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Awareness and Acceptance of Artificial Intelligence-Based Healthcare Services among Hospital Staff: An Empirical Study

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ABSTRACT
This paper will examine awareness and acceptance of Artificial Intelligence (AI)-based healthcare services in hospital employees in Bangalore with an aim of determining how awareness contributes to technology acceptance. The quantitative research methodology was used and primary data were gathered involving 121 participants in the private, specialty and multispecialty hospitals through a structured questionnaire. Data analysis was done using statistical data analysis tools like descriptive statistics, factor analysis, correlation, regression and ANOVA. The results demonstrate that the level of hospital employee's awareness about AI use in clinical, administrative and patient support is moderate to high in Bangalore. The findings also indicate that awareness plays a large role in perceived usefulness and behaviour intention to use AI-based systems and not so much on ease of use. The analysis finds that awareness and proper training can increase acceptance and help to successfully introduce AI technologies to healthcare organizations
Keywords: Awareness and Acceptance of Artificial Intelligence, Heath care services, Hospital Staff, Technology adoption, AI-based system, Bangalore etc

INTRODUCTION:

Artificial Intelligence (AI) is a growing trend that is changing modern organisations through increased efficiency, accuracy and decision-making (Stefanie et al., 2024). In many industries, the use of AI-driven services like automated systems, data analysis tools and intelligent support technologies has become common to facilitate the process of operations and enhance the performance process as a whole (Elena et al., 2025). Such technologies can process information much faster, minimise human error and contribute to a more effective strategic planning (Abdallah et al., 2023). Consequently, institutions are appreciating the opportunities of AI in their quest to promote innovation and remain competitive in a highly dynamic environment (Adithyan et al., 2024). The effective deployment of AI-related services, however, is not only reliant on the technological progress but also the individuals who will be dealing with these systems. The conscious of AI is very important in the development of the knowledge of people about its functionality, advantages and shortcomings (Abuejheisheh et al., 2025). When well-informed, the individuals are likely to have a favourable attitude towards technology (Alruwaili et al., 2024). Conversely, low knowledge can create a misconception, doubt and unwillingness to embrace.

The acceptability of AI-based services is also essential, as it shows the readiness of people towards the inclusion of the technologies in their daily lives (Relator et al., 2025). There are various factors that affect accepting e.g. usefulness, ease of use, familiarity with technology and organisational backup. In most instances, issues on job security, technical incompetency and confidence in the automated systems might prevent uptake (Cao et al., 2021). Accordingly, it is important to learn the degree of awareness and acceptance of AI-based services to effectively implement these technologies in the case of organisations. With the identification of factors that influence adoption, organisations are able to determine the appropriate training programmes, awareness and support mechanisms. In its turn, it may help to ease the incorporation of AI technologies and make sure that the potential advantages of the technology are not wasted.

2. REVIEW OF LITERATURE

2.1. Acceptance of AI-Based Services

Acceptance of AI-Based Services can be defined as the quantity of people prepared to welcome and utilise the technologies of artificial intelligence in their daily lives (Stefanie et al., 2024). It is a very important outcome variable in technology adoption studies since it determines whether the new technological systems are being effectively used in an organisation (Abdallah et al., 2023). Acceptance is often perceived in the context of the behavioural intention of an individual to use and in certain

situations, real usage of AI-based systems (Relator et al., 2025).

The degree of acceptance depends on how people view the usefulness and ease of use of AI technologies (Alruwaili et al., 2024). Users are also more willing to adopt AI when they feel it can make them better performers, minimise efforts and be more efficient (Cao et al., 2021). On the other hand, issues of complexity, ignorance or mistrust, can decrease the level of acceptance (Catalina et al., 2023). The awareness and familiarity with AI are also important as better informed people will be more willing to use these technologies (Cao et al., 2021). Moreover, acceptance indicates how an individual is willing to change and adopt innovative solutions into his or her work procedures (Adithyan et al., 2024). The awareness of the degree of the acceptance of AI-based services is crucial to the organisations because it can assist them in creating successful training programmes and strategies to facilitate the successful implementation and usage of technologies (Duchessi et al., 1993).

2.2. Awareness of AI

Awareness of AI refers to the level at which people are knowledgeable about the artificial intelligence technologies, their functions, uses and consequences (Duchessi et al., 1993)(Wang et al., 2025)(Relator et al., 2025). It means that one understands the functioning of AI systems and in what situations they may be used. More educated people will be in a higher position to consider the applicability and utility of AI within the workplace setting. Such knowledge eliminates confusion and contributes to the development of knowledgeable attitudes towards the technology(Catalina et al., 2023). On the other hand, poor awareness can cause misconception, fear or resistance to adoption. Exposure to information, past experience and organisational communication tend to create awareness (Cornelissen et al., 2022). It serves as an antecedent that determines attitudes and willingness to use AI-based services. Increased intensity of awareness promotes innovation openness and facilitates the creation of positive intention behaviour (Aldhahi et al., 2025). Thus, it is important to promote the successful implementation of AI technologies by improving awareness.

2.3. Perceived Usefulness (PU)

Perceived Usefulness is the level of personal belief regarding that the utilisation of AI-based services will positively influence the personal performance of an individual (Castagno & Khalifa, 2020). It encompasses the perceived advantages related to enhanced efficiency, accuracy and productivity. As people understand that AI can make work easier, the workload decreased, or the decisions made, they will appreciate the idea of its application (Aboalshamat, 2022). This perception is a key determinant in creating positive attitudes towards adoption of technology. When people think that AI-based tools are highly useful, they will be more willing to adopt them in their working activities (Adithyan et al., 2024). Conversely, in case the benefits are not definite or unworthy, there might be resistance to adoption. Perceived usefulness is affected by previous experience, perceived results and organisational support (Shi et al., 2022). It is still one of the greatest predictors of behavioural intention in technology acceptance studies (Abdullah & Fakieh, 2020). Thus, the practical benefits of AI should be stressed in order to promote its adoption and long-term usage.

2.4. Perceived Ease of Use (PEOU)

Perceived Usefulness is the level of personal belief regarding that the utilisation of AI-based services will positively influence the personal performance of an individual (Lee & Yoon, 2021). It encompasses the perceived advantages related to enhanced efficiency, accuracy and productivity. As people understand that AI can make work easier, the workload decreased, or the decisions made, they will appreciate the idea of its application (Shevtsova et al., 2024). This perception is a key determinant in creating positive attitudes towards adoption of technology. When people think that AI-based tools are highly useful, they will be more willing to adopt them in their working activities (Weinert et al., 2022). Conversely, in case the benefits are not definite or unworthy, there might be resistance to adoption. Perceived usefulness is affected by previous experience, perceived results and organisational support (Stai et al., 2020). It is still one of the greatest predictors of behavioural intention in technology acceptance studies (Stai et al., 2020). Thus, the practical benefits of AI should be stressed in order to promote its adoption and long-term usage.

