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Motivators and Barriers of Artificial Intelligent (AI) Based Teaching

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ABSTRACT

Purpose Purpose: This study attempts to identify and rank the factors that influence Malaysian educators' adoption of artificial intelligence (AI)-based pedagogical solutions. **Design / methodology / approach:** This study conducted pair-wise comparisons using a statistically significant sample of 218 Malaysian university professors. **Findings:** The findings demonstrate that schools must equip teachers with the resources, support, and recognition they need to adopt AI-based pedagogies. Furthermore, higher education institutions (HEIs) must offer their academic members adequate resources, including money and technological equipment. **Research limitations/implications:** Practically, this research highlighted that AI-based classroom solutions may be substantial in teaching. Practitioners can use the results of this study to enhance the teaching methodologies. While making the strategies to improve teaching among educational institutions, the results of this study are quite helpful for management. As this study reported the significant role of AI-based classroom among the educational institutions. **Originality/value:** This research is the original work that is based on the novel idea to contribute significantly to the literature. The relationship developed by this research are new and enhanced the knowledge of teaching with articfical intelligence.

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1. Introduction

Business, as usual, is evolving in various industries due to artificial intelligence (AI) improvements, including manufacturing, finance, retail, and medicine. Higher education technical developments may benefit students, professors, administrators, and institutions (Sun, Anbarasan, & Praveen Kumar, 2021). Artificial intelligence (AI) has many potential benefits for higher education, including but not limited to the following: enabling on-demand curriculum customization; facilitating personalized student engagement; enabling interactive teaching and smart content; improving learning outcomes; and reducing administrative workload. In recent years, AI has gained popularity in classrooms around the world. Educators today use AI in a variety of scenarios (AI). By 2022, there will be a 43% increase in students encountering AI (Malik, Tayal, & Vij, 2019). Governments and corporations are investing heavily in artificial intelligence in the classroom.

Malaysia's government wants to construct several national technological institutes, including various artificial intelligence (AI) facilities committed to educating (Chatterjee & Bhattacharjee, 2020), studying, and growing the area. As a result of these endeavors, HEIs may anticipate that AI will play a significant role in molding the future shortly (Sun et al., 2021). Educative and scholastic systems utilizing artificial intelligence (AI) have been developed and used in several nations. In Latin America, for instance, the Math Adaptive Platform is included in the national curriculum and delivers individualized training based on a comprehensive study of each student's performance (Alam, 2022). The Brazilian government developed Mec Flix, a video content distribution program, to help students prepare for standardized exams. For example, both IBM's Watson and South Africa's "Daptio" use advanced analytics to personalize instruction for instructors and students in Africa and other developing nations (Bin & Mandal, 2019). Recent research indicates that AI may enhance teaching and learning; hence, AI-based education is gaining momentum.

AI's recent healthcare, banking, manufacturing, and logistics achievements have received much academic and mainstream media coverage. Significant progress has been made in speech, image, and object identification due to machine learning algorithms, enhanced data processing technology, and corporate funding (Ren, Feng, & Jiang, 2022). Moreover, technology has enabled the creation of revolutionary innovations such as self-driving vehicles and voice-activated digital assistants such as Siri and Alexa, all of which have the potential to improve the lives of individuals significantly (Lin et al., 2022). Despite more than four decades of use, artificial intelligence (AI) has had a minor impact on schools. Proponents of educational technology and venture capitalists believe that the widespread use of cutting-edge AI techniques, such as "deep" machine learning, will have far-reaching consequences for the future of the educational system. This will likely occur frequently (Jung et al., 2021).

This study seeks to identify and rank the factors influencing Malaysian educators' adoption of AI-based pedagogical solutions. While academics have examined AI's reception in other settings, such as retail and financial services (including e-commerce), they have not yet examined AI's reception in educational settings. Therefore, the study's emphasis on how educators apply AI-based teaching methodologies has significantly contributed to the current body of knowledge. Theoretically and practically, the conclusions of this study are essential for strengthening the role of artificial intelligence in Malaysian educational institutions. The researchers must also adhere to the future directions of this research if they wish to contribute to the body of information and literature.

