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Research paper

Healthcare Professionals` Readiness to Adopt Electronic Health Record System: Exploring The Impact of Voluntariness to Use as A Moderator

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Abstract

Purpose: An Electronic Health Record (EHR) in the healthcare system impacts healthcare workers to ensure error-free record maintenance by adopting it in their routine work. The perspective of the investigation is to explore the determining factor of healthcare professionals` intention to adopt the EHR by focusing on Self-efficacy (SEY), Facilitating Conditions (FLCN), and Performance expectancy (PEEX) with the mediating variable Perceived Value (PEVL). Additionally, the moderating role of Voluntariness to use (VLTU) was also addressed in this study.
Methodology: The quantitative samples of 311 data were collected from doctors, nurses, paramedical, and admins from four multi-specialty hospitals and the interpretation of the results were done through frequency, correlation, regression, measurement modelling and structural equation modelling (SEM) were used to process the data.
Outcomes: The outcomes identified that all predictors pointedly impacted the mediator and, in turn, influenced BITU. The mediation role of PEVL of the EHR partially supported the individual's SEY and FLCN, whereas PEEX is not supported by the mediator. To test the impact of the moderator VLTU on using EHR, which has been added in the existing framework as the novelty of the study, but it has not been justified.
Implications: The study suggests improving clinical outcomes, streamlining operations, and enhancing overall efficiency within healthcare systems and gives a roadmap for a comprehensive strategy for the hospitals to promote the adoption of EHR by prioritizing user engagement, robust infrastructure, and system optimization.
Originality: Though the factors have been assessed in various domains with different perspectives, this paper`s contribution dealt with the hospital settings, which have not been addressed by the previous studies, along with the moderating factor.

Keywords: *Electronic Health Records; UTAUT3; Self-Efficacy; Perceived Value; Behavioral Intention; Voluntariness to Use; Healthcare Technology Adoption.*

1. Introduction

One of the technological integrations with healthcare is EHRs, which have been used to adopt, streamline, and retrieve the data of each patient to reduce errors and enhance the excellence of patient care (Kruse et al., 2018). Continued use of EHR systems depends on both individual and organizational factors. For example, nurses' engagement with EHR systems in Jordan has been linked to personality traits (e.g., openness and conscientiousness) and organizational support, such as training and managerial backing. These factors enhance initial adoption and foster sustained utilization by addressing behavioral resistance and usability challenges (Alsyouf et al., 2024). Additionally, Digital literacy and prior technology experience also positively influence attitudes and behavioral intentions toward EHR adoption, particularly in resource-limited settings (Damtew Walle et al., 2023). Healthcare professionals in Ghana recognize the benefits of EHR systems but cite technical issues and lack of interoperability, recommending updates and training for improved satisfaction (Mensah et al., 2024). Only a few healthcare workers are expected to adopt the technology, which is a rising concern in the healthcare industry (Jha et al., 2009). Even though the adoption of EHR systems has significantly increased and is predicted to reach $47.6 billion by 2030. In 2017 National Health Policy prioritized technology for better healthcare delivery, focusing on digital tool deployment, enhanced efficiency, and outcomes. It also aims to bolster health surveillance and create a nationwide health information exchange network by 2025.
The exploration was to assess the reason behind the usage intention of doctors, nurses, paramedical staff, and administrators in using EHR who are associated with the health care and treatment provided to the patients by utilizing the EHR as the innovation system, which is being insisted on by the Government of India. The conceptual framework has been arrived at from various technology acceptance models,

which have been framed by different researchers (Davis, 1989; Venkatesh et al., 2003; Venkatesh et al., 2012; Farooq et al., 2017), which will help to apprehend the aspects that influence EHR.
Therefore, this current research demonstrates the latent predictors of healthcare professionals' BITU of the EHR systems by suggesting a new model with the moderator variable. For the purpose of finding this association between SEY, FLCN, PEEX, PEVL, and BITU, the study poses the following research questions:
Do the factors predict the intentional use behavior of healthcare workers?
Does the moderator variable have a substantial effect on the study`s purpose of exploration?

