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Predicting Adoption Intention of Artificial Intelligence- A Study on ChatGPT

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***Abstract*—** The objective of this research is to study the factors that influence the adoption behaviour of ChatGPT among professionals in Bangladesh. This study investigates the adoption intention of ChatGPT by using the modified Unified Theory of Acceptance and Use of Technology (UTAUT) model. This model is used as a theoretical framework to analyse the many aspects that exert effect on the adoption process. The study was administered to a sample of 350 professional knowledge-workers using an online questionnaire. The data analysis was performed using PLS-SEM. The findings of the research provided a significant understanding of the determinants that influence the desire to adopt and the actual use of ChatGPT. The study highlights the significance of strengthening behavioral intentions, emphasizing performance benefits and building trust, and creating facilitating conditions to promote adoption and utilization of ChatGPT among Professionals in Bangladesh. The research contributes to the understanding of factors influencing the adoption and usage behavior of ChatGPT and offers practical implications for organizations and policymakers to maximize the benefits of artificial intelligence applications in the context of Bangladeshi Professionals. The study's limitations include its exclusive focus on Bangladeshi professionals, reliance on self-reported data, and oversight of ethical and privacy concerns. This research is one of the first attempts to elucidate the factors influencing the acceptance of ChatGPT among professionals in Bangladesh, using the modified UTAUT-2 model.

Index Terms- Artificial Intelligence Adoption, ChatGPT Utilization, UTAUT, Structural Equation Model, Technology for Knowledge Workers.

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I. Introduction

ChatGPT has the capacity to create text replies that closely resemble human-like discourse, even in the absence of explicit instructions. It is capable of engaging in conversational exchanges and offering meaningful insights. The adoption of ChatGPT in the workplace can streamline communication, automate tasks, and enable professionals to access information and support more efficiently. ChatGPT can only be successful if professionals are ready to actively embrace and make use of it. To fully take advantage of ChatGPT in the workplace, it is essential to have a firm grasp on the elements that impact the adoption decisions of professionals. The goal of this study is to provide substantial insights into the factors that influence the willingness of knowledge-workers in Bangladesh to use ChatGPT. This information may be used by firms aiming to introduce ChatGPT in their work environments. The theoretical framework of UTAUT-2 may aid in comprehending the perceived advantage, ease of use, social effect, supporting circumstances, and alignment with job needs of ChatGPT in the knowledge-workers' context of Bangladesh. The rapid advancements in natural language processing and artificial intelligence have made ChatGPT a promising technology for knowledge-workers in various industries. Despite the growing interest in ChatGPT and its potential benefits, Prior studies revealed a notable dearth of research in previous investigations regarding the identification of factors that perform an essential part in predicting the adoption of ChatGPT from the perspective of individual users, particularly among business professionals in a digitally divided country like Bangladesh. Therefore, objective of this study is to predict the adoption intention of ChatGPT among Bangladeshi Knowledge-workers. The primary research question of this study is:

RQ: What factors determine adoption of ChatGPT among the professional knowledge workers in Bangladesh.

RQ1: *How does "Attitude Towards Artificial Intelligence (ATAI)" affect the "behavioral intention" to use ChatGpt among Professionals of Bangladesh?*

RQ2: *What is the impact of "Performance Expectancy (PE)" on the "behavioral intention to use (BIU)" ChatGpt among Professionals of Bangladesh?*

RQ3: *How does "effort expectancy (EE)" influence the "behavioral intention to use (BIU)" ChatGpt among Professionals of Bangladesh?*

RQ4: *What is the effect of "social influence (SI)" on the "behavioral intention to use (BIU)"ChatGpt among Professionals of Bangladesh?*

RQ5: *How do "facilitating conditions (FC)" impact the "behavioral intention to use (BIU)" ChatGpt among Professionals of Bangladesh?*

RQ6: *What is the relationship between "hedonic motivation (HM)" and the "behavioral intention to use (BIU)" to use ChatGpt among Professionals of Bangladesh?*

RQ7: *How does "trust (T)" influence the "behavioral intention to use (BIU)" ChatGpt among Professionals of Bangladesh?*

