AIUB Journal of Business and Economics [AJBE]

Volume 20, Issue 1, July 2023 Pages 90-101

Research Article

ISSN: 1683-8742 (PRINT) 2706-7076 (ONLINE) Homepage: https://ajbe.aiub.edu

Adoption of AI-Powered Web-Based English Writing Assistance Software: An Exploratory Study

Ragib Intiser[1], Mehzabul Hoque Nahid[2]*, Md. Aftab Anwar[3] and Rezbin Nahar[4]

[1234] Faculty of Business Administration, American International University-Bangladesh (AIUB)

***Correspondence:** mehzab.nahid@aiub.edu

Abstract

Purpose of the Study: This research paper examines the usage of web based digital writing assistant software amongst the undergraduate students of private universities in Bangladesh. To examine the effects of different factors in students' adoption and usage of digital writing assistant software, this study applied Unified Theory of Acceptance and Use Technology (UTAUT) model.

Methodology: The study used UTAUT model containing 8 latent variables (self-efficacy, performance expectancy, effort expectancy, social influence, facilitating condition, satisfaction, hedonic motivation, price value, adoption intention, and adoption behavior) and a total of 25 items in those variables. Through online questionnaire distribution, this study has collected and analysed 559 data. The research employed deductive approach and structural equation modelling (SEM) method for data analysis.

Findings: The results shows that the factors that impact on students' behavior intention to use of digital writing assistant are performance expectancy, price value, hedonic motivation, effort expectancy, and facilitating condition, where as social influence and facilitating conditions does not have significant influence on behavioural intention. This study also found the significant impact of facilitating conditions and behavior intention on actual use of the software.

Implication: This study will help to understand students' usage of such software and how academic institutions would be able to incorporate such services for students and academicians. Developers of such software can also identify the necessary features and incorporate them for convenient usages by the students. Authority and faculty members of different institution can identify the factors that enable them to incorporate such technology in the academics that would benefit both the teachers and students.

Limitation and Future Direction: This study has several limitations such as time constrains, financial factors, responses of respondents, etc. Some moderating variable such as gender, field of study, etc can be considered assessing the behavioral intention and actual usages of the software. Future research may also conduct to assess a comparative scenario between public and private universities in Bangladesh.

Article History:
Received: 1 June 23
Accepted: 30th June 23
Online: 31st July 23

Keywords:
Artificial Intelligence,
Web-Based Assistance,
Undergraduate Students,
Private University,
UTAUT Model

1. Introduction

New technology has a significant impact on improving, easing, and transforming how people live in many areas, such as education, communication, business, and health. Therefore, different educational changes have stressed the need to use and incorporate new technology in various aspects of education. Acclimatization to the use of new technology like AI-Powered Web-Based English Writing Assistance Software (EWAS) within lessons is extremely important in this digital age. The goal of using information technology (IT) in classrooms is to increase program adaptability and keep students engaged by making them participate actively in the whole learning process. AI-Powered Web-Based English Writing Assistance Software such as Grammarly and quillbot is one of the many options available to achieve this(Fitria, 2021).

Not all the people around the globe speak English as their first language and thus they face difficulties in spelling proper English words and maintaining proper grammar while writing or speaking certain sentences. Spelling and use of proper grammar are paramount when producing quality writings otherwise it might create confusion and audience might not be able to capture what the writer is trying to present and be left at guessing. Maintaining proper grammar, punctuation, proper tense is difficult and time consuming. That is why there is AI-powered writing assistant software available that enables a writer to decrease overall time spent on maintaining proper grammar and spelling. These AI-powered tools use machine learning algorithms to detect any mistakes that the writer might have made in their writing and suggest proper spelling and sentences to correct them. Writing is a challenging skill, because it requires a lot of cognitive and language skills that make it an arduous task. Writing is also one of the two productive skills along with speaking that a learner needs to master to achieve the goal of having communicative competence(Fitria, 2021).

The most fundamental writing skill requires the ability to understand, grasp, and convey a concept in a paragraph or essay. Moreover, the purpose of writing is to communicate ideas, rather than showing proficiency in the use of the rules of spelling, punctuation, and grammar. Many students struggle to succeed in their studies in Bangladesh's diverse higher education system due to language barriers. Students need to use grammar correctly and effectively to express their ideas and perform better in their studies. Their academic performance suffers if they fail to follow the rules and forms of grammar. Both students and institutions recognize the gap in students' grammar skills and expect Academic Learning Centers (ALCs) to help them improve it. However, this expectation to correct grammar errors goes against the anti-proofreading policies that ALCs have and is often impractical due to limited time and a focus on more important skills (O'Neill and Russell, 2019). This can cause conflict between the Academic Learning Advisor (ALA) and the student with negative consequences for both. Students' communication is hindered by grammar problems in the short term and their language proficiency is not improved in the long term, as they do not get the grammar feedback and teaching they need. ALAs also feel dejected with their own performance for two reasons. Firstly, they failed to met the students' expectations and needs and secondly, they failed to achieve the main goal of the ALC, which is to help students to develop their academic literacy skills.

