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Research Article

Modelling YouTube assisted language learning (YALL) adoption in EFL learning: A technology acceptance model (TAM) and theory of planned behavior (TPB) approach

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ABSTRACT

The study aims to explore the students' perception of YouTube assisted language learning (YALL) in the English as a foreign language (EFL) context using the basic technology acceptance model (TAM) by Davies (1989). This study delves into YALL adoption using TAM model as it is an unexplored area and the present studies focuses on mere perception regarding YALL or the adoption of YouTube as an educational resource, but not on the adoption of YALL in EFL context. The study is based on a quantitative approach. The data was collected using a questionnaire adapted from Chau et al. (2024) through Google Forms. The sample of 272 students was collected by purposive sampling followed by random sampling. Data is subjected to analysis in Smart PLS 4.1.1.2 for PLS-SEM analysis. The findings reveal that reliability, convergent validity, and discriminant validity are valid in all perceived usefulness (PU), perceived ease of use (PEOU), and behavioral intention (BI) constructs. Moreover, hypotheses testing results reveal that PEOU positively influences PU (b = 0.667, t = 11.600, p = 0.000). Furthermore, BI is also significantly impacted by PEOU (b = 0.362, t = 6.056, p = 0.000) and PU (b = 0.493, t = 8.634, p = 0.000). Lastly, the findings of the study are supported by the theory of planned behavior as the insights from TAM hint at the positive adoption, which implies that perceived behavioral control is promoting the adoption of YALL in university EFL context. This study offers practical insight to introduce YALL as a useful technique by educators to promote enhanced self-learning.

Keywords: EFL learners, language learning, TAM, YALL, theory of planned behavior

INTRODUCTION

Background

YouTube plays an important role in making education easy, effective, and accessible, and acts as a ubiquitous learning aid (Koc & Yucel, 2022; Mady & Baaadel, 2020). YouTube has a number of benefits in language learning, as pointed out in the recent research. Listiani et al. (2021) discovered that YouTube is a valuable tool for bilingual children to learn English language skills. This idea is reinforced by Dabamona and Yunus (2022), who state that YouTube serves as a beneficial medium to learn English and promote an autonomous learning experience. According to Crystal and Potter (2023), English is the most influential language worldwide. Keeping its importance in view, YouTube serves as an effective medium for students to learn English language skills (Zarzycki, 2020). English has four skills: speaking, learning, listening, and reading. YouTube, as a new technology, serves a significant role in improving these skills (Faziah et al., 2024).

YALL as an Effective Learning Tool in EFL Context

YouTube assisted language learning (YALL) is an effective learning tool in the English as a foreign language (EFL) and is found to be a significant tool in improving EFL skills (Dizon, 2022). YouTube learning has proven

cognitive benefits as it enhances creative skills to learn new things (Akihary et al., 2023). YouTube provides various kinds of videos, clips, trailers, blogging, podcasts, and other helpful content for learning purposes. It provides easy accessibility to native speakers, which plays a key role in enhancing English language skills, especially pronunciation, intonation, grammar, and language learning (Indrastana & Rinda, 2021; Putri, 2022). The importance of smart multimedia like YouTube cannot be denied as it not only provides autonomy, but also improves language skills (Alobaid, 2020; Imran et al., 2024a). This view is reinforced by Chorna et al. (2023), who declare that YouTube is a medium that is an open resource for language learning and enhances linguistic competencies. Speaking is one of the most important language skills, and YouTube plays a vital role in this regard and helps improve the speaking skills of the students (Damayanti & Marrufah, 2021; Febriyanti et al., 2024). In the same vein, YouTube also improves students' listening and comprehension skills as it provides them with a better understanding of content (Chien & Huang, 2020; Tanir, 2023). As it enhances the comprehension skills of the students, it consequently helps them to write better and prepare their assignments easily (Tahmina, 2023).

YouTube as the Learning Resource in Education–Recent Trends

As the recent trends are concerned, YouTube adoption is seen as a practical learning tool by students. It is adopted as a positive educational tool for learning and tutorials by students (Maziriri et al., 2020). It served as a supplementary material during the COVID-19 times and promotes positive internet learning (Almusharraf & Khahro, 2020; Liu & Luo, 2021). This is reinforced by Abdullah et al. (2023), who found e-learning, including YouTube, to be a significant learning tool after COVID-19, hinting at a shift towards this new learning system. As the learning methodology is evolving and shifting, its impacts are also noticeable, especially in the outcomes or results (Imran et al., 2024b). With the evolving learning methodology integrated with technological tools like YouTube, academic achievement is heavily influenced by the information of the technology (Abu-Taieh et al., 2022). If the information to use the technology is available sufficiently, the greater the chance of improving academic achievements. These recent trends show that YouTube has been adopted as an essential learning tool that can serve as a positive learning tool, serves as supplementary material, and improves academic achievements. These studies indicate YouTube adoption as a resourceful tool. However, the adoption of its specific domain, YALL, which, in terms of its implication in EFL, has been discussed comprehensively in the previous section, remained neglected.