RQ8: *What is the relationship between "behavioral intention to use (BIU)" and "actual use" of ChatGpt among Professionals of Bangladesh?*

This research carries substantial significance from both scholarly and pragmatic standpoints. This study expands the current knowledge base on the adoption of technology and makes a valuable contribution to the under-examined domain of ChatGPT adoption among professionals. This study examines the applicability and evaluates the resilience of modified UTAUT-2 framework in the context of nascent artificial intelligence (AI) technologies within a developing nation, such as Bangladesh. The present study may serve as a basis for subsequent researchers to investigate and comprehend the implementation of analogous AI technologies in comparable circumstances. This study offers significant practical implications for companies intending to integrate ChatGPT or comparable artificial intelligence technologies into their operational processes. Organizations can devise efficacious strategies to promote the acceptance and utilization of technologies among professionals by comprehending the factors that impact their adoption intention. As a result, it may result in enhanced productivity, efficacy, and a general competitive edge for enterprises. The scope of this research is confined to Bangladeshi professionals in various industries such as IT, finance, healthcare, marketing, and consulting. The focus of the research was on professionals who are either currently using or have the potential to use ChatGPT for their work-related tasks.

II. LITERATURE REVIEW

In recent years, the utilization of AI in business processes has gained significant attention and has become a topic of extensive study. Various industries and Professionals have recognized the potential of AI to revolutionize their operations, enhance decision-making, and drive growth. AI systems are assessed by Professionals with respect to their perceived potential to enhance productivity, augment efficiency, and provide precise and insightful analyses. When individuals hold the belief that artificial intelligence (AI) can offer advantages, they are more inclined to adopt and employ the technology in their routine activities [1]. The adoption of AI by Professionals is influenced significantly by the factor of effort expectancy. The concept pertains to the subjective perception of the level of intricacy and user-friendliness that are attributed to artificial intelligence systems. If professionals perceive AI technologies as difficult to understand or use, they may resist their adoption. However, if AI systems are user-friendly, intuitive, and require minimal effort to operate, professionals are more likely to embrace them and integrate them into their work processes [1]. The likelihood of professionals adopting AI technologies is positively correlated with the promotion of AI usage and its benefits by influential individuals. Moreover, in the event that an organisation fosters a culture that values innovation and is receptive to novel technologies, the integration of AI is apt to be more readily accepted by corporate personnel [2]. The concept of perceived usefulness pertains to the degree to which artificial intelligence (AI) technologies are perceived as advantageous in facilitating the completion of tasks and attainment of objectives. The likelihood of Professionals incorporating AI into their daily work is positively correlated with their belief in the technology's ability to enhance decision-making, address intricate challenges, and optimise overall performance. The significance of user-friendliness, simplicity, and comprehensibility of AI systems is underscored. The likelihood of Professionals incorporating AI technologies into their work routines is positively correlated with their usability and operability of said technologies [3]. The use of artificial intelligence (AI) by knowledge workers is influenced by several factors that may be analysed using models like UTAUT-2, which is widely used to describe user behaviour towards modern disruptive digital technologies [4]. The intention to adopt and the actual use of AI technologies are influenced by various factors such as "performance expectancy", "effort expectancy", "social influence", "facilitating conditions", "perceived usefulness", "perceived ease of use", and individual characteristics [5]. Through comprehension of these variables, enterprises can devise tactics to encourage the adoption of AI and guarantee its triumphant assimilation into corporate operations. The criticality of user acceptance in Contemporary Disruptive information system (IS) implementations has been a pivotal argument by [6]. Over recent years, the burgeoning interest in understanding and interpreting user responses towards IS has contributed to the development of numerous theoretical models, drawing insights from diverse fields such as IS, psychology, and sociology [7]. Furthermore, a study has expressed concerns over the practicality of the four moderators used in the UTAUT model, suggesting that a simpler model, through an acceptable initial scoring approach, might achieve similar predictive power. This led to the evolution of the original UTAUT model into UTAUT-2, proposed by [8]. The authors added three contemporary factors - HM, price value, and habit - into the model, thereby enhancing its ability to capture consumer acceptance. It has been successfully utilised in various areas such as AI in healthcare and m-commerce, further establishing its effectiveness and practical relevance [9]. However, it is crucial to note that the applicability of certain factors, such as hedonic evaluations may vary depending on the context. For example, the hedonic factor may not be relevant in situations where the technology usage is not intended to be enjoyable. Similarly, the price-value factor may not hold significance in situations where the cost of the technology is not directly perceived by the users, such as when purchases of ChatGPT Plus. The context of technology usage, thus, plays a significant role in determining the relevance of different factors in the UTAUT-2 model. The AI Technologies like ChatGPT that this study focuses on represent a complex and evolving technology. The unique features and capabilities of the AI technologies like ChatGPT might necessitate the consideration of other factors not included in the UTAUT-2 model. For instance, trust in the system's AI capabilities might be a critical factor influencing user acceptance. Similarly, concerns about "data privacy and security", which are