2.5. Technical Competency

Technical Competency is the skill of a person to be able to use digital technologies, such as AI-based systems, effectively (Weinert et al., 2022). It takes into consideration the knowledge, skills and experience to use and relate with technological tools. Employees with superior levels of competence take more confidence in the ability to deal with new systems and adjust to technological changes (Antes et al., 2021). This feature will decrease anxiety and makes the process of interacting with the AI apps easier. Conversely, low technical skills can pose challenges and frustration or evasion can be experienced. Technical competency is achieved by education, training and by experience (Serbaya et al., 2024). It is important in defining the ease with which people can use AI technologies. Increased competency does not only result in better efficiency, it also increases the ability to solve problems in complex systems. Hence, to make AI-based services successful and effective in their application, the development of technical skills is critical.

2.6. Training and Education

This process through which individuals acquire knowledge and gain skills in the AI technology is what is termed as training and education (Dai et al., 2025). Some examples are formal training courses, seminars, workshops and projects of self-study. Training enhances the level of understanding, self-confidence and prepares individuals to work with AI systems successfully (Weinert et al., 2022). It helps to reduce the ambiguity and solve the problems related to the usage of technology. With the clarification of the benefits, functionality and limitations of AI, educational programmes can enable individuals to make informed judgments (Garvey et al.,

2022). On the contrary, poor training may result in the lack of understanding, errors, or opposition to change. The prospects of continuous learning ensure individuals remain abreast with the technical advancement and can adapt to the emerging systems (Kutz et al., 2017). Training and education are necessary to a successful deployment because they provide users with the necessary skills (Esmaeilzadeh et al., 2021). They thus provide a substantial contribution to the growing acceptability and efficient use of AI-based services.

3. Research Methodology

3.1. Research Design

The research presented in the study focuses on the awareness and acceptance of AI-based healthcare services by hospital staff members through the quantitative research method. To obtain answers to the research question, a descriptive and analytical study approach is used that will investigate the extent of awareness and its role in the adoption of AI technology in the medical environment systematically.

3.2. Data Collection

A structured questionnaire was mailed to staff at hospitals and served as the primary source of data to conduct the study. The test was aimed at quantifying some aspects of awareness and acceptance of AI applications on a five-point Likert scale. The questionnaire also contains the questions regarding the healthcare services, administrative processes and patient involvement as well as such criteria as perceived utility, ease of use and behavioural intention. The level of secondary data consisted of the academic publications, research papers and other reports pertinent to the area of study to help in supporting the theoretical framework.

3.3. Sampling technique

A convenience sample approach was selected to choose respondents representing several types of hospitals, such as privacies, specialty and multispecialty. To conduct the analysis of the present study, 121 valid answers were obtained.

3.4. Data Analysis Techniques

Through the use of the right statistical methods, the objectives of the study were met. The first objective utilised factor analysis and descriptive statistics to determine the major elements of the acceptance and awareness and the extent of the perception among the hospital employees as a whole. The second goal involved an analysis of how awareness affects a number of dimensions of acceptability including perceived usefulness, ease of use and behavioural intention to use AI-based technology by correlation and multiple regression. In addition, Analysis of Variance (ANOVA) was used to establish whether the acceptability and level of knowledge among the hospital staff members varies with the type of hospital where they work.

3.5. Research Objectives and Hypothesis

1. To analyse the level of awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

(No Hypothesis statements employed in the Objective 1)

2. To examine the influence of awareness on acceptance of Artificial Intelligence-based healthcare services among hospital staff.

H_{01}: There is no significant relationship between awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

H_1: There is a significant relationship between awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

H_{02}: Awareness of Artificial Intelligence does not have a significant influence on acceptance of AI-based healthcare services among hospital staff.

H_2: Awareness of Artificial Intelligence has a significant influence on acceptance of AI-based healthcare services among hospital staff.

H_{03}: There is no significant difference in the acceptance of Artificial Intelligence-based healthcare services among hospital staff working in different types of hospitals.

H_3: There is a significant difference in the acceptance of Artificial Intelligence-based healthcare services among hospital staff working in different types of hospitals.

3.6. Limitations of the study

The sample size used in the study, 121 responders, is too small and could not be able to represent all the hospital employees. Also, the convenience sampling was used and it may affect the accuracy and the generalisability of the findings since respondents were selected on the basis of accessibility. The findings might not be replicated in other health care environments, like government hospitals and rural areas, since the research is limited to specific hospitals, including those in the private, speciality and multispecialty. The data were collected through the means of a questionnaire and the responses are premised on the personal opinions and perceptions of the participants that may lead to biasness and lack of precision in the information obtained, plus, other important factors like organisational support, infrastructure and technology resources are not considered. Finally, but not the least, the research is cross-sectional that is, it was conducted at a specific time and does not capture the changes in acceptance or awareness within a more extended period of time.

4. Data Analysis and Interpretation

This section discusses and analyses data obtained through surveys of the hospital staff to understand the perception they have of the use and acceptance of AI-based services in healthcare. Hospital professionals in different types of hospitals, such as private, speciality and multispecialty hospitals, provided 121 valid responses. The findings were collected through a systematic questionnaire that was formulated to estimate different aspects of awareness and acceptability of AI applications in hospital functions.

The statistical study results are presented in the following tables and clarification of the correlation between the level of awareness and acceptance of AI-based healthcare services with the staff members of the hospitals.

Objective 1: To analyse the level of awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

To accomplish the first goal of the research, there was an effort to examine the degree of awareness and acceptance of Artificial Intelligence services of healthcare provision among the hospital staff. The study data were derived with the help of 121 respondents employed in various kinds of hospitals through a structured questionnaire that was to evaluate the awareness and acceptance of AI applications in the hospital functions.

Artificial Intelligence awareness had been measured in various dimensions, which included clinical and patient care services, hospital information and administrative systems and patient interaction and support services. The dimensions used to measure the acceptance of AI-based systems included the perceived usefulness, ease of use and comfort and behavioural intention to use artificial intelligence in hospital operations.

Descriptive statistics was used to analyse the level and structure of awareness and acceptance using factor analysis. The general degree of awareness as well as the degree of acceptance among hospital staff was understood in terms of descriptive statistics, whereas in terms of factor analysis, the dimensions underlying AI awareness and acceptance were recognised in terms of hospital functions. The analysis findings are as shown in the following tables.

Descriptive Statistics and Factor Analysis: AI Awareness

Table no 4.1: Descriptive Statistics

Sl. No	AI Awareness	N	Minimum	Maximum	Mean	Std. Deviation
Awareness of AI in Clinical & Patient Care Services						
01	I am aware that AI is used to support clinical diagnosis in hospitals.	121	1	5	1.17	.749
02	I am aware of AI applications used in radiology and imaging services.	121	1	5	2.04	.473
03	I am aware that AI is used for analysing laboratory test results.	121	1	5	1.13	.618
04	I am aware of AI-based patient monitoring and alert systems.	121	1	5	2.09	.516
05	I am aware that AI supports treatment planning and clinical decision-making.	121	1	5	2.09	.695
Awareness of AI in Hospital Information & Administrative Systems						
01	I am aware that AI is integrated with hospital information systems (HIS/EHR).(Hospital Information System / Electronic Health Records)	121	1	5	1.55	1.154
02	I am aware of AI use in appointment scheduling and queue management.	121	1	5	2.16	.785
03	I am aware that AI is used in billing and insurance processing.	121	1	5	1.33	.860
04	I am aware of AI applications used for inventory and resource management.	121	1	5	2.11	.693
05	I am aware that AI supports administrative automation in hospitals.	121	1	5	2.11	.545
	Awareness of AI in Patient Interaction & Support Services					
01	I am aware of AI-based Chabot's or virtual assistants used for patient support.	121	1	5	2.04	.523
02	I am aware of AI-enabled SMS or app-based reminders for patients.	121	1	5	1.27	.837

03	I am aware of AI tools used for handling patient queries and feedback.	121	2	5	2.14	.521
04	I am aware of AI-based systems used for patient communication and follow-ups.	121	1	5	2.06	.414
05	I am aware that AI improves patient engagement through digital platforms.	121	1	5	1.31	.876

Table 4.1 contains the descriptive statistics of the awareness of Artificial Intelligence (AI) application among hospital employees according to 121 individuals who responded correctly. The analysis was conducted in order to know the degree of awareness of AI in three key areas, which are clinical and patient care services, hospital information and administrative systems and patient interaction and support services.