Research Gap and Innovation in the Study

Although the YALL has been widely explored around the globe (Febriyanti et al., 2023; Gracella & Nur, 2020; Islamiah & Aprizani et al., 2021; Koc & Yucell, 2020; Sakkir et al., 2020). Most existing research on YALL has focused on the YALL perception among students, as seen before. Moreover, the Pakistani context, especially the higher education sector, is another factor that provides a significant gap. Sadaf et al. (2024) explored students' perception of YALL from the intermediate students in the Pakistani context. Similarly, Akbar and Sadiq (2024) investigated students' perceptions of YALL of matriculation students. In contrast to these studies, this study explores the students' adoption of YALL in nine higher education universities in Pakistan using the basic model of the technology acceptance model (TAM) proposed by Davies (1989). The present study is innovative in nature and fills the gap as it studies YALL, a specific domain of YouTube for language learning, instead of viewing YouTube as a valuable resource for education, as seen before. Furthermore, the current study focuses on the adoption of YALL instead of checking perceptions of students regarding YALL. Moreover, this is further enhanced by the fact that adoption is analyzed using the basic TAM by Davies (1989), which is a useful validated model to study technology acceptance at the basic level. In short, YALL adoption, especially in the EFL context using TAM, provides an innovative nature to this study, fills the gap in the existing literature, and paves the way for future research to analyze the adoption of new technological tools using existing technological models. Addressing this domain will benefit from understanding students' YALL adoption in EFL learning, so academia promotes its use correctly to get the most benefit.

Research Hypothesis

H1: Perceived ease of use (PEOU) has a direct and significant effect on perceived usefulness (PU) of YALL in EFL context.

H2: PEOU has a direct and significant effect on behavioral intention (BI) to use YALL in EFL context.

H3: Perceived use has a direct and significant effect on BI to use YALL in EFL context.

Research Question

How can YALL adoption be understood with the synergy of TAM and the theory of planned behavior (TPB)?

LITERATURE REVIEW

The literature review section is divided into two parts. The first part discussed the perception of YALL and its perceived benefits in academia around the globe. The second part discussed the adoption of YouTube as an effective educational tool around the globe. However, both sections confirm that adoption of the YouTube-specific domain related to language learning, YALL, is a neglected area as the present literature focuses either on perception regarding YALL or focuses on adoption of YouTube as an educational tool (not specifically for language learning).

YALL and its Perceived Benefits in EFL Context

The students' perception regarding YALL has been discovered around the globe. It has many perceived benefits, especially in EFL and second language learning contexts. YALL seems to improve all basic language skills, as evident from the studies conducted around the globe.

YALL improves speaking skills

YALL contributions to improve speaking skills are remarkable, as evidenced by the existing literature–Febriyanti et al. (2024), who investigated YouTube's impact on speaking skills of learners using interviews. The results revealed that YouTube is a practical, accessible, and flexible learning medium that improves students' speaking skills and motivation to learn. It increases their learning interest by providing various videos and valuable features, and helps them with pronunciation, accents, vocabulary, grammar, fluency, comprehension, and intonation. This view is reinforced by Damayanti and Marrufah (2021), who investigated the significance of learning media for students of 9th grade in the context of Korea and found it beneficial, as it provides direct access to native speakers' videos so that students can improve their speaking skills. Similarly, Chau et al. (2024) explored students' perception of YALL at Van Lang University using a TAM questionnaire and semi-structured interviews. They found that YouTube is an effective tool that motivates them to learn English and enhance their speaking skills. Furthermore, Akbar and Sadiq (2024) investigated the impact of language tutorials on YouTube on secondary school students in the Pakistani context and found that it significantly improved English speaking skills. Moreover, Sukumaran et al. (2023) explored Malaysian English as a second language students to see YALL's effectiveness in improving their proficiency. The results revealed that YouTube provides exposure and assists in audio-visual terms to improve their English speaking skills effectively. Lastly, Budiyanti (2022) explored YouTube perception at an Islamic university in an EFL classroom and found it helpful in speaking assignments because they have a real model from YouTube videos to enhance their speaking skills. All the studies included in this sub-section are perception-based studies conducted in secondary or tertiary education in different countries that claim YALL as an effective tool in improving the speaking skills of the students.

YALL improves grammar, vocabulary, and assignment preparation

Apart from improving speaking skills, YALL contributes significantly to improving grammar, vocabulary, and assignment preparation. Madani et al. (2023) explored YouTube's effectiveness in learning vocabulary in West Java. They found that YouTube provides ease in learning English vocabulary because it is easy to understand, and students feel motivated by using YouTube for language learning. This view is reinforced by Kusumariana (2022), who found that participants can pronounce and spell well and learn sentence-making. It also improves their vocabulary and provides teachers with a productive source of learning regarding

vocabulary. Tahmina (2023) explored students' perception of YALL using a questionnaire and semi-structured interviews in the context of Bangladesh and found that many students using YouTube assistance have benefited by watching YouTube videos in preparing assignments, acquiring grammatical competencies, and learning vocabulary because they easily understand the content on YouTube. In the same vein, Sakkir et al. (2020) explored students' perception of YALL in the EFL context in the Indonesian context and concluded that the majority of the students found it a productive tool in course assignments and study tasks. All the above-mentioned studies confirmed that YALL plays a significant role in improving grammar, vocabulary, and assignments as per students' perception from various contexts, including West Java, Bangladesh, and Indonesia.

YALL improves EFL learning process as it provides relevant material and keep students motivated

As YALL significantly contributes to improving linguistic competencies, it also makes the EFL learning process easy by providing students with the relevant material and keeping them engaged and motivated with the learning process. Gracella and Nur (2020) conducted an interview-based study in the Nigerian context and found that using YouTube has many benefits in improving their English skills. It has easy access, and students find it helpful and motivating in every situation to learn English. Similarly, Sadaf et al. (2024) stated that students responded positively to the role of videos, vlogs, and lectures on YouTube in learning the English language and highlighted the efficacy of YouTube assistance. This view is reinforced by Rizki (2024), who found that YouTube positively impacts students' perception as a medium for learning English listening. It provides students with various materials that interest them, comfort them in learning, and create a positive perception of the use of technology in learning English listening. Furthermore, Anggrarini and Faturokhman (2020) found that it makes students happy and keeps them motivated. At the same time, Perkasyah and Dewi (2023) found that students agreed that studying English using YALL is more beneficial than any other app. It prevents their time from providing paid and unpaid work and does not consume much data. All the studies converge at the point that YALL plays a significant role in making the EFL learning process easy, effective, and enjoyable. It also keeps students motivated, enhancing their productivity to learn the language.