particularly relevant in the context of AI technologies, could also impact the adoption of the system. While the UTAUT and modified UTAUT-2 models provide valuable frameworks for understanding user acceptance and adoption of contemporary technologies, they should be used flexibly, and supplemented with other factors as needed, to accurately reflect the complexities and nuances of different technologies and usage contexts. With the advent of AI and its applications, there is a need to extend and modify these models to capture the unique characteristics of AI technologies. In the case of ChatGPT, a language model developed by Open AI, there are still gaps in our understanding of how specific factors influence individuals' adoption intentions. Future research should delve into the factors that contribute to trust in ChatGPT, such as system transparency, explainability, and accountability. Gaining insights into the process of trust formation and its influence on individuals' intents to adopt may provide valuable guidance for the development and deployment of artificial intelligence (AI) systems that foster trust and promote user acceptance. Another factor that warrants further investigation is HM. While many technology adoption models have primarily focused on utilitarian factors such as usefulness and ease of use, the hedonic aspects of technology use, such as enjoyment and entertainment value, are increasingly relevant in the context of AI technologies. ChatGPT, with its conversational capabilities and ability to generate creative responses, offers users a unique and engaging experience. Exploring the role of HM in the adoption of ChatGPT can help us understand why individuals choose to use the system beyond its functional benefits. Additionally, examining how the hedonic aspects interact with utilitarian factors can provide a more comprehensive understanding of adoption intentions and user behavior. Attitude towards AI technologies (ATAI) such as ease of use and usefulness can potentially impact the adoption of ChatGpt among professionals, as it represents a pre-existing mindset. This psychological trait can influence one's actions and intentions and is closely linked to individual behavior and the attitude-behavior relationship in tech-users [10]. According to a multitude of research studies, the construct of "Attitudes towards AI (ATAI)" is defined as an individual's distinct emotional disposition towards engaging in a certain behaviour related to the adoption of technology [11]. This disposition may be either positive or negative and has significant influence on the actual inclination to use Disruptive Digital Technology. Based on this perspective, the following hypotheses have been formulated:

H1: "Attitude Towards AI" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among Professionals.

According to PE refers to an individual's belief that a system can enhance their job performance. This concept is closely linked with the perceived usefulness of a technology, as individuals anticipate that using the system to improve their ability to perform their job. PE is linked with the quality of job development and is based on the belief of employees that the use of AI to improve their performance within organizations [12].

H2: "Performance Expectancy (PE)" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among professionals.

EE is a significant determinant of technology acceptance, referring to the perceived ease of use associated with the system [13]. The construct of EE encompasses antecedents such as complexity and ease of use [14], and in this study, it represents employees' beliefs about the ease of using AI in an organization. The concept of EE is consistent with the ease of use construct proposed in the diffusion of innovation (DoI) theory, defined as the degree of simplicity or difficulty in using AI in an organization [15]. Additionally, users' individual behavioral characteristics influence their technology adoption leading to the formulation of the following hypotheses:

H3: "Effort expectancy (EE)" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among professionals.

The degree to which an individual's social environment affects their acceptance of a technology is referred to as social influence, as stated by [16]. Social influence was one of the preserved constructs when UTAUT was refined into UTAUT-2 to explain voluntary use, according to [8]. Recent studies highlighted social influence as a significant precursor to an individual's behavioral intention to use a technology [17]. The study proposed the following hypothesis:

H4: "Social Influence (SI)" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among professionals.

