The Awareness Level of the Artificial Intelligence Applications' Risk among Faculty Members and its Relation to the Attitude towards Digital Culture at Imam Abdulrahman Bin Faisal University

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Abstract

The current study aimed at identifying the awareness level of artificial intelligence applications' risks among faculty members and its relation to the attitude towards digital culture at Imam Abdulrahman Bin Faisal University. The descriptive survey method was used. A questionnaire was designed to measure the awareness of the artificial intelligence applications' risks, and a scale for measuring the attitude towards digital culture. They were administered to a sample of [463] faculty members at Imam Abdulrahman Bin Faisal University. The study concluded that there is an average awareness of the artificial intelligence applications' risks and the attitude towards digital culture among faculty members. A significant relationship was found out between awareness of the artificial intelligence applications' risks as a whole and the attitude towards digital culture. The results indicated that there are no differences in the awareness level of the artificial intelligence risks due to the variables of: gender, use duration of digital applications, and colleges. There are no differences in the variable of the attitude towards digital culture with its various dimensions: cognitive, psychomotor, and affective and its total score. The current study recommended designing a professional development plan for faculty members on the negative effects and risks of artificial intelligence, and launching an Arab platform based on artificial intelligence applications.

Keywords: Artificial Intelligence, Applications, Digital Culture.

1. Introduction

Artificial intelligence is considered one of the most important outcomes of the Fourth Industrial Revolution with its multiple systems and technologies; therefore, it is necessary to work on exploiting it by providing the scientific and technical structure.

Artificial intelligence advantages cannot be denied for serving humanity, as it seeks to find faster, smarter, more effective and more accurate ways in many fields. It has provided many smart applications that have facilitated and made daily life easier; including the smartphone [32]. Hence, it was necessary for all countries and societies to engage in the fields of artificial intelligence. It has become certain that the standard of a country's strength and superiority in the current era is its ability to apply artificial intelligence and its continuous development in all life aspects [18].

Artificial intelligence has made a major breakthrough in the process of both education and learning in the Kingdom of Saudi Arabia. It established the National Center for Artificial Intelligence, Data Management and Saudi Data and Artificial Intelligence Authority; to achieve leadership in innovation at the international level and enable the Kingdom's economy based on the data revolution in order to achieve the Kingdom of Saudi Arabia Vision 2030 for digital transformation in all fields; [38]. It was followed by new technological developments in universities and the innovation of advanced practices in the educational process, especially those that use remote communication as a primary means of learning, which led to an increase in the use of e-learning in its various forms, most notably artificial intelligence, as it has the ability to replicate human skills by computers or software. This depends on various technologies such as machine learning, deep learning and natural language processing. [10] However, the use of artificial intelligence applications in university education faces many potential obstacles, such as the lack of infrastructure needed by the digital world, and the risk of artificial intelligence simulating human behavior, as it creates more challenges, especially with regard to its suitability, especially in the field of legislation and law [5].

Studies [2], [6], [32], and [3] confirmed that there is a number of risks such as those related to the misuse of data, increased dependence on the culture of individuals, and ethical and social risks that affect human values and relationships, and the diminishing ability to think and innovate. Study [18] also showed that artificial intelligence may reduce human interaction and social communication between teachers and students. Furthermore, it affects the development of communication, cooperation and social interaction skills among students. Study [43] confirmed the risks of its frequent use leading to cases of addiction, depression and isolation, in addition to ethical risks facing educational systems when using them, as learning algorithms are usually not secure and safe.

With the spread of using artificial intelligence applications and the spread of digital culture in universities, digitization has become an indispensable necessity with recent changes. Its absence causes an electronic gap in various fields of education. Study [33] confirmed that dealing with

digital culture applications is necessary, as all parties in the university are concerned with digitization, and digital culture is a means to facilitate the process of distance learning and all administrative matters related to the university. Moreover, possessing digital culture and using its media and applications in a legal and ethical manner is one of the ways to succeed in e-learning and helps achieve education quality.

Based on the above part, the problem of the current study can be clearly stated in the need to identify the awareness level of faculty members regarding many risks and threats posed by some artificial intelligence technologies and systems as a result of their negative use, which the faculty member must take seriously and prepare the necessary precautions and solutions to confront them and limit their damage. Given the limited studies and research that addressed identifying faculty members' awareness of these risks and also identifying their attitudes towards digital culture in light of some demographic factors and identifying the relationship between them. This is the core of the current study.

Study Problem Statement

The problem of the current study was determined by the necessity of identifying the awareness level of faculty members regarding the risks of artificial intelligence and the attitude towards digital culture. To tackle this problem, the following questions were answered:

What is the level of risk awareness of artificial intelligence applications among faculty members at Imam Abdul Rahman Bin Faisal University?

What is the attitude level towards using digital culture among faculty members at Imam Abdul Rahman Bin Faisal University?

Study Aims

The current study aims at the following:

- Identifying the concept, aims, importance, risks of artificial intelligence and digital culture, its importance and obstacles.
- Identifying the most important risks among faculty members and the current study.
- Identifying the relationship between faculty members' awareness of the risks of artificial intelligence applications and the attitude towards digital culture at Imam Abdulrahman bin Faisal University.
- Identifying if there are differences between the average responses of faculty members regarding awareness of the risks of artificial intelligence and the attitude towards digital culture according to the variables of : college, gender, and use duration of digital applications.

Study Significance

- This study may benefit officials in the Ministry of Higher Education, Saudi universities, and all sectors of society. Hence, the current study contributes to developing and improving the educational process to keep up with the twenty-first century requirements.

- Paying attention to the faculty members because they are one of the most important elements in the university due to their tasks and responsibilities because of the profession according to the changes of the era, and identifying their awareness level of the risks of artificial intelligence applications, especially in light of the rapid development of technology and digital culture, which is expected to prevail in the education sector by 2030 according to local and international estimations and statistics.

