Factors Influencing Learner Acceptance of Online Assessment at a Higher Education Institution

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***Abstract*—The widespread adoption of computer technology has led to increased use of computer-based testing, including language proficiency assessments. This study uses the Decomposed Theory of Planned Behaviour by Taylor & Todd (1995) to explore factors influencing learners' acceptance of online assessments, primarily through interviews and questionnaires. Data were collected from 86 participants who took the online assessment. The interviews revealed three main factors influencing participants' experiences: Behavioural belief (perceptions of benefits and drawbacks), Normative belief (influence of peers or instructors), and Control belief (perceived ease or difficulty in using the technology). Meanwhile, the questionnaire analysis revealed that attitude, peer influence, and technology-facilitating conditions are significant factors that affect participants' acceptance of using linguistic skills. The questionnaire analysis indicates that participants' acceptance of Linguaskill is significantly influenced by their attitude, peer influence, and the facilitating conditions provided by technology. The findings offer practical implications for computer-based assessment developers, educational institutions, and platform developers, suggesting strategies for enhancing user acceptance and assessment effectiveness. These insights could improve the development and implementation of other computer-based language testing platforms, contributing to the broader discourse on e-assessment in language education.**

***Keywords*—decomposed theory of planned behaviour, online language assessment, learner acceptance**

I. Introduction

This study attempted to identify and explore the factors influencing learner acceptance of the Linguaskill online test, a computer-adaptive English language proficiency test offered by Cambridge Assessment English. It also aims to suggest ways to make the online test more effective and efficient. User acceptance and use of ICT for learning and assessment are underpinned by the Technology Acceptance Model (TAM) [1] and the Decomposed Theory of Planned Behaviour (DTPB) [2].

The widespread adoption of computer-based testing in language assessment has raised important questions about learner acceptance and readiness. While computer-based language tests, like Linguaskill, offer potential advantages in efficiency and accessibility, there is limited understanding of how learners perceive and accept these assessment formats, particularly in the context of Malaysian higher education. The factors influencing learners' acceptance of online language assessments must be systematically investigated to ensure successful implementation. Without proper understanding of these acceptance factors, institutions risk implementing computer-based tests that may create barriers for learners and negatively impact assessment outcomes. This study, therefore, seeks to identify and analyse the key factors affecting learner acceptance of Linguaskill as an online English language assessment tool and to determine how these factors shape the overall assessment experience. Understanding these dynamics is crucial for improving the delivery and effectiveness of computer-based language testing programs in Malaysian universities. Thus, the study sought to answer the following research questions:

1) What factors influence learner acceptance of online language assessment?
2) How do these factors affect the participants' online language assessment experience?
3) How can online language assessment be carried out more effectively?

This study employed a mixed method research design comprising both quantitative and qualitative methods. The sampling method is purposive sampling. Eighty-six final year students from selected faculties at a public university in the Klang Valley area in Malaysia who have sat for the Linguaskill test, four test invigilators, and a representative from the company that is the sole agent for Linguaskill in Malaysia were the participants of the research. The quantitative method was used to answer research question 1. A questionnaire was developed and administered to the final year students from selected Faculties at this university to gauge the factors influencing their acceptance of the online language proficiency test, Linguaskill. The qualitative method was used to answer research questions 2 and 3. Semi-structured focused interviews with the participants were carried out to explore how learner acceptance factors affect their online language assessment experience. Semi-structured interviews were also conducted with personnel from the company who administered the Linguaskill test and the 4 invigilators who proctored the online test via a video conferencing app (i.e., Zoom Meeting). The interview sessions gauged their experiences in administering and managing the test and their suggestions on how the test administration could be done more effectively and efficiently. Understanding factors influencing learner acceptance of online language assessment and determining ways to improve the online language assessment method could help test providers improve the online test features, testing procedures, and the training and instructions provided for test takers. Results of the study could also assist relevant organisations, such as the Ministry of Education and higher learning institutions, in gauging the suitability of the Linguaskill test as an L2 proficiency test in terms of learner

acceptance of the test and factors related to learner acceptance and learner experience in taking the test.