2. Literature Support

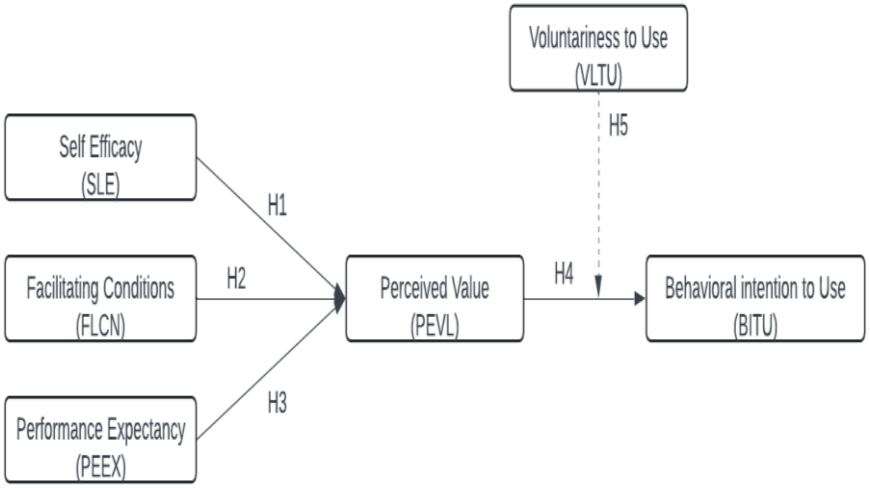

Fig. 1: Conceptual Model.

2.1. SEY and PEVL

Self-efficacy (SEY) is the level of belief in your capacity to execute specific performance outcomes, and it is inferred as a person's trust in their capability for achievement and typically refers to the degree of potential that an individual feels they possess (Bandura, 2013; Christensen, 2015). The users who are more self-reliant in their capacity to learn how to use EHR can perceive the usage of the system (Venkatesh et al., 2003). The higher the degree of SEY enhances the environmental PEVL in the context of Customer Relationship management and self-service technologies (Sartono et al., 2024). In consideration of the age factor, SEY influences self-engagement with the technology and adopting new innovative technology easily (O'Neill et al., 2023). The work engagement in the organization is predicted by SEY of one's work through ICT adoption (Ruth et al., 2024). E-learning during a pandemic makes the user enhance their self-ability by using many emerging applications, which are being supported by MSMEs to fit the technology (Mantik et al., 2024). SEY positively influences PEVL in adopting new technology about digital payment applications, enhancing their intention to use such technologies effectively (Baliawan et al., 2024). Researchers (Alamsyah et al., 2022; Cao et al., 2022) observed that SEY influences PEVL in adopting smart voice assistants, e-learning, and Information systems, indicating that individuals with higher SEY perceive higher PEVL of technology adoption with Prior literature supports it claim that SEY is the major threat when compared to other antecedents, since it denotes the individual user behavior capacity to adopt the new technology. According to Bandura (2014), SEY believes that "It could be developed through four primary sources such as mastery experiences, vicarious experience, social persuasion, and emotional and Physiological States." Leaders who believe in their own ability can have high morale and performance in adopting the new technology (Stajkovic & Luthans, 1998). SEY of individuals believe that the task they perceive is meaningful and achievable (Partridge et al., 2013). When individuals perceive higher value in the technology, they are more likely to engage deeply and consistently (Pintrich, 2003). SEY enhances PEVL by making the worker feel more enthusiastic to succeed, thereby reducing burnout (Bakker & Demerouti, 2007). When employees feel motivated, they can accomplish the task through proper employee engagement, and meeting the organizational commitments leads to positive PEVL (Locke & Latham, 2002). From the evidence of the arguments on SEY to PEVL, this present study also aims to examine how an individual`s SEY is determined by PEVL when they use the EHR in the hospital settings by testing the hypothesis:
H1 SEY has a positive impact on PEVL

2.2. FLCN and PEVL

The entities probably use the innovative technology when they have proper infrastructure and resources, which is identified by Venkatesh et al. (2003) in the UTAUT model. FLCN is one of the main constructs to influence the BITU, and the positive acceptance rate of new technology shows that there must be high supportive conditions prevailing in the organization, which increases the confidence level of users (Davis, 1989). In the usage of new applications, FLCN significantly impacts the standards of the application, which has been perceived by the users (Oliveira et al., 2023). Many recent findings (Alamsyah et al., 2022; Azalan et al., 2022; Hwang et al., 2022; Man et al., 2024) suggested that FLCN has a strong impact on its PEVL about E-learning, application-based interface, in-store automation, and highly automated vehicles. In meeting the job demands, FLCNs are recognized as "job resources" which will help employers to access the resources from the feedback database software (Bakker & Demerouti, 2007). Research on E-Commerce shows that a good user-friendly interface with clear protocols defined in the platform makes the customer more delighted to purchase the same product, which increases brand loyalty (Venkatesh & Davis, 2000). FLCN in retail and service contexts proved that the consumer perceives the value of the product because of the proper information and good customer support (Zeithaml et al., 2020). To summarise the major literature support of FLCN and PEVL relationships, which has been carried over in various domains such as healthcare (Andrews et al., 2014), consumer behavior (Zeithaml et al., 2020), and education (Alamsyah et al., 2022), and thereby the current literature aimed to check the association of the two variables by framing the hypothesis as:

