research is needed on the specific application of AI in project management and its potential impact on project performance. In addition, research is needed on how to manage the application of AI in projects to maximize its potential benefits and reduce potential risks and challenges.

Another area of research concerns the role of AI in organizational decision making. AI systems can analyze large amounts of data and provide decision support, but whether they can improve the quality of an organization's decisions still needs in-depth research. In addition, AI's decision-making process is often black-box and difficult to explain and understand [73]. Therefore, research is needed on how to make AI decisions more transparent and explainable so that organizations can trust and accept them.

In addition, the ethics of AI, like the problems facing the AI, is an important area of research. As the application of AI becomes more widespread, how to ensure that its use in organizations and projects is ethical, and how to deal with the ethical challenges that AI may raise, are issues that require in-depth research. Finally, the social and cultural impact of AI is also an important area of research. The widespread adoption of AI could change the culture and working practices of organizations and projects, potentially triggering employee resistance or maladaptation. Therefore, there is a need to delve into the impact of AI on organizational culture and employee behavior, and come up with best practices and strategies for managing the introduction of AI.

4.2.3. Adaption of Cultural, Diversity, Environmental, and Social Factors

In the field of architecture, construction, and engineering (AEC), there is insufficient research on cultural adaptability and diversity. Current research mainly focuses on internal organization, but there is a lack of in-depth research on the impact of cross-cultural and pluralistic factors on organizational justice and project performance [58,61,101]. Future research could be devoted to exploring the practice of organizational justice in different cultural contexts and the impact of diverse teams on project performance. In addition, research also needs to focus more on long-term associations between organizational justice and project performance, rather than just short-term effects. Finally, multi-level analysis is also an area that needs to be strengthened. Current research mainly focuses on the intra-organizational or intra-project level, and less attention is paid to the influence of multi-layered factors. Future research can use a cross-level analytical approach to delve into the interactions between organizations, projects, individuals, and the external environments. With the rapid development of digital technologies, future research will focus more on how digital tools and platforms impact organizational justice practices and program performance. This could include research into AI-based decision support systems, big data analytics tools, and virtual collaboration platforms.

The application of technology will bring more innovation and efficiency to the AEC sector. Another important trend is the focus on sustainability and green projects. Future research will place greater emphasis on the impact of sustainability and green project management on organizational justice and project performances [68,91]. This may include the consideration of environmental and social justice factors in project decisions and the impact of sustainability practices on project success. The construction industry will continue to seek more sustainable methods and practices to meet growing sustainability requirements. The perspective of globalization will also become an important direction of future research. As construction projects increasingly cross international boundaries, future research will focus more on organizational justice and project performance in the context of globalization. This may involve the study of transnational cooperation, cross-cultural management, and international projects. Understanding the influencing factors in different cultural, social, and national contexts will help construction projects better adapt to the international market. Finally, data-driven decision making will also be a key topic for future research. Future research will place greater emphasis on the importance of data-driven decision making for organizational justice and project performance. This may include the application of data analytics, predictive modeling, and the real-time monitoring of project

decision making and performance improvement. Data will become a valuable resource in the construction sector, providing more insights and support for decision makers.

4.2.4. The Impact of AI on Complex and Challenging Leadership Styles

The current research has clarified the correlation between leadership styles and organizational justice, but there are still some unresolved questions. First, how leadership style affects different types of organizational justice (distributive justice, procedural justice, interactive justice, information justice, etc.) still needs in-depth research [97,99]. Most of the existing studies focus on distributive justice, but pay less attention to other types of justice [72,102]. Future research could explore the impact of different leadership styles in different areas of justice to gain a more comprehensive understanding. In addition, existing studies mainly focus on the influence of leadership style on employees' perceived justice, but pay less attention to the influence of leadership style on actual justice practice [59,66]. Future research could explore in greater depth how leadership styles influence just decision making and policy making within organizations, and how leaders contribute to the construction of a culture of justice through their actions and decisions.

With the rapid advancement of AI technology, how leaders adapt to and interact with AI systems to improve organizational justice and project performance is an important but understudied question. The current research has focused on leaders' decision making and behavior, but there is a lack of in-depth research into leaders' interactions with AI systems. Future research could focus on how leaders work with AI, how they manage AI systems, and how AI affects leaders' decision-making styles and organizational cultures.

Despite research showing that leadership style can influence organizational justice, there are still some unanswered questions in this area. First, it is necessary to deeply study the influence of different types of leadership styles on organizational justice in different fields. For example, a leadership style may have a positive impact on distributive justice, but a negative impact on procedural justice [63]. In addition, the current research mainly focuses on the individual leadership style of leaders, but does not consider the influence of the leadership team and the collective leadership style. Future research could explore the impact of a team leadership style on organizational justice to gain a more comprehensive understanding.