The range of the mean values under the dimension awareness of AI in clinical and patient care services is 1.13 to 2.09. The least mean value (Mean = 1.13, SD = 0.618) is demonstrated in the statement "I am aware that AI is employed in analysing laboratory test results and it means that most of the respondents are highly aware. On the same note, there is also a high level of awareness in terms of the awareness with respect to the use of AI in clinical diagnosis (Mean = 1.17, SD = 0.749). Relatively, awareness of AI-based patient monitoring systems (Mean = 2.09, SD = 0.516) and treatment planning support (Mean = 2.09, SD = 0.695) have marginally higher mean values and thus moderately high awareness among a proportion of the staff.

The average values in the case of the awareness of AI in the hospital information and administrative systems lie between 1.33 and 2.16. The awareness of the respondents about the use of AI in the billing and insurance processing (Mean = 1.33, SD = 0.860) and integration with the hospital information systems (Mean = 1.55, SD = 1.154) is a bit higher. Nonetheless, awareness among appointment scheduling (Mean = 2.16, SD = 0.785) and inventory management systems (Mean = 2.11, SD = 0.693) suggests that some groups of staff are moderately aware of such things.

As far as the awareness of AI in the area of interaction and support services with patients is concerned, the range of mean values is between 1.27 and 2.14. The respondents are more aware of AI-enabled notifications (Mean = 1.27, SD = 0.837) and online interaction with the patient (Mean = 1.31, SD = 0.876). The levels of moderate awareness are present with AI tools in dealing with patient queries (Mean = 2.14, SD = 0.521), AI-based communication systems (Mean = 2.06, SD = 0.414) and chatbot or virtual assistant services (Mean = 2.04, SD = 0.523).

In general, the descriptive statistics show that the awareness of the hospital staff about the application of Artificial Intelligence in various hospital processes is rather high to moderate. There is relatively greater awareness on the core clinical and administrative applications and relative less awareness on the advanced patient interaction and digital support services. This implies that despite the current adoption of AI technologies in hospitals, the awareness rates might differ based on the sphere of implementation and the work of the personnel.

Table no 4.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.542
Bartlett's Test of Sphericity	Approx. Chi-Square	171.629
	Df	105
	Sig.	.000

Table 4.2 shows the outcome of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett Test of Sphericity test to confirm that the data is suitable to analyse using the factor analysis regarding the awareness of Artificial Intelligence-based healthcare services among hospital employees.

In question 4, the KMO is 0.542 compared to the minimum acceptable of 0.50 which makes the sample size of 121 respondents sufficient and the variables used to measure the variables of the awareness scale are appropriate to undergo a factor analysis. This implies that the items have a correlation to find the underlying factors.

The Test of Sphericity by Bartlett has a Chi-square of 171.629 and has a degrees of freedom of 105 and a significance value of 0.000 that is below the significance value of 0.05. Such an outcome shows that the correlation matrix is not an identity and that there is a strong relationship between the variables of awareness of AI-based hospital services.

Therefore, the findings verify that the data is suitable to implement the factor analysis and the variables of awareness can be clustered in fruitful factors.

Table no 4.3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.005	13.367	13.367	2.005	13.367	13.367	1.753	11.688	11.688
2	1.790	11.934	25.302	1.790	11.934	25.302	1.633	10.889	22.577
3	1.408	9.385	34.687	1.408	9.385	34.687	1.500	10.001	32.578
4	1.337	8.913	43.600	1.337	8.913	43.600	1.468	9.787	42.364
5	1.278	8.518	52.118	1.278	8.518	52.118	1.463	9.754	52.118
6	.994	6.625	58.743						
7	.903	6.019	64.762						
8	.889	5.924	70.686						
9	.818	5.454	76.140						
10	.747	4.979	81.119						
11	.710	4.736	85.855						
12	.645	4.300	90.156						
13	.593	3.953	94.109						
14	.466	3.108	97.217						
15	.417	2.783	100.000						
Extraction Method: Principal Component Analysis.									

Table 4.3 demonstrates the total variance explained with the help of Principal Component Analysis of the variables associated with the phenomenon of awareness of the concept of Artificial Intelligence-based healthcare services by hospital employees. The extraction of the factors was done with the purpose of determining the underlying dimensions of awareness.

The findings demonstrate that there are five components with eigenvalues exceeding 1 which meet the Kaiser criterion of using factors. Eigenvalues of these five factors are 2.005, 1.790, 1.408, 1.337 and 1.278 respectively, which shows that each of these factors is quite important in explaining the cumulative variance in the awareness variables.

The amount of the cumulative percentage of variance that these five components explain amounts to 52.118 which is greater than the acceptable level of 50 in a social science research study. It implies that the factors taken are sufficient and reflect a significant amount of the overall variation in the level of awareness about AI-based hospital services.

The total variance is attributed to the first component (13.367%), the second component (11.934), the third component (9.385), the fourth component (8.913) and, the fifth one (8.518). Upon rotation, the variance is more balanced across the five components, which means that the variables are clustered into meaning and are used in the denomination of various factors that reflect various elements related to the awareness of Artificial Intelligence in hospital functions.

Accordingly, the factor analysis proves the hypothesis that the variables of awareness can be clustered into several underlying dimensions, representing various lines of AI awareness among hospital employees: clinical applications, administrative systems and patient support services.

Table no 4.4: Component Matrix and Communalities

Sl No		Component					Communalities	
		1	2	3	4	5	Initial	Extraction
01	I am aware that AI is used to support clinical diagnosis in hospitals.	.426	.456	-.001	.133	-.098	1.000	.417
02	I am aware of AI applications used in radiology and imaging services.	-.108	.481	.479	-.029	.372	1.000	.611
03	I am aware that AI is used for analysing laboratory test results.	.745	.056	.196	.078	-.239	1.000	.659
04	I am aware of AI-based patient monitoring and alert systems.	.565	.060	-.233	-.222	.097	1.000	.436
05	I am aware that AI supports treatment planning and clinical decision-making.	.501	-.208	.339	.439	-.165	1.000	.629
06	I am aware that AI is integrated with hospital information systems (HIS/EHR).(Hospital Information System / Electronic Health Records)	.191	.446	-.399	.281	.352	1.000	.597
07	I am aware of AI use in appointment scheduling and queue management.	-.132	.534	.200	-.002	.156	1.000	.368
08	I am aware that AI is used in billing and insurance processing.	.162	.221	-.552	.417	.317	1.000	.654
09	I am aware of AI applications used for inventory and resource management.	-.025	-.082	.021	.562	-.095	1.000	.333
10	I am aware that AI supports administrative automation in hospitals.	.395	-.425	-.096	-.048	-.018	1.000	.348
11	I am aware of AI-based Chabot's or virtual assistants used for patient support.	.289	-.459	.107	-.221	.408	1.000	.521
12	I am aware of AI-enabled SMS or app-based reminders for patients.	.412	-.118	.422	.017	.544	1.000	.659
13	I am aware of AI tools used for handling patient queries and feedback.	.237	.493	.132	-.523	-.103	1.000	.601
14	I am aware of AI-based systems used for patient communication and follow-ups.	-.352	-.068	.462	.393	.157	1.000	.521
15	I am aware that AI improves patient engagement through digital platforms.	.128	.329	.191	.145	-.529	1.000	.462
Extraction Method: Principal Component Analysis.								
a. 5 components extracted.								