Thirty million individuals are assisted by a digital writing assistant that enables them to write more simply and effectively, avoiding redundancy, poor grammar, and inappropriate tone, to develop good communication. Some web-based learning tools that use AI technology are being used with a clear aim to enhance educational help and support for both teachers and students. Web-based English writing software provides more options and convenience in learning at a lower price. As a result, this software is widely recognized as a powerful technological tool that improves the quality of teaching and learning. However, new technological platforms, such as English writing assistance software, have offered helpful tools for contemporary education, the success of technology adoption has always depended on the users' views and satisfaction (Gunasinghe, Hamid, Khatibi, & Ferdous Azam, 2020). Usually, web-based English writing software users are of three types: administrators, instructors or lecturers and students. However, in Higher Education Environments (HEIs), lecturers are seen as a key factor that influences the success of such system spread, since their abilities, attitudes and knowledge about system use would determine system diffusion (Gunasinghe *et al.*, 2020). Previous research has focused primarily on this population of some Asian countries students (Andina, Dewi and Cahyono, 2019a). But, very

little research has been done on the population of Bangladeshi private university students. In a different study on students' adoption of AI-technologies in academic purposes, researchers have found satisfaction levels to have significant effect on behavioral intention(Emon *et al.*, 2023). Hence, the main purpose of this study is to identify factors that influence on students' behavioral intentions to uses AI-Powered Web-Based English Writing Assistance Software (EWAS) as well as actual usages. The private University scenario in Bangladesh has seen an incredible change since its days of commencement in the 1990s. An increasing number of universities in this country are striving to offer the best possible programs to prepare the youth for the demanding and challenging future ahead. But many students are still struggling with improving their English proficiency as their medium of instruction and communication is English, except who passed from English medium institution. Rest of them tremendously suffers from, speaking, writing and expressing cognitive analysis through appropriate English write-up. Hence, many students are trying to use AI English correction tools for their academic write-up.

After the COVID-19 pandemic hit the country, all the educational institutions got shut down from March 2019. The lockdown spanned about 18 months and that caused a big loss for both the students and the institutions. To cope up with this massive gap, a lot of the institutions employed online classroom experience. Where the education that was supposed to be delivered via physical classroom was delivered online instead. Previously most of the institutions were not familiar with such an approach and were not certain about the outcomes it would provide. It was at that time that many online services were developed and were introduced to education as well. In a book published in 2021, it has recorded a total sum of public universities in Bangladesh to be 49 and a sum of private universities to be 105 (Kabir and Chowdhury, 2021). However, despite having so many universities, Bangladesh was unable to climb up the ladder as being one of the top universities in East-Asia. Vice-chancellor of BRAC University, Prof. Vincent Chang, highlighted lack of investment to be the reason behind this failure as East-Asian economies have transitioned to low wage manufacturing economies to diversified knowledge-based economies(Dowland, 2022). Instructors check several aspects when checking scripts of the students and a lot of the times they do not have the flexibility to focus on the whole script to check all the spellings, grammars, punctuations, and other errors and so students does not receive the entirely justified result. This hinders the improvement on building the proper structure, spelling, grammar of the students(O'Neill and Russell, 2019). In such cases, writing assistant software can assist with improving clarity, confidence, proper spelling, grammar, and punctuation that instructors might overlook due to the time-consuming nature of checking every single mistake on grammar, punctuation, and spelling. Such a software is Grammarly that claims that it not only assists with maintain grammar, punctuation, and spelling, but also it provides with appropriate definition to why such is the case, and it also enables the user to use synonyms of a word to change the repetitiveness of a word or sentence and remove plagiarism as well.

This research attempted to identify the acceptance of English writing software in private university students of Bangladesh. There is minimal amount of study conducted on English writing software, and the ones that were conducted are limited to country or area. With the rapid development of many artificial intelligence-based services, it is paramount that it is identified that the acceptance of such technologies is prime. Since 2008, Bangladesh has embarked on a mission to transform the nation into a digitalized one. Since then, many technological innovations and adoptions have taken place. Educational institutions are responsible for preparing the students with proper knowledge to continue and adapt the digitalization. Hence, it is essential to ascertain the acceptance level of a particular technology among students before deciding to either persist with its utilization or discard it.