There are also some important gaps in the research on the impact of leadership styles on project performance. The existing research has focused on the impact of leaders on project teams, but project performance is often affected by broader factors. Future research could focus more on the impact of the leadership style on the overall project performance, including the achievement of project strategic objectives, customer satisfaction, and project sustainability. In addition, the mediating mechanism between the leadership style and project performance still needs further research to better understand the underlying mechanism of this relationship.

The complex interaction between organizational justice, project performance, and AI is an emerging but understudied area. In an age of digitization and automation, leaders need to adapt and leverage AI systems to achieve the goals of organizational justice and project performance [43,58]. However, it is unclear how leadership styles will adapt in this complex environment to better meet the new challenges of AI systems. Future research could explore how leaders interact with AI systems, the adjustment of leadership styles, and how leaders' behavior contributes to organizational justice and project performance.

4.2.5. Developing a Comprehensive Understanding of Agile Framework

Although agile methods have been widely used in software development, there is still a research gap in integrating AI techniques. The application of AI in project management, such as project risk management, resource allocation, and decision support, has great potential to improve project performance. However, how to combine AI with agile methods to achieve the best results still needs in-depth research. At present, the scope of the application of AI in project management has covered many aspects, including automated tasks, data

analysis, predictive modeling, and intelligent decision support. However, blending these AI techniques with agile methodologies to drive agile and intelligent project management remains a relatively unexplored area. Future research could focus on how AI algorithms can be embedded in agile projects to better support project decision making and teamwork, for example, the way that AI can be used to monitor project progress in real-time, automatically identify potential risks, and provide targeted recommendations [72]. This helps the project team to better respond to changing needs and challenges, increasing the flexibility and adaptability of the project. In addition, AI techniques can be used to optimize resource allocation. By analyzing historical data and real-time information, AI technology can help project managers allocate human and material resources more precisely to ensure projects are completed within the budget and timeframe. This helps to improve resource utilization, reduce project costs, and improve project performance. Decision support is another potential area of research. AI technology can provide decision support to project managers and teams, including project prioritization, change management recommendations, and problem resolution recommendations. This helps to improve the quality and efficiency of decisions and reduce uncertainty in projects.

Despite the agile approach's emphasis on teamwork and customer orientation, its relationship to organizational justice has not been fully studied. Organizational justice involves a perception of fairness in employee treatment and resource allocation, while agile methods typically emphasize iterative development and a rapid response to customer needs [103]. Future research could explore the impact of agile methods on organizational justice in different organizational contexts and how agile practices can be adapted to improve perceived organizational justice.

5. Conclusions

Grounded in the growing concerns of AI technology, this paper sets out to explore the application and impact of AI on organizational justice and project performance. By combining a systematic literature review (i.e., PRISMA) and science mapping approach (i.e., VOSviewer), a total of 47 included articles were retrieved from the Scopus database. The core contents of the paper include analyzing the annual publication trends, peer-reviewed journals, co-occurrence analysis of keywords, co-authors, countries/regions, and documents, summarizing mainstream research topics, and proposing future research directions and research gaps. Through these analyses, the research aims to gain insight into how AI is changing organizational justice and project performance, as well as trends and challenges in the field.

This paper is based on the PRISMA guidelines by combining a systematic literature review and a science mapping review. In total, 38 peer-reviewed journals were identified through the selection strategy, with the top eight journals accounting for 36.17% of all articles related to the studied domain. The year with the highest number of publications was 2022, when 12 research papers were published. This was followed by nine research papers in 2023 and six in 2019. This data trend reflects the increasing attention and interest from year to year, and one of the main reasons is that AI technology continues to evolve, making its application areas such as organizational management and project execution more practical and beneficial. Through keyword co-occurrence analysis, five major research gaps and future research directions were identified. They include (1) advancing business intelligence strategies, (2) unlocking AI technology potential on organizational justice and project performance, (3) the adaption of cultural, diversity, environmental, and social factors, (4) the impact of AI on complex and challenging leadership styles, and (5) developing a comprehensive understanding of an agile framework. By countries/regions' analysis, it is found that India is the country with the highest number of published articles and total link strength, followed by Malaysia, Iran, and the United States. The study also found that Iran had the most influence in the field of research, while France had a later average publication year.

