



Unraveling the Complexity: A DEMATEL Analysis of the Negative Impact of Artificial Intelligence (AI) Adoption among Students in Higher Education

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Abstract

This research employs DEMATEL analysis as a methodological approach to thoroughly examine the adverse consequences of implementing Artificial Intelligence (AI) among students enrolled at Universiti Teknologi MARA (UiTM) Negeri Sembilan, Malaysia. The analysis encompasses three distinct professional cohorts: student representatives, academic staff, and upper management. Through a systematic analysis of causal relationships between multiple factors, this study aims to identify and prioritize the fundamental elements contributing to the negative consequences associated with integrating artificial intelligence. The prominence of privacy and security concerns as a causal factor highlights the importance of implementing strong data protection measures and adhering to ethical practices related to AI. Furthermore, various factors connected with personal disconnection, restricted adaptability, dependence on technology, and insufficient emotional intelligence influence the adverse outcomes of artificial intelligence implementation among students. The results underscore the necessity of implementing focused interventions and strategies to tackle these difficulties and guarantee a harmonious and advantageous integration of artificial intelligence in students' educational journeys. Higher education institutions can effectively harness the advantages of AI while ensuring their students' welfare and educational achievements by recognizing and proactively addressing any potential limitations.

Received: August 01, 2023 Revised: November 14, 2023 Accepted: January 04, 2024

Keywords: DEMATEL analysis; Artificial Intelligence; Higher Education; Student Welfare; Data Protection.

1. Introduction

AI has rapidly gained prominence in higher training, presenting revolutionary answers that intention to convert coaching and gaining knowledge of procedures [1]. But the adoption of AI in academic settings has added forth concerns regarding its ability negative effect on university students' instructional studies and effects. it's far critical to comprehensively study the elements contributing to this negative effect and recognize their interdependencies to increase powerful techniques for mitigation.

Preceding research has shed mild on numerous poor aspects of AI adoption in education. privateness and security concerns have been diagnosed as key factors that preclude a hit implementation of AI in instructional settings [2]. Restricted customization of AI era, leading to a standardized academic experience, has additionally been highlighted as a capacity difficulty [3]. Emotional disconnection bobbing up from elevated reliance on AI-based totally structures, which might also reduce personal interplay and human connection, has been diagnosed as a concerning outcome [4]. Moreover, era dependence and the capability for improved display screen time because of AI adoption pose risks to critical thinking skills and usual well-being [5].

To cope with the want for a complete analysis of the negative impact of AI adoption in higher education, this has a look at employs the DEMATEL approach. The DEMATEL method permits a scientific assessment of causal relationships amongst various factors contributing to the poor effect of AI adoption. By applying this method, the study aims to perceive the distinguished factors and their interdependencies, offering a holistic expertise of the complicated motive-and-impact relationships inside the context of AI adoption in better training.

The goal of this study is to analyze the poor effect of AI adoption in higher education the use of the DEMATEL method. with the aid of analyzing the relationships amongst factors together with privacy and protection concerns, limited customization, emotional disconnection, era dependence, and extended screen time, the study aims to find the underlying mechanisms and dynamics contributing to AI adoption's poor effects in education. Ultimately, the findings will tell the improvement of centered interventions and strategies to mitigate the terrible impact, ensuring a balanced and useful integration of AI in better education settings.

2. Literature Review

The issue of personal disconnection springing up from the improved integration of AI in education has garnered attention within the literature. As AI-primarily based structures become more every day, there may be a subject that students may additionally revel in a reduced sense of personal interplay and human connection, which can be vital for powerful gaining knowledge of studies [6]. The reliance on AI era may additionally create a barrier to fostering significant pupil-instructor and peer-to-peer interactions, impacting social and emotional improvement [7]. This lack of personal connection can lead to decreased engagement, motivation, and delight inside the instructional technique [8]. Addressing this task requires finding a stability between AI integration and maintaining the critical human element in education.