In the context of adoption intention of ChatGPT among Professionals, facilitation conditions (FC) refer to the extent to which individuals perceive that the technical infrastructure is in place to support the use of contemporary technologies [18]. Previous research has shown that FC plays a significant role in determining the acceptance and adoption of contemporary technologies and subsequently impacts usage behavior [19]. Many studies have explained the relation between FC and AC. However, studies on adoption behavior of disruptive learning tools didn't consider exploring the relation between FC and AC. Instead, they considered relations between FC and BIU [20]. Based on these discussions, The study proposed the following hypotheses:

H5: "Facilitating Conditions (FC)" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among Professionals.

Previous research demonstrated the importance of hedonic factors in influencing users' behavioral intentions towards adopting contemporary technologies. HM is one of the key factors that influence the adoption and usage of contemporary technologies [13]. Similarly Hedonic factors, such as enjoyment and excitement, are significant predictors of users' intention to use contemporary technologies [21]. Therefore, it can be hypothesized that professionals who are motivated by hedonic factors, such as enjoyment and excitement, are more likely to have a positive behavioral intention towards ChatGpt.

H6: "Hedonic Motivation (HM)" has positive effect on "behavioral intention to use (BIU)" of ChatGpt among Professionals.

Prior research indicated that trust is a critical factor in users' acceptance and adoption of contemporary technologies. "Trust" is defined as the willingness of an individual to rely on another party in a situation involving risk [22]. A study uncovered that trust is positively related to the adoption and

use of contemporary technologies, indicating that users are more likely to adopt a contemporary system if they have a high level of trust in the system's reliability[23]. Therefore, the study hypothesizes that professionals who trust ChatGpt's reliability and security are more likely to have a positive behavioral intention towards it.

H7: "Trust (T)" has a positive effect on "behavioral intention to use (BIU)" of ChatGpt among professionals.

Behavioral intention is seen as an indicator of an individual's readiness to perform a specific behavior and is regarded as an immediate precursor to behavioral action [24]. Therefore, if employees demonstrate behavioral intention to use a contemporary technology such as AI integrated ChatGpt, they are likely to show corresponding usage behavior to implement the system. This leads to the following hypothesis:

H8: "Behavioral Intention to Use (BIU)" has positive effect on Actual Use of ChatGpt among professionals.

UTAUT-2 is a conceptual model used to understand the factors that influence the adoption and use of technology. The model includes the following constructs: "ATAI", "PE", "EE", "SI", "FC", "HM", "T", "BIU", and "AU". The model suggests that the adoption and use of technology is influenced by the user's (ATAI), their perception of the technology's usefulness (PE), their perception of the effort required to use the technology (EE), the social influence on their decision to use the technology (SI), the facilitating conditions that enable the use of the technology (FC), the pleasure and enjoyment derived from using the technology (HM), and their "trust" in the AI technology (T).

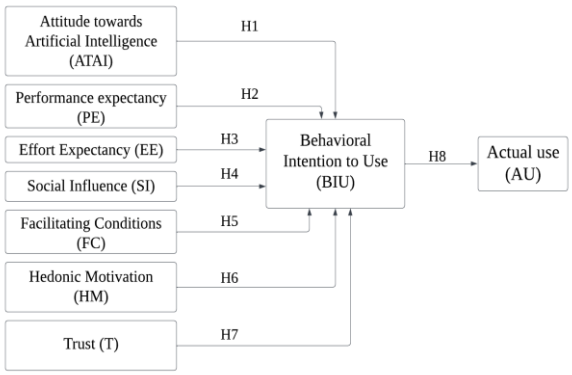

Figure 1: Conceptual Model

These factors together shape the user's "behavioral intention to use the technology (BIU)" and their "actual use (AU)" of the technology. In the modified UTAUT-2 model, each construct is interdependent and influences the user's behavior in relation to technology adoption and use. The proposed model is visually represented in Figure 1.