TAM Studies Analyzing Adoption of YouTube for Educational Learning

The adoption of YouTube as a useful resource for education learning using TAM is analyzed across the globe in different studies, indicating it is an impactful tool in shaping students' self-learning habits, and hints at shifting focus from traditional class learning to autonomous self-learning using YouTube. In this attempt, Mady and Badeel (2020) analyzed YouTube adoption as a learning aid by UAE university students and found that students use it for learning and general knowledge, and there is a significant correlation between the use of YouTube videos in an academic setting and academic performance, indicating the positive impact of YouTube videos on students' learning. Similarly, Maziriri et al. (2020) explored YouTube adoption as an educational tool for learning and tutorials in Johannesburg, South Africa and found PU as the more significant predictor of intention than PEOU, and intention predicting use as the most powerful relation, indicating the usefulness as the strong driver of not only shaping intention to use, but also the practical use of YouTube. Liu and Luo (2021) investigated the adoption of YouTube as a supplementary material among college students using TAM and TTF and found that PEOU, usefulness, satisfaction, and efficacy significantly predicted intention, however, content richness, and TTF didn't predict intention, indicating the users friendly interface of YouTube, its relevant and useful content, self-efficacy and satisfaction with its quality allow students' to adopt it as a useful learning resource. Abu-Taieh et al. (2022) explored the adoption of YouTube as a useful learning tool and its impact on academic achievement in the bilingual environment in the context of Jordan using the extended information adoption model and found that information usefulness, which is predicted by source quality and information quality, proved as a successful predictor of information adoption, which in turn predicts significantly academic achievement. This indicates that usefulness is the key quality of YouTube, which leads to learning more from it, and this ultimately leads to improving academic achievements. All these studies indicated the adoption of YouTube as a useful learning resource for education around the globe.

The comprehensive review of literature in this section confirmed the significant gap regarding the adoption of the YouTube-specific domain, YALL, in the EFL context, as the previous studies focus on the

Table 1. Demographic features

Demographic	Value	Frequency (N)	Percentage (%)
Gender	Male	115	42.3
	Female	157	57.7
Semester	1st	189	69.5
	2nd	1	0.4
	3rd	9	3.3
	4th	-	-
	5th	18	6.6
	6th	1	0.4
	7th	26	9.6
	8th	28	10.3
Degree programs	BS	260	95.6
	MA	1	0.4
	ADP	9	3.3
	MPhil	2	0.7

perception of YALL and adoption of YouTube as a learning resource for education, not specifically the adoption of YouTube for language learning, which is addressed by the present study.

RESEARCH METHODOLOGY

Research Design

The research is based on the post-positivist paradigm and used quantitative techniques. The research design focuses on students' perception and acceptance of YALL in transforming university EFL students' language learning skills.

Research Participants

The research population is sampled on the basis of two sampling techniques: purposive sampling followed by random sampling. First of all, purposive sampling is done at two scales. Purposively, nine public sector universities of Pakistan were chosen, so the findings could be generalizable to the whole population. After that, the English departments of these public sector universities were chosen. The public sector universities, including Bahauddin Zakaria University, Multan, Emerson University, Multan, The Women's University, Multan, Institute of Southern Punjab, Multan, University of Punjab, Lahore, Government College University, Lahore, University of Education, Lahore, The Islamia University, Bahawalpur, and University of Sargodha, Sargodha, proved significant for pursuing research there. After choosing English departments purposively, the random sampling was done. The random sampling allowed the participation of students from different semesters, degrees, and genders, which contributed to a generalizability principle. A total of 274 random students from the purposively sampled universities and English departments of the respective universities filled the form. The details of the participants are given in **Table 1**.

Instrument and Data Collection Method

This research used a structured questionnaire. A Google Form-based questionnaire was created and circulated to various students at Pakistani universities to get their responses about their perception and acceptance of YALL in the EFL context. The questionnaire was adapted from Chau et al. (2024), which was modified from Davies (1989)–the questionnaire comprised a total of 14 questions of three constructs. The details of the questionnaire with the descriptive statistics, factor loadings, average variance extracted (AVE), and the source of adaptation are given in **Table 2**. The PU construct has eight questions, while PEOU and BI have three questions each. All the questions were adapted by an EFL expert to fit the Pakistani context. Moreover, the pilot study was conducted on twenty-five students at these universities to check the appropriateness of the scale. The questionnaire took about one week to receive responses from 6 April 2025 to 13 April 2025.

Table 2. Measurement items

Construct	Code	Item	Loadings	Mean	SD	AVE	AFS
PU	PU1	YALL improves my academic performance.	0.718	3.949	0.864	0.542	Chau et al. (2024)
	PU2	YALL increases my understanding of English language skills.	0.756	3.963	0.794		
	PU3	I can watch videos on any aspect of language that I did not comprehend at school.	0.724	4.114	0.856		
	PU4	YALL gives me more control over my language learning.	0.721	3.926	0.971		
	PU5	I can listen to the same lessons from different teachers on YouTube for better comprehension.	0.772	3.739	0.924		
	PU6	YALL is helpful in understanding language and linguistics concepts easily.	0.776	3.967	0.837		
	PU7	YALL is helpful in understanding complex grammatical rules using YALL.	0.719	3.706	0.908		
	PU8	Watching YouTube videos for language learning helps me improve my writing, reading, listening, and speaking skills.	0.703	3.864	0.895		
PEOU	PEOU1	My interaction with YouTube for language learning is clear and understandable	0.794	3.787	0.727	0.672	Chau et al. (2024)
	PEOU2	I find YouTube easy to use for language learning.	0.810	4.206	0.758		
	PEOU3	It is easy to get content from YouTube for language learning.	0.853	3.824	0.826		
BI	BI1	I would prefer to use YouTube because it helps me to learn language skills.	0.861	3.864	0.818	0.692	Chau et al. (2024)
	BI2	I would prefer to use YouTube to improve my language skills because it arouses my interest in language learning.	0.861	3.695	0.861		
	BI3	I will choose YouTube assisted language learning because it develops my English skills.	0.770	3.632	0.934		