H2 FLCN has a positive impact on PEVL

2.3. PEEX and PEVL

Venkate sh et al. (2003) proposed that PPEX is the major component that reflects one's belief could improve the performance of the job, which will improve the PEVL when adopting the technology. When making decisions for buying the same product repeatedly, PEEX plays a significant role as the product meets the customer's expectations, hence the PEVL also impacts positively (Bhattacherjee, 2001). PEEX plays a critical role in clinical learning among nursing Students in Morocco in adopting ICT tools (Sari et al., 2023). In human resource analytics, it's recognized that PEEX correlates and is linked directly in terms of job efficiency, which implies that perceived value is higher (Moturi et al., 2022). Students perceived higher value in using MOODLE as a learning management system, which helps in the completion of tasks (Sabas & Kiwango, 2021). In the aspects of Fintech platforms that offer a wide range of new applications, the adoption rates are higher due to the PEEX of the applications' usage, which directly impacts the PEVL (Xie et al., 2021). Another assumption on- Commerce platform, the PEEX reflects its performance in ease of use, security, privacy, and trust. When these criteria are met with the online product, the PEVL increases and the return of the product decreases; henceforth, the customer's behavioral intention to use leads to stronger (Kim et al., 2008). As with the E-Commerce platform, mobile application usage has also been studied with PEEX and PEVL, which stated that the application must be developed with a user-friendly interface and meet the needs of the users, which leads to PEVL (Venkatesh & Bala, 2008). This study also responds to this evidence of prior research and poses the hypothesis to be analyzed as:
H3 PEEX has a positive impact on PEVL

2.4. PEVL and BITU

Research studies also suggest that the consumption values define the PEVL in green product purchase intention, where the consumer preferences over traditional markets have been emphasized. The environmental and social values of consumers have been influenced by consumers' behaviors towards green products. In that case, the PEVL is the major antecedent to BITU (Confente et al., 2020). The PEVL on internet banking adoption has also been supported, as PEVL directly influences BITU in FinTech usage (Xie et al., 2021). Zeithaml et al. (2020) note that consumer purchase behavior is also impacted by PEVL and the value of the product, and the purchase intention implies that the performance of the product is good. PEVL is highly supported in a positive relationship with BITU when PEVL takes more advantage of the new technology (Lu & Wang, 2020). In the ITC domain, PEVL has played a major role in BITU, which specifies that FLCN positively accelerates with the intent to use e-healthcare services and e-zakat applications, particularly among users with less technical skills(Malarvizhi et al., 2024). Research studies also highlighted that PEVL increases the adoption intention in platforms like wealth management (Xie et al., 2021), privacy concerns (Kim et al., 2021; Sannegadu et al., 2022), and cloud computing (Kim et al., 2021) contexts by underlining the sustained engagement. Hence, from these proven statements, the current hypothesis could be tested as:
H4 PEVL positively impacts BITU

2.5. The mediating role of PEVL

PEVL fully intervenes in the SEY and BIU, emphasizing its critical role in technology acceptance through Social CRM (Sartono et al., 2024). The effect of SEY on BITU toward academic information systems with PEVL as a mediating variable was examined based on the quality of the information (Muslichah, 2018). PEVL highlighted FLCN and BITU in use by the E Government in Thailand, where it impacts indirectly and directly (Jermsittiparsert et al., 2022). Thompson et al. (1991) observed that the PEVL, as an intervening variable among the constructs such as attitude, subjective norms and perceived behavioral control, and intention has been carried over in the research and determined the role of PEVL among MBA students, which shows the goodness of fit indices, which has been justified in the study Villagomez & Chacón (2020). Oamen et al. (2024) pointed out that PEVL strongly supported and mediated between PEEX and BITU, the technology that improves job satisfaction and improves technology performance in the context of pharmaceutical executives. PEVL is predominant in connecting SEY, FLCN, PEEX, and BITU, and this proposes the hypotheses for mediation as:
H4a: PEVL mediates SEY and BITU
H4b: PEVL mediates FLCN and BITU
H4c: PEVL mediates PEEX and BITU