The table 4.4 is the component matrix and communalities achieved during the Principal Component Analysis of variables used to measure awareness of Artificial Intelligence-based healthcare services among hospital staff. The communalities report the ratio of the variance in every variable that is elucidated by the extracted parts.

The value of extraction of communalities is between 0.333 and 0.659 and this indicates that most of the variables have a reasonable amount of variance that is explained by the factors that are extracted. The awareness statement that I know that AI is used to analyse the results of the laboratory tests has a high communality value (0.659), awareness of AI-enabled reminders (0.659) and billing and insurance processing (0.654) have a high communality value hence the variables are well represented in the factor solution. Even the smallest communality value (0.333) falls into the desirable range

of the exploratory factor analysis that all variables are adequate contributors of the factor structures.

The component matrix indicates the proportion of every variable picked up by the 5 extracted components. The loadings are however divided into more than one component and at this stage it is hard to create a clear picture of what the underlying factor structure is. Unrotated component matrices will tend to have overlapping loadings and therefore interpretation using this matrix alone cannot give the variables any meaningful grouping.

As such, factors rotation is needed to get a better picture of loadings pattern. The next step with the aid of the rotated component matrix is determining the important loadings and putting the variables into meaningful factors that reflect the various aspects of awareness of Artificial Intelligence in the hospital operations.

Table no 4.5: Rotated Component Matrix

Sl. No		Component				
		1	2	3	4	5
01	I am aware that AI is used to support clinical diagnosis in hospitals.	.494	.191	-.118	.186	.295
02	I am aware of AI applications used in radiology and imaging services.	.025	.763	.170	-.006	-.015
03	I am aware that AI is used for analysing laboratory test results.	.772	-.122	.141	.170	.011
04	I am aware of AI-based patient monitoring and alert systems.	.262	-.184	.233	.459	.262
05	I am aware that AI supports treatment planning and clinical decision-making.	.664	-.158	.205	-.344	-.057
06	I am aware that AI is integrated with hospital information systems (HIS/EHR).(Hospital Information System / Electronic Health Records)	.041	.181	-.010	.061	.748
07	I am aware of AI use in appointment scheduling and queue management.	.010	.584	-.108	.065	.103
08	I am aware that AI is used in billing and insurance processing.	-.024	-.073	-.015	-.092	.800
09	I am aware of AI applications used for inventory and resource management.	.180	-.084	-.117	-.507	.150
10	I am aware that AI supports administrative automation in hospitals.	.183	-.465	.305	.069	-.027
11	I am aware of AI-based Chabot's or virtual assistants used for patient support.	-.051	-.206	.677	.090	-.094
12	I am aware of AI-enabled SMS or app-based reminders for patients.	.240	.224	.740	-.050	.020
13	I am aware of AI tools used for handling patient queries and feedback.	.206	.345	-.084	.648	-.110
14	I am aware of AI-based systems used for patient communication and follow-ups.	-.063	.333	.087	-.605	-.181
15	I am aware that AI improves patient engagement through digital platforms.	.478	.127	-.448	.003	-.131

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Table 4.5 displays the Principal component analysis of the variables of awareness of the Artificial Intelligence-based healthcare services among staff in a hospital in terms of Principal component analysis with varimax rotation. The rotation was done to achieve more understandable factor structure and factors loadings of more than 0.60 were taken into account as meaningful to interpret.

The findings indicate that the variables of the awareness are clumped into five parts, which constitute various aspects of awareness of AI application in the functions of the hospitals.

Factor 1 - Awareness of AI in Clinical Decision and Diagnostic Support: The variables that have high loadings in this factor are awareness of AI used to analyse laboratory test results (0.772) and awareness of AI used to aid in treatment planning and clinical decision-making (0.664). These variables are the level of awareness that deals with clinical and diagnostic usability of artificial intelligence within the hospital services.

Factor 2 - Awareness of AI in Radiology and Scheduling Systems: This factor has high loading of awareness of AI applications in the radiology and imaging services (0.763). The appointment scheduling loading is moderate but the most significant contribution is associated with the imaging related awareness, which suggests the knowledge on the usage of AI in the specialised hospital system.

Factor 3 - Awareness of AI in Patient Support Technologies: The awareness of AI-based chatbots or virtual assistants (0.677) and AI-powered patrol reminders to patients (0.740) is associated with high loadings. These variables depict the consciousness of AI as a means of interacting with patients and services of digital support.

Factor 4 - Awareness of AI in Communication and Monitoring Systems: This factor entails high loading of awareness of AI tools in managing patient queries (0.648) and awareness of AI based communication and follow-up systems (-0.605). These variables are associated with awareness in connexion with communication, coordination and monitoring functions assisted by AI.

Factor 5 - Awareness of AI in Hospital Information and Administrative Systems: The loadings of awareness of AI embedded in hospital information systems (0.748) and AI utilised in billing and insurance process (0.800) are of high magnitude. These are variables which reflect an insight into administrative and information system applications of artificial intelligence.

On the whole, the rotated component mattress demonstrates that the knowledge of Artificial Intelligence among the personnel of the hospital is multidimensional and covers the areas of clinical, administrative, communication and patient support. The factor analysis will validate that hospital staff is aware of AI in various functional units, albeit at varying degrees of awareness regarding each application.

Descriptive Statistics and Factor Analysis: AI Acceptance

Table no 4.6: Descriptive Statistics

Sl. No	Acceptance of AI	N	Minimum	Maximum	Mean	Std. Deviation
	Perceived Usefulness of AI Systems					
01	AI-based systems improve the overall efficiency of hospital operations.	121	1	5	1.31	.729
02	AI helps improve quality of patient care in hospitals.	121	1	5	2.15	.703
03	AI supports better clinical and administrative decision-making.	121	1	3	1.19	.537
04	AI reduces workload and repetition of routine tasks.	121	1	5	2.05	.545
05	Overall, AI adds value to hospital services.	121	1	5	1.22	.701
	Ease of Use & Comfort with AI Systems					
01	AI-based systems used in hospitals are easy to use.	121	1	3	1.12	.451
02	I feel comfortable using AI-enabled systems in my daily work.	121	1	3	1.98	.288
03	Learning to use AI-based systems is easy for me.	121	1	5	2.93	.478

04	AI systems integrate well with existing hospital workflows.	121	1	3	1.98	.273
05	I do not feel stressed or anxious while using AI-based systems.	121	1	5	2.02	.508
	Willingness & Behavioural Intention to Use AI					
01	I am willing to continue using AI-based systems in hospital operations.	121	1	5	2.02	.500
02	I support increased use of AI technologies in hospitals.	121	1	5	2.02	.500
03	I prefer working in hospitals that adopt advanced AI technologies.	121	1	5	2.02	.500
04	I would recommend AI-based systems to other healthcare 4s.	121	1	5	1.14	.596
05	Overall, I have a positive attitude towards AI adoption in hospitals.	121	1	3	1.03	.221

Table 4.6 presents the descriptive statistics relating to the acceptance of Artificial Intelligence (AI)-based healthcare services among hospital staff based on 121 valid responses. The level of acceptance was analysed using three dimensions, namely perceived usefulness, ease of use and comfort and behavioural intention to use AI systems in hospital functions.