2. Literature Review

2.1 Artificial Intelligence

AI-powered computers may one day be able to imitate human intelligence (AI) (Weng et al., 2019). "artificial intelligence" (AI) refers to a computer's ability to "perform tasks by demonstrating intelligent, human-like behavior; and to behave logically by perceiving their surroundings and taking actions to achieve specified goals." Voice recognition, machine learning, and expert systems are a few domains in which AI has proven effective (Chatterjee & Bhattacharjee, 2020). As a result of the proliferation of popular video streaming services like Netflix and YouTube and navigational systems like Google Maps and Apple Maps, the number of people who interact with artificial intelligence has increased (Bag et al., 2021; Hwang et al., 2020). Teachers and researchers have recently taken an interest in artificial intelligence (AI) in the classroom because of the potential benefits it might bring to students' education and teachers' productivity (Bates et al., 2020; Guan, Mou, & Jiang, 2020; Luan et al., 2020). Educators are increasingly turning to AI-assisted instructional strategies while explaining the benefits of video games such as Pac-Man, Mario, and even Angry Birds to better educate their students. Teachers' perspectives on artificial intelligence (AI) are particularly significant because they are primarily responsible for integrating AI in schools (Chiu & Chai, 2020). This study aims to assist instructors at HEIs that apply AI-based pedagogical tools in bridging this gap by developing frameworks for limiting and promoting variables. The current study aims to fill in gaps in our understanding of how educators use ICT in the classroom by developing frameworks based on previous research.

2.2 Inhibiting Factors

Individual, divisional, and administrative variables may influence instructors' reluctance to use new instructional technologies (Zhang, Shankar, & Antonidoss, 2022). Internal and external obstacles prevent teachers from implementing digital technologies in the classroom. Without adequate financing, a proper ICT infrastructure, sufficient training, technical assistance, and a well-defined plan and policy, digital technology in the school may not be adopted (Alam, 2022). Teachers' lack of ICT ability, computer self-efficacy, motivation, and awareness may provide an internal barrier. Institutional and structural obstacles impede teachers' use of technology in the classroom (Luan et al., 2020). There is less pressure to deploy ICTs because the ROI for lowering teachers' workload is modest. Teachers' expertise, attitudes, and experiences impact the use of technology in the classroom. Researchers have demonstrated that teachers' negative attitudes and aversion to change substantially move whether or not they adopt technology and how they use it in the classroom (Bates et al., 2020). Teachers are pessimistic about adopting technology due to a lack of leadership or direction, exacerbated by faulty legislation and arbitrary methods of implementing technology via imprecise norms and procedures.

2.3 Motivating Factors

Several obstacles must be overcome before artificial intelligence (AI) can be successfully implemented in the classroom (Guan et al., 2020). Teachers are encouraged to employ technology in their courses, and pedagogical techniques may reduce some obstacles. Both internal and external stimuli are potential motivational triggers (Masters, 2019). It has been claimed that financial incentives, public acclaim, and career progression chances could inspire teachers to embrace ICT in the classroom. If educators are financially compensated for adopting new technologies, they will be more receptive to doing so (Holmes, Bialik, & Fadel, 2020). Using technology to enhance classroom instruction may make learning more engaging and productive, resulting in improved student results (Malik et al., 2019). Educators favor ICT-based teaching approaches due to their numerous advantages (Guo, 2020). Self-motivated educators employ many tactics and strategies to pursue greater levels of expertise.

2.4 *Conceptual Framework*

This study expands on past studies to identify a variety of enablers and obstacles to adopting AI-enabled education solutions among educators. Institutional, technological, and human constraints limit development. Our study found that caring about what others thought of us, obtaining academic incentives, and having an intrinsic desire to succeed were the factors most important for keeping us motivated. The framework is depicted in Figure 1.