II. Literature Review

A. Computer-Based Testing of L2 Ability and Learner Acceptance

Computer-Based Testing (CBT) has become increasingly popular due to its advantages for test providers, including efficient administration, fast grading, and scalability. Globally recognised English proficiency tests, like IELTS and TOEFL, offer CBT in linear formats, where test content remains consistent across delivery modes. Adaptive CBT, such as Cambridge's Linguaskill, tailors the levels of difficulty based on test-taker responses, providing a more dynamic and individualised experience.

Research on test-takers' perceptions of CBT is mixed. Several studies [3, 4] reported favourable views and confidence in computer-based language tests. CBT received positive feedback for the listening test and, similarly, the reading test [4, 5]. However, one study highlighted negative perceptions due to technical problems [6], but another study received positive feedback while emphasising the technical issues to improve [7]. While positive attitude is reported, there is a need for further integration of technology in teaching and learning, and a practical solution is needed to improve the assessment experience.

Thus, given the prevalence of computer-based testing, there is a need to investigate test takers' perceptions of computer-based tests and the factors influencing their acceptance of these tests. With greater interest in computer-adaptive testing since the late 1990s, the current study is interested in gauging test takers' and test providers' perceptions of one such test, the Linguaskill test. The Linguaskill test was only recently launched in January 2019, and its replacement of the BULATS (an English language proficiency test by Cambridge Assessment English) came into effect in January 2020 [8]. The Linguaskill test was chosen for this study as it is a computer-adaptive test, a sub-type of computer-based testing that has garnered greater interest among researchers in the past decade. Also, it has only recently been introduced, thus making it a novel subject to study. In particular, the current study will identify and explore factors that influence test takers' acceptance of the test, as well as the means by which the administration and effectiveness of test delivery could be improved.

B. Review of Previous Studies on Online Language Assessment Acceptance

Research on online language assessment acceptance has evolved significantly, particularly with the acceleration of digital assessment adoption in recent years. A critical examination of existing studies reveals several key patterns, limitations, and research gaps that warrant attention.

Early studies predominantly focused on comparing online and traditional assessment formats. Researchers [9] examined transition challenges from paper-based to computer-based language tests, highlighting technical infrastructure concerns and readiness issues. However, these early studies often emphasized technological aspects while giving limited attention to psychological and pedagogical factors affecting acceptance. This narrow focus potentially overlooked crucial elements of user acceptance in language assessment contexts.

A significant body of research has employed various technology acceptance models to examine educational technology adoption. Studies have been done by many researchers on educational adoption technologies using DTPB to investigate acceptance factors, while others used TAM or UTAUT frameworks. This diversity in theoretical approaches, while providing multiple perspectives, has led to split understanding and difficulties in comparing findings across studies. Moreover, many studies have been unsuccessful in adequately adapting these general technology acceptance models to the specific context of language assessment.

Research on high-stakes versus low-stakes assessment contexts reveals interesting patterns. Studies indicate different acceptance factors emerge depending on assessment consequences, yet few studies systematically compare these contexts. Additionally, research often fails to address how test stakes interact with technology acceptance factors.

Stakeholder perspective analysis shows imbalances in existing research. While student acceptance is well-studied, few studies examine instructor perspectives or institutional factors affecting implementation success. This gap limits understanding of how different stakeholder views interact in shaping overall assessment system acceptance.

Technological evolution presents challenges for current research. Many studies examine specific platforms or technologies that quickly become outdated. This rapid evolution makes it difficult to build cumulative knowledge about acceptance factors that remain consistent across technological changes.

C. Technology Acceptance Model (TAM) and the Decomposed Theory of Planned Behaviour (DTPB)

This study is underpinned by the Technology Acceptance Model (TAM) [1] and the Decomposed Theory of Planned Behaviour (DTPB) [2]. TAM can help explain a user's acceptance, attitudes, and behaviours towards a technological device or system. It can also help define and show relationships between the user's acceptance of a technological system and the determinants of actual system use.