2.6. The moderating effect of VLTU on PEVL and BITU

VLTU is well-defined as the usage degree of a technology or behavior is optional for the user. This variable moderates the impact of PEVL on BITU, as it affects how much freedom an individual must act based on their perception of value rather than external pressures or mandates (Venkatesh et al., 2003). Research found that environment-based volunteers moderate the PEVL and BITU, which enhances the user acceptance and behavior of adopting the technology (Wu & Lederer, 2009). The primary construct in predicting the PEVL is BITU, which is possible only by the VLTU of the users (Dodds et al., 1991; Zeithaml, 1988). In the purchasing behavior context, the VLTU has more control over PEVL, which leads to repurchase and strengthens the intention to use or buy the product (Bendapudi & Berry, 1997). Emerging literature supports are very less for the moderator role of VLTU on PEVL and BITU, because it has been studied only on Effort expectancy (Chiu, T. M., & Ku, B. P., 2015), and the study proposed a tripartite conceptualization of VLTU, such as perceived, anticipated, and feasibility (Tsai et al., 2017). Moreover, the previous researchers have not stressed that the VLTU moderates PEVL to BITU in the EHR use system, particularly in the context of the healthcare domain, though it has been studied in various domains. This paper has taken the research gap from the prior studies and proposes the hypothesis:
H5: VLTU moderates PEVL and BITU

3. Research Methodology

3.1. Questionnaire design

The final questionnaire was verified by an expert committee from the healthcare department, with 4 doctors from top multi-specialty Hospitals. The data were collected through Google Forms as well as papers after the consent from the hospitals. The initial phase of the

study was done in person and circulated to each multi-specialty hospital in Chennai, with the evidence from Table I, where the bed counts are more than 300, and 180 samples.

Table 1: Number of Samples Collected from each Hospital

Hospital	Number of Beds	Responses (Paper and Google form)
A	300	68
B	400	82
C	200	80
D	300	90
Total Responses		320

Source: Presented based on the research conducted.

The second phase of the study was done through Google Forms and collected 140 samples. Of these, 9 samples were unusable for the study because of missing data in the demographic section. Thus, the final number of samples collected was 311, with the rate of response 97.1%. The questionnaire is made up of two segments: Demographic details and 6 constructs, which are quantified in 5-point Likert scales.

3.2. Respondents

The respondents are healthcare workers, with the evidence showing in Table II that the majority are female, with 60.5%. The age group of the healthcare workers is high, which falls under 26-30 (39.23 %). Most of the samples shown that the high usage of EHR in the hospital are carried over by nurses (35.7%) usage of EHR in terms of experience (44.4%) of people falls under the category 1-3 years whereas 1-5 years range of experienced healthcare professionals working with the same hospitals (57.5%) and daily users of EHR are high with 63.7%.

Table 2: Respondents' Details

Demographic details	Items	Occurrence (N)	Percentage
Masculinity	Male	123	39.5
	Female	188	60.5
Age	21-25	107	34.41
	26-30	122	39.23
	31-35	52	16.72
	36-40	13	4.18
	41-45	12	3.86
	>45	5	1.61
Status of the job	Admin	45	14.5
	Paramedical	61	19.6
	Nurses	111	35.7
	Doctors	67	21.5
	Others	27	8.7
Experience in using EHR(in years)	<1 year	94	30.2
	1-3 years	138	44.4
	4-6 years	40	12.9
	>6 years	39	12.5
Total experience in this hospital	<1 year	69	22.19
	1-5 years	179	57.56
	6-10 years	44	14.15
	11-15 years	9	2.89
	>15 years	10	3.22
Usage frequency of EHR	A few times a year	24	7.7
	A few times a month	18	5.8
	A few times every two weeks	16	5.1
	A few times a week	55	17.7
	Daily	198	63.7

Source: Illustrated by Authors based on Research results.

3.3. Scales

The initial measurement of SEY was introduced by Bandura (2006) context-specific construct rather than a universal scale. Later (Schwarzer, 1995) proposed the "General Self-Efficacy Scale" (GSES), includes 10 items such as "I can always manage to solve difficult problems if I try hard enough", "If someone opposes me, I can find the means and ways to get what I want", "It is easy for me to stick to my aims and accomplish my goals", "I am confident that I could deal efficiently with unexpected events" were measured based on 5-point scale from 1 "strongly disagree" to 5 "strongly agree".

FLCN adopted with 4 items given by (Venkatesh et al., 2003) to measure the availability of resources and support in the organisation namely, "I have the resources necessary to use the system", "I know necessary to use the system", "The system is not compatible with other systems I use", and "A specific person (or group) is available for assistance with system difficulties". The replies were measured using a 5-point scale from 1 "strongly disagree" to 5 "strongly agree".