5.1. Theoretical and Practical Contributions

Through the analyses, it is found that although AI has developed rapidly in its field, its application to project management, especially organizational justice research, is still very low. By applying AI technology to the improvement and perfection of organizational justice, it can have a positive impact on project performance. Therefore, the issue of fairness in project management can be further studied in the future, including how to ensure the fairness of resource allocation and how to reduce bias and inequality. This paper recognizes the potential of AI in project management, especially in terms of increasing efficiency, reducing costs, and improving project performance, and therefore recommends that project managers invest in intelligent project management tools and technologies that can generate substantial returns. In addition, the government can improve project management and organizational justice by supporting scientific and technological innovation and research and development projects, and encouraging enterprises and organizations to adopt AI technologies.

5.2. Limitations and Further Studies

Utilizing a mixed-methods approach allowed this paper to capture the mainstream research direction in this field, revealing insights into organizational justice that might have been overlooked with a singular methodological focus. There are some deficiencies in this paper which are caused by insufficient research on AI technology in the field of organizational justice at the current stage, and there are not many reference cases for analysis. Therefore, the conclusions drawn from this literature review are also limited. To better study the impact of AI on organizational justice and project performance, future research should focus on providing case studies and quantitative analyses to prove the positive correlation between them.

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References

1. Hamon, R.; Junklewitz, H.; Sanchez, I. *Robustness and Explainability of Artificial Intelligence*; Publications Office of the European Union: Luxembourg, 2020.
2. Bagherzadeh, F.; Shafighfard, T. Ensemble Machine Learning approach for evaluating the material characterization of carbon nanotube-reinforced cementitious composites. *Case Stud. Constr. Mater.* **2022**, *17*, e01537. [CrossRef]
3. Bagherzadeh, F.; Shafighfard, T.; Khan, R.M.A.; Szczuko, P.; Mieloszyk, M. Prediction of maximum tensile stress in plain-weave composite laminates with interacting holes via stacked machine learning algorithms: A comparative study. *Mech. Syst. Signal Process.* **2023**, *195*, 110315. [CrossRef]
4. Wamba-Taguimdje, S.L.; Fosso Wamba, S.; Kala Kamdjoug, J.R.; Tchatchouang Wanko, C.E. Influence of artificial intelligence (AI) on firm performance: The business value of AI-based transformation projects. *Bus. Process Manag. J.* **2020**, *26*, 1893–1924. [CrossRef]
5. Vishwakarma, L.P.; Singh, R.K. An Analysis of the Challenges to Human Resource in Implementing Artificial Intelligence. In *The Adoption and Effect of Artificial Intelligence on Human Resources Management, Part B (Emerald Studies in Finance, Insurance, and Risk Management)*; Tyagi, P., Chilamkurti, N., Grima, S., Sood, K., Balusamy, B., Eds.; Emerald Publishing Limited: Bingley, UK, 2023; pp. 81–109.
6. Sarker, I.H. Data science and analytics: An overview from data-driven smart computing, decision-making and applications perspective. *SN Comput. Sci.* **2021**, *2*, 377. [CrossRef]
7. Yean, T.F. Organizational justice: A conceptual discussion. *Procedia-Soc. Behav. Sci.* **2016**, *219*, 798–803. [CrossRef]