III. METHODOLOGY

3.1 Research Design Process:

In the research design process, following aspects were considered, such as the research approach, paradigm, method, justification, type of data, and study setting. In this study, the research design process involved the following. The research approach used in this study was deductive. The deductive approach involved starting with a hypothesis or theory and testing it empirically using data. The hypothesis was that several factors predicted the adoption intention of ChatGPT among Bangladeshi professionals. The research paradigm used in this study was positivism. A focus group has been conducted in this study with ChatGPT adoption experts to refine the survey questionnaire before it was formally administered. The type of data collected in this study was quantitative data. Quantitative data involves the collection of numerical data, which is then analyzed using statistical methods. The use of quantitative data allowed for the collection and analysis of large amounts of data necessary for determining the factors that predicted the adoption intention of ChatGPT among Bangladeshi professionals Quantitative research methods: A synopsis approach [25]. The study setting for this study was online. The survey was distributed through various online platforms, such as social media, email, and online forums. Conducting the study online was a cost-effective method and allowed for the collection of data from a large and diverse sample of Bangladeshi professionals, regardless of their geographical location.

3.2 Sampling Method

3.2.1 Target Population:

The target population of this study is the full-time knowledge workers working in Private and Public organization in Bangladesh. This included individuals who were studying in fields such as information technology, finance, healthcare, education, and others.

3.2.2 Sampling Frame: The sample frame used in this research consisted of graduate professional knowledge workers who were employed on a full-time basis within both public and private organisations.

3.2.3 Sampling Technique:

The technique of sampling used in this research consisted of a purposive sampling technique. This technique guaranteed that the selected sample depicted the intended population.

3.2.4 Sample Size and Sampling Units:

The specific detail of total Private service holders' information in Bangladesh is not available. Because of that, in this study the population is unknown. The sample size for this study was 449 and 350 people responded. This sample size was determined using the sample size formula, which takes into account the population size, expected prevalence of the outcome variable, and desired level of precision [26]. 350 responses were deemed sufficient to achieve a power of 0.8 with a 95% confidence level. The sampling units for this study were individual professionals studying postgraduate programs in different universities in Bangladesh.

3.2.5 Questionnaire Designing:

The questionnaire used in this study designed using two theoretical frameworks: UTAUT-2 is a commonly used conceptual framework that aims to elucidate and forecast user acceptance and utilisation of technology. In the context of Bangladeshi professionals, modified UTAUT-2 may effectively discern the pivotal aspects that impact the intention to embrace ChatGPT. The questionnaire consisted of two sections. The first section gathered demographic information about the participants, such as Gender, Age, Highest level of educational qualification, Designation, Organization Type, Industry sector, Year of Experience. The second section included questions that measure the constructs of interest, including ATAI, PE, HM, T, EE, SI, facilitating conditions,

Behavioral Intention to Use (BIU), Actual Use (AU). Participants were asked to rate their agreement with each statement.

3.3 Data Collection Method

3.3.1 Data Collection Instrument:

The data collection instrument for this study was a structured questionnaire survey. The survey questionnaire was designed based on the modified UTAUT-2 model and included questions on the factors that predicted the adoption intention of ChatGPT among Bangladeshi professionals. The questionnaire utilized a 5-point Likert scale for responses.

3.3.2 Data Collection Procedure: The data collection procedure employed in this study entailed the initial step of seeking permission from targeted universities to administer a survey to their EMBA students. Subsequently, the questionnaire survey was disseminated electronically via email and university communication channels. Clear instructions were provided to participants regarding the completion of the questionnaire, along with an assurance of their comprehension of the study's objectives and their rights as participants. Prior to commencing the survey questionnaire, informed consent was obtained from all participants. Finally, the completed survey questionnaires were collected through an online survey platform.

3.4 Data Analysis Process

3.4.1 Data Coding:

The data collected through the survey were coded using a numerical system. Each response to the questionnaire was assigned a numerical code, which was used for data entry and analysis.