To measure the PEEX, 4 items were adopted (Venkatesh et al., 2003) which included the scales such as "I would find the system useful in my job", "Using the system enables me to accomplish tasks more quickly", "Using the system increases my productivity", and "If I use the system, I will increase my chances of getting a raise" using 5-point scale from 1 "strongly disagree" to 5 "strongly agree".

From (Parasuraman et al., 1991; Sweeney & Soutar, 2001; Zeithaml, 1988), the PEVL measures are taken with 13 items, "The price of the EHR will be very economical for me", "The price to purchase the EHR will be unacceptable for me", "The price of the EHR will appear as a bargain", "The price to acquire the EHR will be reasonable", "This EHR will have a longer product life", "I will not feel superiority by owning this EHR", " From my experience of this EHR, I feel that I will get quality attributes" and were measured on 5-point scale from 1 "strongly disagree" to 5 "strongly agree".

To measure the VLTU, Moore & Benbasat (1991) developed the initial scale to use in the context of technology adoption. “My supervisor expects me to use the EHR”, “My use of EHR is voluntary”, “My supervisor doesn’t require me to use EHR”, “Although it might be useful, using EHR is certainly not compulsory in my job”, which is measured in a 5-point scale from 1 “strongly disagree” to 5 “strongly agree”. BITU included four items which are remained relatively consistent to capture an individual's purpose to involve with the technology (Venkatesh et al., 2003) namely, “I expect to use the EHR system in the next month”, “I will use the EHR system in the next month”, “ I am likely to use the EHR system in the next month” and “I am going to use the EHR system next month” which is measured in 5-point scale from 1 “strongly disagree” to 5 “strongly agree”.

4. Results

4.1. Model fit

The SEM model was analyzed and demonstrated to obtain the model fit for the data. Table III demonstrates an acceptable fit across most indices (CMIN/DF, NFI, RFI, CFI, and TLI). Whereas the RMSEA value is marginally acceptable because the study has a smaller sample size. Hence, it is not necessary to consider the goodness of fit (Kenny et al., 2015). The subsequent segment of the analysis described the internal consistency of the latent variables and tested the hypotheses. The measurement of each latent variable`s Composite Reliability (CR) and Cronbach's Alpha (α) is examined (Wenzel & Babbie, 1994). Table IV denotes CA Value for SEY, PEEX, FLCN, PEVL, VLTU, and BITU, ranging from 0.701 to 0.946, which shows the excellent reliability for each latent variable, whereas the CR ranges from .06 to .946, which confirms that the internal consistency of the items (Hair et al., 2008) is moderate to high. The standardized loadings for each item range from 0.534 to .874, which is above 0.5 (Hair et al., 2008).

Table 3: Model Fit Results

Measure	Name	Goodness of Fit	Actual Meas-ure	Result	Author
CMIN/DF	Chi-square value	<5	4.9	Fit	(Marsh & Hocevar, 1985)
NFI	Normed Fit Index	>0.5	.775	Fit	(Bentler & Bonett, 1980)
RFI	Relative Fit Index	<0.9	.751	Fit	(Bentler & Bonett, 1980)
CFI	Comparative Fit Index	>0.5	.811	Fit	(Hu & Bentler, 1999)
TLI	Tucker-Lewis	<1	.791	Fit	(Lewis et al., 1973)
RMSEA	Root Mean Square Error of Approxi-mation	.08 - ≤.10	.112	Fit	(Kenny et al., 2015)

Source: Illustrated by the Authors based on SEM Analysis.

The Average Variance Extracted (AVE) for latent variables is>.05 (Hair et al., 2008), whereas in the case of VLTU it is <0.5 (Fornell & Larcker, 1981), which is acceptable as its CR value is >0.6. Therefore, the final measurement model Table IV arrived after excluding one item from FLCN and seven items from PEVL, which are below 0.5 in the estimates. The study observed the discriminant validity to assess whether the constructs are distinct from each other. AVE presented in Table V for each variable exceeded the correlations with other constructs, signifying satisfactory discriminant validity. This suggests that the constructs are distinct from one another and measure unique aspects of the underlying theoretical model (Fornell & Larcker, 1981).