The constrained customization of AI generation in academic contexts has been identified as a extensive concern. while AI offers the potential for personalized learning reviews, the rigid nature of a few AI systems may additionally prevent character student wishes and preferences [9]. students may have various studying patterns, abilities, and hobbies that require tailored methods. however, the dearth of customization options can result in a standardized academic revel in that fails to address the specific requirements of each learner [10]. To absolutely leverage the blessings of AI, it's miles crucial to broaden adaptable and bendy AI structures that cater to person mastering wishes and sell personalised academic pathways. the supply of erroneous or deceptive facts by way of AI systems is another regarding factor. whilst AI technology can enhance statistics retrieval and evaluation, there may be a danger of erroneous or biased outputs [11]. This underscores the importance of ensuring the accuracy, reliability, and transparency of AI algorithms and statistics assets [12]. erroneous information can cause inaccurate mastering outcomes, misinformation propagation, and erosion of believe in AI-based educational tools [13]. To mitigate this, ongoing tracking, rigorous validation techniques, and continuous development of AI structures' content and hints are crucial.

Privateness and security worries surrounding AI adoption in university had been significantly discussed. AI structures frequently rely on collecting and studying great quantities of touchy pupil information, raising questions about facts protection, consent, and ability breaches [14]. Safeguarding student privacy is critical to keep believe in AI technology and make certain compliance with relevant rules. instructional institutions

and policymakers want to set up robust privateness regulations, comfy information control practices, and ethical recommendations for AI implementation in university [15]. The dependence on AI technology can affect university students' critical wondering capabilities and trouble-solving capabilities. Overreliance on AI structures may also diminish university students' independent questioning and creativity, as AI frequently provides geared up-made answers [16]. students should be recommended to broaden their cognitive and analytical capabilities, even within the presence of AI gear, to foster deeper know-how and domesticate vital talents for the future [17].

AI systems' limited emotional intelligence poses challenges to the development of empathy and interpersonal abilities amongst students. Emotional intelligence, which includes recognizing and responding to emotions, is an important issue of holistic education [18]. AI's inability to completely recognise and respond to human emotions can prevent the cultivation of emotional intelligence amongst university students, which is vital for powerful verbal exchange, collaboration, and nicely-being [19]. the mixing of AI era in training may also make contributions to extended screen time for both students and educators. immoderate display time has been associated with numerous bodily and mental health dangers, including sedentary conduct, eye stress, sleep disturbances, and decreased social interaction [20]. it is critical to strike a balance between utilising AI tools and promoting wholesome display screen behavior by way of incorporating offline activities, bodily movement, and screen-time management techniques [21-26,37].

DEMATEL method changed into at the beginning advanced via the technological know-how and Human Affairs Programme (SHAP) of the Battelle Memorial Institute of Geneva between 1972 and 1976 [22]. The research employed a methodology primarily based on graph idea to advantage talent and illustrate the complex relationships among different variables the usage of a visible illustration [23]. The usage of the DEMATEL method may facilitate the process of prioritizing factors thru the analysis of the visual interconnections among entities and their respective groups. This analysis helps the discernment of the nature of the connection among variables and the importance of their have an impact on other variables. The DEMATEL technique has won significant traction in diverse fields together with the control of know-how, advertising processes, structures for manage, and safety issues in recent times.

3. METHODOLOGY

The present study's methodology chapter delineates the systematic approach employed to examine the adverse effects associated with the integration of AI in higher education settings, specifically among students. The study is carried out in four separate phases to guarantee a thorough and rigorous examination.