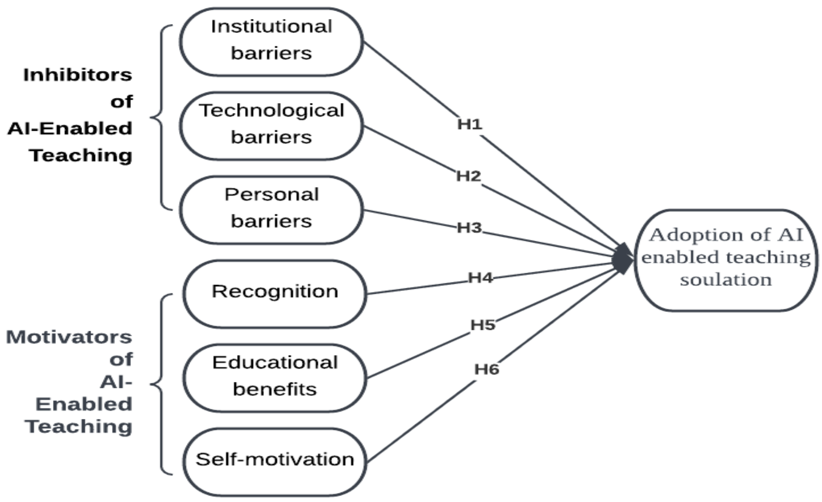

Figure 1: *Research Model*

Teachers may be reluctant to adopt new instructional technology for various reasons, some of which are more superficial than others (Masters, 2019). The lack of institutional support and resources necessary for teachers to apply AI-based teaching solutions has made it difficult for them to acquire traction (Holmes et al., 2020). When educators attempt to integrate technology into their lessons, they usually fail to owe to a shortage of resources (both financial and human). The university's report, "lack of resources" (AI) impedes instructors' efforts to integrate cutting-edge tools like artificial intelligence (Bag et al., 2021).

Despite possessing labs, the internet, computers, software, and hardware, many higher education institutions still struggle to give students current, relevant AI-enabled course materials. Teachers are understandably apprehensive about implementing new technology in the classroom because it typically results in an increased workload. The failure of educational technology may be attributable to a lack of communication between the concerned parties. Therefore, teachers must update their skill sets to integrate AI-enabled innovations into their curricula efficiently.

H1. *The technological barrier has a significant effect on AI-enabled teaching solutions.*

The "complexity" and "compatibility" of AI applications are two technical characteristics that help overcome technological limitations. Due to a lack of money and time, technology integration in the classroom is not always feasible (Weng et al., 2019). The terms "complexity" and "compatibility" denote, respectively, "the degree to which an innovation is seen as consistent with the adopters' job and beliefs" and "how difficult an invention is thought to be grasped" (Lin et al., 2022). Many educational institutions have been sluggish in adopting AI-based technologies for this reason. In his 2022 article, John emphasizes the importance of ICT compatibility in the classroom and other educational settings.

H2. *The institutional barrier has a significant effect on AI-enabled teaching solutions.*

Individual variations and teachers' natural skepticism and caution are obstacles to the effective use of ICT in the classroom (Jung et al., 2021). Implementing ICT in the classroom may be difficult if teachers lack confidence in their own use. Most teachers with fewer computer skills avoid using computers in the classroom. Concerning the decision to implement new technologies in the classroom (Bin & Mandal, 2019), teachers' degrees of comfort and apprehension are two factors that influence ICT adoption decisions (Alam, 2022). If required to employ computers in the classroom, students experience "computer anxiety" Some educators are up-to-date on AI-related classroom innovations, while the vast majority are not (Sun et al., 2021). Although many educators have a solid understanding of the fundamentals of information and communication technology (ICT), they may be hesitant to implement it in the classroom. Many teachers are cautious or even hostile to incorporating ICTs into their courses due to their own technological incompetence and worries about potential harm to their students. Some teachers may exhibit "innovation aversion." due to the difficulty and expense of learning to employ developing technology such as artificial intelligence.

H3. *The personal barrier has a significant effect on AI-enabled teaching solutions.*

Observing my colleagues successfully incorporate new technology into their lessons gives me optimism as a teacher. Monetary and non-monetary incentives can motivate instructors to use technology in the classroom (Malik et al., 2019). Teachers Linking teacher training with a more robust commitment to using cutting-edge technology may also increase ICT adoption in the classroom. If instructors received formal recognition for their work, they could be more eager to experiment with advanced classroom technologies such as artificial intelligence. Student and staff surveys demonstrate that teachers' social standing has increased due to technological developments (Chatterjee & Bhattacharjee, 2020). They are proud to be among the elite educators of the modern period, having made important contributions to their chosen field. Teachers are more likely to use AI-based solutions if they are made to feel respected and trusted.

H4. *Recognition has a significant effect on AI-enabled teaching solutions.*

When artificial intelligence is utilized in the classroom, teachers, and students benefit. Using AI in the classroom can increase the quality of instruction and the learning depth of each student. This breakthrough will enable educators to personalize their students' learning experiences using artificial intelligence (Sun et al., 2021). Educators who modify their teachings to the unique needs of their pupils through collaborative creativity may be more successful (Hwang et al., 2020). Students may have more engaging and thought-provoking conversations if artificial intelligence (AI) is utilized in the classroom. Teaching and learning solutions based on artificial intelligence (AI), such as gaming technology and simulations, may provide students with more engaging and effective learning methods. The adaptability and familiarity of these methods inspire optimism that they will improve pupils' capacity to learn.