Note. SD: Standard deviation, AFS: Adapted from the studies

Data Analysis Procedures

This study employed SmartPLS 4.1.1.2 to perform partial least squares structural equation model (PLS-SEM). Firstly, the measurement model is measured, in which the convergent and discriminant validity are measured. Firstly, in convergent validity, composite reliability, Cronbach's alpha, and AVE were measured.

After that, discriminant validity was checked using the Fornell-Larcker criterion (FLC) and the Heterotrait-Monotrait (HTMT) ratio. The second step was to analyze the structural model. In the structural model, hypothesis testing was done, path coefficients were analyzed, the coefficient of determination (R^2) was evaluated, and p-values and t-statistics were analyzed for hypotheses. Finally, effect size (f^2) was checked to see the magnitude of the path coefficient. Finally, the bootstrapping technique was used to check the hypotheses after keeping the significance level at 0.05 with 3000 iterations by default.

Ethical Concerns

The ethical concerns about data collection were dealt with carefully. First of all, the detailed description of the study was given in the introductory section of the Google Form. The informed consent was obtained as the first question asked, "Do you want to participate in this study?". The question was made compulsory to be filled out before proceeding with the main questionnaire. Moreover, in the introduction section, the students were assured of anonymity and data protection. Lastly, they were requested to fill out the form carefully and attentively.

Theoretical Framework

TPB

The TPB provides an accurate picture of how behaviors are adopted as described in the words, "Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control; and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior" (Ajzen, 1991, p. 179). Furthermore, the TPB is different from the theory of reasoned action based on its inclusion of perceived behavioral control in the theory, as described in the words, "In fact, the TPB differs from the theory of reasoned action in its

addition of perceived behavioral control" (Ajzen, 1991, p. 183). The theory of reasoned action proposes that if someone wants to adopt a behavior with a positive attitude and thinks that significant others, like friends, peers, and family, want them to perform a behavior, it plays a significant role in adopting that behavior. Icek improved the theory of reasoned action by adding the third influencing factor, which is called the perceived behavioral control, and that improved the predictability of the model.

The TPB stands on three central tenets.

1. **Attitude towards the behavior:** The attitude is the set of beliefs that helps one define the behavior as described in the words, "degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). According to Ajzen (1991), if you think positively about your behavior, then it makes a positive difference in your life. If you evaluate a behavior (both in positive and negative effects), your attitude simply answers the question, "What do I think?"
2. **Subjective norms with respect to behavior:** The subjective norm is the idea that is prevalent and propagated by the people in the society, as described in the words, "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991, p. 188). It includes the people you interact with and the way you think about your behavior. So, your behavior is shaped by those who live around you. Suppose they wanted to appreciate a course you are influenced to follow. In short, subjective norms answer, "What do others think?" about the behavior.
3. **Perceived Behavioral control over the behavior:** The perceived control behavioral is an interesting and innovative construct added by the TPB, differentiating it from the theory of reasoned action, and it is related to the ease or difficulty of executing a behavior. It is defined in the words "the perceived ease or difficulty of performing the behavior, and it is assumed to reflect past experience as well, as anticipated impediments and obstacles" (Ajzen, 1991, p. 188). For example, if you find the course fine, you are more likely to take it; similarly, if you feel less collaborative, you will be less likely to sign up. So, you get the answer to the question, "Can I do it?" This is the point which builds intention and ultimately leads to an actual behavior. This theory helps make predictions.

Conceptual Framework

TAM

TAM is one of the modern models based on psychological theories to see the acceptance of new technologies on the basis of factors that they offer (Legris et al., 2003; Marangunić & Granić, 2015). The conceptual framework employed in this study is the TAM by Davies (1989) to see the university students' intention of YALL in language learning. The theory has two primary constructs, namely PU and PEOU. PU refers to the degree of belief that specific technology would enhance productivity (Davies, 1989; Venkatesh & Bala, 2008). On the other hand, PEOU is defined as the least degree of effort and cognitive abilities that are required to run the technology (Davies, 1989). The final construct is the BI, which is actually students' intention to accept the technology on the basis of attitude, subjective norms, and beliefs (Venkatesh, 2003).

Synergy of TAM and TPB

TAM is actually based on the theory of reasoned action, which also laid the foundations for the TPB. The TAM is a newly developed theory, mainly focusing on the acceptance of various technologies among people based on the ease and usefulness they provide to their users. However, the TPB is a theory of psychology which determines how people's attitudes, coupled with subjective norms and perceived behavioral control, help them shape their intentions to adopt a new behavior. The theory incorporates some of the central concepts in the social and behavior sciences, and it defines these concepts in a way that permits prediction and understanding of particular behaviors in specified contexts (Ajzen, 1991, p. 206). As the components of both theories are related to the adoption of a behavior, the synergy of these theories helps us understand YALL acceptance comprehensively. TAM provides statistical findings related to the adoption of YALL, and TPB provides a logical understanding of the adoption of YALL. It simply answers the question of why YALL adoption is seen as a positive tool, especially by analyzing the constructs of YALL in comparison to the relevant constructs of the TPB. TAM, with its major components PU and PEOU, which are an amalgamation of factors related to the personal and social level, serves as an interesting factor in determining BI. This acts in