Table 4: Measurement Model Results

Items	Constructs	Standardised loading	Unstandardized Loading	S E	t- Value	P- Value	CR	CA (α)	AVE
SEY_1	SEY	0.707	1				0.946	0.946	0.641
SEY_2		0.764	1.019	0.078	13.115	***			
SEY_3		0.741	1.127	0.088	12.818	***			
SEY_4		0.858	1.125	0.077	14.541	***			
SEY_5		0.813	1.155	0.083	13.843	***			
SEY_6		0.79	0.941	0.07	13.477	***			
SEY_7		0.817	1.071	0.077	13.949	***			
SEY_8		0.825	1.08	0.077	14.09	***			
SEY_9		0.831	1.106	0.078	14.241	***			
SEY_10		0.851	1.143	0.079	14.53	***			
PEEX_1	PEEX	0.838	1				0.881	0.879	0.647
PEEX_2		0.817	0.845	0.053	15.994	***			
PEEX_3		0.797	0.865	0.053	16.277	***			
PEEX_4		0.765	0.829	0.057	14.487	***			
FLCN_1	FLCN	0.771	1				0.794	0.733	0.563
FLCN_2		0.773	0.606	0.066	9.246	***			
FLCN_4		0.707	0.797	0.07	11.463	***			
PEVL_1	PEVL	0.803	1				0.897	0.885	0.611
PEVL_2		0.735	0.912	0.068	13.356	***			
PEVL_3		0.773	0.979	0.068	14.416	***			
PEVL_4		0.774	0.945	0.064	14.677	***			
PEVL_9		0.768	0.849	0.057	14.812	***			
PEVL_13		0.764	0.726	0.064	11.358	***			
BITU_1	BITU	0.821	1				0.905	0.903	0.704
BITU_2		0.874	0.937	0.052	18.118	***			
BITU_3		0.808	0.987	0.061	16.286	***			
BITU_4		0.853	0.977	0.057	17.142	***			
VLTU_4	VLTU	0.611	1				0.6	0.701	0.423
VLTU_3		0.567	0.9	0.078	11.465	***			
VLTU_2		0.534	0.821	0.072	11.364	***			
VLTU_1		0.671	0.943	0.081	11.651	***			

Note: SEY “Self-Efficacy”, PEEX “Performance Expectancy, FLCN “ Facilitating Conditions”, PEVL “ Perceived Value”, BITU “Behavioral Intention to Use”, VLTU “ Voluntariness to use”.

Source: Illustrated by the Authors based on SEM Analysis.

Table 5: Correlation Matrix

	SEY	PEEX	FLCN	PEVL	BITU	VLTU
SEY	1					
PEEX	0.642138	1				
FLCN	0.668576	0.571982	1			
PEVL	0.340306	0.433374	0.443512	1		
BITU	0.613567	0.591209	0.629696	0.441213	1	
VLTU	0.295338	0.196039	0.212927	-0.01033	0.146317	1

Note: SEY “Self-Efficacy”, PEEX “Performance Expectancy, FLCN “ Facilitating Conditions”, PEVL “ Perceived Value”, BITU “Behavioral Intention to Use”, VLTU “ Voluntariness to use”.

Source: Illustrated by the Authors based on Research results.

4.2. Result of path analysis

The path analysis depicted in Figure 2 and the values are represented in Table VI denote the significance of hypotheses and their relationship between the constructs. The hypothesis H1, H2, H3 and H4 (SEY with β=-0.282, SE=0.136, p= 0.038), (β= 0.217, SE=0.091, p= 0.017), (β= 0.584, SE=0.147, p= 0.001) and (β= 0.516, SE=0.062, p= 0.001) respectively concluded that SEY, PEEX, FLCN and PEVL had supported positively and significant in adopting the EHR in hospital settings.

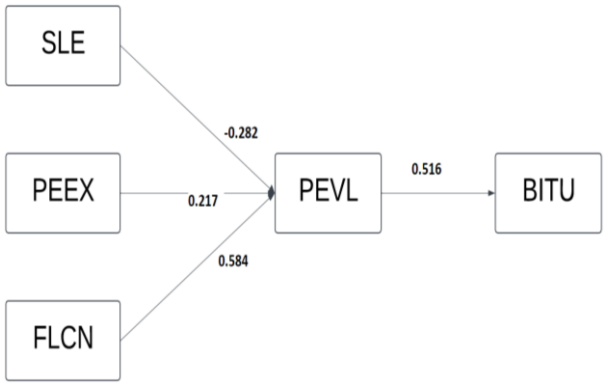

Fig. 2: SEM Result for Direct Effect.

Source: Created by the authors based on SEM

To estimate the mediation effect (refer to Table VII) of the model for the hypotheses H4a, H4b, and H4c, bootstrap techniques in AMOS were adopted with 2000 samples at a 95% confidence level. PEVL supported H4a and H4c with β= 0.048, SE=0.09, p= 0.052 and β= 0.002, SE=0.121, p= 0.002 respectively. The mediation of PEVL has not supported PEEX of using EHR and BITU with β= 0.079, SE=0.068, p= 0.075.