8. Adamovic, M. Organizational justice research: A review, synthesis, and research agenda. *Eur. Manag. Rev.* 2023; *in press*. [CrossRef]
9. Viswesvaran, C.; Ones, D.S. Examining the construct of organizational justice: A meta-analytic evolution of relations with work attitudes and behaviors. *J. Bus. Ethics* **2002**, *38*, 193–203. [CrossRef]
10. Burney, L.L.; Henle, C.A.; Widener, S.K. A path model examining the relations among strategic performance measurement system characteristics, organizational justice, and extra-and in-role performance. *Account. Organ. Soc.* **2009**, *34*, 305–321. [CrossRef]
11. Shafi, M.Q.; Iqbal, R.; Shahzad, K.; Unterhitzenberger, C. The mediating role of project citizenship behavior in the relationship between organizational justice dimensions and project success. *Proj. Manag. J.* **2021**, *52*, 547–562. [CrossRef]
12. Yu, J.F.; Ding, Y.M.; Jia, R.Y.; Liang, D.D.; Wu, Z.; Lu, G.L.; Chen, C.R. Professional identity and emotional labour affect the relationship between perceived organisational justice and job performance among Chinese hospital nurses. *J. Nurs. Manag.* **2022**, *30*, 1252–1262. [CrossRef]
13. Suliman, A.; Al Kathairi, M. Organizational justice, commitment and performance in developing countries: The case of the UAE. *Empl. Relat.* **2012**, *35*, 98–115. [CrossRef]
14. Wang, X.; Liao, J.; Xia, D.; Chang, T. The impact of organizational justice on work performance: Mediating effects of organizational commitment and leader-member exchange. *Int. J. Manpow.* **2010**, *31*, 660–677. [CrossRef]
15. Yang, F.; Li, X.; Song, Z.; Li, Y.; Zhu, Y. Job burnout of construction project managers: Considering the role of organizational justice. *J. Constr. Eng. Manag.* **2018**, *144*, 04018103. [CrossRef]
16. Zhang, L.; Yao, Y.; Yiu, T.W. Job burnout of construction project managers: Exploring the consequences of regulating emotions in workplace. *J. Constr. Eng. Manag.* **2020**, *146*, 04020117. [CrossRef]
17. Grgić-Hlača, N.; Zafar, M.B.; Gummadi, K.P.; Weller, A. Beyond distributive fairness in algorithmic decision making: Feature selection for procedurally fair learning. In Proceedings of the AAAI Conference on Artificial Intelligence 2018, New Orleans, LA, USA, 2–7 February 2018; Volume 32.
18. Kordzadeh, N.; Ghasemaghaei, M. Algorithmic bias: Review, synthesis, and future research directions. *Eur. J. Inf. Syst.* **2022**, *31*, 388–409. [CrossRef]
19. Stroet, H. AI in Performance Management: What Are the Effects for Line Managers? Bachelor's Thesis, University of Twente, Enschede, The Netherland, 2020.
20. Awan, S.H.; Habib, N.; Shoaib Akhtar, C.; Naveed, S. Effectiveness of performance management system for employee performance through engagement. *SAGE Open* **2020**, *10*, 2158244020969383. [CrossRef]
21. Zhang, H.; Feinzig, S.; Raisbeck, L.; Mccombe, I. *The Role of AI in Mitigating Bias to Enhance Diversity and Inclusion*; IBM Smarter Workforce Institute Report; IBM Corporation: Armonk, NY, USA, 2019; 15p.
22. Deloitte. "Thriving in the Era of Pervasive AI: Deloitte's State of AI in the Enterprise, 3rd Edition", Deloitte Insights. 2020. Available online: https://www2.deloitte.com/us/en/insights/focus/cognitive-technologies/state-of-ai-and-intelligentautomation-in-business-survey.html (accessed on 8 July 2023).
23. Black, J.S.; van Esch, P. AI-enabled recruiting: What is it and how should a manager use it? *Bus. Horiz.* **2020**, *63*, 215–226. [CrossRef]
24. Unterhitzenberger, C.; Bryde, D.J. Organizational justice, project performance, and the mediating effects of key success factors. *Proj. Manag. J.* **2019**, *50*, 57–70. [CrossRef]
25. Lim, B.T.; Loosemore, M. The effect of inter-organizational justice perceptions on organizational citizenship behaviors in construction projects. *Int. J. Proj. Manag.* **2017**, *35*, 95–106. [CrossRef]
26. Palaiologos, A.; Papazekos, P.; Panayotopoulou, L. Organizational justice and employee satisfaction in performance appraisal. *J. Eur. Ind. Train.* **2011**, *35*, 826–840. [CrossRef]
27. Alarie, B.; Niblett, A.; Yoon, A.H. How artificial intelligence will affect the practice of law. *Univ. Tor. Law J.* **2018**, *68*, 106–124. [CrossRef]
28. Robert, L.P.; Pierce, C.; Marquis, L.; Kim, S.; Alahmad, R. Designing fair AI for managing employees in organizations: A review, critique, and design agenda. *Hum.–Comput. Interact.* **2020**, *35*, 545–575. [CrossRef]
29. Aanestad, M.; Kankanhalli, A.; Maruping, L.; Pang, M.-S.; Ram, S. Digital Technologies and Social Justice. MIS Quarterly Special Issue Call for Paper, 2021; pp. 1–9. Available online: https://misq-umn-edu.manchester.idm.oclc.org/skin/frontend/default/misq/pdf/CurrentCalls/SI_DigitalTechnologies.pdf (accessed on 3 September 2023).
30. Morse, L.; Teodorescu, M.H.M.; Awwad, Y.; Kane, G.C. Do the ends justify the means? Variation in the distributive and procedural fairness of machine learning algorithms. *J. Bus. Ethics* **2021**, *181*, 1083–1095. [CrossRef]
31. Rueda, J.; Rodríguez, J.D.; Jounou, I.P.; Hortal-Carmona, J.; Ausín, T.; Rodríguez-Arias, D. "Just" accuracy? Procedural fairness demands explainability in AI-based medical resource allocations. *AI Soc.* 2022; *in press*. [CrossRef]
32. Kapoor, K.K.; Dwivedi, Y.K.; Williams, M.D. Rogers' Innovation Adoption Attributes: A Systematic Review and Synthesis of Existing Research. *Inf. Syst. Manag.* **2014**, *31*, 74–91. [CrossRef]
33. Rethlefsen, M.L.; Kirtley, S.; Waffenschmidt, S.; Ayala, A.P.; Moher, D.; Page, M.J.; Koffel, J.B. PRISMA-S: An extension to the PRISMA statement for reporting literature searches in systematic reviews. *Syst. Rev.* **2021**, *10*, 1–19. [CrossRef] [PubMed]
34. Antwi-Afari, M.F.; Li, H.; Chan, A.H.S.; Seo, J.; Anwer, S.; Mi, H.Y.; Wu, Z.; Wong, A.Y.L. A science mapping-based review of work-related musculoskeletal disorders among construction workers. *J. Saf. Res.* **2023**, *85*, 114–128. [CrossRef]