2. Literature Review

There are several models that have been created to evaluate user acceptance of a technology and their desire to utilize such technologies. Technology acceptance model (TAM) (Davis, Bagozzi and Warshaw, 1989), technology acceptance model 2 (TAM2) (Venkatesh *et al.*, 2003), theory of reasoned actions (TRA) (Fishbein, 1979), Theory of planned behavior (TPB) (Chau and Hu, 2001; Ajzen, 2020) all these enables to understand user acceptance of a technology. The stated models along with other models such as, combined-technology

acceptance model and theory of planned behavior (C-TAM-TPB), diffusion of innovation theory (DOI), social cognitive theory (SC), motivation model and model of PC utilization are capable of explaining significantly more of user intent to utilize an information technology system developed unified theory of acceptance and use of technology (UTAUT) to provide a unified view(Venkatesh, Thong and Xu, 2012). The UTAUT model has a noteworthy characteristic in that it demonstrates a substantially greater ability to explain variation in use behaviour compared to other models that have so far been unable to attain such a level of explanation (Birch and Irvine, 2009; Venkatesh, Thong and Xu, 2016; Dwivedi *et al.*, 2019). UTAUT model is considered to be more efficient, and it is still used due to its higher explanatory power compared to other models(Taherdoost, 2018). UTAUT is the most popular model in the area of technology acceptance, with an emphasis on technological elements for effective information system adoption including AI-technologies (Almaiah *et al.*, 2022; Emon *et al.*, 2023). Therefore, for this research, UTAUT model was chosen to explain the factors that influence the use of AI-powered web-based English writing assistant software.

Performance Expectancy (PE): Performance expectancy is defined as, "the extent to which a technology benefits the user when performing a particular activity"(Venkatesh *et al.*, 2003). Performance expectancy is one of the four core constructs of the UTAUT model. A recent research has shown that there is a favorable correlation between "Performance expectancy" and users' intents to use web technologies to improve their English proficiency(Andina, Dewi and Cahyono, 2019a; Emon *et al.*, 2023). In the context of this study, it is expected that if the users find the system improve their task performance, then they are more likely to use and adopt the system. Hence, the following hypothesis is developed:
H1: Performance expectancy has a positive effect on the behavioral intention to use EWAS

Effort Expectancy (EE): Definition of effort expectancy is, "level of effort a consumer thinks a specific task will require" (Venkatesh, Thong and Xu, 2012; Escobar-Rodríguez and Carvajal-Trujillo, 2014). If users see the ease of use of EWAS tools and the little effort required to use them, their likelihood of adopting these tools increases. Recent study findings indicate a positive association between "Effort Expectancy" and users' intentions to use web technologies to improve their English proficiency (Tan, 2013). Hence, the following hypothesis is developed:
H2: Effort expectancy has a positive effect on the behavioral intention to use EWAS.

Social Influence (SI): Social influence is defined as, "extent that consumers feel other people think they ought to be using a specific technology"(AlQudah, 2015).The results of a research suggest that there is a correlation between "Social Influence" and users' intents to make use of technology to enhance their English language skills (Andina, Dewi and Cahyono, 2019a, 2019b). That means, external pressures exerted by the surrounding environment on people, potentially influencing their perceptions and behaviour in relation to adopting technologies to improve their language proficiency. These pressures might stem from the thoughts and perspectives of friends, family, and superiors. It is plausible that effects of social influence may vary from country to country, culture to culture which is why some studies have observed direct impact of this construct and some have not. As a result, this study puts forward the following hypothesis.
H3: Social influence has a positive effect on the behavioral intention to use EWAS.

Hedonic Motivation (HM): Hedonic motivation had positive influence on determining individual's behavioral intention in a study on measuring people's acceptance of bicycle sharing system(Chopdar, Lytras and Visvizi, 2022). There is a limited study on the effects of hedonic motivation on behavioral intention in digital writing assistant context. Many have defined hedonic motivation in their own way. In the words of a famous researcher, hedonic motivation is, "an intrinsic motivator associated with fun, pleasure or enjoyment derived from the use of a technology"(Venkatesh, Walton and Thong, 2012; AlQudah, 2015).The research findings suggest a favorable correlation between "Hedonic Motivation" and users' intends to use AI-powered solutions, such as Grammarly(Suki and Suki, 2017) and ChatGPT(Emon *et al.*, 2023), for the purpose of enhancing their writing productivity. Therefore, the present research attempts to examine the following hypothesis:
H4: Hedonic motivation has a positive effect on the behavioral intention to use EWAS.

Price Value (PV): Researchers have conducted a study on adoption of lecture capture system and have found that price have a positive impact on student's behavioral intention (Farooq *et al.*, 2017). There is a lack of study of effects of price on behavioural intention in English digital writing assistant software for private students of Bangladesh. Researchers have provided the definition of price value as, "a cognitive trade-off by consumers between the perceived benefits of a technology and the perceived costs for using them" (Venkatesh et al., 2012). It is an overly critical factor that determines whether the user will accept or reject the technology (Venkatesh et al., 2012). Price can be either the money paid, or the sacrifices made for something, depending on how much it is worth compared to how much it costs. Nonmonetary expenditures, such as time and effort expended, are connected to the value specified as return(Huang and Kao, 2015).Research on the adoption of Artificial Intelligence (AI) for academic purposes has shown that the perceived value of pricing positively influences users' behavioral intention to use AI technology for teaching and learning (Alhwaiti, 2023). Therefore, the present research attempts to examine the following hypothesis:
H5: Price value has a positive effect on the behavioral intention to use EWAS.