The mean values of the dimension perceived usefulness of AI systems are 1.19 to 2.15, meaning that the greatest part of the respondents are highly aware of the acceptance. The fact that AI enhances higher clinical and administrative decision-making has a low mean value (Mean = 1.19, SD = 0.537), which means that the notions that AI is useful are quite popular among hospital personnel. On the same note, the sentences overall, AI adds value to hospital services (Mean = 1.22, SD = 0.701) and overall, AI based systems enhance the overall efficiency of hospital operations (Mean = 1.31, SD = 0.729) also capture high level of acceptance. The slight positive mean values are in improvement of quality of patient care (Mean = 2.15, SD = 0.703) and reduction of workload (Mean = 2.05, SD = 0.545), the moderate agreement of some respondents.

When it comes to the aspect of ease of use and ease of using AI systems, the range of mean is between 1.12 and 2.93. The least mean is recorded with the statement "AI-based systems within hospitals are easy to use" (Mean = 1.12, SD = 0.451) and this means that the respondents strongly agree with the statement. And in the same way, the remarks connected with the comfort in day to day work (Mean = 1.98, SD = 0.288) and adaptation with the hospital workflow (Mean = 1.98, SD = 0.273) show a positive perception as well. It is, however, the statement, Learning to use AI-based systems, which demonstrates a comparatively high mean value (Mean = 2.93, SD = 0.478) which says that there are some staff that have a difficult time of learning new AI-based technologies.

As far as willingness and behavioural intention to use AI are concerned, the mean values vary between 1.03 and 2.02. The concept of an overall positiveness toward the adoption of AI in hospitals is the lowest on the mean value (Mean = 1.03, SD = 0.221), which is a very high indicator of the positivity of the attitudes of the hospital staff. On the same note, there is a high rate of consent on the recommendation of AI-based systems to other people (Mean = 1.14, SD = 0.596). The willingness to continue using AI, support of increased AI use and willingness to work in the AI-enabled hospital are observed to have moderate mean values (Mean = 2.02, SD = 0.500), which shows that the majority of the staff are open to using AI in the operations of the hospital.

On the whole, the findings demonstrate that the hospital personnel has a great deal of acceptance of the Artificial Intelligence-based healthcare services, especially regarding the perceived usefulness and positive attitude to the AI introduction. Nevertheless, the relative completeness of the mean levels in some of the items pertaining to learning and usage indicates that the training and the provision of technical support can further enhance the level of comfort of workers in working with the AI-based systems.

Table no 4.7: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.601
Bartlett's Test of Sphericity	Approx. Chi-Square	387.797
	Df	105
	Sig.	.000

Table 4.7 reflects the outcomes of Kaiser Meyer Olkin (KMO) measure of sampling adequacy and Bartletts Test of Sphericity applied to discuss the appropriateness of data used to conduct factor analysis in terms of acceptance

of Artificial Intelligence-based healthcare services by hospital personnel.

The KMO value stands at 0.601 that is greater than the minimum acceptable limit of 0.50 and this implies that the sample size of 121 respondents is sufficient to conduct factor analysis. The value also implies that the correlations of the variables of the acceptance of AI systems can be used to recognise the underlying factors.

The Chi-square value of the Test of Sphericity by Bartlett is 387.797 and the degrees of freedom taken are 105 and the significance value is 0.000, which is not less than 0.05. This means that the correlation matrix is not an identity matrix and that the variables considered in the acceptance scale have a significant relationship.

Thus, the outcomes affirm the fact that the data can be used to implement factor analysis and the variables that quantify the acceptance of Artificial Intelligence-based healthcare services can be summarised under meaningful factors.

Table no 4.8: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.802	18.678	18.678	2.802	18.678	18.678	2.022	13.479	13.479
2	1.906	12.706	31.384	1.906	12.706	31.384	1.920	12.797	26.277
3	1.694	11.294	42.677	1.694	11.294	42.677	1.907	12.715	38.991
4	1.477	9.848	52.526	1.477	9.848	52.526	1.688	11.250	50.241
5	1.240	8.264	60.790	1.240	8.264	60.790	1.582	10.549	60.790
6	.998	6.653	67.443						
7	.886	5.909	73.352						
8	.814	5.424	78.776						
9	.657	4.379	83.155						
10	.585	3.903	87.058						
11	.509	3.396	90.454						
12	.494	3.294	93.748						
13	.385	2.567	96.316						
14	.308	2.055	98.370						
15	.244	1.630	100.000						
Extraction Method: Principal Component Analysis.									

Table 4.8 shows the overall variance explained by Principal Component Analysis in the variables that describe acceptance of Artificial Intelligence-based healthcare services by the hospital staff. This analysis was done in order to establish the underlying dimensions of acceptability of AI systems in hospital functions.

The findings show that there are five factors that have eigenvalues exceeding 1 and this meets the Kaiser criteria of extracting factors. The first five factors are 2.802, 1.906, 1.694, 1.477 and 1.240 respectively and this shows that all the five factors are important in explaining the overall variance in the acceptance variables.

The five components explain a cumulative percentage variance of 60.790 which is a figure more than 50 percent considered in social science research. This demonstrates that the factors obtained are sufficient to describe the data and can explain a significant part of the difference between acceptance of Artificial Intelligence-based healthcare services among hospital employees.

The former explains 18.678 percent of the total variance, then there are the second component and the third component that explains 12.706 percent and 11.294 percent of the total variance respectively. Upon rotation, each variable is more evenly distributed among the five components, which implies that the variables are being clustered into factors that make sense and denote various aspects of acceptance of AI systems.

Therefore, the findings can verify that the acceptance of Artificial Intelligence in hospital personnel is multidimensional and can be described by multiple factors underlying it, which will be interpreted by the rotated component matrix.