35. Shi, J.; Antwi-Afari, M.F. Organizational leadership and employee well-being in the construction industry: A bibliometric and scientometric review. *J. Eng. Des. Technol.* 2023; *ahead-of-print*. [CrossRef]
36. Chiang, D.C.I.; Antwi-Afari, M.F.; Anwer, S.; Mohandes, S.R.; Li, X. Occupational stress in the construction industry: A bibliometric-qualitative analysis of literature and future research directions. *Int. J. Build. Pathol. Adapt.* 2023; *ahead-of-print*. [CrossRef]
37. Sun, W.; Antwi-Afari, M.F.; Mehmood, I.; Anwer, S.; Umer, W. Critical success factors for implementing blockchain technology in construction. *Autom. Constr.* **2023**, *156*, 105135. [CrossRef]
38. Small, H. Visualizing science by citation mapping. *J. Am. Soc. Inf. Sci.* **1999**, *50*, 799–813. [CrossRef]
39. Mu, X.; Antwi-Afari, M.F. The applications of Internet of Things (IoTs) in industrial management: A science mapping review. *Int. J. Prod. Res.* 2023; *in press*. [CrossRef]
40. Cobo, M.J.; López-Herrera, A.G.; Herrera-Viedma, E.; Herrera, F. Science mapping software tools: Review, analysis, and cooperative study among tools. *J. Am. Soc. Inf. Sci. Technol.* **2011**, *62*, 1382–1402. [CrossRef]
41. Aria, M.; Cuccurullo, C. Bibliometrix: An R-tool for comprehensive science mapping analysis. *J. Informetr.* **2017**, *11*, 959–975. [CrossRef]
42. Meho, L.I.; Yang, K. Impact of data sources on citation counts and rankings of LIS faculty: Web of Science versus Scopus and Google Scholar. *J. Am. Soc. Inf. Sci. Technol.* **2007**, *58*, 2105–2125. [CrossRef]
43. Solaimani, S.; Swaak, L. Critical Success Factors in a multi-stage adoption of Artificial Intelligence: A Necessary Condition Analysis. *J. Eng. Technol. Manag.* **2023**, *69*, 101760. [CrossRef]
44. Criveanu, M.M. Investigating Digital Intensity and E-Commerce as Drivers for Sustainability and Economic Growth in the EU Countries. *Electronics* **2023**, *12*, 2318. [CrossRef]
45. Banerjee, S.; Potts, C.M.; Jhala, A.H.; Jaselskis, E.J. Developing a Construction Domain–Specific Artificial Intelligence Language Model for NCDOT's CLEAR Program to Promote Organizational Innovation and Institutional Knowledge. *J. Comput. Civ. Eng.* **2023**, *37*, 04023007. [CrossRef]
46. Thapa, C.; Tang, J.W.; Abuadbba, A.; Gao, Y.; Camtepe, S.; Nepal, S.; Almashor, M.; Zheng, Y. Evaluation of federated learning in phishing email detection. *Sensors* **2023**, *23*, 4346. [CrossRef]
47. Chen, W.; Zheng, M.; Lu, C.; Tian, N.; Ding, X.; Li, N. Multi-objective decision support system for large-scale network pavement maintenance and rehabilitation management to enhance sustainability. *J. Clean. Prod.* **2022**, *380*, 135028. [CrossRef]
48. Wang, J.; Omar, A.H.; Alotaibi, F.M.; Daradkeh, Y.I.; Althubiti, S.A. Business intelligence ability to enhance organizational performance and performance evaluation capabilities by improving data mining systems for competitive advantage. *Inf. Process. Manag.* **2022**, *59*, 103075. [CrossRef]