Phase 1: Literature Review and Identification of Negative Impact Criteria

The have a look at initiates by using accomplishing a complete literature evaluation to examine the present-day corpus of information approximately the negative effect of AI implementation amongst university students in better education. The literature overview has recognized several criteria that are associated with the detrimental effects of incorporating AI technology in instructional environments. these standards encompass an extensive spectrum of formerly mentioned concerns as viable limitations and boundaries. The complete examination of existing literature paperwork the foundation for determining the standards so one can be assessed in next tiers. The standards that have been diagnosed are complete in nature and embody the various dimensions of the negative results which can arise from the adoption of synthetic intelligence amongst university students. thru a complete examination and integration of previous scholarly investigations, this section ensures that the modern studies are constructed upon a robust basis of mounted knowledge and enlightens the following ranges of the take a look at. the realization of this stage is desk 1, which presents an in-depth stock of the destructive outcomes associated with the combination of AI among university students in institutions of higher mastering. The table provided herein offers a complete summary of the numerous standards to be able to be difficulty to further evaluation within the subsequent ranges of the research.

Phase 2: Expert Assessment and Criteria Selection

Student, academic staff, and higher-level administrative representatives are chosen to evaluated criteria in section 2. The direct score method are used to assign ratings to each poor effect criteria on a scale ranging from 1 to 10. On this scale, a grade of 1 represents "Very not crucial" while a rating of 10 represents "Very vital". a fixed threshold value of 7.5 or above become decided on at some stage in the score manner. Any poor impact criteria that exceeded this degree was considered very tremendous and selected for this studies. This method enabled a targeted of the main factors which have a tremendous effect on the adoption and use of AI among university students.

Phase 3: Pairwise Comparison of Selected Criteria

Phase 3 comprises paired comparisons on a linguistic scale from 1 to 5 to determine the degree of connection between the criteria. The scale includes a range of categories, including "Unrelated" (1), "Slightly Unrelated" (2), "Moderately Unrelated" (3), "Related" (4), and "Very Related" (5). This practise includes experts' subjective assessments of criterion relationships. The researchers use linguistic terminology to gain a thorough understanding of how different factors are connected. This helps them identify the most important factors that contribute to the negative effects of implementing AI among students in higher education. The Phase 4 DEMATEL study uses the data to provide treatments and strategies to overcome artificial intelligence adoption obstacles.

Phase 4: DEMATEL Analysis Execution

The DEMATEL technique is a systematic strategy used to investigate causal links and evaluate the importance of each criterion. The DEMATEL analytical process involves many steps:

Step 1: In the first stage, a direct connection matrix is formed, represented as x_{ij}^k , where each element represents an integer score k supplied by an expert. The metric, as specified in Equation (1), offers a numerical assessment of the impact of criteria i on criterion j inside a matrix of dimensions $n \times n$. The phrase may be rewritten as:

$$a_{ij} = \frac{1}{L} \sum_{k=1}^H x_{ij}^k \quad (1)$$

L: The number of experts

Step 2: The second step involves normalizing the matrices representing direct influence. The normalized direct-relation matrix R is derived from matrix C using equations (2) and (3).

$$S = k \cdot A \quad (2)$$

$$k = \min \left(\frac{1}{\max_{1 \leq i \leq n} \sum_{j=1}^n [a_{ij}]}, \frac{1}{\max_{1 \leq j \leq n} \sum_{i=1}^n [a_{ij}]} \right) i, j \in (1, 2, \dots, n) \quad (3)$$

Step 3: The next step in the process involves the development of a comprehensive relations matrix. The computation of the total-relation matrix W involves the utilization of formula (4), wherein the Identity Matrix I is employed after the normalization of the direct-relation matrix R.

$$M = S(I - S)^{-1} \quad (4)$$

Step 4: Implementing the concepts of C+R and R-C is exemplified in equations (5) to (7) for matrix M, where R denotes the summation of columns and C denotes the summation of rows. Criteria that demonstrate positive R-C values have a greater impact on the other criteria. The term "dispatchers" is frequently employed to designate these criteria. Criteria with lower levels of R-C are more vulnerable to external influences. The entities are commonly referred to as "receivers." In contrast, the summation of variables R and C represents the degree of correlation between a single criterion and the remaining variables.