- Identifying the faculty members' attitudes towards digital culture, in order to protect them from the risks and threats of artificial intelligence to which they are exposed while using digital culture applications.

2. Conceptual Framework of the Study:

Artificial Intelligence Concept

There are many definitions that address the concept of artificial intelligence. According to [10], artificial intelligence can be defined as a number of machine-based systems and advanced algorithms that aim to develop the ability to carry out a variety of intellectual tasks and logical operations. These systems interact with the human element and the environment directly or indirectly.

Study [17] considers it a science that is concerned with studying intellectual abilities and logical processes. It is also a group of the smartest systems in computer science that rely on collecting and processing information and raising the level of assimilation and understanding of that information. Constructing and designing those systems supports the human element in making use of them to solve problems and making decisions and not an alternative to it.

While study [31] believed that it is a term that includes two complementary definitions:

- A collection of sciences, theories and applications that aim to reproduce the cognitive capabilities of humans by means of a machine. Current developments aim, for example, at the ability to assign complex tasks to a machine that were previously delegated to humans.

- Systems that operate through machines in light of a set of goals determined by humans.

It is also considered one of the modern computer sciences that search for advanced methods to program it to carry out practices and conclusions similar to those attributed to humans and consistent with their intelligence, through understanding the mental and computational processes that increase the computer's ability to solve complicated processes [27].

Based on the previous definitions, it is obvious that artificial intelligence is a concept that has been agreed upon as the intelligence of machines that simulate the human mind by feeding it with programs and algorithms, and thus it makes the machine act as if it were a human.

Importance of Artificial Intelligence:

Studies [32], [2], [7], and [27] indicated the importance of artificial intelligence provided to serve the educational process:

- It provides many smart applications that facilitated daily life; including the smartphone.
- It leads to changing the role of teachers by programming artificial intelligence systems to provide experience for students.
- It helps collect data and information supported by smart computer systems.
- Smart computer systems help choosing the college that best suits students' needs and goals.
- It enables students to learn anywhere and at any time using artificial intelligence systems.
- It is used in fields that include many details and complexities, in addition to fields that require stressful mental concentration and quick decision-making.
- Artificial intelligence is characterized by its relative stability, as it is not exposed to the factors affecting its capabilities, such as forgetfulness, that the human element is exposed to.
- Artificial intelligence in universities supports existing human cognitive capabilities while reducing the need for human knowledge, experience, and skills.

Aims of Artificial Intelligence:

Artificial intelligence and its various applications aim at serving the humanity and overcoming the difficulties of life in all fields. Both [8] and [11] indicated these aims, which are as follows:

1. Understanding the nature of human intelligence through computer programs and systems capable of simulating humans in solving a problem or making a specific decision.
2. Developing computer software.
3. Facilitating the use of the computer and benefiting from it in solving various problems.
4. It helps access patterns of processing mental processes in the human mind.
5. It helps finding out non-typical solutions to problems, and training in solving them or making an appropriate decision for them.
6. Storing and analyzing knowledge, storing methodological rules for dealing with it, accessing its facts, acquiring accumulated human knowledge, updating it, preserving it, investing it in solving problems, optimally investing in scientific and applied knowledge and expertise, overcoming problems of damage, deficiency, and forgetfulness, generating or developing new knowledge and experiences, activating computerized knowledge, and using it in making decisions [17].

Challenges and Risks Facing the Faculty Members when Using Artificial Intelligence Applications:

Studies [43],[24], and [28] identified a number of risks and challenges facing providing artificial intelligence in university education, the most important of which are:

- Lack of specialized staff.
- Lack of infrastructure, including communications, computers and software.
- Re-qualifying students and faculty members and developing their traditional skills to suit learning applications and computer use.
- Reading large sections on the computer can cause eye strain.
- Students' addiction to using artificial intelligence; which makes them not want to do any kind of work other than using its applications.
- Its frequent use leads to cases of depression due to impersonal communication, as education is not required by being in one place like traditional education.
- Faculty members and students need training to use these devices.
- It will lead to increasing unemployment, if artificial intelligence cannot match humans in terms of effectiveness; therefore, machines will replace humans in practical fields.
- Its use for non-scientific purposes that do not serve society constitutes a real threat, as it has the ability to cause rapid and unprecedented economic and social chaos.

Digital Culture Concept

It is defined as "the process of automating all administrative tasks and activities by relying on all necessary information applications to achieve the goals of the new administration in reducing the use of paper, simplifying procedures, eliminating routine, and rapid and accurate completion of tasks and transactions." [37].

It is also defined as "a term that refers to the cultural changes that result from the development and dissemination of digital technology, especially the Internet and the Web, and a research methodology on an open platform for sharing information through sites specialized in scientific research in cooperation with users of modern technology across the world and from various specializations" [35]

Importance of Digital Culture

Many studies, such as study [4] and study [25], indicated the importance of digital culture:

- A basis for searching information with electronic databases, indexes, websites and multimedia.
- Developing teaching and learning activities and moving away from traditional teacher-centered methods, and relying on student-centered methods through learning using virtual learning environments.
- Helping individuals update information, keep pace with modern developments, and constantly follow up on all developments and new knowledge.

- Being a human and social necessity. Every individual in society must identify, obtain, evaluate and use his information needs.
- Being an important and complementary part of university education. It gives the individual the ability to search for information on his own and to rely on himself in learning.
- Building individuals who are capable of lifelong learning, and who are able to find, evaluate and use information effectively to solve problems.
- Helping strengthen individuals' personalities and preparing them to take advantage of the opportunities inherent in the knowledge of society.