H5. *Educational Benefit has a significant effect on AI-enabled teaching solutions.*

Professionally, professors may profit from experimenting with AI and other cutting-edge technologies (AI) (Bates et al., 2020). An individual's inner drives can be characterized by individual creativity, capacity for continuous learning, and professional advancement. One successful method for fostering original thought in the classroom is encouraging instructors to experiment with new, cutting-edge educational techniques (Chiu & Chai, 2020). Fostering students' motivation to continue learning throughout their lives could improve education. The personal motives of educators impact their usage of technology in the classroom (Zhang et al., 2022). Educators that utilize novel tactics and technology, such as artificial intelligence (AI), will have a competitive advantage (Ren et al., 2022). Such opportunities for self-improvement may benefit instructors in their quest for higher positions in the sector. This suggests they may be more open to incorporating AI-based educational solutions into their current pedagogical strategies.

H6. *Self-motivation has a significant effect on AI-enabled teaching solutions.*

3. Research Methodology

Quantitative research is the most effective method for examining causality, elucidating dependence, and validating concepts. Due to the vast number of variables that could influence the adoption rate of an AI-based learning and teaching system, quantitative research methodologies are the most appropriate for this examination. Due to its concentration on quantitative methods, the conclusions of this study make substantial use of mathematical and statistical tools. The sample framework was incapable of accommodating the unanticipated sampling procedures employed in the study; hence, the request was denied. This study's population comprises university employees, including professors. A "sample size" refers to the total number of pieces evaluated when discussing testing. The study's conclusions will have more credibility if they are based on information from a meaningfully-sized subgroup of the target population. Recommend a sample size of at least 200 individuals to obtain reliable findings from Partial Least Square-Structural Equation Modeling (PLS-SEM). Numerous experts advise selecting a sample size between 30 and 500 for an analytical survey to uncover simple errors as quickly as possible. This investigation will begin with the distribution of 150 questionnaires.

This research employs artificial intelligence as a teaching aid but is not responsive to human interaction. This study seeks to understand what inspires and dissuades individuals from using AI-enabled learning tools. The independent variables consist of five distinct components instead of the more conventional three components that make up each factor. The expressed intent of study participants to share their ideas online is the dependent variable. A Likert scale can measure the extent to which individuals agree with a certain statement or viewpoint. On a scale from 1 to 5, where 1 means strongly disagree, and 5 means strongly agree, the most favorable response would be a 4. Path analysis (or structural equation modeling) can find indirect effects by revealing mechanisms such as mediation (bootstrapping) and moderation (product indicator approach). As methods for validating hypotheses and refining models, Hair Jr, Howard, and Nitzl (2020). Both academic research and practical application now recognize its significance. Theory examinations are also crucial.

According to research, PLS solidity gives a more trustworthy and accurate evaluation of the relationships between variables than the covariance technique. Nonetheless, if the sample size is too small or if the data are not normally distributed, a PLS or SEM may be used instead. Smart PLS (Partial Least Squares, version 3.2.8) is used for statistical evaluation. The PLS software utilizes the Statistics Package for the Social Sciences (SPSS) for data collection (Statistical Social Science Package, version 25). After converting the dataset to CVS, we immediately began our Smart PLS investigation.

4. Data Analysis

Using SPSS 25, demographic data are evaluated to categorize responses, and factors are explored descriptively to facilitate further study. The data were analyzed using SEM and partial least squares (PLS-SEM). Small sample sizes and PLS-appropriateness SEMs for theory testing make them perfect for analyzing non-uniformly distributed data. We utilized SmartPLS3 and bootstrap sampling to test the hypothesis. Section A of the questionnaire contains a brief biographical sketch of each respondent. To obtain demographic information such as gender, age, and educational background, the respondent is given three questions.