Table 6: Direct Effect

Hypotheses	Path			Beta	SE	P Value	Result
H1	PEVL	<---	SEY	-0.282	0.136	0.038	significant
H2	PEVL	<---	PEEX	0.217	0.091	0.017	significant
H3	PEVL	<---	FLCN	0.584	0.147	0.001	significant
H4	BITU	<---	PEVL	0.516	0.062	0.001	Significant

Note: SEY “Self-Efficacy”, PEEX “Performance Expectancy, FLCN “ Facilitating Conditions”, PEVL “ Perceived Value”, BITU “Behavioral Intention to Use”, VLTU “ Voluntariness to use”.

Source: Illustrated by the Authors based on SEM Analysis.

Table 7: Mediation Effect

Hypotheses	Path	Beta	SE	P value	Result
H4a	SEY-->PEVL-->BITU	0.048	0.09	0.052	significant
H4b	PEEX-->PEVL-->BITU	0.079	0.068	0.075	not significant
H4c	FLCN-->PEVL-->BITU	0.002	0.121	0.002	significant

Note: SEY “Self-Efficacy”, PEEX “Performance Expectancy, FLCN “ Facilitating Conditions”, PEVL “ Perceived Value”, BITU “Behavioral Intention to Use”, VLTU “ Voluntariness to use”.

Source: Illustrated by the Authors based on SEM Analysis.

Moderation effect:

The moderator exploration is to determine the magnitude to which the importance of a VLTU to use the system in the hospital stimulates the relationship between PEVL and BITU variables. Table VIII represents the regression model through SPSS, which was done with the centered variable as PEVL and centered moderator as VLTU, examined with 21.8% (R^2: 0.218; SE: 0.73; F: 28.54; p: 0.00) of the variance in BITU. The interaction term (PEVL x VLTU) resulted in β=-0.062, SE=.114, t=, .547 and p= .585, which is not significant to BITU. Table 8 findings suggest that VLTU negatively impacts the relationship between PEVL and BITU, which indicates that VLTU is in no

way associated and does not moderate the value perceived by the user and the Purpose to use the System by the user which as proven based on statistical analysis.

Table 8: Moderator Analysis

Effects	Beta	SE	T Value	P value
Constant	.177	1.746	.102	.919
PEVL	.731	.496	1.473	.142
VLTU	.470	.401	1.172	.242
PEVL*VLTU	-.062	.114	-.547	.585

Note: R^2: 0.218; SE: 0.73; F: 28.54; p: 0.00
Note: PEVL "Perceived Value", BITU "Behavioral Intention to Use", VLTU "Voluntariness to use".

Source: Represented by the Authors based on SEM Analysis.

5. Discussion

The research aimed to understand the new dimension with the constructs and their combinations, focusing on the mediating and moderating effects of BITU within the context of EHR adoption. With the support of previous theoretical frameworks such as the TAM and UTAUT3 (Farooq et al., 2017), this research contributes a novel perspective by introducing a moderator variable, VLTU, and examining its impact on BITU, which was the lack of research in existing literature. Users rarely adopt and utilize technology when they believe it will enhance their performance or simplify their tasks (Venkatesh et al., 2003; Venkatesh & Davis, 2000). This research confirms these principles, particularly in the context of EHR systems, demonstrating that user PEVL is a key influencer of BITU.

SEY leads to greater acceptance of BITU either directly or indirectly in healthcare information systems. Individuals with high SEY assign greater value to technology, which positively impacts their behavioral intentions. The PEVL acts as a mediating variable between SEY and BITU in consumer purchasing behavior, which impacts the buying pattern which as proven in the existing literature (Baliawan et al., 2024; Budiman, 2022; Deji & Musa, 2024), and thereby H1 and H4a are confirmed and proved by testing. This indicates that SEY is the level of belief in healthcare workers' capacity to execute specific performance outcomes in EHR, and it is interpreted as an individual's trust in their capacity for achievement. Meanwhile, BITU, as a dependent factor influenced by SEY through PEVL, possesses the ability to learn by healthcare professionals.