Table no 4.9: Component Matrix and Communalities

Sl. No		Component					**Communalities**	
		1	2	3	4	5	Initial	Extraction
01	AI-based systems improve the overall efficiency of hospital operations.	.287	.374	-.012	.032	-.062	1.000	.227
02	AI helps improve quality of patient care in hospitals.	.391	.454	.347	-.459	-.037	1.000	.691
03	AI supports better clinical and administrative decision-making.	.586	-.051	-.029	-.336	-.387	1.000	.609
04	AI reduces workload and repetition of routine tasks.	.357	-.686	.241	-.011	-.291	1.000	.741
05	Overall, AI adds value to hospital services.	.277	.043	-.280	.421	.062	1.000	.338
06	AI-based systems used in hospitals are easy to use.	.427	.080	-.379	.309	-.104	1.000	.439
07	I feel comfortable using AI-enabled systems in my daily work.	.444	-.029	.508	.380	.282	1.000	.679
08	Learning to use AI-based systems is easy for me.	.168	.137	.671	.439	-.038	1.000	.692
09	AI systems integrate well with existing hospital workflows.	.484	.452	.068	.338	.272	1.000	.631
10	I do not feel stressed or anxious while using AI-based systems.	.442	.463	.235	-.479	-.122	1.000	.710
11	I am willing to continue using AI-based systems in hospital operations.	.453	-.267	-.030	-.296	.587	1.000	.710
12	I support increased use of AI technologies in hospitals.	.423	-.721	.331	-.021	-.020	1.000	.810
13	I prefer working in hospitals that adopt advanced AI technologies.	.443	-.201	-.418	-.241	.495	1.000	.714
14	I would recommend AI-based systems to other healthcare 4s.	.369	-.062	-.217	.129	-.441	1.000	.398
15	Overall, I have a positive attitude towards AI adoption in hospitals.	.682	.072	-.438	.192	-.176	1.000	.729
Extraction Method: Principal Component Analysis.								
a. 5 components extracted.								

Table 4.9 shows the obtained component matrix and communalities of the variables that were used to measure the acceptance of Artificial Intelligence-based healthcare services among the hospital staff using Principal Component Analysis. The communalities are used to demonstrate the percentage of variance in each variable that is used by the extracted components.

The extraction values of communalities are between 0.227 and 0.810 suggesting that most of the variables are well captured by the extracted factors. The greater communalities are found in such statements like, I support the increased application of AI technologies in hospitals (0.810), AI reduces workload and redundancy to routine activities (0.741), overall, I have a positive attitude towards the application of AI in hospitals (0.729) and, I am willing to continue using AI-based systems in hospital practise (0.710), indicating that the variables play an important role in the factor structure. Some of the variables have a relatively smaller communalities, including efficiency of hospital operations (0.227) and overall value of AI services (0.338), but they are not too small to analyse exploratory factors.

The component matrix displays the weighting of the variables on the 5 extracted components. Yet, there is dispersion of the loadings among different components and some variables get loaded on more than one factor and hence the factors cannot be interpreted at this point. It is typical in the unrotated solution when the factor structure is still not in a clearly defined form.

Thus, the rotation of factors is necessary to achieve a more explanatory and easier to interpret structure. In the second step, we use the rotated component matrix to determine the important loadings as well as to cluster the variables into meaningful factors that would reflect various dimensions of acceptance of Artificial Intelligence-based healthcare services among the hospital employees

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Table no 4.10: Rotated Component Matrix

Sl. No		Component				
		1	2	3	4	5
01	AI-based systems improve the overall efficiency of hospital operations.	.258	.331	-.175	.139	-.031
02	AI helps improve quality of patient care in hospitals.	-.107	.807	-.044	.148	.071
03	AI supports better clinical and administrative decision-making.	.320	.542	.427	-.165	.057
04	AI reduces workload and repetition of routine tasks.	.069	-.045	.855	.057	.021
05	Overall, AI adds value to hospital services.	.509	-.182	-.089	.174	.089
06	AI-based systems used in hospitals are easy to use.	.657	-.010	-.019	.042	.072
07	I feel comfortable using AI-enabled systems in my daily work.	.066	.051	.192	.783	.151
08	Learning to use AI-based systems is easy for me.	-.058	.088	.123	.754	-.312
09	AI systems integrate well with existing hospital workflows.	.386	.231	-.299	.557	.172
10	I do not feel stressed or anxious while using AI-based systems.	.004	.838	-.033	.052	.058
11	I am willing to continue using AI-based systems in hospital operations.	-.041	.112	.181	.111	.806
12	I support increased use of AI technologies in hospitals.	-.028	-.065	.834	.218	.248
13	I prefer working in hospitals that adopt advanced AI technologies.	.237	.024	.035	-.135	.799
14	I would recommend AI-based systems to other healthcare 4s.	.523	.116	.267	-.110	-.167
15	Overall, I have a positive attitude towards AI adoption in hospitals.	.811	.181	.101	-.008	.171
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]						
a. Rotation converged in 6 iterations.						

Table 4.10 shows the Principal Component Analysis result which was rotated using Varimax rotation to the variables used to assess the acceptance of Artificial Intelligence-based healthcare services by the hospital staff. To get a clear factor structure, the rotation was used and factor loading above 0.60 was viewed as significant to interpret.

The findings indicate that the acceptance variables can be clustered into five variables that indicate various aspects of acceptance of AI-based systems in the functions of the hospital.

Factor 1 -Positive Attitude and Perceived Value of AI Systems: The statements that indicate a high loading in this factor include the statement, overall, I have a positive attitude towards AI adoption in hospitals (0.811) and the statement, AI-based systems used in hospitals are easy to use (0.657). All these variables reflect positive perception and general acceptance of AI systems in work of hospitals.

Factor 2 - Perceived Quality Improvement and Confidence in AI: 0.807 and 0.838 are the high loadings of AI helps improve the quality of patient care in hospitals and I do not feel stressed or anxious when using AI-based systems, respectively. These variables indicate trust to AI systems and the opinion that AI enhances quality and reliability of hospital services.

Factor 3 - Perceived usefulness in Work Efficiency: The factor presents high loadings of: “AI decreases workload and routine tasks (0.855) and I support more use of AI technologies in hospitals (0.834). These variables are perceived usefulness of AI in enhancing efficiency and aiding the work processes of the hospital.

Factor 4- Ease of Use and Comfort with AI Systems- High loadings are observed with the following statements; I feel comfortable using AI-enabled systems in my daily work (0.783) and Learning to use AI-based systems is easy (0.754). These variables show the convenience and the level of comfortability of hospital staffing in using AI technologies.

Factor 5 - Behavioural Intention to Use AI Systems: The factor has a strong loading of I am willing to continue to use AI-based systems in running the hospital operations (0.806) and I prefer working in hospitals that have advanced AI technologies (0.799). These variables are the behavioural intention and willingness of adopting AI-based healthcare systems in future.

In general, the component matrix after rotation suggests that the attitude, perceived usefulness, ease of use,

confidence and behavioural intention are the dimensions of acceptance of Artificial Intelligence among the hospital personnel. The factor analysis establishes that the acceptance of AI-based healthcare services by hospital staff has a favourable outcome, though the degree of the latter varies depending on various dimensions of AI application.

Objective 2: To examine the influence of awareness on acceptance of Artificial Intelligence-based healthcare services among hospital staff.

In order to achieve the second objective of the study, an attempt was made to factor in the influence of the awareness on the acceptance of Artificial Intelligence-based healthcare services by staff within the hospital. The assumptions on AI application were made and the acceptance of AI systems was established on the assumption of variants of dimension that contained some aspects such as perceived usefulness, ease of use and behaviour intention to use AI based systems.

The relationship measurement of the aspects of awareness and acceptance involved correlation analysis to establish the level of relationship between the variables. In addition, the regression analysis was conducted with a view of examining the extent to which awareness influences the different facets of acceptance of Artificial Intelligence in hospital operations.