It is clear from the above part the importance of digital culture, as it leads to individuals acquiring self-learning skills, continuous learning skills, keeping up with technical and scientific innovations in their field of specialization, and selecting knowledge by evaluating it and using it efficiently and effectively.

Obstacles to Digital Culture:

Digital culture transforms the role of the faculty member from a knowledge owner to a guide, organizer, and planner of the learning process in environments rich in various learning resources. However, there are some obstacles, including:

Increasing the reliance of education on the web necessitates the need to expand technical education as a primary source of education for all elements of the educational process, and the goals of education have become temporary and experimental, a scarcity of technologically qualified teachers, as well as weak communications infrastructure, the lack of free Internet availability for citizens, and the weak level of teaching staff in information technology and their inability to adapt to it, and the absence of the electronic labor market and laws regulating electronic government [30].

On the other hand, universities today live in a rapidly changing environment due to rapid and successive developments in software and electronic computer systems with the emergence of new innovations in this field, and perhaps one of them is artificial intelligence, which has developed the way organizations deal with their internal and external structure [20].

Study Procedures

The study proceeded according to the following procedures:

1. Determining the awareness level of faculty members regarding the risks of artificial intelligence applications, and the level of their attitude towards using digital culture at Imam Abdulrahman Bin Faisal University, through:

- Studying the concept of artificial intelligence, its importance and aims.
- Studying the challenges and risks facing faculty members when using artificial intelligence applications.
- Studying digital culture, its importance and obstacles.

- Direct personal interviews with faculty members in the university.
- Studying research and studies that address the risks of artificial intelligence applications and digital culture.
- Identifying the most important risks for faculty members and in relation to the current study.
- Designing a scale to identify the awareness level of faculty members of the artificial intelligence applications' risks, and a scale to determine the level of their attitude towards using digital culture.
- Verifying the validity and reliability of the two scales by calculating internal validity and reliability through the values of alpha coefficients [Spearman and Gattman].
- The awareness levels of the artificial intelligence applications' risks were divided to: [low, medium, high] by calculating the range and their dimensions according to the data resulting from the administration of the questionnaire.

2. Determining the relationship between faculty members' awareness of the artificial intelligence applications' risks and the attitude towards digital culture at Imam Abdulrahman Bin Faisal University, through the correlation coefficient matrix between awareness of artificial intelligence applications' risks [as a whole], and the attitude towards digital culture scale [as a whole].

3. There are statistically significant differences between the mean scores of faculty members' awareness of the risks of artificial intelligence and the attitude towards digital culture according to the variables of : college, gender, and use duration of digital applications, through the means, standard deviations, and the [t] value regarding the differences between the responses of the study sample of the questionnaire pivots on the awareness level of the artificial intelligence applications' risks and the pivots of the attitude towards digital culture. To verify that, One Way ANOVA method was used.

4. Obtaining and statistically processing scores in addition to concluding and interpreting results.

5. Providing recommendations and suggestions.

3. Study Methodology

The descriptive survey method was used which is concerned with describing and explaining what exists, identifying the relationships found between facts, and identifying common practices among individuals and groups, which helps in collecting information, facts, and data about the phenomenon under study as it depends on description and analysis.

- Study Sample: The study sample consisted of [463] faculty members at Imam Abdul Rahman Bin Faisal University in Dammam, the Kingdom of Saudi Arabia, divided into [238] males, at a percentage of 51.40%, and [225] females, at a percentage of 48.60%. Participants

included [260] faculty members who used digital culture for less than 10 years, at percentage of 56.16%, [203] who used digital culture applications for more than 10 years, at a percentage of 43.84%, and faculty members in the faculties of Arts and Education [215], Science and Administration [107], Engineering [50], and Health [91].

Study Instruments: To achieve the study aims, the following two instruments were designed:

Risk Awareness Questionnaire of Artificial Intelligence Applications:

A questionnaire was designed to measure risk awareness of artificial intelligence applications, after reviewing a number of studies, including the study of [5], [4], [30], [18], and [21]. The questionnaire consisted of 30 items distributed under five main pivots: the risks of artificial intelligence applications related to the education process [11 items], to students [6 items], to data and information [4 items], ethics [5 items], scientific research [4 items], on a five-point Likert scale [strongly agree, agree, neutral, disagree, strongly disagree] and given a rating of [5, 4, 3, 2, 1].

Validity:

To ensure the validity of the content, the questionnaire on the level of risk awareness of artificial intelligence applications was presented in its initial form to 9 jury members, staff members in the field of specialization, and the agreement rate ranged between [88.8% and 95%].

To calculate the internal validity, it was administered to a sample of [50] staff members between the dimensions and the total score of the scale, and they were in the following order: [0.811, 0.814, 0.817, 0.816, 0.813]. All of them were significant at [0.01] level, which indicates the internal consistency of the questionnaire statements.

Reliability:

Reliability coefficients for the questionnaire on the level of risk awareness of artificial intelligence applications were calculated using reliability coefficients [Cronbach's alpha - Split-Half including Spearman's coefficient and Gutman's coefficient] which are significant at [0.01] level for the Risk Awareness Questionnaire of Artificial Intelligence Applications [as a whole] and at each of its pivots, which confirms the reliability of the questionnaire and its validity for administration in the current study.

Attitude towards Digital Culture Scale:

The Attitude towards Digital Culture Scale was designed after reviewing and analyzing a number of studies, including the studies: [4], [33], and [40]. The scale consists of [30] items distributed equally over three main pivots, which are the dimensions of: [cognitive, psychomotor, affective] respectively, on a five-point Likert scale [strongly agree, agree, neutral, disagree, strongly disagree] and given a rating of [5, 4, 3, 2, 1].

Validity:

To ensure the content validity, the Attitude towards Digital Culture Scale was submitted in its initial form to a number of [9] jury members, and the percentage of agreement ranged between [88.8% and 95%], which are acceptable percentages of agreement.