Facilitating Condition (FC): Facilitating condition refers to, "a user's perception of the disposable resources and support when performing a task" (Venkatesh et al., 2012). A research has showed that facilitating condition had significant impact on customer's behavioral intention and usages (Venkatesh et al., 2003). The study's findings suggest a favorable correlation between the "Facilitating Condition" users' intentions to use technology, and the actual adoption of web-based technologies for enhancing their English writing proficiency (Tan, 2013). It is indisputable that the use of EWAS technologies requires a certain set of expertise, resources, and technological infrastructure, which are often not readily available to end-users without cost. Therefore, it is anticipated that these external resources will drive end-users to embrace the EWAS system. Consequently, the following hypotheses are developed:
H6: Facilitating condition has a positive effect on the behavioral intention to use EWAS.
H7: Facilitating condition has a positive effect on the Actual adoption to use EWAS.

Behavior Intention (BI) and Actual use or Adoption behavior (AB): Behaviour intention is widely recognized as a proximal determinant of use behaviour, providing insight into an individual's inclination to engage in certain behaviour. Behaviour refers to the overt and visible reaction shown by an individual in a certain circumstance, specifically in relation to a particular objective. There exists substantial data that supports the notable impact of Business Intelligence (BI) on the adoption and utilisation (AU) of information technology, as shown in many research (Venkatesh, Thong and Xu, 2012). The application of this concept has lately been expanded to include the field of AI utilisation (Andrews, Ward and Yoon, 2021). Therefore, the present research attempts to examine the following hypothesis.
H8: Adoption intention has a positive effect on the Actual adoption of EWAS.

3. Methodology

The current research adopted quantitative research technique, and a self-administered questionnaire was created in Microsoft Forms, and was distributed online to the target population. The target population of the study is the undergraduate students of private universities in Bangladesh. The sampling frame is students who are registered in Spring 22-23 semester in particular five departments. The study used UTAUT model containing 8 latent variables (self-efficacy, performance expectancy, effort expectancy, social influence, facilitating condition, satisfaction, hedonic motivation, price value, adoption intention, and adoption behavior) and a total of 25 items in those variables. The research adopted 5-point Likert-type scale where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree". In the first section of the questionnaire demographic questions were asked such as, discipline of the respondents, current location, gender, age, and internet usage experience. A totaled of 700 questionnaire were distributed, from the distributed questionnaire, a total of 559 data were collected. The response rate is 79.85%. The respondents were the students of five private universities of spring 2022-2023 semester that spans from January to May, 2023.

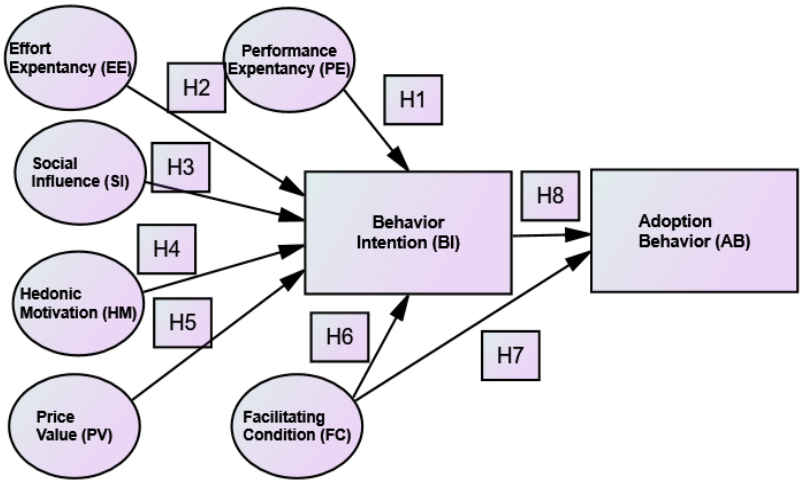

Figure 1: Conceptual Framework of the Research

This research adopted purposive sampling technique where respondents are using AI-powered web-based English writing assistance software for their academic purpose. The study has clear intention to collect data from specific group of people who are using AI-powered web-based English writing assistant software that is why the study employed purposive sampling technique. As the study is on AI-powered web-based English writing assistant software by the private university students of Bangladesh, as well as in the private universities, the medium of communication being English and the students are required to complete various tasks in English in which they take assistance of such software. To ensure the validity of the questionnaire, before the distribution of questionnaire, it was checked by selective faculty members to improve the quality of the questionnaire and assess the content validity of the research instruments. To analyze the reliability of the questionnaire, a reliability test was conducted using Cronbach's alpha. Convergent and discriminate validity was analyzed using Average variance extracted, outer loading and Fornell-Larcker criterion. The main path analysis was conducted with structural equation modeling. The technique of Partial Least Square based structural equation modeling (PLS-SEM) was employed to examine the association among the latent variables. The software used for the analysis is SmartPLS 4.0.