$$M = [m_{ij}]_{n \times n} \quad i, j \in (1, 2, \dots, n) \quad (5)$$

$$R_i = \sum_{j=1}^n [m_{ij}]_{n \times 1} = [m_i]_{n \times 1} \quad (6)$$

$$C_i = \sum_{i=1}^n [m_{ij}]_{1 \times n} = [m_j]_{1 \times n} \quad (7)$$

Step 5: Obtain the "matrix of internal dependencies" and the "map of effect relationships." The dataset was mapped using the values of (R+C, R-C). The parameter commonly referred to as the threshold value is utilized to indicate the level of interdependence that exists within a given set of criteria.

4. Results And Discussion

This chapter summarizes the studies on AI integration's negative impacts on higher education students. The chapter begins with Table 1, a thorough list of negative effect criteria with brief explanations and average ratings.

Table 1: List all negative impact.

Negative Impact	Brief Description	Rating Value	Selected Criteria
Personal Disconnection	Reduced sense of personal interaction and human connection, impacting social and emotional development.	8.54	Selected (N1)
Limited Customization	Lack of adaptability in AI systems, hindering personalized learning experiences tailored to individual needs.	7.98	Selected (N2)
Lack of Emotional Intelligence	The absence or limited presence of emotional intelligence in AI systems hampers the development of empathy and interpersonal skills among students.	7.56	Selected (N3)
Privacy and Security	Concerns about data protection, consent, and potential breaches in student data collection and use.	8.56	Selected (N4)
Technology Dependence	Excessive reliance on AI may hinder students' critical thinking and problem-solving abilities.	8.13	Selected (N5)
Wrong Information	The provision of inaccurate or biased information by AI systems leads to misguided learning outcomes.	8.01	Selected (N6)
Increase Screen Time	The integration of AI technology may contribute to increased screen time for students and educators.	7.89	Not Selected (N7)
Standardization of Education	Lack of customization in AI systems may result in a standardized educational experience, ignoring diverse needs.	7.48	Not Selected
Ethical Dilemmas	Encountering ethical dilemmas related to AI use, such as plagiarism concerns or AI-generated content ownership.	7.47	Not Selected
Loss of Human Interaction	Excessive use of AI may reduce opportunities for meaningful human interactions and mentorship.	7.44	Not Selected
Skill Gaps	Overemphasis on AI-integrated learning may neglect the development of essential skills not addressed by AI tools.	7.38	Not Selected
Dependency on AI for Decision-Making	Overreliance on AI-generated recommendations may hinder students' ability to make informed decisions.	6.98	Not Selected
Disengagement	Overusing AI tools may lead to disengagement and disinterest in the learning process among some students.	6.97	Not Selected
Technological Overwhelm	Continuous exposure to AI and technology may cause students to feel overwhelmed and stressed.	6.54	Not Selected
Data Misuse and Breach	Mishandling or misuse of student data by AI systems can lead to privacy breaches and trust issues.	6.52	Not Selected

Figure 1 depicts the chosen parameters pertaining to the adverse effects of AI on students.