To calculate the validity of the internal consistency of the Attitude towards Digital Culture Scale, it was administered to a pilot sample of [50]. The internal consistency of the questionnaire was calculated between the dimensions and the total score of the scale, and it was, respectively, [cognitive, psychomotor, affective]: 0.866 , 0.823 , 0.833, and they were all significant at [0.01] level. This indicates the internal consistency of the questionnaire statements.

The internal consistency of the questionnaire was calculated between the dimensions and the total score of the scale, and it was as follows: [0.866, 0.823, 0.833], all of which are high consistency coefficients that are significant at a confidence level of [0.01], which leads to confidence in the results that the scale will find out.

Reliability:

The reliability of the scale was calculated and it was found that the values of the reliability coefficients [Cronbach's alpha - Split-Half] which include Spearman's Coefficient and Guttman's Coefficient respectively: 0.854, 0.852 , 0.823 for the scale as a whole are significant at [0.01] level of the Attitude towards Digital Culture Scale [as a whole] and at each dimension.

Frequency Distribution of the Awareness Levels of the Artificial Intelligence Applications' Risks:

After reviewing previous Arab and foreign research and studies related to the study concern, the scale consists of four pivots, and the study sample participants answered them according to what suits them and determined their response according to five choices: [[strongly agree, agree, neutral, disagree, strongly disagree] and the correction was made according to the triple rating [5, 4, 3, 2, 1] for positive statements, [1, 2, 3, 4, 5] for negative statements, and the awareness levels of the artificial intelligence applications' risks were divided to: [low, medium, high] by calculating the range and its dimensions according to the data recorded as a result of administering the questionnaire based on the following equations:

Range = [highest recorded score - lowest recorded score]

Class Length = [range / 3] + 1

Low Level: from the lowest recorded score to < [lowest recorded score + class length]

Medium Level: from the lowest recorded score to < [lowest recorded score + class length * 2]

High Level: from the lowest recorded score to < [lowest recorded score + class length * 2]

4. Results:

4.1. To answer the first question: What is the level of risk awareness of artificial intelligence applications among faculty members at Imam Abdul Rahman Bin Faisal University? The risk awareness levels of artificial intelligence applications were divided as follows: [low, medium, high] by calculating the range and its dimensions according to the data resulting from administering the questionnaire, and Table [1] shows that.

Table 1. Percentage Distribution of Risk Awareness Levels of Artificial Intelligence Applications

Dimensions	Levels	Score	N.	Percentage	Mean	Relative Weight	Rank
Risks of artificial intelligence applications related to the education process	Low	22<17	254	54.86	1.77	58.89	Second
	Medium	27<22	63	13.61			
	High	27 and above	146	31.53			
	Total		463	100.00			
Risks of artificial intelligence applications related to students	Low	12<9	185	39.96	1.62	54.07	Third
	Medium	15<12	268	57.88			
	High	15 and above	10	2.16			
	Total		463	100.00			
Risks of artificial intelligence applications related to data and information	Low	6<5	87	18.79	2.44	81.21	First
	Medium	7<6	87	18.79			
	High	7 and above	289	62.42			
	Total		463	100.00			
Risks of artificial intelligence applications related to ethics	Low	10<7	353	76.24	1.30	43.27	Fifth
	Medium	12<10	82	17.71			
	High	12 and above	28	6.05			
	Total		463	100.00			
Risks of artificial intelligence applications related to scientific research	Low	7<4	179	38.66	1.62	54.00	Fourth
	Medium	9<7	281	60.69			
	High	9 and above	3	0.65			
	Total		463	100.00			
Questionnaire on the level of risk awareness of artificial intelligence applications [as a whole]	Low	54<45	169	36.50	1.85	61.77	
	Medium	63<54	193	41.68			
	High	63 and above	101	21.81			
	Total		463	100.00			

The values in Table [1] regarding the awareness level of the artificial intelligence applications' risks among faculty members at Imam Abdulrahman Bin Faisal University showed that: It was ranked first for those with an average level, as their percentage was estimated at 41.68%, followed by the low level percentage at 36.50%, followed by those with a high level, at 21.8%. Awareness of the artificial intelligence applications' risks [as a whole] was M=1.85 with a relative weight of [61.77]; meaning that faculty members at Imam Abdulrahman University have an average level of awareness of the artificial intelligence risks as a whole. These results differ from study [22], which showed that there is a decrease in the awareness level of the mechanisms for applying artificial intelligence in education. The researchers indicate the need to exert more efforts to spread awareness about the possibilities of using artificial intelligence applications in the educational process, and to prepare training programs to familiarize them with the mechanism of using applications related to artificial intelligence and its risks. Based on these results, it becomes obvious that it is important for the university to review the units specialized in information applications and emphasize spreading the awareness culture of the artificial intelligence risks. This is consistent with study [5] regarding working to spread the risks and dangers of technological culture in general and the artificial intelligence in particular to increase

the awareness of faculty members in the university. This is consistent with study [36] on the importance of educating all participants in the educational process in various forms of modern applications about the positive and negative effects of artificial intelligence and using virtual meetings to simplify concepts and educate society as a whole to know how to access various digital sites that rely on artificial intelligence technology. Study [40] focused on the need to prepare training programs for faculty members to develop skills in using artificial intelligence, its applications and its various risks.

- The faculty members' awareness of the artificial intelligence applications' risks in the pivot related to data and information came in first place. It obtained M=2.44 and the relative weight [81.21%]. This confirms that their awareness is high. This may be due to the interest of faculty members in the university to know the threats and risks of artificial intelligence related to maintaining the confidentiality of their information out of fear and keenness on the privacy of their data. It is also found out that it is consistent and concurrent with the efforts made by the university in this aspect related to the risks of artificial intelligence in data and information to educate faculty members more than other aspects. As study [21] confirmed that there are many risks and negative uses of artificial intelligence; including deep forgery technology and its negative effects on the individual and society.