3.4.2 Data Analysis:

The data analysis process involved utilizing various statistical techniques, including correlation analysis. Additionally, the Reflective Lower Order Measurement Model was applied using SMART PLS 4 to assess the relationships between variables and determine the factors that predicted the adoption intention of ChatGPT among Bangladeshi Professionals. According to the Partial Least Squares (PLS) method, the minimum sample size necessary is 10 times more than the highest count of routes that lead to an endogenous reflecting construct. In our study model, the upper limit for the number of pathways that may enter an endogenous reflective construct is 28. Hence, it can be concluded that a sample size of 280 is deemed enough for the analysis of the study model using PLS [27]. The SmartPLS 4.0 software is used for the purpose of evaluating both the measurement and structural models. The researchers conducted a correlation study to assess the strength and direction of the correlations analysis was utilised to find the elements that influence the desire for adoption. These statistical techniques, including the Reflective Lower Order Measurement Model, were justified for this study as they were suitable for analyzing the quantitative data collected through the survey [28]. The correlation analysis provided insights into the relationships between variables.

3.4.3 Reliability of the Measurements:

The reliability of the measurements was assessed using Cronbach's alpha, which is a measure of internal consistency reliability. Cronbach's alpha was calculated for each construct in the survey, including ATAI, PE, HM, T, EE, SI, FC, BIU, and AU. A Cronbach's alpha value of 0.7 or higher indicated adequate internal consistency reliability for each construct[29].

Table 1: Reliability Statistics

Construct	Item No	Cronbach's alpha
Attitude Towards Artificial Intelligence (ATAI)	4	.870
Performance expectancy (PE)	3	.905
Effort expectancy (EE)	4	.880
Social Influence (SI)	3	.869
Facilitating Conditions (FC)	4	.823
Hedonic motivation (HM)	3	.904
Trust (T)	2	.828
Behavioral Intention to Use (BIU)	3	.915
Actual Use (AU)	2	.932

The reliability statistics presented in Table-1 highlight the internal consistency of measurement constructs used in the study. With Cronbach's alpha coefficients ranging from .823 to .932, most constructs, such as Attitude Towards Artificial Intelligence, Performance Expectancy, Effort Expectancy, Hedonic Motivation, Behavioral Intention to Use, and Actual Use, demonstrate strong to very high reliability, indicating consistent measurement of their respective concepts. Constructs like Social Influence and Trust exhibit acceptable reliability, while Facilitating Conditions could benefit from potential refinement or expansion for enhanced consistency. These reliability values collectively underscore the dependable nature of the measurement instruments, forming a robust basis for drawing insights into individuals' attitudes and behaviors concerning artificial intelligence. Overall, based on the reliability statistics presented, the scale or instrument in question demonstrates a high level of internal consistency, suggesting that it is a reliable tool for measuring the construct of interest.

IV. RESULTS

The correlation matrix presented in Table 2 shows the relationships between the variables in the study, with values representing the strength and direction of the correlations.

Table 2: Correlations

	ATAI	AU	BIU	EE	FC	HM	PE	SI	T
ATAI	1								
AU	0.73	1							
BIU	0.74	0.9	1						
EE	0.7	0.6	0.6	1					
FC	0.72	0.72	0.73	0.72	1				
HM	0.64	0.6	0.59	0.68	0.62	1			
PE	0.8	0.78	0.74	0.71	0.71	0.73	1		
SI	0.73	0.65	0.68	0.71	0.64	0.64	0.66	1	
T	0.72	0.73	0.72	0.72	0.63	0.65	0.73	0.83	1

Interpreting the correlations reveals that the variable ATAI (Adoption Intention) has a moderate positive correlation with AU (Actual Use) and BIU (Behavioral Intention to Use), indicating that as the attitude towards use and behavioral intention to use ChatGPT increase, the adoption intention also tends to increase. Additionally, AU has a strong positive correlation with BIU, suggesting that a positive attitude towards use is closely related to a stronger behavioral intention to use. The variable EE (Effort Expectancy) shows a positive correlation with ATAI, AU, BIU, and T (Trust), implying that as the Effort Expectancy increases, the adoption intention, attitude towards use, behavioral intention to use, and trust in ChatGPT also tend to increase. “Trust” exhibits the

highest correlation coefficient (0.83) with SI (Social Influence), indicating a strong positive relationship between trust and social influence[29].