Table 1

Demographics of the respondents

Construct		Frequency	Percent
Gender	Female	143	65.6
	Male	75	34.4
Education	Masters	197	90.4
	Doctorate	14	6.4
	Degree	7	1.8
Age	41-45	24	11.0
	36-40	111	50.9
	31-35	68	31.2
	26-30	15	6.9

The first section of the questionnaire collects participants' demographic information (see Table 1). It asked the visitor five questions about their gender, age, and educational background. 34.4 percent of those polled are men, while 65.1% of respondents are female. This shows that women make up the majority of educators. 50.9 percent of respondents are between the ages of 36 and 40, 11% are between the ages of 41 and 45, and 31.2% are between the ages of 31 and 35. In addition, 6.9% of respondents are between 26 and 30 years old. 90.4% of the population holds a master's degree, 6.4% have a Ph.D., and 1.8% hold a bachelor's degree.

According to Tavakol and Dennick, "Cronbach's alpha is a measure of internal consistency reliability based on equal indicator loadings" (2011). There exists a reliability estimate based on the intercorrelation of observable indicators. According to the researchers, "the reliability of a study's data is improved when Cronbach's alpha is greater than 0.70" (Tavakol & Dennick, 2011); conversely, "the reliability of the data is believed to be compromised when Cronbach's alpha is less than 0.60" The Cronbach's alpha for the constructs is presented in Table 2.

Table 2

Cronbach's Alpha

	Cronbach's Alpha	Number of Items
Adoption of AI-Enabled Teaching Solutions	**0.863**	**5**
Educational benefits	**0.844**	**3**
Institutional barriers	**0.878**	**3**
Personal barriers	**0.841**	**3**
Recognition	**0.802**	**3**
Self-motivation	**0.848**	**3**
Technological barriers	**0.850**	**3**

To fulfill, alpha must be at least 0.70, "while 0.600 was also deemed acceptable by other studies" (Tavakol & Dennick, 2011). Numerous academics believe a Cronbach's alpha of 0.701 is judged acceptable because it is greater than the cutoff value of 0.70. Consequently, it is plausible to assume that the measurements in this study are accurate and reliable.

As stated by academics, "including the indicators and structures to which they refer, a route model incorporates the measurement model." "Outer model is an alternative name for the PLS-SEM measuring model" (Hair Jr et al., 2020). "AVE and composite reliability ratings should be used to assess the convergent and discriminant validity of the measurement model" (Alarcón, Sánchez, & De Olavide, 2015). Numerous experts advocate that "external and cross-loadings are used to evaluate the indicator's dependability." Table 3 summarizes the construct reliability results.

Table 3

Construct Reliability

		Outer Loading	rho_A	Composite Reliability	Average Variance Extracted
Adoption of AI-Enabled Teaching Solutions	AITS1	0.770	**0.912**	**0.728**	**0.598**
	AITS2	0.827			
	AITS3	0.701			
	AITS4	0.802			
	AITS5	0.750			
Educational benefits	EB1	0.649	**0.899**	**0.926**	**0.863**
	EB2	0.811			
	EB3	0.858			
Institutional barriers	IB1	0.719	**0.859**	**0.888**	**0.616**
	IB2	0.771			
	IB3	0.878			
Personal barriers	PB1	0.847	**0.836**	**0.865**	**0.568**
	PB2	0.645			
	PB3	0.667			
Recognition	R1	0.818	**0.864**	**0.898**	**0.689**
	R2	0.618			
	R3	0.658			
Self-motivation	SM1	0.975	**0.870**	**0.895**	**0.633**
	SM2	0.870			
	SM3	0.634			
Technological barriers	TB1	0.626	**0.888**	**0.909**	**0.625**
	TB2	0.648			
	TB3	0.762			

Frequently, the outside loading size is cited as a measure of dependability. "With SmartPLS software 3.0, the conventional PLS method was used to calculate loadings, cross-loadings, composite dependability, and the average variation in time (AVE)," as advised by social scientists. In addition, "it is typical for a single item's loading to exceed 0.70. The outer loading should be at least 0.50, whereas the extracted average variance should be greater than 0.50."

Scholars say that "internal consistency dependability refers to the degree to which all items on a given subscale assess the same concept." Scholars propose using the Cronbach Alpha method to measure internal consistency and reliability. Scholars recommend, "To estimate manifest variable intercorrelations, this section employs indicators with identical outer loadings across all indicators." "In contrast, PLS-SEM examines the overall coherence of all the different indicators," as academics advocate.

The theoretical or conceptual foundations are included in the structural model of this paradigm. The structural model (also referred to as the inner model in PLS-SEM) has latent variables and their route connections. This study uses both the direct connection paradigm and the mediation model. Scholars indicate that "the predictive relevance of Q2, f2, and R2 values, as well as the significance of path coefficients, are crucial to the evaluation of structural models in PLS-SEM." According to experts, the estimation of path coefficients (i.e., structural model links) follows a PLS-SEM technique.