- Awareness of the artificial intelligence applications' risks related to the education pivot came in second place and obtained M = 1.77 and a relative weight of [58.89%]. This confirms the weak awareness of faculty members of this type of risks. This differs from study [13], which concluded that the degree of awareness of faculty members at King Khalid University of the skills and applications of artificial intelligence in education is high. This calls for the need for Imam Abdulrahman University to pay attention to educating faculty members about the artificial intelligence applications' risks related to education. The UNESCO report confirmed the importance of all employees receiving continuous training in the skills necessary for artificial intelligence due to changes in education methodologies so that people do not lose their jobs by 2030 [41].

- As for awareness of the artificial intelligence applications' risks related to the student pivot, it ranked third and obtained an average M = 1.62 and a relative weight of [54.07%], meaning that the awareness of faculty members is average. This requires more effort to increase the faculty members' awareness in the university of the risks, especially since practices based on artificial intelligence contribute to accelerating the student learning process and improving its quality. However, it must be taken into account that this does not harm students and their independence and encourage them to innovate and educate them and those in charge of the educational process with them about the risks and negatives of relying on artificial intelligence in teaching. This is consistent with what was recommended by study [19].

- As for the artificial intelligence applications' risks related to the scientific research pivot, M = 1.62 and a relative weight of [54.00%], which indicates that their awareness level of the risks related to scientific research is average. This requires the university to study the potential risks of using artificial intelligence applications related to scientific research and to educate faculty members greatly, as neglecting the risks leads to issuing unreliable results and incorrect conclusions, which reduces the credibility and validity of research to take into account the

potential risks associated with its use in order to avoid any negative consequences associated with it. This is what study [39] confirmed. Study [15] also recommended the necessity of developing research performance in universities in light of artificial intelligence by directing scientific research to serve development goals using modern applications and establishing a mechanism for developing research and technological exchange with foreign universities. Study [23] confirmed the necessity of a comprehensive review in universities to understand the benefits, risks and use of artificial intelligence in scientific research.

- The artificial intelligence applications' risks related to the ethics pivot obtained M = 1.30 and a relative weight of [43.27%], which indicates the weak level of awareness of faculty members related to ethics. This result differs from what was reached by study [3], which indicated that there is a high awareness among faculty members in the university of the risks and threats of artificial intelligence ethics, such as misuse of data and increased intensity of conflicts and crimes. Study [14] confirmed that the most important negatives and risks are the lack of awareness of artificial intelligence systems of ethics and values, the inability of its systems to change and develop their operating system or respond to the conditions and changes that may occur in the work environment, and their inability to innovate as humans are able to do, and malicious programs that target the destruction and theft of data, files and private information. Study [18] indicated that there is a major defect due to the spread of artificial intelligence in cybersecurity issues and the preservation of information and the existence of a strong relationship between artificial intelligence applications and the risks of its use.

4.2 . To answer the second question: What is the attitude level towards using digital culture among staff members at Imam Abdul Rahman Bin Faisal University? The awareness levels of the attitude towards digital culture were divided as follows: [low, medium, high] by calculating the range and its dimensions according to the data resulting from administering the questionnaire, and Table [2] shows the frequency distribution of the attitude levels towards digital culture.

Table 2. Relative Distribution of Attitude Levels Towards Digital Culture

Dimensions	Levels	Score	N.	Percentage	Mean	Relative Weight	Rank
Cognitive Level	Low	35<31	151	32.61	2.33	77.83	
	Medium	39<35	6	1.30			
	High	39 and above	306	66.09			Second
	Total		463	100.00			
Psychomotor Level	Low	36<32	75	16.20	2.26	75.23	
	Medium	39<36	194	41.90			
	High	39 and above	194	41.90			Third
	Total		463	100.00			
Affective Level	Low	39<37	31	6.70	2.67	88.91	
	Medium	40<39	92	19.87			
	High	40 and above	340	73.43			First
	Total		463	100.00			
Attitude towards digital culture [as a whole]	Low	111<103	56	12.10	2.34	78.04	
	Medium	119<111	193	41.68			
	High	119 and above	214	46.22			
	Total		463	100.00			

The values in Table [2] showed the level of attitude towards using digital culture among faculty members at Imam Abdulrahman Bin Faisal University; the difference in the percentages of the attitude level towards digital culture as a whole was the first for those with a high level, while their percentage was [46.22%], followed by the percentage of level M = 41.68%, followed by those with a low level, where their percentage was [12.10%]. In general, only the affective level was in the first place, obtaining M = 2.67 with a relative weight [88.91%], followed by the cognitive level M = 2.33 and a relative weight [77.83%], and in the last place the psychomotor level M = 2.26 and a relative weight [75.23%].

The previous results indicate that the level of faculty members' attitude towards digital culture in general is high, as it was consistent and concurrent with reality. Faculty members at the university are the most used category of digital culture applications, and thus their attitudes are high at all cognitive, emotional and skill levels. This shows their acceptance of digital culture and their desire to use its various applications, including artificial intelligence technology. However, the tendency towards awareness at the emotional level was the highest and obtained M = 2.67 and a relative weight [88.91%]. It is clear from this that the current study concluded that faculty members at Imam Abdulrahman University positively accept digital culture and greatly encourage them to recognize and optimally use digital culture applications as well as artificial intelligence. The researchers focus on the need for the university to adopt these positive trends and plan for the future in terms of designing programs that support awareness and optimal use of digital culture applications, especially as their awareness level of artificial intelligence applications is average. At the same time, the spread of digital culture, which is indispensable in all businesses, is increasing, as it is a basic requirement for a successful personal professional life in the information age. It is considered the basis for educational reform of educational institutions. By activating digital culture, the traditional educational model can be transformed into a new based on the integration of roles between technology, teacher and student, in which priority is given to research and investigation rather than transferring information. This is consistent with [4].