4. Results and Discussions

Two different types of data have been collected. The first part of the data resembles the demographics of the respondents in which it has been found that majority of the respondent were males and majority of them were at age below 25. The vast amount of the respondents has experience using internet and computer for 2 or more years. All the data regarding the demographics of the respondents is represented in table 1.

Table 1: Respondent's demographics

Characteristics	Values	Frequency	Percentage (%)
Age	Below 25	490	87.66%
	25 or above	69	12.34%
Gender	Male	405	72.45%
	Female	154	27.55%
Discipline	Business	239	42.75%
	Engineering	205	36.67%
	Science	91	16.28%
	Arts and Social Science	20	3.58%
	Economics	4	0.72%
Experience	2 or more years	468	83.72%
	Less than 2 years	91	16.28%

From the collected data, it has been observed that 40 respondents have said that they think all 6 of the mentioned features were most important, 38 of them thinks 5 of the mentioned features are important, 71 of them thinks 4 of the features are the most important, 101 of them have chosen 3 of the features to be most important to them, 73 of the people have said that 2 out of 6 features is most important according to them, and 236 of them have picked one of the feature to be most important.

Reliability Analysis

Before moving towards hypothesis testing, reliability analysis was conducted for the variables. For this, Cronbach's alpha and composite reliability have been assessed and the results are shown in table 2. Cronbach's alpha was higher than 0.70 ($\alpha > 0.70$) for all the variables. Which means that all the values are above the acceptance score for Cronbach's alpha and thus internal consistency between the items are high (Hair *et al.*, 2010; Hair Jr *et al.*, 2017). In the composite reliability test, it has been found that all the values are well above 0.70 (CR > 0.70) which is within the acceptance margin (Hair Jr *et al.*, 2017; Hair and Alamer, 2022). Hence it is proved that internal consistency between items is high.

Table 2: Reliability Test Results

Constructs	Cronbach's Alpha (α)	Composite reliability (CR)	Average Variance Extracted (AVE)	No. of Item
Performance Expectancy (PE)	0.819	0.826	0.734	3
Effort Expectancy (EE)	0.810	0.813	0.726	3
Social Influence (SI)	0.871	0.892	0.793	3
Hedonic Motivation (HM)	0.855	0.856	0.776	3
Price Value (PV)	0.830	0.844	0.745	3
Facilitating Condition (FC)	0.839	0.846	0.676	4
Behavioral Intention (BI)	0.850	0.851	0.769	3
Adoption Behavior (AB)	0.848	0.860	0.767	3

Convergent and Discriminant Validity

Table 2 displays the Average Variance Extracted (AVE), which was used to assess the convergent validity. According to researchers, the acceptable score for AVE is higher than 0.5 (Hair *et al.*, 2010; Hair Jr *et al.*, 2017) From our findings, it can be observed that AVE score for all the constructs is well above the acceptance score of 0.50 (AVE > 0.50). For discriminant validity, it has been shown by researchers that the square root of AVE of a construct should exceed the correlations between that construct and any other construct(Fornell and Larcker, 1981). The table 2 represents discriminant validity test results. Table 3 presents which web based digital writing assistant software the students had experience with and the feature of software. Table 3 represents the "Grammar correction" have been chosen as the most important feature for a digital writing assistant software, followed by spelling check and then paraphrasing to be the most important feature that digital writing assistant should offer. The table also mentioned that "Citation generating" software has the least feature included by the developer. The table also presents students mostly experienced with "Grammerly" and least experienced with "Ryter".

Table 3: Important features and software experience

Title	Values	Frequency	Percentage (%)
Feature	Grammar correction	409	29.24%
	Spelling check	320	22.87%
	Paraphrasing	248	17.73%
	Plagiarism check	180	12.87%
	Summarizing	163	11.65%
	Citation generating	79	5.65%
Software Experience	Grammerly	320	27.03%
	Quillbot	289	24.41%
	Office 365	281	23.73%
	Google Docs	245	20.69%
	Wordtune	12	1.01%
	Pro-writing Aid	8	0.68%
	ChatGPT	1	0.08%
	Ryter	1	0.08%
	Never used any	27	2.28%

Hypothesis Testing:

The model consisted of 6 exogeneous variables and 2 endogenous variables. The model can explain the good amount of variance between the dependent and independent variables. In total there have been 8 hypotheses that have been developed.