In the study's literature review, a total of six hypotheses were proposed. Statistically significant t-values are statistically different from 0; however, the degree of freedom, confidence interval, and directionality of the hypothesis has a considerable impact on this; so, the p-value is employed to assess the significance of the data paths." Scholars advocate using "PLS bootstrapping resampling with 1,000 bootstrap samples" to obtain statistical T-values for the data.

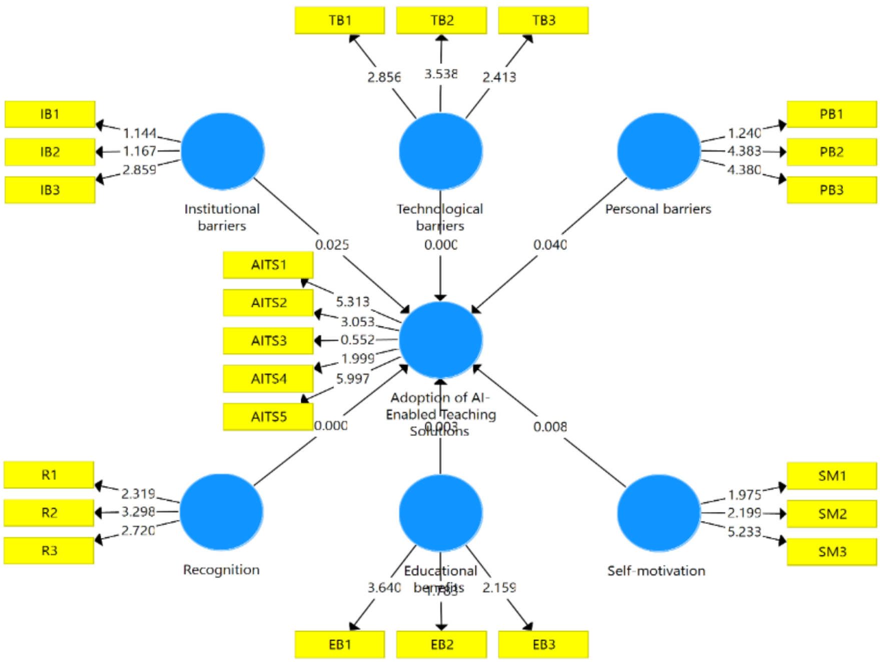

Figure 2: *Structural Modeling (P Values)*

P and T Values statistics in Table 4 and Figure 2 indicate "the strength of the relationship between the independent and dependent variables, while the p-value indicates the relationship's significance." Thus, Educational benefits -> Adoption of AI-Enabled Teaching Solutions (t= 3.019, p= 0.0030), Institutional barriers -> Adoption of AI-Enabled Teaching Solutions (t= 2.248, p= 0.025), Personal barriers -> Adoption of AI-Enabled Teaching Solutions (t= 2.057, p= 0.040), Recognition -> Adoption of AI-Enabled Teaching Solutions (t= 4.186, p= 0.000), Self-motivation -> Adoption of AI-Enabled Teaching Solutions (t= 2.675, p= 0.008), Technological barriers -> Adoption of AI-Enabled Teaching Solutions (t= 4.491, p= 0.000) is supported at 0.05 p-value.

Table 4

Results of hypothesis testing

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Educational benefits -> Adoption of AI-Enabled Teaching Solutions	0.190	0.178	0.063	3.019	**0.003**
Institutional barriers -> Adoption of AI-Enabled Teaching Solutions	0.132	0.145	0.059	2.248	**0.025**
Personal barriers -> Adoption of AI-Enabled Teaching Solutions	0.138	0.148	0.067	2.057	**0.040**
Recognition -> Adoption of AI-Enabled Teaching Solutions	0.236	0.232	0.056	4.186	**0.000**
Self-motivation -> Adoption of AI-Enabled Teaching Solutions	0.179	0.184	0.067	2.675	**0.008**
Technological barriers -> Adoption of AI-Enabled Teaching Solutions	0.310	0.293	0.069	4.491	**0.000**

Scholars advocate measuring the predictive power of a model by the squared correlation between actual and predicted values of an endogenous component's coefficient of determination. "(R2) was deemed accurate when its value reached 1.5%." Alternatively, "three levels of structural model quality: significant (0.26 and 0.67), moderate (0.13), and weak (0.13 and 0.35)" In this experiment, the traditional PLS approach was used to create the main effect model. Figure 3 and Table 5 depict the findings of the R-square test.