4. 3. To answer the third question: What is the relationship between risk awareness of artificial intelligence applications and the attitude towards digital culture among faculty members at Imam Abdul Rahman Bin Faisal University? Table [3] shows that.

Table 3. Matrix of correlation coefficients between risk awareness of artificial intelligence applications [as a whole] and the Scale of the Attitude towards Digital Culture [as a whole]

	Risk Awareness of Artificial Intelligence Applications	the Scale of the Attitude towards Digital Culture
Risk Awareness of Artificial Intelligence Applications		0.719**
the Scale of the Attitude towards Digital Culture		

Significant at [0.05] level **Significant at [0.01] level

It is clear from Table [3] that there is a direct statistically significant correlation between risk awareness of artificial intelligence applications [as a whole] and the Scale of the Attitude towards Digital Culture [as a whole], where the "r" value reached its statistical significance at the level of [0.01].

This shows that the current study found out that there is a strong relationship between faculty members' awareness of the risks of artificial intelligence applications at Imam Abdulrahman University and their attitudes towards digital culture and the use of its various technologies. This strong relationship shows that the higher the level of awareness of the risks of artificial intelligence applications, the higher the attitude towards digital culture among faculty members. This encourages the university to pay attention to increasing the awareness of average faculty members of the risks of artificial intelligence and supporting their positive attitudes towards digital culture. This interpretation is supported by what was indicated by [42] that identifying the risks of artificial intelligence applications increases interest in using it in the correct way, planning for and completing serious work, encouraging intellectual openness and innovative thinking, and exploring broader areas for adapting those good applications related to digital culture in their work.

4.4. To answer the fourth question: Are there statistically significant differences between the mean scores of faculty members for risk awareness of artificial intelligence and attitude towards digital culture according to the variables of : college, gender , and use duration of digital applications?

Table 4. Significance of Differences in Risk Awareness of Artificial Intelligence Applications and the Attitude towards Using Digital Culture according to the [Gender] Variable

Dimensions	Gender	N	Mean Score	Standard Deviation	Degree of Freedom	t-value	Significance Level
Risks of artificial intelligence applications related to the education process	Male	238	23.35	5.39	461	.406	.685
	Female	225	23.15	5.31			
Risks of artificial intelligence applications related to students	Male	238	11.71	1.48	461	1.292	.197
	Female	225	11.89	1.57			
Risks of artificial intelligence applications related to data and information	Male	238	6.57	0.93	461	.134	.893
	Female	225	6.56	0.94			
Risks of artificial intelligence applications related to ethics	Male	238	8.43	1.51	461	.046	.963
	Female	225	8.42	1.47			
Risks of artificial intelligence applications related to scientific research	Male	238	6.88	1.30	461	.177	.860
	Female	225	6.86	1.17			
Risk of artificial intelligence applications [as a whole]	Male	238	56.93	6.19	461	.103	.918
	Female	225	56.88	5.79			
Cognitive Level	Male	238	38.74	4.44	461	.219	.827
	Female	225	38.65	4.45			
Psychomotor Level	Male	238	38.47	2.89	461	.191	.848
	Female	225	38.42	3.02			
Affective Level	Male	238	40.07	1.19	461	.073	.966
	Female	225	40.07	1.18			
	Male	238	117.29	5.15	461	.309	.757

Attitude towards digital culture [as a whole]	Female	225	117.14	5.12

It is clear from Table [4] that there is no statistically significant difference between the responses of the study sample on the questionnaire pivots on the level of risk awareness of artificial intelligence applications related to [the education process, students, data and information, ethics, scientific research] according to the variable [gender], as the [t] values, respectively, were non-statistically significant values. There was no variance or statistically significant difference between the responses of the study sample on the questionnaire pivots on the attitude towards digital culture [cognitive level, psychomotor level, affective level] according to the variable [gender], where the overall t-value was, respectively, non-statistically significant values according to the gender variable.

Table 5. Significance of Differences in Risk Awareness of Artificial Intelligence Applications and the Attitude towards Digital Culture according to the Use Duration of Digital Applications

Pivot	Digital Applications Use	N	Mean Score	Standard Deviation	Degree of Freedom	t-value	Significance Level
Risks of artificial intelligence applications related to the education process	Less than 10 years	260	23.17	5.32	461	.407	.684
	More than 10 years	203	23.37	5.38			
Risks of artificial intelligence applications related to students	Less than 10 years	260	11.84	1.52	461	.697	.486
	More than 10 years	203	11.74	1.53			
Risks of artificial intelligence applications related to data and information	Less than 10 years	260	6.55	0.94	461	.201	.841
	More than 10 years	203	6.57	0.93			
Risks of artificial intelligence applications related to ethics	Less than 10 years	260	8.40	1.52	461	.417	.677
	More than 10 years	203	8.46	1.45			
Risks of artificial intelligence applications related to scientific research	Less than 10 years	260	6.92	1.25	461	.926	.355
	More than 10 years	203	6.81	1.23			
Risk of artificial intelligence applications [as a whole]	Less than 10 years	260	56.87	6.06	461	.129	.897
	More than 10 years	203	56.95	5.92			
Cognitive Level	Less than 10 years	260	38.60	4.44	461	.568	.571
	More than 10 years	203	38.83	4.45			
Psychomotor Level	Less than 10 years	260	38.30	3.03	461	1.200	.231
	More than 10 years	203	38.64	2.85			
Affective Level	Less than 10 years	260	40.12	1.18	461	1.031	.303

	More than 10 years	203	40.00	1.18			
Attitude towards digital culture [as a whole]	Less than 10 years	260	117.02	5.07	461	.944	.346
	More than 10 years	203	117.47	5.22			

Table [5] shows that:

- There is no statistically significant difference between the awareness level of the risks of artificial intelligence applications related to [the educational process, students, data and information, ethics, scientific research] according to the variable of [use duration of digital applications], as the [t] value was respectively statistically insignificant values. The researchers believe that faculty members' awareness of the risks of artificial intelligence is not affected by the use duration of digital applications, as the arithmetic mean for the two groups is less than 10 years, and more than 10 years respectively M = [56.87, 56.95]. These results indicate that awareness of the risks of artificial intelligence is not affected by the use duration.