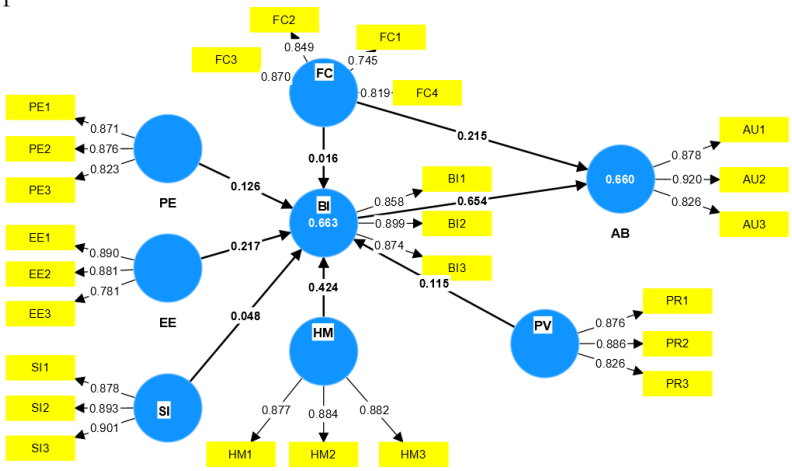

Figure 2: Structural Model of the Research

Figure 2 demonstrate hypothesized path model of the research framework using SmartPLS. Table 4 presents path coefficients of the model, which highlights the hypothesized paths, coefficients, p-values, and the test results. The model shows fit indices results as follows: $\chi 2$ = 1652.518; NFI= 0.834, the results support the threshold for model fit.

Table 4: Hypothesis Testing

Hypothesis	Constructs	Path Coefficient	p-values	Remarks
H1	PE -> BI	0.126	0.027	Supported
H2	EE -> BI	0.217	0.000	Supported
H3	SI -> BI	0.048	0.266	**Not Supported**
H4	HM -> BI	0.423	0.000	Supported
H5	PV -> BI	0.115	0.004	Supported
H6	FC -> BI	0.017	0.793	**Not Supported**
H7	FC -> AB	0.215	0.000	Supported
H8	BI -> AB	0.653	0.000	Supported

***Significant at level 0.05

The significance tests for the structural model parameters are used as the basis for accepting or rejecting the hypotheses proposed. In path analysis, performance expectancy (PE) had the most effect on behavior intention (BI) as can be observed ($\beta = 0.126$, $p < 0.05$) supporting H1. In H2 where it was stated that effort expectancy (EE) has a positive effect on behavioral intention (BI), the hypothesis was supported ($\beta = 0.217$, $p < 0.05$). Highlighting H3, that is social influence (SI) did not have significant positive impact on behavioral intention (BI) ($\beta = 0.048$, $p < 0.05$), where path coefficient is less than p-value 0.05, that is hypothesis is not supported. Hypothesis H4 and H5 presents consecutively that there is significant effects of hedonic motivation (HM) and price value (PV) on behavioral intention ($\beta = 0.423$, $p < 0.05$, and $\beta = 0.115$, $p < 0.05$, respectively). Hence, both H4 and H5 are supported. In H6, facilitating condition (FC) did not have significant positive impact on behavioral intention (BI) ($\beta = 0.017$, $p < 0.05$), where path coefficient is less than 0.05. Therefore it is confirmed that H6 is not supported. However, in H7, facilitating condition (FC) has significant positive impact on adoption behavior ($\beta = 0.215$, $p < 0.05$), thus H7 is supported. Finally, last hypothesis, H8 presents behavioral intention (BI) has significant positive effect on adoption behavior (AB) ($\beta = 0.653$, $p < 0.05$). In summary, from the table 4 it has been observed that H1, H2, H4, H5, H7 and H8 are supported, where as both H3 and H6 are not confirmed. In this regard, it can conclude that performance expectancy, effort expectancy, hedonic motivation, price value, significantly influence on behavioral intention. The findings supported by Tan (2013),

Venkatesh et al., (2003, 2012), Chopdar et al.,(2022), Suki and Suki (2017) and Farooq et al., (2017). But, social influence and facilitating condition does not have any significant influence on behavioral intention. These findings supported by Guetz and Bidmon (2022) and Ambarwati et al (2020). From the table it can also conclude that facilitating condition and behavioral intention have significant effects on adoption behavior. This findings also supported by Tan (2013), Venkatesh et al., (2003, 2012). This indicates that behavioral intentions of a student significantly impact on the actual usages of AI-Powered Web-Based English Writing Assistance Software (EWAS).

5. Conclusions

This study has assisted in finding the factors that influence students' usage of digital writing assistant software. From the analysis, The results shows that the factors that impact on students' behavior intention to use of digital writing assistant are performance expectancy, price value, hedonic motivation, effort expectancy, and facilitating condition, where as social influence and facilitating conditions does not have any influence on behavioural intention. This study also found the significant impact of facilitating conditions and behavior intention on actual use of the software. The study indicates that the digital learning assistant software with guidance, tutorials, assistance in using the software, students are more likely to be using it on a daily basis. Therefore, developers of such software should provide as many instructions as possible to make it easier to use and implement it in different tasks as possible for its users. The teachers should also aid students who are struggling to understand these services and help them not only to understand but provide them with tasks that would enable them to use such technologies. If the users of digital writing assistant software find services interesting, gets them excited and motivates them, then it would drive them to use it more frequently. Undergraduate students who are studying, many of them do not have a job that they do besides their studies. They mostly rely on the money that they receive from their guardians. Therefore, pricing is also a good factor to consider. The developers should provide a package that is affordable for the students may increase the number of usages.