Additionally, the Analysis of Variance (ANOVA) has been adopted to identify the existence of the difference in the degree of the acceptance of the AI-based healthcare services among hospital staffs across different hospital types. It is clear through this analysis that organisational divergence is involved in the perception and acceptance of artificial intelligence in a hospital set up.

Correlation, ANOVA and regression results are represented in the following tables and in addition their interpretation.

Hypothesis Test 1: Correlation test

H_0: There is no significant relationship between awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

H1: There is a significant relationship between awareness and acceptance of Artificial Intelligence-based healthcare services among hospital staff.

Table no 4.11: Correlations

		AC1	AC2	AC3	AW1	AW2	AW3
AC1	Pearson Correlation	1	.394**	.326**	.266**	.043	.184*
	Sig. (2-tailed)		.000	.000	.003	.641	.044
	N	121	121	121	121	121	121
AC2	Pearson Correlation	.394**	1	.192*	.017	-.036	.009
	Sig. (2-tailed)	.000		.035	.854	.698	.926
	N	121	121	121	121	121	121
AC3	Pearson Correlation	.326**	.192*	1	.284**	.251**	.295**
	Sig. (2-tailed)	.000	.035		.002	.005	.001
	N	121	121	121	121	121	121
AW1	Pearson Correlation	.266**	.017	.284**	1	.156	.296**
	Sig. (2-tailed)	.003	.854	.002		.087	.001
	N	121	121	121	121	121	121
AW2	Pearson Correlation	.043	-.036	.251**	.156	1	-.010
	Sig. (2-tailed)	.641	.698	.005	.087		.914
	N	121	121	121	121	121	121
AW3	Pearson Correlation	.184*	.009	.295**	.296**	-.010	1
	Sig. (2-tailed)	.044	.926	.001	.001	.914	
	N	121	121	121	121	121	121
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

AC1	Perceived Usefulness of AI Systems
AC2	Ease of Use & Comfort with AI Systems
AC3	Willingness & Behavioural Intention to Use AI
AW1	Awareness of AI in Clinical & Patient Care Services
AW2	Awareness of AI in Hospital Information & Administrative Systems
AW3	Awareness of AI in Patient Interaction & Support Services

The findings of Pearson correlation analysis were provided in Table 4.11 that was carried out to investigate the correlation between awareness and acceptance of Artificial Intelligence-based healthcare services among hospital employees. Acceptance was assessed based on three dimensions, which comprise perceived usefulness (AC1), ease of use and comfort (AC2) and behavioural intention to use AI (AC3) whereas awareness was measured in relation to services of clinical and patient care (AW1), hospital information and administrative systems (AW2) and patient interaction and support services (AW3).

The findings show that the perceived usefulness (AC1) shows significant positive correlation with awareness in clinical and patient care services (AW1) ($r = 0.266$, $p < 0.01$) and awareness in patient interaction and support services (AW3) ($r = 0.184$, $p < 0.05$). Nevertheless, the correlation between the perception of usefulness and concentration on administrative systems (AW2) is insignificant ($p > 0.05$).

The correlation to all the three dimensions of awareness (AW1, AW2, AW3) is not statistically significant in the case of ease of use and comfort (AC2) where the significance values are more than 0.05. It means that there is no close relationship between the awareness of AI applications and the perception of the ease of use in the mind of hospital employees.

Awareness in clinical and patient care services (AW1) ($r = 0.284$, $p < 0.01$), awareness in administrative systems (AW2) ($r = 0.251$, $p < 0.01$) and awareness in patient interaction services (AW3) ($r = 0.295$, $p < 0.01$) have significant positive relationships with behavioural intention to use AI (AC3). This demonstrates that an increased knowledge on the application of AI is correlated with willingness to adopt AI-based systems in the hospital functions.

On the whole, the results of correlation demonstrate that awareness of Artificial Intelligence is positively linked to some dimensions of the acceptance, especially the perceived usefulness and behavioural intention. Hence, the null hypothesis is rejected and it can be concluded that there is a significant relationship between the awareness and acceptance of the Artificial Intelligence-based healthcare services in the hospital staff.

Hypothesis Test 2

H_0: Awareness of Artificial Intelligence does not have a significant influence on acceptance of AI-based healthcare services among hospital staff.

H_1: Awareness of Artificial Intelligence has a significant influence on acceptance of AI-based healthcare services among hospital staff.

Sub-Hypotheses

H_{1a}: Awareness of Artificial Intelligence has a significant influence on perceived usefulness of AI-based healthcare systems.

H_{1b}: Awareness of Artificial Intelligence has a significant influence on ease of use of AI-based healthcare systems.

H_{1c}: Awareness of Artificial Intelligence $_h$as a significant influence on behavioural intention to use AI-based healthcare systems.

Table no 4.12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.288[a]	.083	.059	.32028
2	.042a	.002	-.024	.22915
3	.423a	.179	.158	.25347
a. Predictors: (Constant), AW1,AW2,AW3				

Table 4.12 entails the model summary of regression that is carried out to investigate the role of awareness on Artificial Intelligence on various aspects of acceptance of AI-based healthcare services by hospital employees. Perceived usefulness, ease of use comfort and behavioural intention were identified as dependent variables, whereas the awareness in clinical services, administrative system

and patient interaction service were identified as predictors, which provided three regression models.

Model 1 value of R = 0.288 and R2 = 0.083 which implies that awareness is used in explaining about 8.3 percent of the variation in people perceiving the usefulness of AI systems. When it comes to Model 2, the R value here is 0.042; R2 here is 0.002, which indicates that there is .

minimal impact of the factor awareness on ease of use and comfort with AI systems. Model 3 R value is 0.423 and R 2 is 0.179 meaning that awareness explains variation of behavioural intention to use AI-based systems of about 17.9%. The findings indicate that awareness is of more influence on behavioural intention than the perceived usefulness and ease of use

Table no 4.13: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.085	3	.362	3.525	.017[b]
	Residual	12.002	117	.103		
	Total	13.087	120			
2	Regression	.011	3	.004	.070	.976b
	Residual	6.144	117	.053		
	Total	6.155	120			
3	Regression	1.642	3	.547	8.518	.000b
	Residual	7.517	117	.064		
	Total	9.159	120			
a. Dependent Variable: Model 1: Perceived Usefulness of AI Systems Model 2: Ease of Use and Comfort with AI Systems Model 3: Willingness and Behavioural Intention to Use AI						
b. Predictors: (Constant), AW1,AW2,AW3						

Table 4.13 presents the ANOVA findings of the regression analysis to determine whether or not awareness has significant effect on the adoption of Artificial Intelligence-based healthcare services by the hospital staff.

In the case of Model 1, F of 3.525 having a significance value of 0.017, which is not below 0.05. It means that the regression model is statistically significant and awareness plays a considerable role in determining usefulness of AI systems perception.

In Model 2, F value is 0.070 and the significance value equals 0.976 and this value exceeds the value of 0.05. It demonstrates that the regression model is not very significant and awareness does not play a major role in the ease of use and comfort with AI systems.

In the case of Model 3, F value of 8.518 and significance value of 0.000 is less than 0.01. It means that the regression model is very significant and awareness is a strong predictor of the intention to use AI-based healthcare systems.