49. Ismail, J.I.M.S.; Muhammad, M.N. Artificial Intelligence Innovation Related Factors Affecting Organizational Performance. *Int. J. Sustain. Constr. Eng. Technol.* **2022**, *13*, 203–212.
50. Shepherd, D.A.; Zacharakis, A. Conjoint Analysis: A Window of Opportunity for Entrepreneurship Research. In *Reflections and Extensions on Key Papers of the First Twenty-Five Years of Advances*; Emerald Publishing Limited: Bingley, UK, 2018; pp. 149–183.
51. Dangelico, R.M.; Vocalelli, D. "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. *J. Clean. Prod.* **2017**, *165*, 1263–1279. [CrossRef]
52. Hamidinava, F.; Ebrahimy, A.; Samiee, R.; Didehkhani, H. A model of business intelligence on cloud for managing SMEs in COVID-19 pandemic (Case: Iranian SMEs). *Kybernetes* **2021**, *52*, 207–234. [CrossRef]
53. Zulkifli Abai, N.H.; Yahaya, J.; Deraman, A.; Hamdan, A.R.; Mansor, Z.; Jusoh, Y.Y. Integrating Business Intelligence and Analytics in Managing Public Sector Performance: An Empirical Study. *Int. J. Adv. Sci. Eng. Inf. Technol.* **2019**, *9*, 172–180. [CrossRef]
54. Farrokhi, V. The Identification of Readiness in Implementating Business Intelligence Projects by Combining Interpretive Structural Modeling with Graph Theory and Matrix Approach. *Acta Polytech. Hung. J. Appl. Sci. Bp. Tech Hung.* **2014**, *15*, 89–102.
55. Hou, C.K. A model for evaluating the potential impact of integrating ERP systems with BI systems on organisational performance: An empirical study of the semiconductor industry. *Int. J. Technol. Policy Manag.* **2014**, *14*, 250–270. [CrossRef]
56. Hou, C.K. Measuring the impacts of the integrating information systems on decision-making performance and organisational performance: An empirical study of the Taiwan semiconductor industry. *Int. J. Technol. Policy Manag.* **2013**, *13*, 34–66. [CrossRef]
57. Thanopoulos, J.; Papazoglou, N.; Caminis, D.S. Managerial self-actualisation in the era of business intelligence. *Int. J. Appl. Syst. Stud.* **2023**, *10*, 70–82. [CrossRef]
58. Tjebane, M.M.; Musonda, I.; Okoro, C. Organisational Factors of Artificial Intelligence Adoption in the South African Construction Industry. *Front. Built Environ.* **2022**, *8*, 823998. [CrossRef]
59. Satpathy, B. Strategic alliance between information intensive services and supply chain integration: Impact on firm performance. *Braz. J. Oper. Prod. Manag.* **2019**, *16*, 241–260.
60. Jin, X.-H. Model for Efficient Risk Allocation in Privately Financed Public Infrastructure Projects Using Neuro-Fuzzy Techniques. *J. Constr. Eng. Manag.* **2011**, *137*, 1003–1014. [CrossRef]
61. Mohammadnazari, Z.; Mousapour Mamoudan, M.; Alipour-Vaezi, M. Prioritizing Post-Disaster Reconstruction Projects Using an Integrated Multi-Criteria Decision-Making Approach: A Case Study. *Buildings* **2022**, *12*, 136. [CrossRef]
62. Wuni, I.Y.; Shen, G.Q.; Ogungbile, A.J.; Ayitey, J.Z. Four-pronged decision support framework for implementing industrialized construction projects. *Constr. Innov.* **2022**, *22*, 263–283. [CrossRef]