Meanwhile, the DTPB is somewhat similar to the TAM, it is also used to predict users' intentional behaviour towards using technology. However, the DTPB improved on the TAM by identifying salient beliefs that may affect adoption and use of the technology, which can be used across different settings [2]. The DTPB also extended on the Theory of Planned Behaviour (TPB) introduced by Ajzen [10]. As shown in Fig. 1, the DTPB retained the three determinants of behavioural intention in the TPB: attitude, subjective norm, and perceived behavioural control. However, elements of TAM and TPB were adapted and extended, and the determinant "attitude" was decomposed into perceived usefulness, perceived ease of use and compatibility. It includes the most salient factors that could predict acceptance and use of technological systems. This makes the DTPB model more able to predict behaviour and provide explanations, making it more valuable, understandable and applicable [11]. Fig. 1 presents the DTPB framework.

Meanwhile, Subjective Norms (SN) are determined by

normative beliefs, which include peer influence and superior influence, and Perceived Behavioural Control (PBC) is determined by self-efficacy, resource-facilitating conditions, and technology-facilitating conditions. The DTPB model has been widely used in measuring user acceptance of technology in various fields from medicine, finance to education [12–14].

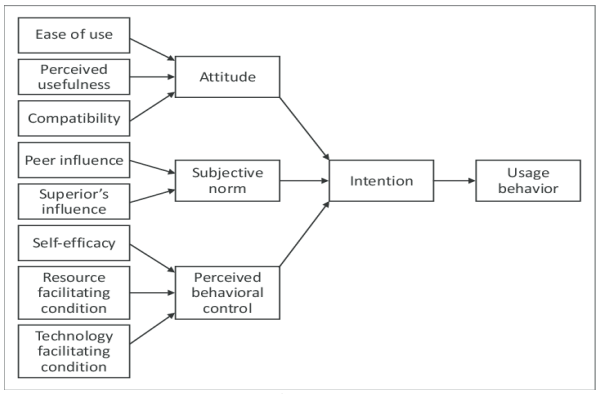

Fig. 1. The Decomposed Theory of Planned Behaviour (DTPB) (Taylor & Todd, 1995) [2].

D. Definitions of Components in DTPB

Attitude refers to an individual's favourable or unfavourable acceptance towards an innovation. One of the variables in this determinant is Perceived Usefulness. In order for people to accept a system, they must perceive the system to be useful to them. Perceived usefulness originates from TAM. It is "the degree to which a person believes that using a particular system would enhance his or her job performance" [15]. In initial research on TAM, perceived usefulness was the most common and significant determinant of technology acceptance. Over the years, perceived usefulness has been significant in various research studies identifying acceptance factors. This research defines perceived usefulness as when users feel that using Linguaskill is a reasonable or practical language assessment. Secondly, perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" [15]. It is when the user feels that the experience of using a system is hassle-free and convenient. For this research, the perceived ease of use is defined as the ease of using Linguaskill when taking the assessment. The last variable in attitude is compatibility. Compatibility is from the Innovation Diffussion Theory by Rogers in the field of innovations. Moore and Bensabat [16] have adapted the theory to be applied to individual technology acceptance. Compatibility is defined as the degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters. In this research, compatibility is to see whether the Liguaskill assessment is compatible with the user's style of taking assessments.

Fig. 2 shows the model proposed for this study. For the current research, the notions of relative advantage and trialability were added in the attitude determinant. Relative advantage refers to the extent to which an innovation is perceived as superior to its predecessor [17]. In the context of the Decomposed Theory of Planned Behaviour (DTPB), relative advantage plays a crucial role in shaping an individual's attitude toward adopting a new technology or behaviour. The more an individual perceives the new technology as beneficial compared to existing alternatives, the stronger their inclination to develop a favourable attitude toward its adoption. The relative advantage is one of the key variables in adopting new technology. Rogers [17] asserts that it is one of the five perceived characteristics of innovations, together with compatibility. A study found that relative advantage is a significant determinant influencing customers' acceptance of Islamic home financing [18]. In the case of online assessment, relative advantage may include factors, such as convenience and flexibility, compared to traditional paper-based assessments. Another variable added is Trialability which refers to the extent to which a technological innovation can be tested or experimented with on a limited basis before committing to full adoption [17]. Technological innovation will usually be accepted more easily and quickly when it has been tested [19]. Users want to be able to try out the new system to make decision on whether or not the technology is favourable to them. In the context of online language assessment and education technology adoption, trialability plays a crucial role in shaping users' attitudes, particularly in the early stages of adoption.