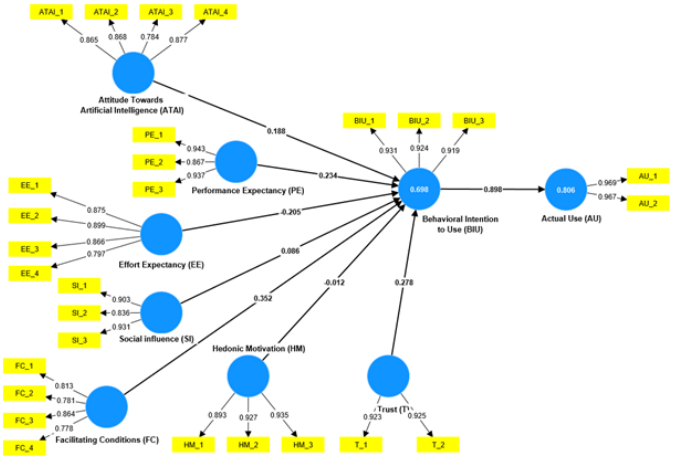

Figure 2: Structural Equation Model

PE (Performance Expectancy) demonstrates a strong positive correlation with ATAI and AU, indicating that as the Performance Expectancy of using ChatGPT increases, the adoption intention and attitude towards use also tend to increase. Lastly, FC (Facilitating Conditions) exhibits relatively weaker correlations with other variables compared to the rest, suggesting a less prominent association. Overall, the correlation matrix provides valuable insights into the positive associations between variables and the adoption intention of ChatGPT among Bangladeshi Professionals. These predictors collectively explain 69.8% (R^2 = 0.698) of the variance in BIU. Among them, facilitating conditions demonstrate the strongest positive influence (0.352) on BIU, followed by performance expectancy (0.234), trust (0.278), attitude towards AI (0.188), effort expectancy (-0.205), and social influence (0.086). Furthermore, BIU strongly predicts AU with a path coefficient of 0.898. The overall model explains a substantial proportion of the variance in AU (R^2 = 0.806). The high factor loadings of the individual items within each construct confirm their effectiveness in representing their respective variables in the model [29]. The coefficient of (-0.205) for "effort expectancy" indicates a negative correlation between this measure and another one. Effort expectation generally pertains to the subjective perception of the amount of ease or difficulty associated with the execution of a certain job or engagement with a particular system. The numerical value of -0.205 represents the strength and direction of the correlation between the variables. A negative result indicates an inverse relationship between the rise in "effort expectancy" (representing the perception of task difficulty) and the reduction in the other measure. Put simply, if people see an activity as requiring more diligence, it is anticipated that the resulting output or measurement would decline consequently. Overall, these findings emphasize the significance of facilitating conditions, performance expectancy, trust, attitude towards AI, effort expectancy, and social influence in shaping behavioral intentions and subsequent actual usage of ChatGPT.

Table 3: Hypothesis Test

Hypothesis	Path coefficients	P Values	Result
ATAI -> BIU	0.188	0.03	Supported
PE -> BIU	0.234	0.00	Supported
EE -> BIU	(-0.205)	0.01	Supported
SI -> BIU	0.086	0.12	Supported
FC -> BIU	0.352	0.00	Supported
HM -> BIU	(-0.012)	0.86	Supported
T -> BIU	0.278	0.00	Supported
BIU -> AU	0.898	0.00	Supported

In hypothesis testing, a common criterion is to assess whether the p-value associated with a path coefficient is below a predetermined significance level (such as 0.05 or 0.001). If the p-value is below the chosen threshold, it is considered statistically significant, indicating support for the hypothesis. Conversely, if the p-value is above the threshold, the hypothesis is not supported [30]. For the presented results, the path analysis of structural equation modeling (SEM) was conducted to analyze the proposed hypotheses. Table-3 displays the path coefficients and corresponding results. Out of the eight tested hypotheses, eight were supported. The structural equation model (SEM) analysis revealed important insights into the relationships among the variables in the study. The findings indicate that behavioral intentions to use (BIU) have a significant impact on actual usage (AU), with a strong path coefficient of 0.898. Additionally, BIU is influenced by attitude towards AI (ATAI), EE, FC, HM, PE, SI, and T.