Table 3. Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE
BI	0.777	0.789	0.870	0.692
PEOU	0.756	0.765	0.860	0.672
PU	0.879	0.882	0.905	0.542

Table 4. HTMT ratio

	BI	PEOU	PU
BI			
PEOU	0.842		
PU	0.847	0.819	

Table 5. FLC

	BI	PEOU	PU
BI	0.832		
PEOU	0.690	0.820	
PU	0.734	0.667	0.737

juxtaposition to the TPB, as attitudes of people, subjective norms, and perceived behavioral control help shape BI. As the constructs of TAM are related mainly to attitude and perceived behavioral control, subjective norm is not given much importance as Ajzen (1991) claimed that only attitude or combination pf attitude with behavioral control can significantly predict intention in the words, "the relative importance of attitude, subjective norm, and perceived behavioral control in the prediction of intention is expected to vary across behaviors and situations. Thus, in some applications it may be found that only attitudes have a significant impact on intentions, in others that attitudes and perceived behavioral control are sufficient to account for intentions, and in still others that all three predictors make independent contributions" (Ajzen, 1991, p. 188). Here, in this case, mainly attitude and perceived behavioral control are the significant factors in determining the intention. Hence, the significant and positive impact of PU and PEOU on BI can indicate a positive attitude of users based on their experience with the technology and perceived behavioral control (as benefits propounded in PU and PEOU), leading to the strong intention and adoption of behavior (technology).

FINDINGS

Measurement Model

The measurement model is analyzed under following headings.

Convergent validity

The Cronbach's alpha is used to determine the reliability and validity of our findings. The items should be highly correlated to maintain high internal consistency. A composite reliability measure is also applied to evaluate accuracy. The minimum accepted value of both is 0.7, which should not be ≥ 0.95, so all values fulfil the requirements and maintain internal consistency. The average value extracted AVE is used to determine the convergent validity, whose minimum accepted value is 0.5 as per Hair et al. (2022). The reliability and convergent validity checks are given in **Table 3**.

Discriminant validity

The discriminant validity is captured by two means: HTMT ratio, as given in **Table 4**, and by FLC, as given in **Table 5**. If we see all values in HTMT, all values are below 0.85 as per Henseler et al. (2015), indicating that discriminant validity is established. The square root of AVE should be greater than the correlation of one variable with other variables to maintain discriminant validity (Fornell & Larcker, 1981). If we see all values in the FLC, every factor is loading highest in its section, indicating that discriminant validity according to the FLC is also established.

In cross-loading, factors loading on its parent construct should be high instead of loading on other constructs. If loading is higher and is significantly well on its parent construct instead of the other constructs, then there is no issue of discriminant validity. **Table 6** indicates the same case where the items are loading

Table 6. Cross loading

	BI	PEOU	PU
BI1	**0.861**	0.664	0.657
BI2	**0.861**	0.578	0.601
BI3	**0.770**	0.462	0.569
PEOU1	0.520	**0.794**	0.543
PEOU2	0.506	**0.810**	0.509
PEOU3	0.656	**0.853**	0.583
PU1	0.464	0.440	**0.718**
PU10	0.558	0.462	**0.703**
PU2	0.578	0.483	**0.756**
PU3	0.486	0.457	**0.724**
PU4	0.469	0.472	**0.721**
PU5	0.543	0.482	**0.772**
PU6	0.613	0.585	**0.776**
PU9	0.583	0.524	**0.719**

Table 7. Hypotheses testing

	Original sample (O)	Sample mean (M)	Standard deviation (SD)	t-statistics (|O/SD|)	p-values
PEOU → BI	0.362	0.360	0.060	6.056	0.000
PEOU → PU	0.667	0.664	0.057	11.600	0.000
PU → BI	0.493	0.494	0.057	8.634	0.000

Table 8. f^2

	BI	PEOU	PU
BI			
PEOU	0.187		0.800
PU	0.347		

Table 9. R^2

	R^2	Adjusted R^2
BI	0.611	0.608
PU	0.445	0.442

well on their parents' constructs. The items/factors loading well on their parent constructs are indicated with bold readings in **Table 6**.

Structural Model

Hypotheses testing

The findings reveal that PEOU (b = 0.667, t = 11.600, p = 0.000) significantly and positively impacts university students' usefulness (PU) of using YALL for English language learning. After that, PU (b = 0.493, t = 8.634, p = 0.000) also significantly impacts students' intention to use YALL for language learning. Lastly, PEOU (b = 0.362, t = 6.056, p = 0.000) strongly and positively impacts students' intention of using YALL for English language learning. The findings are represented in **Table 7**.

Effect size

The f^2 of PEOU on PU is 0.800, which indicates a strong f^2as it crosses the threshold of 0.35 for a strong f^2as per Sarstedt et al. (2022). Moreover, the $f^2$of PEOU on BI is 0.187, indicating a moderate effect, and the $f^2$of PU on BI is 0.347, indicating a substantial effect. The findings are shown in **Table 8**.

Coefficient of determination

The model has strong explanatory power in both the cases as of PEOU impact on PU has R^2 of 0.445 or 44.5% explanatory power, which lies in a moderate to strong range as per Hair et al. (2011) and PU and PEOU impact on BI has 0.611 or 61.1% explanatory power which indicates a substantial explanatory power as per Hair et al. (2011). This is shown in **Table 9** and **Figure 1**.