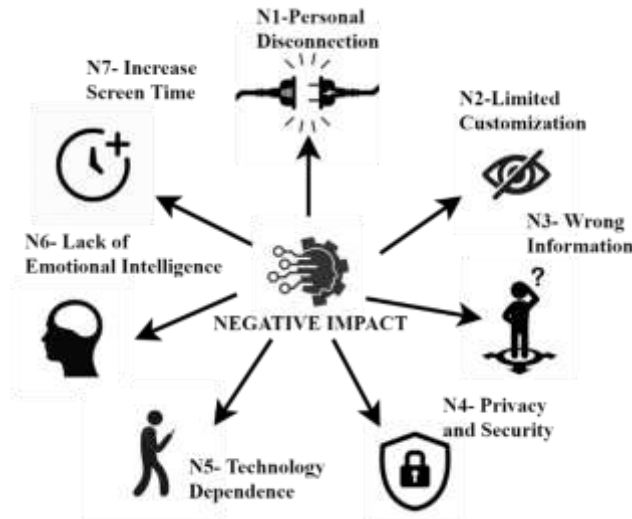


Figure 1: The selected criteria on the negative impact of AI among students

Tables 2, 3, and 4 are fundamental components of the DEMATEL analysis, for assessing the interrelationships and significance of decision criteria. Table 2, referred to as the Average Initial Direct Relationship Matrix, A, captures the expert-assessed influence levels between criteria N1 to N7. Table 3, known as the Normalized Direct Relation Matrix, D, standardizes these relationships to a common scale for relative comparisons. Lastly, Table 4, the Total Relationship Matrix T, synthesizes direct and indirect influences among criteria, providing a comprehensive perspective on their importance in the decision-making process.

Table 2: Average initial direct relationship matrix A

	N1	N2	N3	N4	N5	N6	N7
N1	1.0000	3.0000	2.6667	2.3333	4.3333	2.0000	3.0000
N2	4.0000	1.0000	2.3333	2.6667	2.6667	2.0000	4.3333
N3	2.6667	3.6667	1.0000	2.3333	2.0000	4.0000	2.0000
N4	4.6667	4.6667	4.3333	1.0000	5.0000	4.0000	4.0000
N5	3.3333	3.0000	2.3333	3.3333	1.0000	4.0000	1.6667
N6	4.3333	3.3333	2.3333	4.0000	2.0000	1.0000	3.6667
N7	2.0000	2.3333	4.0000	2.3333	2.3333	4.0000	1.0000

Table 3: Normalized direct relation matrix D.

	N1	N2	N3	N4	N5	N6	N7
N1	0.0361	0.1084	0.0964	0.0843	0.1566	0.0723	0.1084
N2	0.1446	0.0361	0.0843	0.0964	0.0964	0.0723	0.1566
N3	0.0964	0.1325	0.0361	0.0843	0.0723	0.1446	0.0723
N4	0.1687	0.1687	0.1566	0.0361	0.1807	0.1446	0.1446
N5	0.1205	0.1084	0.0843	0.1205	0.0361	0.1446	0.0602
N6	0.1566	0.1205	0.0843	0.1446	0.0723	0.0361	0.1325
N7	0.0723	0.0843	0.1446	0.0843	0.0843	0.1446	0.0361

Table 4: Total relationship matrix T

	N1	N2	N3	N4	N5	N6	N7
N1	0.3052	0.3599	0.3261	0.3064	0.3849	0.3293	0.3451
N2	0.4116	0.3006	0.3266	0.3228	0.3421	0.3369	0.3983
N3	0.3590	0.3761	0.2624	0.3021	0.3033	0.3823	0.3130
N4	0.5527	0.5337	0.4880	0.3664	0.5175	0.5112	0.4931

N5	0.3993	0.3733	0.3247	0.3494	0.2874	0.3998	0.3178
N6	0.4545	0.4085	0.3522	0.3897	0.3493	0.3269	0.4067
N7	0.3392	0.3379	0.3663	0.3051	0.3146	0.3903	0.2771

Table 5 presents the outcomes of the DEMATEL analysis, which depict the comparative significance of the chosen criteria and their respective contributions to the overall adverse influence.