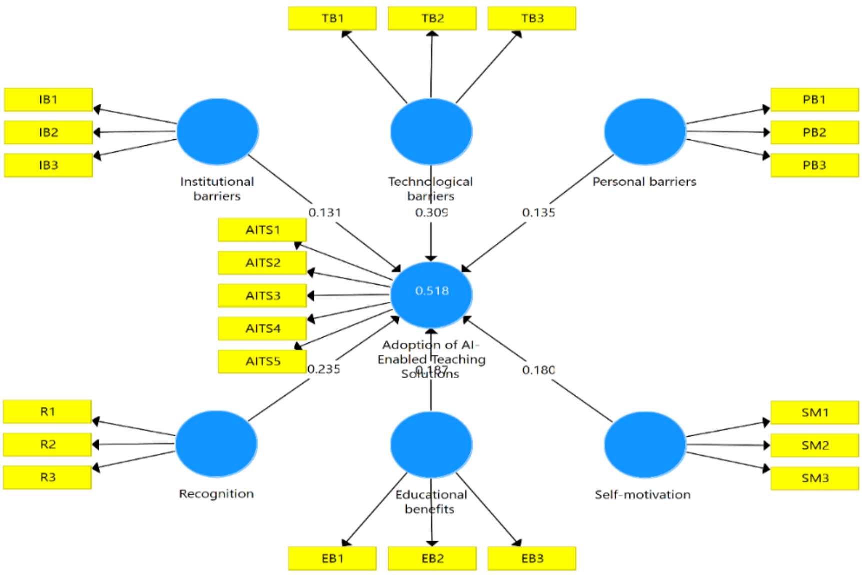

Figure 3: *R-square*

Table 5

R Square

	R Square	R Square Adjusted
Adoption of AI-Enabled Teaching Solutions	0.518	0.504

5. Discussion and Conclusion

According to the study's conclusions, a lack of resources and time inhibits using AI-enabled teaching approaches in higher education. To use AI-enabled technologies in classrooms, instructors require resources and time that their institution can not provide. According to the findings, a lack of equipment and infrastructural resources impedes the use of cutting-edge educational innovations. There are a variety of obstacles to adopting new technologies in higher education, including a lack of resources and time. College and university faculty members are assigned various duties, including instruction, research, and administration. Due to their busy schedules, these individuals have limited time to study artificial intelligence and other technical advancements (Bag et al., 2021). Adopting new educational tools is challenging for teachers who are already overworked. Compatibility, a technological obstacle, prevents other educators from incorporating AI into their teaching strategies. Students and instructors may reject pedagogical practices that are incompatible with artificial intelligence. The compatibility of technology with current practices significantly impacts how instructors integrate ICT (Weng et al., 2019). Individuals' lack of computer self-efficacy, computer anxiety, and inventiveness were found to be less significant than organizations or technologies. Like those stated, computer self-efficacy and stress may affect ICT adoption (Jung et al., 2021). However, the personalities of teachers are not given significant weight by the outcomes of this study.

According to the study, instructors in higher education are more likely to employ AI-based teaching solutions if their institutions recognize their efforts (Lin et al., 2022). Providing educators with monetary or non-monetary rewards for their work could encourage their usage of instructional technologies such as artificial intelligence. If AI-based teaching solutions are linked to professional development, educators are more likely to use them. Additionally, instructors' enthusiasm to adopt new instructional technologies may increase if they receive promotions or positive evaluations (Bin & Mandal, 2019). As a result of AI-based solutions, educators may witness an improvement in the quality of their training. When utilizing AI-enabled solutions, teachers benefit from personalized learning content tailored to their students' needs. By integrating AI into their teaching practices, such as material preparation, assignment design, and assessment development, teachers may free up time for high-quality education. As a result, higher education instructors have embraced AI-based teaching innovations (Alam, 2022). According to studies, self-motivation is the least influential factor in university instructors' adoption of artificial intelligence (AI). Teachers and administrators who are overworked are less likely to be willing to experiment with new technologies. They place greater importance on public recognition and educational benefits than personal development.