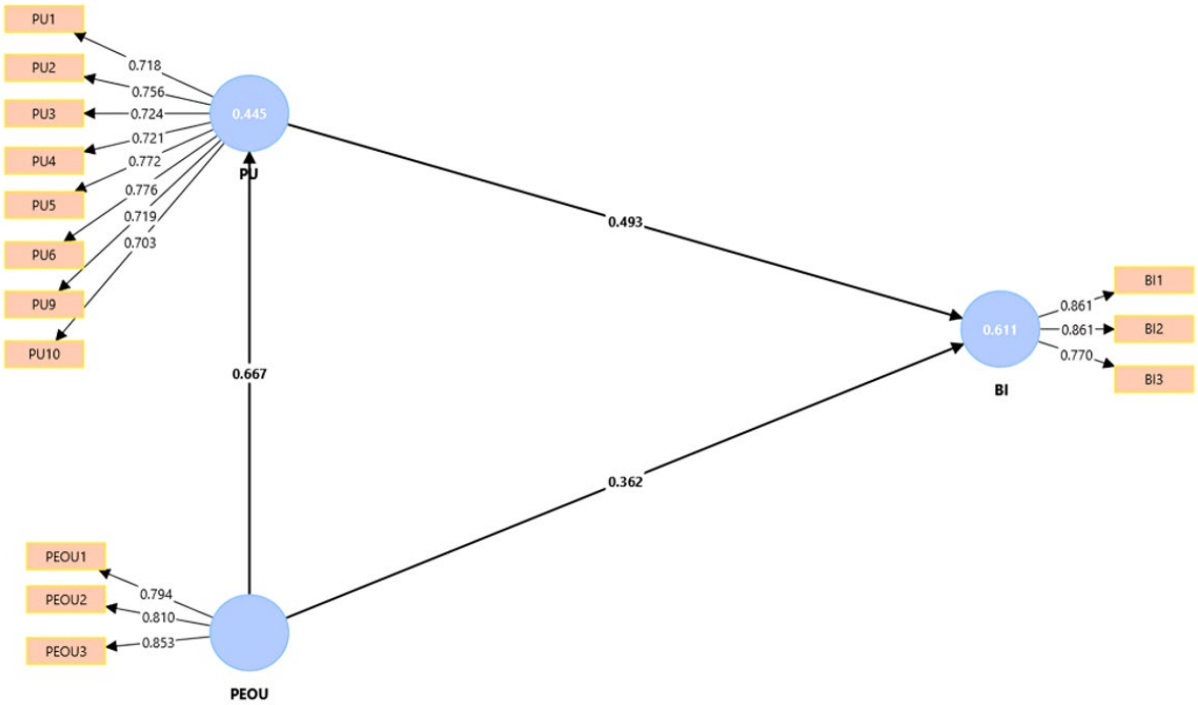

Figure 1. Measurement model and structural model (Image created by authors using SmartPLS 4)

Table 10. Model fitness

	Saturated model	Estimated model
SRMR	0.069	0.069
NFI	0.829	0.829

Model fitness

The model has good fitness as SRMR is 0.69, which lies below the threshold of 0.8, indicating a goodness of fit. Moreover, Bentler and Bonett (1980), NFI also met the criteria of 0.8 validating model fitness. The model fitness is given in **Table 10**.

DISCUSSION

The discussion section comprises five sections. Each section contributes to the understanding of findings in a logical way.

Brief Findings

The findings of the study explained acceptance of YALL in the Pakistani University EFL context in a positive way. The study was conducted at the English departments of nine general universities in Pakistan, where students were picked from different degrees, semesters and classes. The first hypothesis that PEOU significantly and positively influences PU has been proved, indicating that easy availability of YouTube, its friendly interface, its quality content and learner autonomy attract students' intention to use it in their language learning, as they found it a useful tool in their language learning. In the same vein, the second and third hypotheses that PEOU and PU positively impact BIs of university EFL learners are also proven, which hints at the potential of YALL to shape university EFL students' intention and behavior to adopt as an essential learning resource, as they found it easy and useful to use in their language learning.

TPB Providing Logical Grounds to TAM Findings–A Useful Synergy

The findings of the study are supported by Ajzen's (1991) TPB. The first hypothesis that perceived ease positively impacts PU proves true. Here, the constructs of attitude and perceived behavioral control of the TPB come into action as the adoption of YALL by EFL learners is based on their positive attitude that sprang

out from its easy-to-use features, including precise content and a self-directed learning approach. As the positive attitude of usefulness is predicted significantly by ease, it is based on their past experience with the YALL because Ajzen (1991) claimed perceived behavioral control "assumed to reflect past experience as well, as anticipated impediments and obstacles" (p. 188). The second and third hypotheses that PU and PEOU positively and significantly impact BI prove true, which ultimately leads to the belief that YALL is a great language learning resource among resources. Here again, the attitude and especially perceived behavioral control provide sufficient justification to PEOU and PU in shaping intention to opt for YALL for language learning among EFL learning. The second hypothesis that PEOU significantly predict intention to use YALL is supported by the perceived behavioral control as the positive experience of using YALL in the past, present, or in the future push students to adopt it as useful language learning resource as they seem too aware of different features that provide ease including less internet data consumption, plethora of videos on one subject, download/offline facility, and filtering the content on the basis of the viewer's choice. The third hypothesis that PU significantly, positively, and more powerfully predicts intention to use YALL is supported by both attitudes towards opting for YALL and perceived control over YALL. The PU, which is positively predicted by PEOU, developed a positive attitude towards YALL. This positive attitude, coupled with perceived behavioral control, especially in terms of future benefits, including easy and improved language learning, enhanced vocabulary, and better understanding of linguistic features, including grammar and language structures, leads more powerfully to adoption of YALL for language learning. As the findings of both the constructs are positive and significant in shaping intention, they simply aligned with attitude and perceived behavioral control in shaping intention as clear from the words of Ajzen (1991) "Thus, in some applications it may be found that only attitudes have a significant impact on intentions, in others that attitudes and perceived behavioral control are sufficient to account for intentions" (Ajzen, 1991, p. 188). So, we can say that significant BI predicted by PEOU and PU is due to students' positive attitude towards YALL and perceived behavioral control over YALL. In short, it can be concluded that quantitative findings yielded from TAM regarding the adoption of YALL by EFL learners are given proper justification by the TPB.