Table 5: Prominence and Net Cause/Effects for Negative Impact of AI

Criteria	R	C	R + C	R - C	Identify	Ranking
N1- Personal Disconnection	2.3569	2.8217	5.1785	-0.4648	Effect	3
N2- Limited Customization	2.4389	2.6901	5.1290	-0.2512	Effect	4
N3- Lack of Emotional Intelligence	2.2983	2.4462	4.7445	-0.1478	Effect	7
N4- Privacy and Security	3.4627	2.3420	5.8047	1.1206	Cause	1
N5- Technology Dependence	2.4517	2.4991	4.9508	-0.0474	Effect	5
N6- Wrong Information	2.6877	2.6766	5.3643	0.0111	Cause	2
N7- Increase Screen Time	2.3306	2.5511	4.8817	-0.2205	Effect	6

Table 5, offer insights into the relative significance of every criterion and its contribution to the overall terrible effect. Among the recognized standards, N4 demonstrates the very best prominence and internet purpose/effect with a rating of five.8047, indicating it as a big cause thing. The difficulty for data safety and privateness acts as a barrier to the successful implementation of AI in educational settings. This locating emphasizes the significance of addressing privateness and safety troubles to make certain the accountable and ethical use of AI in higher training. The standards with super negative results, even though to a quite lesser quantity, encompass N1 with a score of five.1785, N2 with a score of 5.1290, and N5 with a score of 4.9508. These factors spotlight the capability demanding situations of reduced personal interplay, standardized instructional reports, and decreased crucial wondering abilities because of AI adoption.

On the opposite hand, N6 reveals a mild prominence and internet reason/impact with a score of 5.3643, indicating it's had an effect on as a reason thing. The absence or restrained presence of emotional intelligence in AI systems hinders the improvement of empathy and interpersonal capabilities among university students, negatively impacting their ordinary academic revel in. Factors which include N3 with a score of 4.7445 and N7 with a rating of 4.8817 show an extraordinarily decrease net purpose/impact. While those factors still make contributions to the negative effect of AI adoption, there influence is rather less prominent compared to the opposite standards.

These findings from the DEMATEL analysis highlight the significance of addressing privateness and protection issues in AI adoption at the same time as additionally emphasizing the importance of mitigating factors related to non-public disconnection, confined customization, era dependence, loss of emotional intelligence, incorrect records, and increased screen time. By recognizing these key elements and their causal relationships, stakeholders can expand interventions and techniques to triumph over the negative impact of AI adoption in higher training efficiently. The new overall relation matrix for the chosen standards is provided in Table 6, presenting extra insights into the relationships and interdependencies several of the elements.

Table 6: Total relation matrix for Negative Impact of AI

	N1	N2	N3	N4	N5	N6	N7		
Individual network maps, in Figure 2, focus relationships of a criterion within context of AI's impact on education. These	N1	0	0	0	0	1	0	criterion featured on the particular the dire detailed	
	N2	1	0	0	0	0	1		
	N3	0	1	0	0	0	1		0
	N4	1	1	1	0	1	1		1
	N5	1	1	0	0	0	1		0
	N6	1	1	0	1	0	0		1
	N7	0	0	0	0	0	1		0

visualizations primarily rely on an attached threshold fee of 0.3679 to depict how each criterion interacts with others. In comparison, Figure 3 presents a comprehensive view by displaying a general community map showing all combined connections between criteria. Each criterion's importance and the intricate network of relationships characterising artificial intelligence's harmful consequences in education become clarified through these visible representations.