6. Study Limitation

This study has several limitations such as time constrains, financial factors, responses of respondents, etc. The study was conducted in a noticeably short period of time, which is why there was not a proper and more conscious pre-test that was done, and no pilot test was conducted before moving to the main analysis. The sampling techniques that have been used in this study have been employed due to the lack of time and the students at a private university in Bangladesh are the participants of this study. It should also be notified that this research examines the factors that affect behavioral intention and actual use of the technology, and it only has not been assessed any moderating variable such as gender, field of study, etc. Reaching out to the study respondents is one of most vital constrains of this study. Because most of them are busy with their academic activities and personal life. Hence, many of were unable to filled questionnaire and submit. Future research may also conduct to assess a comparative scenario between public and private universities in Bangladesh.

7. Implication

The development of the internet is enabling people to learn various things from the internet. There are a lot of people who are self-taught from the contents available on the internet. Students get help on their academic tasks from the internet as well. It is not possible for a teacher to look at each and every single spelling and grammatical mistake made by their students and provide definition to them to why that happened. Which is why digital writing assistant software enabling the students to write proper sentences, form proper words for their tasks. This study provides insight into what students perceive as the adoption and usage factors for web based digital writing assistant software. The research also shows the necessity of conducting proper training and workshop organized but the university to highlight more appropriate use of the AI software. In this way, students may able to correct use of the software and add more values to their academic and future professional life. Developers of such software can identify these factors and provide improvement to such areas and also

teachers and faculty members of different institute can identify the factors that enable them to incorporate such technology in the academics that would benefit both the teachers and students.

References

Ajzen, I. (2020) 'The theory of planned behavior: Frequently asked questions', *Human Behavior and Emerging Technologies*, 2(4), pp. 314–324.

Alhwaiti, M. (2023) 'Acceptance of Artificial Intelligence Application in the Post-Covid Era and Its Impact on Faculty Members' Occupational Well-being and Teaching Self Efficacy: A Path Analysis Using the UTAUT 2 Model', *Applied Artificial Intelligence*, 37(1), p. 2175110.

Almaiah, M. A. *et al.* (2022) 'Measuring institutions' adoption of artificial intelligence applications in online learning environments: Integrating the innovation diffusion theory with technology adoption rate', *Electronics*, 11(20), p. 3291.

AlQudah, A. A. (2015) 'Unified theory of acceptance and use of technology (UTAUT)', *Retrieved on September*, 16(August), p. 2018.

Andina, D. M., Dewi, S. A. and Cahyono, B. Y. (2019a) 'Understanding factors affecting the use of English writing software in Indonesia', *ACM International Conference Proceeding Series*, pp. 297–301. doi: 10.1145/3345120.3345130.

Andina, D. M., Dewi, S. A. and Cahyono, B. Y. (2019b) 'Understanding factors affecting the use of English writing software in Indonesia', *ACM International Conference Proceeding Series*, pp. 297–301. doi: 10.1145/3345120.3345130.

Andrews, J. E., Ward, H. and Yoon, J. (2021) 'UTAUT as a model for understanding intention to adopt AI and related technologies among librarians', *The Journal of Academic Librarianship*, 47(6), p. 102437.

Birch, A. and Irvine, V. (2009) 'Preservice teachers' acceptance of ICT integration in the classroom: Applying the UTAUT model', *Educational media international*, 46(4), pp. 295–315.

Chau, P. Y. K. and Hu, P. J. H. (2001) 'Information technology acceptance by individual professionals: A model comparison approach', *Decision Sciences*, 32(4), pp. 699–719. doi: 10.1111/j.1540-5915.2001.tb00978.x.

Chopdar, P. K., Lytras, M. D. and Visvizi, A. (2022) 'Exploring factors influencing bicycle-sharing adoption in India: a UTAUT 2 based mixed-method approach', *International Journal of Emerging Markets*. doi: 10.1108/IJOEM-06-2021-0862.

Davis, F. D., Bagozzi, R. P. and Warshaw, P. R. (1989) 'User acceptance of computer technology: A comparison of two theoretical models', *Management science*, 35(8), pp. 982–1003.

Dowland, D. (2022) 'Time for higher education in Bangladesh to evolve: Reflections of an international university registrar'.

Dwivedi, Y. K. *et al.* (2019) 'Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model', *Information Systems Frontiers*, 21, pp. 719–734.

Emon, M. M. H. *et al.* (2023) 'Predicting Adoption Intention of Artificial Intelligence ChatGPT', *AIUB Journal of Science and Engineering (AJSE)*, 22(2), pp. 189–199.

Escobar-Rodríguez, T. and Carvajal-Trujillo, E. (2014) 'Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model', *Tourism Management*, 43, pp. 70–88. doi: 10.1016/j.tourman.2014.01.017.