YALL–An Effective Learning Tool for EFL Learners–Comparative View with the Present Study

The findings that YALL is an impactful resource for EFL students are supported by various studies around the globe. Sukumuran et al. (2023) found it significantly impactful in improving speaking skills. The positive impact of online videos on language learning is reinforced by Shafirova et al. (2024). Halim and Arfin (2023) encourage its role as a supporting medium in language learning. This view is further supported by Kim and Kim (2021), who declared YouTube to be a useful resource in developing language skills. Similarly, Tohang et al. (2024) also found it a significant medium for learning language and improving the learning process. Finally, the study by Chau et al. (2024) proves that YouTube is an effective tool for language learning, keeps learners motivated and provides them with an opportunity to take control of their learning journey.

YouTube Adoption and Other Technologies Adoption Using TAM–A Comparative View With the Present Study

The findings of the study are supported by various studies examining the acceptance of different technologies across the globe using TAM. Firstly, the findings pertaining to the adoption of YALL are supported by various studies that studied the adoption of YouTube as a useful resource. The findings that PU and PEOU significantly predicted the adoption of YALL are supported by Maziriri et al. (2020), who studied the adoption of YouTube as an educational tool for learning and tutorials. Interestingly, PU is seen as more powerful and predicted than PEOU in Maziriri et al.'s (2020) study, which aligns exactly with the current study. Moreover, finding PEOU as a significant predictor of PU is contradicted by Liu and Luo (2021), who found PEOU as an insignificant predictor of usefulness. However, finding PEOU and PU as the significant predictors of intention to adopt YALL is supported by Liu and Luo (2020), as they found them to be significant predictors of YouTube as supplementary material during COVID-19 times. Lastly, the finding of PU as a significant predictor of opting behavior is further confirmed by Abu-Taieh (2022), who found that PU is successfully predicted by a number of factors, including source credibility and information quality, and in turn significantly predicts information adoption of YouTube as a learning tool. Secondly, apart from the studies analyzing the adoption of YouTube,

TAM models studied the adoption of other technologies, especially artificial intelligence (AI), in recent years, which confirm PEOU and PU as significant predictors of BI to adopt technology. The findings that PEOU impacts PU and PU impacts BI are aligned with Tummalapenta et al. (2024); however, PEOU's impact on intention is contradicted by this study, which analyzed ChatGPT adoption in the Indian context. The same is the case with Soliman et al. (2024), who explored generative AI adoption using TAM and found PEOU insignificantly impacting intention, which is in contrast to our findings. Moreover, Al-Adwan et al. (2023) also yielded a similar trend of PEOU yielding insignificant impact; however, PU impacts positively in developing intention to opt for the metaverse. Contrary to the trend, PEOU insignificantly impacts BI. Maheswari (2023), who examined ChatGPT adoption using TAM constructs, found PU insignificantly impacts BI. However, the strong impact of PEOU on PU is strongly aligned with the findings of the present study. Lastly, PEOU as a determining factor in affecting intention is aligned with Sharma et al. (2023), who found it significantly impacted intention while checking AI adoption in the Indian context. Furthermore, the findings of the TPB significantly relate to various studies conducted on technology adoption in various higher education backgrounds. The findings of the study are aligned with those of Rahmat et al. (2022), who found the adoption of advanced technology systems in library use. Moreover, a study by Anthony Jr et al. (2020) for blending learning and a study by Hu (2022) for smart learning proved the role of intention in shaping the behaviors of users in opting for certain technologies.

Significance of Comparisons

The comparisons made here provide support to the findings of the present study as they reinforce and confirm the prevailing trend behind the adoption of any technology. The comparisons of the study made in the previous two sections confirmed that usefulness as the most powerful and significant factor in determining technology, as in our case the adoption of YALL, PU is significantly predicted by PEOU and predicts BI more powerfully than PEOU, making it a more prominent factor among EFL learners for adopting YALL. Furthermore, the comparisons revealed that PEOU and PU both contribute greatly towards shaping intention in almost all the studies, including those where YouTube and other technologies adoption were seen using the TAM. Moreover, the TAM is seen as a helpful model in understanding the adoption of new technologies at a basic level.

PRACTICAL AND THEORETICAL IMPLICATIONS

Practical Implications

YALL has practical implications as it can serve as a great vehicle to transform the language learning process into the contemporary era. YALL can be directly or indirectly introduced in the learning process by teachers. As the study indicated, usefulness is the most significant predictor of opting for YALL for language learning in the EFL context, followed by ease of use. TAM-TPB synergy provides several practical implications for educators and policymakers to integrate YALL as a useful tool for language learning and promote its use to make the learning process effective and useful. The first thing is that the educators can introduce YALL as a flipped learning tool. In this flipped learning, the students can be assigned videos to watch regarding specific domains of language and linguistics to understand the concepts carefully. Later on, in class, the same concepts can be discussed to reinforce the learning process. Finally, students can be asked to reflect on those things through feedback to assess what they learn. Apart from assigning videos for learning the rules of language and linguistics concepts, videos can be assigned to improve language skills. The students can be assigned to listen to different English news channels from the UK and the USA. In the class, the difference in the pronunciation and accent they listen to can be discussed. Finally, the students can be allowed to reflect on their learning of the pronunciation of specific words they learn from those news channels. These implications are supported by various theoretical insights, as the assigning of videos for improving skills of any kind can be related to the flipped classroom model (Bergmann & Sams, 2012). The measure is essential and aligned with the TAM-TPB synergy as the usefulness is kept as a first priority, followed by ease to shape students' attitude towards language learning by perceived behavioral control to keep them engaged with the meaningful content in the flipped pattern and enhance their language learning practices (Ajzen, 1991; Davies, 1989).