Recent studies (Ilona & Zaitul, 2021; Kim et al., 2022) believe that PEEX is the critical factor that relates PEVL and increased use of performance correlates BITU in IT innovations. PEEX consistently emerges as the most significant determinant of behavioral intention, while perceived value adds a nuanced perspective by considering cost-benefit analyses in the adoption decision (Venkatesh et al., 2003; Zeithaml, 1988). With the evidence of prior studies (Alsyouf et al., 2023; Pajares & Schunk, 2001) with sufficient resources, training, and a supportive digital environment are more motivated to engage with new technologies. To enhance the functional values relationship with BITU and PEEX, PEVL acts as a mediating factor. Some studies proved that PEEX may not impact BITU, underlying the difficulty of user acceptance models (Kim et al., 2022). Henceforth, this research also fulfilled and supported the direct effects of PEEX to PEVL (H2). The healthcare professionals are highly satisfied with the interface and the infrastructure support for the system, which is prevailing in their hospital. But the mediation effects of PEVL from PEEX to BITU have not been supported in this study (H4b). The survey highlighted that, as an individual, the existing system supports, but as a collective respondent, the model has not supported the hypothesis.

The third factor, FLCN, also plays a significant role, both directly and indirectly, in influencing BITU. Access to adequate resources and support systems strengthens PEVL by creating a favorable user experience (Taylor & Todd, 1995; Thong et al., 2006). PEVL has a direct and significant impact on BITU, as supported (Zeithaml (1988) showed that PEVL is a fundamental determinant of user intentions to purchase or engage with a product or service. Supporting theoretical models like TAM and UTAUT models, perceived usefulness (a component of perceived value) is a key predictor of intention. When users perceive high value in a technology, they are more persuaded to adopt (Davis, 1989; Venkatesh et al., 2003). The same consistency of the result proved in (Kim et al., 2022; Man et al., 2024), FLCN positively influences BITU through PEVL. This research also tested that when users perceive the system interface to be easily operated and resource availability to be adequate, they are more likely to assign higher value to the technology, which, in turn, strengthens their behavioral intention (H3). The results of FLCN to BITU have a significant impact with the mediation of PEVL (H4c). It is proven that if the available infrastructure makes the user perceive a higher degree of usefulness and its value leads to higher BITU, the system.

The significant impact of PEVL on BITU underlined the role of user opinions in technology adoption. Consistent with prior research (Sartono et al., 2024; Venkatesh & Davis, 2000; Zeithaml, 1988), this study explored that users are more likely to develop a behavioral intention to use a system when they recognize it as valuable and beneficial. The strength of the relationship (H4) highlights the mediating role of perceived value in linking external factors.

Several studies (Davis, 1989; Venkatesh et al., 2003; Venkatesh & Davis, 2000; Zeithaml, 1988) confirmed that the PEVL and BITU, with the demographic variable as a moderator, but this literature suggests that users` voluntariness to use the system moderates the behavior intention pattern. Wu & Lederer (2009) highlighted the critical role of VLTU. This study identified that there is no such association that moderates the BITU (H5) about EHR. Thus, the tested framework and literature support (Zeithaml, 1988; Davis, 1989) emphasize that PEVL acts as an intervening variable, directing the effects of SEY, FLCN, and PEEX on BITU. When individuals believe in their capability, perceive high performance benefits, and find adequate support for use, their evaluation of a technology's value becomes stronger, which ultimately drives their intention to adopt and use the technology.

6. Implications

To address the background for the hospital settings, this research aims to add and examine the moderator variable for the new environment. To ensure the successful adoption of EHR, the SEY should be improved by everyone who is involved in the interface with a new skill set and confidence to use the system. The hospitals should ensure that they have proper tools and an interface which should be user user-friendly and provides feedback for usage to be done to avoid any discrepancies. Frequent maintenance should be done for the software, which reduces the reluctance of users to use it. This will enhance the performance of the system with proper upgrading. The perceived value seems to be a tangible benefit if at all the above three factors are streamlined. By strengthening BITU, hospitals can enhance EHR adoption, leading to better workflow efficiency, improved patient care, and compliance with healthcare standards. This study suggests that to improve the BITU for EHR, hospitals must concentrate on the areas of promoting the EHR benefits and its operational efficiency. In

addition to its cap, the hospital should give adequate training and continuous support after adoption, which streamlines the process and reduces errors with the user-friendly design. The hospital should also ensure that the EHR databases are trustworthy software and align with workflow efficiency.

7. Conclusion

The further study recommendation should focus firstly on which stage the EHR is in the hospital. Nevertheless, the study is the first to discover the link in hospital settings; further study should consider the critical factors, like organizational culture, resistance to change, or external policy influences, that might not have been considered comprehensively. The study provides a roadmap for hospitals to enhance EHR adoption by focusing on user engagement, strong infrastructure, and system optimization. By addressing factors such as SEY, FLCN, and PEVL, the healthcare institutions can foster a positive adoption that can be utilized effectively to achieve better clinical outcomes and operational efficiency.

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