63. Tiruneh, G.G.; Fayek, A.R. Hybrid GA-MANFIS Model for Organizational Competencies and Performance in Construction. *J. Constr. Eng. Manag.* **2022**, *148*, 04022002. [CrossRef]
64. Dwivedi, R.; Nerur, S.; Balijepally, V. Exploring artificial intelligence and big data scholarship in information systems: A citation, bibliographic coupling, and co-word analysis. *Int. J. Inf. Manag. Data Insights* **2023**, *3*, 100185. [CrossRef]
65. Tirmizi, S.A.A.; Arif, F. Conceptual Approach for the Use of Artificial Intelligence for Contractual Risk Assessment in Infrastructure Projects. *Eng. Proc.* **2022**, *22*, 12.
66. Escolar-Jimenez, C.C. Data-Driven Decisions in Employee Compensation utilizing a Neuro-Fuzzy Inference System. *Int. J. Emerg. Trends Eng. Res.* **2019**, *7*, 163–169. [CrossRef]
67. Al-Malahmeh, H. Influence of Business Intelligence and Big Data on Organizational Performance. *J. Syst. Manag. Sci. (Online)* **2022**, *12*, 193–212.
68. Tortia, E.C.; Sacchetti, S.; López-Arceiz, F.J. A Human Growth Perspective on Sustainable HRM Practices, Worker Well-Being and Organizational Performance. *Sustainability* **2022**, *14*, 11064. [CrossRef]
69. Chakraborty, S. Evaluating influence of artificial intelligence on human resource management using PLS-SEM (Partial least squares-structural equation modeling). *Int. J. Sci. Technol. Res.* **2020**, *9*, 5876–5880.
70. Vujovic, A. Development of Expert System by using Logical Comparative Conclusion in the Function of Organizational Performance Improvement. *Teh. Vjesn.* **2019**, *26*, 373–379.
71. Enad Al-Qaralleh, R.; Atan, T. Impact of knowledge-based HRM, business analytics and agility on innovative performance: Linear and FsQCA findings from the hotel industry. *Kybernetes* **2022**, *51*, 423–441. [CrossRef]
72. Oliveira, M.A.; Dalla Valentina, L.V.; Futami, A.H.; Possamai, O.; Flesch, C.A. Project performance prediction model linking agility and flexibility demands to project type. *Expert Syst.* **2021**, *38*, e12675. [CrossRef]
73. La Torre, D.; Colapinto, C.; Durosini, I.; Triberti, S. Team Formation for Human-Artificial Intelligence Collaboration in the Workplace: A Goal Programming Model to Foster Organizational Change. *IEEE Trans. Eng. Manag.* **2023**, *70*, 1966–1976. [CrossRef]
74. Ismail, J.I.M.S.; Muhammad, M.N.; Mosali, N.A. Ranking of Innovation Related Factors Influencing Artificial Intelligence Performance. *Int. J. Sustain. Constr. Eng. Technol.* **2022**, *13*, 154–164.
75. Land, S.K. The Importance of Deliberate Team Building: A Project-Focused Competence-Based Approach. *IEEE Eng. Manag. Rev.* **2019**, *47*, 18–22. [CrossRef]
76. Al-Nammari, R.; Simsekler, M.C.E.; Gabor, A.F.; Qazi, A. Exploring Drivers of Staff Engagement in Healthcare Organizations Using Tree-Based Machine Learning Algorithms. *IEEE Trans. Eng. Manag.* **2023**, *70*, 2988–2997. [CrossRef]
77. Sumati, S. AI-Powered Workforce Analytics: Maximizing Business and Employee Success through Predictive Attrition Modelling. *Int. J. Perform. Eng.* **2023**, *19*, 203–215.
78. Pauna, V.H.; Buonocore, E.; Renzi, M.; Russo, G.F.; Franzese, P.P. The issue of microplastics in marine ecosystems: A bibliometric network analysis. *Mar. Pollut. Bull.* **2019**, *149*, 110612. [CrossRef]
79. Khalili-Damghani, K.; Sadi-Nezhad, S. A decision support system for fuzzy multi-objective multi-period sustainable project selection. *Comput. Ind. Eng.* **2013**, *64*, 1045–1060. [CrossRef]
80. Boejko, W.; Hejducki, Z.; Wodecki, M. Applying metaheuristic strategies in construction projects management. *J. Civ. Eng. Manag.* **2012**, *18*, 621–630. [CrossRef]
81. Baldassarri, C.; Mathieux, F.; Ardente, F.; Wehmann, C.; Deese, K. Integration of environmental aspects into R&D inter-organizational projects management: Application of a life cycle-based method to the development of innovative windows. *J. Clean. Prod.* **2016**, *112*, 3388–3401.
82. Chin, T.S.; Yusof, R.M. Mediating Effects of Job Satisfaction in the Relationship Between Emotional Intelligence and Organisational Performance. *Adv. Sci. Lett.* **2017**, *23*, 8871–8873. [CrossRef]
83. Chaikovska, I.; Fasolko, T.; Vaganova, L.; Barabash, O. Economic-mathematical tools for building up a project team in the system of company's knowledge management. *Восточно-Европейский Журнал Передовых Технологий* **2017**, *3*, 29–37. [CrossRef]
84. Sathitsemakul, C.; Calabrese, F. The Influence of Emotional Intelligence on Employees' Knowledge Sharing Attitude: The Case of a Commercial Bank in Thailand. *J. Integr. Des. Process Sci.* **2017**, *21*, 81–98. [CrossRef]
85. Taofeeq, M.D.; Adeleke, A.; LEE, C.-K. Government policy as a key moderator to contractors' risk attitudes among Malaysian construction companies. *J. Eng. Des. Technol.* **2020**, *18*, 1543–1569. [CrossRef]
86. Sandin, G.; Clancy, G.; Heimersson, S.; Peters, G.M.; Svanström, M.; Ten Hoeve, M. Making the most of LCA in technical inter-organisational R&D projects. *J. Clean. Prod.* **2014**, *70*, 97–104.
87. Goedert, J.D.; Sekpe, V.D. Decision support system–enhanced scheduling in matrix organizations using the analytic hierarchy process. *J. Constr. Eng. Manag.* **2013**, *139*, 05013003. [CrossRef]
88. Kim, A.A.; McCunn, L.J.; Lew, J. Successful Facility Change-Management Practices for Retrofit Projects: Case Study in Lighting. *J. Manag. Eng.* **2017**, *33*, 05017001. [CrossRef]
89. Erdis, E. The effect of current public procurement law on duration and cost of construction projects in Turkey. *J. Civ. Eng. Manag.* **2013**, *19*, 121–135. [CrossRef]
90. Rwelamila, P.D.; Fewings, P.; Henjewele, C. Addressing the Missing Link in PPP Projects: What Constitutes the Public? *J. Manag. Eng.* **2015**, *31*, 4014085. [CrossRef]