V. DISCUSSIONS & LIMITATIONS

The research findings provide valuable insights into the factors influencing the adoption intention and actual use of ChatGPT among Bangladeshi Professionals. The correlation matrix reveals significant positive relationships between variables, indicating that adoption intention (ATAI) exhibits a moderate positive correlation with actual use (AU) and behavioral intention to use (BIU), suggesting that as attitudes towards use and behavioral intentions to use ChatGPT increase, so does the adoption intention. Moreover, a strong positive correlation is observed between actual use and behavioral intention to use, indicating that a positive attitude towards use is closely related to a stronger behavioral intention to use ChatGPT. The results from the structural equation model reinforce the importance of behavioral intentions to use ChatGPT. Behavioral intentions are influenced by several factors, including attitude towards AI, effort expectancy, facilitating conditions, performance expectancy, social influence, and trust. Among these predictors, facilitating conditions demonstrate the strongest positive influence on behavioral intentions, followed by performance expectancy, trust, attitude towards AI, and social influence. Additionally, behavioral intentions strongly predict the actual use of ChatGPT, highlighting their pivotal role in driving the technology's adoption and utilization. The presence of a reflecting path coefficient of -0.205 and a "Cronbach alpha" value of 0.880 suggests that there exists a negative association between the constructs of "Effort expectancy" and "Behavioural intention to use" and the presence of a reflecting path coefficient of -0.012 and a "Cronbach alpha" value of

0.904 suggests that there exists a negative association between the constructs of "Hedonic Motivation" and "Behavioural intention to use". A detrimental impact on “effort expectation” and "Hedonic Motivation" would imply that end-users' regard ChatGPT as challenging to utilize due to difficulties in formulating appropriate commands for desired outputs which is not fun, perhaps resulting in reduced levels of adoption and usage. The overall model explains a substantial proportion of the variance in actual use, underscoring the significance of facilitating conditions, performance expectancy, trust, attitude towards AI, effort expectancy, and social influence in shaping behavioral intentions and subsequent actual usage. Based on these findings, it is recommended to strategically focus on strengthening users' behavioral intentions to use ChatGPT to encourage its adoption and usage. Emphasizing the performance-enhancing aspects of ChatGPT and building trust in its capabilities are essential considerations. The study has several limitations that need to be considered. Firstly, its exclusive focus on professionals in Bangladesh restricts the generalizability of the findings to other contexts. Moreover, the study's reliance on self-reported data introduces the possibility of response bias and social desirability bias, potentially affecting the accuracy of the results. Furthermore, the study overlooks the potential ethical and privacy concerns associated with the use of ChatGPT in professional settings, which could impact the interpretation of the findings. Lastly, the absence of exploration into the potential influence of cultural factors on the adoption and usage behavior of ChatGPT among Bangladeshi professionals leaves significant gaps in the understanding of the broader socio-cultural context surrounding the study.

VI. CONCLUSION & FUTURE RECOMMENDATION

The study underscores the importance of strengthening users' behavioral intention to use ChatGPT, highlighting its performance-enhancing aspects, building trust in the technology, and creating facilitating conditions to promote its adoption and actual utilization. Correlation matrix revealed moderate to strong positive correlations between “adoption intention”, “actual use”, “behavioral intention to use”, “attitude towards use”, “effort expectancy”, and “trust in AI powered application”. The aforementioned results provide important perspectives for organisations and governments seeking to optimise the advantages and efficacy of ChatGPT within the specific context of Bangladeshi knowledge workers. It is important to acknowledge the limitations of the study, such as its focus on a specific population. Nevertheless, the research contributes to the understanding of factors influencing the adoption and usage behavior of ChatGPT, offering practical implications for improving decision-making and productivity through the effective utilization of artificial intelligence applications. As a future direction of the research, a longitudinal study should be conducted to capture the dynamic nature of technology adoption and usage behavior concerning ChatGPT over an extended period. Furthermore, conducting a thorough investigation into the potential impact of cultural factors on the adoption and usage behavior of ChatGPT among Bangladeshi professionals will provide valuable insights into the role of cultural context in shaping technology adoption patterns.

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