- There is no statistically significant difference or variance between the responses of the study sample to the questionnaire pivots on the attitude towards digital culture [cognitive level, psychomotor level, affective level] according to the variable of [use duration of digital applications], as the [t] value was respectively statistically insignificant values; meaning that the use duration does not affect the attitude of faculty members towards digital culture, as the arithmetic mean for the two groups is less than 10 years, and more than 10 years respectively M = [117.02, 117.47]. The researchers explain this by the equality of faculty members participating in the study, despite their different experiences, in their positive attitude towards digital culture and the extent of the contributions of digital applications to achieving teaching goals and facilitating student evaluation and assessment procedures. This is consistent with study [29] that the lack of statistically significant differences in faculty members' attitudes towards using educational technologies in university teaching according to the variable of experience in using them is due to the urgent need of all faculty members, regardless of their practical experience, to obtain modern technologies by using them within the college to facilitate many procedures related to students and administration to communicate with these technologies.

Table 6. Significance of Differences in Risk Awareness of Artificial Intelligence Applications and the Attitude towards Digital Culture according to the College

Pivot	College	N	Mean Score	Standard Deviation
Risks of artificial intelligence applications related to the education process	Colleges of Arts and Education	215	23.11	5.29
	Colleges of Science and Management	107	23.43	5.44
	Engineering Colleges	50	23.06	5.33
	Health Colleges	91	23.49	5.45
Risks of artificial intelligence applications related to students	Colleges of Arts and Education	215	11.91	1.57

	Colleges of Science and Management	107	11.77	1.54
	Engineering Colleges	50	11.64	1.48
	Health Colleges	91	11.64	1.42
Risks of artificial intelligence applications related to students.	Colleges of Arts and Education	215	6.56	0.94
Risks of artificial intelligence applications related to data and information	Colleges of Science and Management	107	6.56	0.93
	Engineering Colleges	50	6.56	0.97
	Health Colleges	91	6.57	0.92
Risks of artificial intelligence applications related to ethics	Colleges of Arts and Education	215	8.43	1.45
	Colleges of Science and Management	107	8.41	1.49
	Engineering Colleges	50	8.44	1.47
	Health Colleges	91	8.43	1.60
Risks of artificial intelligence applications related to scientific research	Colleges of Arts and Education	215	6.87	1.16
	Colleges of Science and Management	107	6.81	1.19
	Engineering Colleges	50	6.90	1.13
	Health Colleges	91	6.91	1.51
Risk of artificial intelligence applications [as a whole]	Colleges of Arts and Education	215	56.88	5.76
	Colleges of Science and Management	107	56.98	6.21
	Engineering Colleges	50	57.04	6.15
	Health Colleges	91	56.60	6.39
Cognitive Level Psychomotor Level	Colleges of Arts and Education	215	38.64	4.44
	Colleges of Science and Management	107	38.72	4.51
	Engineering Colleges	50	38.72	4.53
	Health Colleges	91	38.81	4.39
Psychomotor Level	Colleges of Arts and Education	215	38.38	3.05
	Colleges of Science and Management	107	38.56	2.88
	Engineering Colleges	50	38.60	2.76
	Health Colleges	91	38.40	2.95
Affective Level	Colleges of Arts and Education	215	40.07	1.18
	Colleges of Science and Management	107	40.08	1.18
	Engineering Colleges	50	40.02	1.24

	Health Colleges	91	40.07	1.18
Attitude towards digital culture [as a whole]	Colleges of Arts and Education	215	117.09	5.11
	Colleges of Science and Management	107	117.36	5.17
	Engineering Colleges	50	117.34	5.11
	Health Colleges	91	117.27	5.24

It is clear from Table [6] that there are no differences in the responses of the study sample to the questionnaire pivots of the risk awareness level of artificial intelligence applications and the scale of the attitude towards digital culture according to the [college]variable. However, from the researchers' point of view, the colleges of engineering, despite their small number compared to other colleges, as M = [57.04] is the highest mean among colleges [56.60]. This may be due to the specialization of faculty members in engineering colleges and their knowledge, and their awareness of the risks of artificial intelligence applications due to the nature of their work in the field more than others. The mean was, respectively, for the colleges of arts and education, colleges of science and management, and health colleges: M = [56.88, 56.98, 56.60]. To verify the validity of this hypothesis, the One-Way ANOVA method was used.