Budget allocation for acquiring innovative instructional technologies (Sun et al., 2021). In addition to virtual reality and 3D printing, other cutting-edge technologies include artificial intelligence and 3D printing. As long as the NEP-2020 draft is not finalized, higher education institutions may continue to employ AI-based teaching and learning solutions (Malik et al., 2019). In this light, the findings of this study have significant implications for higher education institutions. Due to a lack of finance or other constraints, numerous educators cannot experiment with new technology, such as AI-based teaching approaches. Institutions must provide sufficient funding for instructional technology development (Chatterjee & Bhattacharjee, 2020). Through financing programs or other incentives, teachers may be incentivized to utilize innovative and novel teaching methods.

Second, time constraints inhibit teachers in higher education from utilizing AI-based teaching solutions. Educators must expend more time and energy when using AI-based instructional technologies. In other words, schools should make an effort to offer sufficient time for teachers to experiment with fresh instructional strategies. The more administrative duties that can be eliminated, the better. Teachers who have not received formal technical training may observe AI-based teaching strategies at workshops hosted by educational institutions. This will encourage them to experiment with other instructional strategies. As a final point, schools must acknowledge the work of teachers who use cutting-edge technology, such as artificial intelligence, to develop innovative teaching methods (AI). Rewarding your employees with an incentive, award, or performance credit is an excellent method to demonstrate your appreciation for their efforts. This study's conclusions will impact those that develop AI-based educational systems. It is challenging for educators to invest additional time and funds to ensure that their instructional materials are compatible with AI (Bag et al., 2021; Weng et al., 2019). Therefore, developers must provide solutions that are compatible with instructors' current work styles and can be easily incorporated into their teaching strategies. Due to the significance of enhancing training quality, developers must ensure that AI-based teaching solutions aid teachers.

6. Implications and Future Directions

The current research has contributed exceptional findings to the body of knowledge. This research establishes novel relationships in the literature. Firstly, the literature indicates that technological barriers substantially impact AI-enabled education solutions. Secondly, the literature suggests that institutional barriers substantially impact AI-enabled education solutions. Thirdly, the literature shows that human barriers substantially impact AI-enabled teaching solutions. In addition, the literature indicates that recognition has a substantial impact on AI-enabled education solutions.

Similarly, the literature reports that educational benefit has a substantial impact on AI-enabled teaching solutions. Lastly, the literature indicates that self-motivation substantially impacts AI-enabled teaching solutions. In this way, this discovery has theoretical relevance to the existing body of knowledge.

Due to AI technology, the study anticipates a significant transformation in higher education. There are numerous ways in which Artificial Intelligence (AI) has the potential to transform education. This involves incorporating new teaching and learning technology, such as artificial intelligence (AI). This study aims to identify the primary challenges and motivators that influence the intent of Malaysian higher education professors to implement AI-based teaching and learning solutions. Utilizing the AHP approach, researchers ranked motivating and inhibiting factors in order of importance. Two aspects influence AI-based education solutions: institutional impediments and public awareness. Overall, the study's findings show the necessity to provide teachers with the necessary resources to implement AI-based instructional practices. The usage of general ICT in the classroom has been researched in the past, but instructors' acceptance of AI-based teaching solutions has not been investigated. Despite the extensive study conducted in other fields, researchers have not focused much on the acceptability of AI-based educational solutions. It is now possible for professors and lecturers in higher education to utilize AI-based teaching approaches, which is a substantial addition to the corpus of knowledge in this field. Researchers have also examined the obstacles and motivators that prevent teachers from utilizing AI-enabled teaching strategies.

Despite the efforts taken to fill current literature gaps, additional research is necessary. This study could be developed numerous ways to include more components and sub-dimensions. Likely, the factors driving the adoption of AI-enabled education solutions in Malaysia will vary often. Future studies may produce a more comprehensive model of components to address this issue. Using the AHP approach, a conceptual rating scale was employed to compare two variables side-by-side. Care must be used while evaluating the relative weights of components since a conceptual scale may result in bias. AHP was utilized to establish the relative importance of the several elements influencing the decision of whether or not schools should implement AI-based teaching solutions. Future research may apply multiple regression analysis and structural equation modeling to explore these characteristics' influence on teachers' actual use behavior in AI-based teaching approaches. Studies of instructors' opinions of AI-based teaching approaches that use larger, more diverse samples may reveal statistical significance. The subsequent is a potential path of action.

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