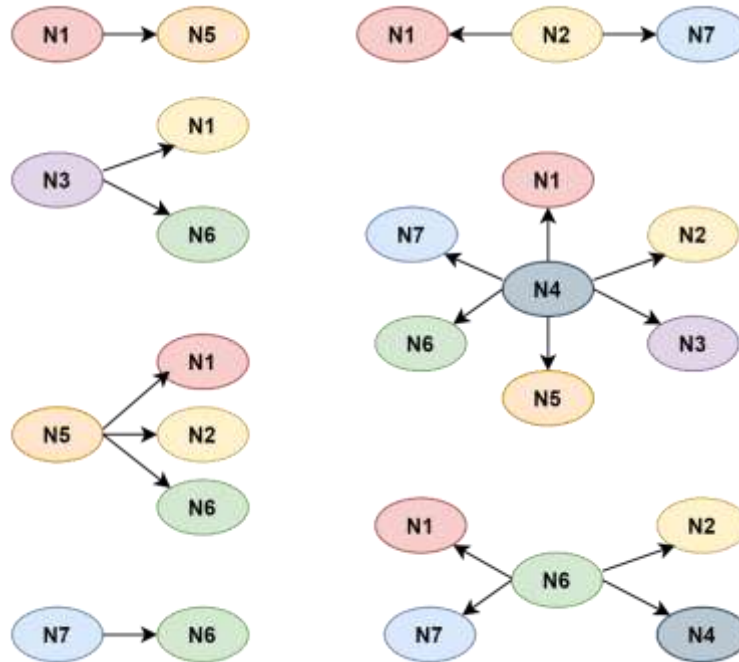


Figure 2: Network relationship map for each criterion

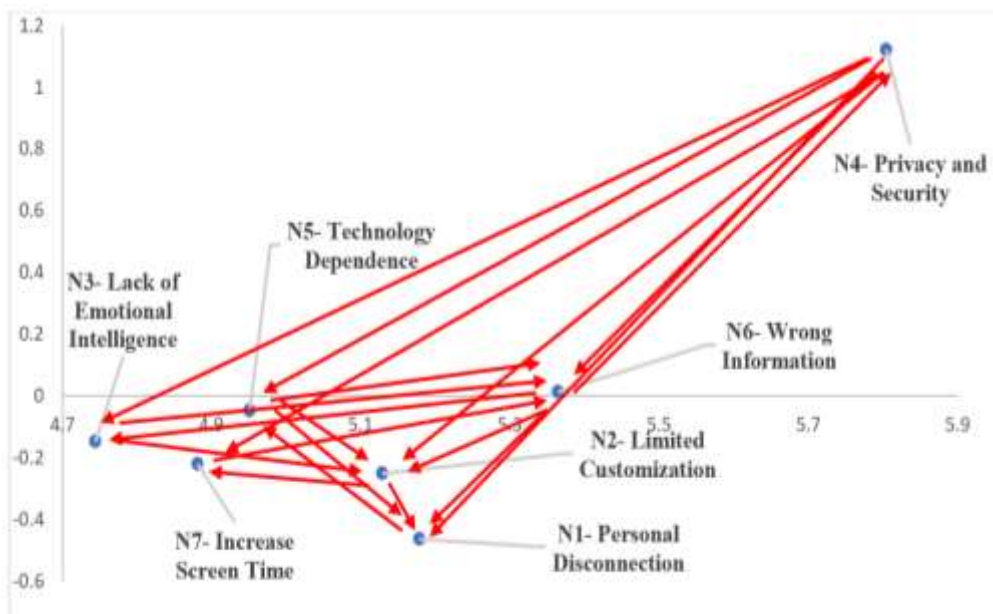


Figure 3: Network relationship map.

The whole correlation matrix suggests that privateness and security (N4) is essential, having sturdy connections with other components. consequently, it is a chief reason of artificial AI's negative results on

university. The matrix illustrates that N4 has a sizeable influence on many different elements, including N1, N2, N3, N5 and N6. The declaration implies that privacy and protection worry influence the use of AI technologies in education, which affect personal disconnection, adaptability, emotional intelligence, generation dependence, and data accuracy. The N6 criteria is likewise vital and interconnected. The entire correlation matrix suggests that N6 impacts N1, N2, N4 and N7. This shows that faulty or prejudiced facts in AI structures can lessen interpersonal engagement, preclude tailor-made educational reports, enhance privacy and protection issues, and growth display time for university students and educators.