The second thing that educators can do is introduce their specialized use as per the findings of TAM-TPB synergy to shape EFL realities. Its use can be structured to improve four different English language skills, including listening, speaking, reading, and writing. For listening, wide exposure to different YouTubers across the world allows access to different accents and pronunciation. This practice helps understand different accents easily and improves listening skills significantly, helping to communicate with international audiences effectively. For speaking skills, a specific accent and pronunciation can be chosen from a favorite YouTuber, and a drill practice can help effectively improve speaking skills. For reading skills, if the videos are watched with the subtitles, it allows the learners to acquire lots of vocabulary and syntactical structures. This will help improve vocabulary and its usage in the real world language. For writing skills, feedback, the written review of the video, and summarization of video content in writing can be provided to students to improve their writing skills. In all the language skills, the TAM-TPB synergy induces a positive learning attitude among EFL learners as they have a choice of choosing content for enhancing their listening and speaking skills, watching it with or without subtitles improve their reading, and writing the video review or summarizing its content improve their writing practices, and as a result the benefits attach to using YouTube in this way promotes positive attitude under behavioral control among EFL learners to opt it as a useful tool in their language learning (Ajzen, 1991; Davies, 1989). This view is further reinforced by Flavell's (1979) metacognition theory. As the purpose of YALL is to improve language skills, the metacognition theory of Flavell (1979) supports this technique in significantly improving skills as it helps students gain personal knowledge of language skills, to master the task based knowledge of skills, and to strategically shape their language learning skills leading to a great metacognitive experience of learning as making language learning as the part of your metacognitive knowledge.

Lastly, the bigger practices from educators can be creating YouTube content/playlists that align with the course content. As in the synergy of TAM-TPB, ease was another significant factor leading to the adoption of YALL in the EFL context; the educators are also responsible for providing ease to the learners, apart from integrating YALL as a useful content to the learners. This can be done in two ways. The educators can create a playlist of the YouTube videos from multiple channels regarding their curriculum units, so it not only provides students with ease, but they can also get the most benefits out of it. An integration of YouTube in LMS can also be a good step in promoting its positive use. But the most effective step that educators can take is to create their own private YouTube channels for their students. In this way, they would be able to create the videos as per the curriculum, the needs of students, tailor students' learning experience, and enhance the comprehension of the students. In this way, the TAM-TPB synergy promotes YALL adoption due to the perceived control behavior as it is defined as "assumed to reflect past experience as well as anticipated impediments and obstacles" (Ajzen, 1991, p. 188). The educator can provide them with ease in creating a content list, an aligned playlist, or a private YouTube channel to shape the positive attitude of learners to opt for YALL in the EFL context.

Theoretical Implications

Furthermore, this study has theoretical implications as the synergy of TAM and TPB yields peculiar findings, which not only complement each other but also provide a clearer and more comprehensible picture of YALL adoption in the Pakistani university context. This synergy can serve as a ground for future studies to delve into the adoption of different technologies while relating to socio-psychological dimensions, which promotes inclusion of intrinsic factors/constructs in the existing models and supports sociological or psychological theory to understand the technology adoption not only through trends but also through the underlying beliefs and habits that lead to the adoption of the technology in a certain way.

CONCLUSION

Research Findings

The study comprehensively took an overview of YALL perception and acceptance among Pakistani universities' EFL students using the basic model of the TAM. The model is complemented by the TPB. The synergy provided a comprehensive understanding of findings. The findings of the study indicated that ease of use is a significant predictor of usefulness, and both ease of use and usefulness are strong predictors of BI

to use YALL in language learning. These findings indicate that the attitude of learners is positively impacted by YALL because of their control over using this technology, based on the benefits it offers to the learners. The study has practical implications as it can be directly incorporated into the EFL classroom and daily activities, so students get the most benefit out of it. Furthermore, synergy brought a clearer picture of its adoption and yielded a new perspective on technology adoption in the educational context.

Limitations

The study has a few limitations. The data sample consists mainly of undergraduate students (BS students), so it lacks diversity from postgraduate students. This study can be further extended to postgraduate students. Moreover, interviews regarding YALL can also be added to enhance the qualitative insights offered by quantitative data. Furthermore, TAM extended models, which include constructs from multiple domains, can be used in future research to analyze YALL adoption from a broader perspective.

Future Research Directions

Although the research was innovative in its use of methodology, especially in the context of YALL in the EFL context, as the previous studies did not delve into YALL adoption using TAMs. However, the present study contributes to filling this gap as it investigates the YALL adoption in the EFL context using the TAM basic model supported by the TPB. This paves the way for future research to see YALL adoption more comprehensively using the advanced versions of existing technological models, including TAM and UTAUT and the emerging models, which comprise the extrinsic and intrinsic constructs that lead to the adoption of a certain technology. Future research can include those extrinsic and intrinsic factors in the model that could possibly motivate EFL learners to adopt YALL in their language learning to figure out the changing trends in its adoption. Furthermore, various theories, including social cognitive theory, metacognitive theory, and theory of reasoned action, can be used as a tool to provide enough justification for the factors included in the models that are used to see YALL adoption among EFL learners.

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