91. Sharma, N.K.; Hargreaves, T.; Pallett, H. Social justice implications of smart urban technologies: An intersectional approach. *Build. Cities* **2023**, *4*, 315–333. [CrossRef]
92. Vărzaru, A.A. An Empirical Framework for Assessing the Digital Technologies Users' Acceptance in Project Management. *Electronics* **2022**, *11*, 3872. [CrossRef]
93. Zhang, Y.; Xing, X.; Antwi-Afari, M.F. Semantic IFC Data Model for Automatic Safety Risk Identification in Deep Excavation Projects. *Appl. Sci.* **2021**, *11*, 9958. [CrossRef]
94. Zhang., Y.; Xing, X.; Antwi-Afari, M.F. A hybrid approach for optimizing deep excavation safety measures based on Bayesian network and design structure matrix. *Adv. Eng. Inform.* **2023**, *58*, 102223. [CrossRef]
95. Khan, S.A.; Ojiako, U.; Marshall, A.; Dalalah, D.; Ceylan, S.; Ali Shabani, N.N.; Al Sharqawi, S.I. The critical risk factors that influence production-oriented projects in the United Arab Emirates: A best-worst method'(BWM) analysis. *Eng. Manag. J.* **2023**, *35*, 144–160. [CrossRef]
96. Siripurapu, A. A new ranking in heptagonal fuzzy number and its application in project scheduling. *Reliab. Theory Appl.* **2022**, *17*, 259–271.
97. Dumitrașcu-Băldău, I.; Dumitrașcu, D.-D.; Dobrotă, G. Predictive Model for the Factors Influencing International Project Success: A Data Mining Approach. *Sustainability* **2021**, *13*, 3819. [CrossRef]
98. Singh, P. Intrinsic Human Capacities of High and Low Performers of Public Sector Manufacturing Industry in India. *Int. J. Manag.* **2019**, *10*, 261–274.
99. Deb, S.K.; Nafi, S.M.; Mallik, N.; Valeri, M. Mediating effect of emotional intelligence on the relationship between employee job satisfaction and firm performance of small business. *Eur. Bus. Rev.* **2023**, *35*, 624–651. [CrossRef]
100. Cubric, M. Drivers, barriers and social considerations for AI adoption in business and management: A tertiary study. *Technol. Soc.* **2020**, *62*, 101257. [CrossRef]
101. Peterson, J.; Tahssain-Gay, L.; Laila, B.N. The impact of exclusivity in talent identification: Sources of perceived injustice and employee reactions. *Empl. Relat. Int. J.* **2022**, *44*, 1217–1240. [CrossRef]
102. Kaul, S.; Singh, A. Organisational justice as an enhancer of organisational commitment. *Int. J. Indian Psychol.* **2017**, *4*, 52–70.
103. Yeo, M.; Ananthram, S.; Teo, S.T.; Pearson, C.A. Leader–member exchange and relational quality in a Singapore public sector organization. *Public Manag. Rev.* **2015**, *17*, 1379–1402. [CrossRef]