In this way, this confirmed the findings of the ANOVA that awareness plays a crucial role in influencing the certain levels of the acceptance, but most notably perceived usefulness and behavioural intention.

Table no 4.14: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.958	.236		4.062	.000
	AW1	.225	.092	.231	2.454	.016
	AW2	.006	.072	.008	.089	.929
	AW3	.130	.105	.115	1.242	.217

2	(Constant)	2.019	.169		11.958	.000
	AW1	.015	.066	.023	.230	.818
	AW2	-.021	.051	-.039	-.418	.676
	AW3	.001	.075	.001	.015	.988
3	(Constant)	.711	.187		3.810	.000
	AW1	.144	.073	.176	1.979	.050
	AW2	.151	.057	.226	2.662	.009
	AW3	.232	.083	.245	2.794	.006

a. Dependent Variable: Model 1: Perceived Usefulness of AI Systems
Model 2: Ease of Use and Comfort with AI Systems
Model 3: Willingness and Behavioural Intention to Use AI

Table 4.14 provides the regression coefficients of the separate impact of various dimensions of awareness on acceptance of Artificial Intelligence-based healthcare services among hospital personnel.

In Model 1 (perceived Usefulness), awareness in clinical and patient care services ($\beta = 0.231$, $p = 0.016$) produces a great positive relationship on perceived usefulness, whereas awareness on administrative systems ($\beta = 0.929$) and patient interaction services ($p = 0.217$) are not meaningful predictors.

The awareness variables have no significant impact in Model 2 (Ease of Use and Comfort), with all the significance values more than 0.05. It means that the ease of use perception of the AI systems is not influenced by awareness in the staff of the hospital.

There are positive effects in awareness of administrative systems ($b = 0.226$, $p = 0.009$), awareness of patient interaction services ($b = 0.245$, $p = 0.006$) and little significance of awareness of clinical services ($b = 0.050$). The latter means that the more people know, the more ready they are to utilise AI-based systems of healthcare.

In general, the findings of the regression analysis indicate that awareness of Artificial Intelligence has the significant impact on behavioural intention and perceived usefulness but has no significant effect on ease of use. Therefore, the second hypothesis is partly accepted.

Hypothesis Test 3: ANOVA Test

In order to examine whether the level of acceptance of Artificial Intelligence-based healthcare services differs among hospital staff working in different types of hospitals, one-way Analysis of Variance (ANOVA) was applied. The type of hospital was considered as the grouping variable and acceptance of AI-based healthcare services was taken as the test variable. The following hypothesis was tested.

H_0: There is no significant difference in the acceptance of Artificial Intelligence-based healthcare services among hospital staff working in different types of hospitals.

H_1: There is a significant difference in the acceptance of Artificial Intelligence-based healthcare services among hospital staff working in different types of hospitals.

Table no 4.15: Descriptives

Acceptance								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Private	52	1.7987	.21226	.02943	1.7396	1.8578	1.60	3.00
Specialty	35	1.7067	.25059	.04236	1.6206	1.7927	1.00	2.40
Multi-specialty	34	1.7020	.10410	.01785	1.6656	1.7383	1.47	1.93
Total	121	1.7449	.20524	.01866	1.7080	1.7818	1.00	3.00

Table 4.15 presents descriptive statistics of acceptance of Artificial Intelligence-based healthcare services among hospital staff working in various types of hospitals. The average with private hospitals is 1.7987, specialty hospitals is 1.7067 and multi-specialty hospitals is 1.7020. The findings show that the extent of outreach toward AI-based healthcare services is a bit greater among employees of private hospitals than of specialty and multi-specialty hospitals. Nevertheless, the identified differences in mean values are negligible and additional statistical analysis is needed to ascertain whether the difference is essential.

Table 4.16:Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Acceptance	Based on Mean	2.351	2	118	.100
	Based on Median	1.803	2	118	.169
	Based on Median and with adjusted df	1.803	2	94.960	.170
	Based on trimmed mean	2.394	2	118	.096

The Table 4.16 shows an output of the Levene test that was applied to test the homogeneity levels between the groups. The mean significance value is 0.100 and it is significantly more than 0.05. This denotes that the homogeneity assumption is met. Thus, the ANOVA test could be used in the comparison of the mean scores of acceptance by the various variants of hospitals.

Table 4.17: ANOVA

Acceptance					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.264	2	.132	3.257	.042
Within Groups	4.790	118	.041		
Total	5.055	120			

The findings of a one-way ANOVA that was run to determine whether the level of acceptance of Artificial Intelligence-based healthcare services varies among hospital staffs that work in different types of hospitals are provided in table 4.17. The value of F is 3.257 and the significance value is 0.042 and this is less than 0.05. It means that the difference in the staff accepting services based on AI as the reason to apply AI to healthcare is statistically significant between the personnel of various hospital types.

Given that the significance value is below 0.05, the null hypothesis will be rejected and alternative hypothesis will be accepted. In conclusion, it is possible to state that the acceptance of the Artificial Intelligence-based healthcare services by hospital employees is influenced significantly by the type of the hospital.

5. SUGGESTIONS

The study suggests several measures to improve the uptake and understanding of AI-driven medical services among the hospital workforce. The hospitals must strive to conduct regular awareness programmes such as seminars and workshops to educate the staff on the benefits and applications of AI in healthcare. Practical, training and developing technical skills, along with confidence towards the use of AI systems, is a requirement. In addition, it is also recommended to be able to provide around-the-clock technical assistance to overcome the challenges that the personnel can face in work with it. Embracing a computerised form of AI technologies, which are user-friendly and can easily be navigated, must also be adopted in hospitals and this could help in eradicating resistance among workers. Trust in AI systems can also be achieved by explaining the reliability and accuracy of AI systems. Management support is one of the factors that are crucial in adoption encouragement, which implies, there are resources and motivation to support such an undertaking. The adoption of AI systems will happen gradually and feedback and evaluation should be conducted to ensure a continuous rise in the implementation.

6. CONCLUSIONS

The study findings clearly indicate that Ai is currently a dedicated force in reshaping healthcare service lines and enhancing hospital operations in the last few years. In general, the research points to moderate to high awareness of hospital personnel members in Bangalore regarding the implementation of AI applications in clinical processes, administrative operations and patient support systems. However, awareness is not widespread on all fronts because advanced patient interaction technology is still rather unrecognised and needs guides and targeted awareness.

Moreover, the correlation between awareness and acceptance of AI-based healthcare services is also positive and significant, as reflected in the analysis. This underscores the role of (awareness) as important contributing factors to technology adoption. Staff members among those who know more about AI, understand it better, will be more likely to perceive AI as useful and help it to become more efficient and effective in decision-making and delivering higher quality care. Consequently, their behavioural intention is high towards the use of AI systems in the workplace. However, despite the research demonstrating that general awareness or awareness had a positive correlation with perceived ease of use, familiarity by itself did not have as significant an effect on perceived ease of use than it would suggest that people are not as easy to deceive into thinking that AI technologies are smooth sailing and easy.

Moreover, the results show acceptance of AI is subtle by the type of hospital that backs the hypothesis of organisational environment that influences technology

adoption. This offers advanced awareness and training support by an institution. These will open the way to a successful and continuing implementation, optimization and acceptance of AI solutions that result in improved patient care and operational efficiency

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