Han, Buchanan and Mckay [24] added attention to the effect of privacy and security issues associated with AI technology on university students' sense of personal disconnection, as well as the potential detrimental consequences at the adaptability and customization of their learning reports. Moreover, the importance of rectifying inaccurate data in AI systems to assure unique and dependable academic effects changed into underscored by Scott [25]. N1 exerts a causal effect on N5, whereas N7 exerts a causal have an impact on N6. This shows that through addressing issues related to private disconnection and the increasing quantity of time spent on monitors, there may be the capability to mitigate generation dependence and decorate the accuracy of facts in artificial intelligence systems.

5. MANAGERIAL IMPLICATIONS

The adoption of AI in university provides diverse organizational and managerial challenges, such as method alignment, human aid control, and operational practices [1]. To cope with those challenges, educational institutions should prioritize the implementation of sturdy records protection measures and ethical practices related to AI [27]. This includes the improvement of stringent privacy rules, comfortable statistics management practices, and clean suggestions for AI implementation to construct and preserve trust among university students and different stakeholders. moreover, the findings emphasize the significance of considering students' views on privacy in generation-stronger guides [28]. Administrator should cope with university students' privateness worries by way of integrating privateness manipulate measures and fostering believe in the higher education institution to make certain the ethical use of AI technology [29].

Moreover, the integration of emotional intelligence components into AI systems is important to cope with the impact of the shortage of emotional intelligence on students' interpersonal competencies and empathy [30]. Educational institutions must explore ways to integrate emotional intelligence components into AI structures to decorate the socio-emotional aspects of learning. moreover, selling safety recognition and addressing privacy worries inside the educational community is critical for responsible AI usage [31]. This involves offering training and recognition programs to students, school, and staff on responsible AI utilization, facts safety, and ethical issues to create a more informed and responsible AI consumer community in the institution.

AI usage in improved education raises ethical and privacy concerns that must be addressed. To ensure AI information correctness and trustworthiness, educational institutions must prioritize constant monitoring, rigorous validation methods, and transparency in AI algorithms and facts assets. Continuous evaluation can provide valuable insights for adapting AI strategies and interventions to effectively tackle increasingly complex scenarios. Higher education institutions can optimize and enhance their operations by consistently monitoring the impacts of AI to guarantee that it remains a valuable instrument for instructional purposes.

6. CONCLUSION

In conclusion, this study examined the negative effects of AI adoption in higher education using DEMATEL analysis. The study revealed numerous key findings that illuminate the complexities of integrating AI in education, with management consequences. The emergence of privacy and security concerns as a central issue highlighted the critical nature of solid data protection measures and ethical conduct in relation to artificial intelligence. To achieve and retain student and stakeholder trust, educational institutions must prioritize strict privacy regulations, secure data management, and clear AI deployment guidelines. It is vital to consider the viewpoints of students regarding privacy, as doing so cultivates a perception of agency and confidence in AI-integrated courses. For the ethical application of AI technologies, institutions must implement privacy control measures and cultivate trust. Moreover, the research emphasized the importance of incorporating elements of emotional intelligence into artificial intelligence systems. Interpersonal competence and empathy, which are essential components of a well-rounded education, may be impeded by AI's deficiency in emotional intelligence. Therefore, it is recommended that academic establishments investigate potential methods of integrating emotional intelligence elements into artificial intelligence systems, thereby augmenting the socio-emotional

dimensions of the learning process. The study also stressed the relevance of AI system data accuracy and reliability. It is critical to implement stringent validation procedures, continuous monitoring, and transparency measures in AI algorithms and data sources. By adopting this proactive strategy, organizations can uphold the reliability of AI tools, thereby encouraging conscientious utilization and well-informed judgment. Together, these results offer significant contributions to the understanding of the intricate terrain surrounding the implementation of AI in higher education. Educational institutions can effectively navigate the challenges offered by AI while capitalizing on its benefits, through a steadfast commitment to privacy, emotional intelligence, and data accuracy. These administrative implications help institutions integrate AI into students' educational journeys to improve outcomes and experience.

Acknowledgments: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant No. GRANT5443].

Funding: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant No. GRANT5443].

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