Farooq, M. S. *et al.* (2017) 'Acceptance and use of lecture capture system (LCS) in executive business studies: Extending UTAUT2', *Interactive Technology and Smart Education*, 14(4), pp. 329–348.

Fishbein, M. (1979) 'A theory of reasoned action: some applications and implications.'

Fitria, T. N. (2021) 'Grammarly as AI-powered English Writing Assistant: Students' Alternative for Writing English', *Metathesis: Journal of English Language, Literature, and Teaching*, 5(1), p. 65. doi: 10.31002/metathesis.v5i1.3519.

Fornell, C. and Larcker, D. F. (1981) 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of marketing research*, 18(1), pp. 39–50.

Gunasinghe, A. *et al.* (2020) 'The viability of UTAUT-3 in understanding the lecturer's acceptance and use of virtual learning environments', *International Journal of Technology Enhanced Learning*, 12(4), pp. 458–481. doi: 10.1504/IJTEL.2020.110056.

Hair, J. *et al.* (2010) *Multivariate Data Analysis: A Global Perspective*.

Hair, J. and Alamer, A. (2022) 'Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example', *Research Methods in Applied Linguistics*, 1(3), p. 100027.

Hair Jr, J. F. *et al.* (2017) *Advanced issues in partial least squares structural equation modeling*. saGe publications.

Huang, C.-Y. and Kao, Y.-S. (2015) 'UTAUT2 Based Predictions of Factors Influencing the Technology Acceptance of Phablets by DNP', *Mathematical Problems in Engineering*, 2015, pp. 1–23. doi: 10.1155/2015/603747.

Kabir, A. H. and Chowdhury, R. (2021) *The privatisation of higher education in postcolonial Bangladesh: The politics of intervention and control*. Routledge.

O'Neill, R. and Russell, A. M. T. (2019) 'Grammarly: Help or hindrance? Academic learning advisors' perceptions of an online grammar checker', *Journal of Academic Language & Learning*, 13(1), pp. A88–A107.

Suki, Norbayah Mohd and Suki, Norazah Mohd (2017) 'Determining students' behavioural intention to use animation and storytelling applying the UTAUT model: The moderating roles of gender and experience level', *International Journal of Management Education*, 15(3), pp. 528–538. doi: 10.1016/j.ijme.2017.10.002.

Taherdoost, H. (2018) 'A review of technology acceptance and adoption models and theories', *Procedia manufacturing*, 22, pp. 960–967.

Tan, P. J. B. (2013) 'Applying the UTAUT to understand factors affecting the use of english e-learning websites in Taiwan', *SAGE Open*, 3(4). doi: 10.1177/2158244013503837.

Venkatesh, V. *et al.* (2003) *USER ACCEPTANCE OF INFORMATION TECHNOLOGY: TOWARD A UNIFIED VIEW*.

Venkatesh, V., Thong, J. Y. L. and Xu, X. (2012) 'Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology', *MIS quarterly*, pp. 157–178.

Venkatesh, V., Thong, J. Y. L. and Xu, X. (2016) 'Unified theory of acceptance and use of technology: A synthesis and the road ahead', *Journal of the association for Information Systems*, 17(5), pp. 328–376.

Venkatesh, V., Walton, S. M. and Thong, J. Y. L. (2012) *Quarterly Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology1*. Available at: http://about.jstor.org/terms.

Author's Biography:

Md Ragib Intiser is a graduate with a Bachelor of Business Administration degree, majoring in MIS and OSCM. Currently he is working for a Canadian startup company. His academic background and work experience have introduced him with the vast technological aspects and how it is intertwined with people's day to day life. It piqued the intertest of him to be informed with up-to-date information and exploring human and machine interaction with the constantly evolving world. He is very passionate about exploring the beneficial aspects of technology in everyday human life.

Md. Mehzabul Hoque Nahid is currently employed as an Assistant Professor in the Department of MIS within the FBA at the American International University-Bangladesh. He successfully completed his postgraduate studies in the field of Information Technology at Swinburne University of Technology in Australia, resulting in the attainment of a master's degree. Before assuming his position as an academician, he gained professional experience by working for various local and multinational organizations

Dr. Md. Aftab Anwar currently works at the Faculty of Business Administration, American International University-Bangladesh, Dhaka. Dr. Aftab does research in Management, Organizational behavior, Human Resources Management, Knowledge Management, entrepreneurship and marketing.

Dr. Rezbin Nahar is an Associate Professor in the Department of Management and Human Resources Management and Director of BBA program under the Faculty of Business Administration of American International University Bangladesh (AIUB). She holds her PhD from International Islamic University Malaysia (IIUM) on Business Administration. Her research interests are broadly concentrated within the fields of management, human resources management, education, and organizational behavioral contexts. development issues.

For instructions on how to order reprints of this article, please visit our website: https://ajbe.aiub.edu
Or contact us for further details: ajbe@aiub.edu