Table 7. One-Way Analysis of Variance for the Differences between the Responses of the Study Sample on the Questionnaire Pivots on the Level of Risk Awareness of Artificial Intelligence Applications and the Pivots of the Scale of the Attitude towards Digital Culture according to the [College]Variable

Dimension	Variance Source	TSS	Degree of Freedom	Mean Squares	F Value	Significance Level
Risks of artificial intelligence applications related to the education process	Between Groups	14.814	3	4.938	.172	.915
	Within Groups	13189.112	459	28.734		
	Total	13203.927	462			
Risks of artificial intelligence applications related to students	Between Groups	6.475	3	2.158	.928	.427
	Within Groups	1067.033	459	2.325		
	Total	1073.508	462			
Risks of artificial intelligence applications related to students	Between Groups	.012	3	.004	.004	1.000
Risks of artificial intelligence applications related to data and information	Within Groups	403.984	459	.880		
	Total	403.996	462			
Risks of artificial intelligence applications related to ethics	Between Groups	.034	3	.011	.005	.999
	Within Groups	1023.145	459	2.229		
	Total	1023.179	462			
Risks of artificial intelligence applications related to scientific research	Between Groups	.551	3	.184	.119	.949
	Within Groups	708.412	459	1.543		

	Total	708.963	462			
Risk of artificial intelligence applications [as a whole]	Between Groups	7.176	3	2.392	.066	.978
	Within Groups	16578.643	459	36.119		
	Total	16585.819	462			
Cognitive Level	Between Groups	2.075	3	.692	.035	.991
	Within Groups	9113.195	459	19.854		
	Total	9115.270	462			
Psychomotor Level	Between Groups	3.718	3	1.239	.141	.935
	Within Groups	4024.839	459	8.769		
	Total	4028.557	462			
Affective Level	Between Groups	.152	3	.051	.036	.991
	Within Groups	647.637	459	1.411		
	Total	647.788	462			
Attitude towards digital culture [as a whole]	Between Groups	6.691	3	2.230	.084	.969
	Within Groups	12160.276	459	26.493		
	Total	12166.968	462			

*Significant at [0.05] level **Significant at [0.01] level

- There is no statistically significant variance between the responses of the study sample to the questionnaire pivots on the risk awareness level of artificial intelligence applications related to [the education process, students, data and information, ethics, scientific research] according to the [college] variable, as the [t] values were, respectively, statistically non-significant values. Researchers illustrate that by the similarity of circumstances, capabilities, and closeness of goals among faculty members of different specializations. In addition, those faculty members, with different theoretical and practical specializations, receive the same training courses and programs directed by the university to develop their skills and raise their efficiency in knowing the positives, risks, and negatives of artificial intelligence.

- There is no statistically significant variance between the responses of the research sample to the questionnaire pivots on attitudes towards digital culture [cognitive level, psychomotor level, affective level] depending on the [college]variable, as [t] values were, respectively, non-statistically significant values. The researchers illustrate that by indicating that the faculty members, participating in the study regardless of their experience and colleges, were equal in terms of their positive attitude towards digital culture and its various applications and their benefit from them in teaching, learning and evaluation processes, and the extent to which these applications contribute to achieving the teaching objectives and facilitating the educational process according to the changes of the era.

5. Conclusion

The current study tackled the concept of artificial intelligence, its importance and aims, the challenges and risks facing faculty members when using artificial intelligence applications, and the identification of digital culture, its importance and obstacles. The study concluded that faculty members at Imam Abdulrahman University have an average level of awareness of the artificial intelligence risks as a whole in relation to the pivots of: [education, students, data and information, ethics, scientific research]. The level of faculty members' attitudes towards digital culture in general was high, as it was compatible and consistent with reality. Faculty members at the university are the most using categories of digital culture applications. Thus, their attitudes are high at all cognitive, affective and psychomotor levels. This demonstrates their acceptance of digital culture and their desire to use its various applications, including artificial intelligence technology. The current study concluded that there is a strong relationship between faculty members' awareness of the artificial intelligence applications' risks at Imam Abdulrahman University and their attitudes towards digital culture and the use of its various technologies. There are also no statistically significant differences between the risk awareness level of artificial intelligence applications in relation to [the educational process, students, data and information, ethics, scientific research] according to the variable of [use duration of digital applications].Moreover, there are no statistically significant differences and variance among the responses of faculty members to the attitude towards digital culture [cognitive level, psychomotor level, affective level] according to the variable of [use duration of digital applications].

Identifying the relationship between faculty members' awareness of the artificial intelligence applications' risks and the attitude towards digital culture at Imam Abdulrahman Bin Faisal University, through a matrix of correlation coefficients between awareness of the artificial intelligence applications' risks [as a whole] and the scale of the attitude towards digital culture [as a whole]. There is no statistically significant variance and differences between the responses of the study sample to the questionnaire pivots of the awareness level of the artificial intelligence applications' risks in relation to [the educational process, students, data and information, ethics, scientific research] according to the variable of [gender].Furthermore, there is no statistically significant variance and differences between the responses of the study sample to the questionnaire pivots of the attitude towards digital culture [cognitive level, psychomotor level, affective level] according to the variable of [gender]. Also, it was concluded that there is no statistically significant variance between the risk awareness of artificial intelligence applications in relation to: [the educational process, students, data and information, ethics, scientific research] according to the variable of [college]. There is no statistically significant variance and differences between the responses of the study sample to the attitude towards digital culture [cognitive level, psychomotor level, affective level] according to the variable of [college]. The study concluded by presenting a number of recommendations and suggestions.

6. Recommendations and Suggestions:

1. Preparing a professional development plan for faculty members about the negative effects and risks of artificial intelligence that affect their academic, social and psychological performance.

2. Developing the digital culture of faculty members to support their positive attitude.

3. Directing faculty members towards constructing reliable digital websites to serve students and researchers.

4. Directing faculty members' attention to the psychological, social, and physical effects of excessive use of artificial intelligence.

5. Carrying out more in-depth studies on the risks of artificial intelligence in the areas of lack of privacy, security, ethics, cheating in exams, and plagiarism in research, which will give a clearer picture of the issue.

6. Providing guidelines for employing artificial intelligence for faculty members in the university.

7. Launching an Arabic teaching and learning platform for the university based on artificial intelligence to serve the educational process for beneficiaries of the university's services.

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