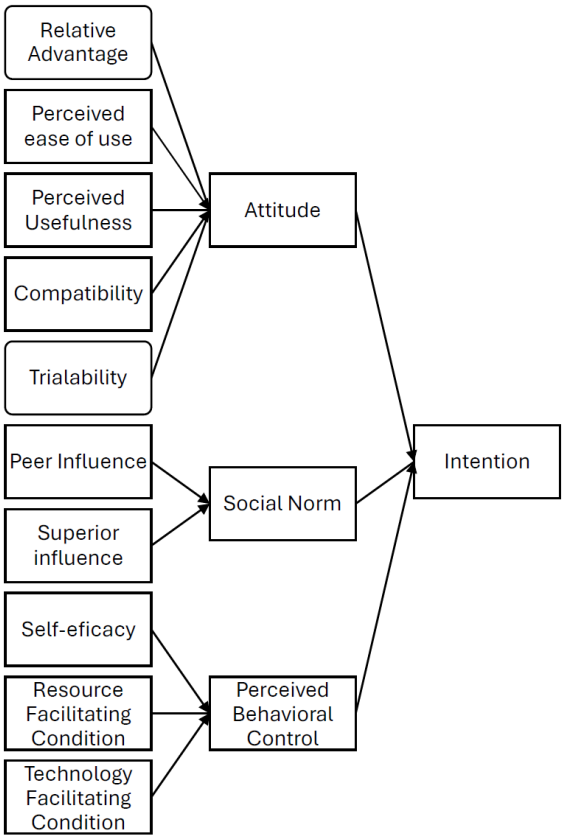

Fig. 2. The model proposed in this study.

Subjective norms are the degree or the extent to which a person believes that others, especially acquaintances and friends, believe that they should use a new system [20]. Studies have confirmed that social influence significantly influences users' intention to accept a new technology [21, 22]. The constructs in social norms are peer influence and teacher influence. For the purpose of this study, social norm is defined as the social factors, such as policy, peer influence and superior influence in prompting the users to participate in the Linguaskill assessment. Peer influence is the degree to

which the user's peers impact the user's acceptance of the assessment. Last but not least, superior influence in this study refers to the encouragement of the superior or the faculty towards using the assessment. A study investigating the acceptance of telemedicine services found that social influence is a determinant factor of user intentions to use [13]. This shows that social influence is a strong determinant in prompting individuals to accept technology.

Perceived Behavioural Control refers to a person's perception of the ease or difficulty of performing the behaviour of interest [2, 10]. It combines three variables: self-efficacy, resource-facilitating conditions, and technology-facilitating conditions. Self-efficacy is the confidence one feels about performing a particular behaviour, including confidence in overcoming the barriers to achieving that behaviour [2, 16]. Resource Facilitating Conditions is the second variable in this construct. It refers to the external factors (i.e., money, time and technology) that affect a user's decision to perform a particular behaviour [2]. Technology-facilitating conditions refer to environmental factors affecting a person's desire to work [2]. A study confirms that PCB is a significant construct in the DTPB concept framework [23]. In some studies [21, 24], self-efficacy is the strongest determinant factor in PCB. This shows that a person's confidence in using a technology is the most important factor in adopting any new technology.

III. Research Design

A. Sample

Purposive sampling was used for this research. The main goal of purposive sampling is to focus on particular population characteristics that are of interest, which best enable the researchers to answer the research questions. This study is a follow-up to the initial Linguaskill assessment implementation, where questionnaires were distributed to all students who took the online language assessment. Eighty-six (86) students from selected faculties in a public university in Malaysia who took the Linguaskill assessment responded to the questionnaire. Additionally, four test invigilators and one representative from the company who conducted the test participated in the interview phase of the study. The number of respondents reflects the voluntary nature of participation in the follow-up study, as not all students who took the initial assessment chose to participate in the subsequent research phase.

B. Research Instrument

The questionnaire used was adapted from different studies with multiple constructs. The items developed focus on three factors—attitudes, social norms, and perceived behavioural control—to see which factors influence language learners' acceptance of the online assessment. The items were adapted from different studies and validated by experts in the field.

The second section of the questionnaire consists of 40 items to assess the respondents based on seven independent variables, namely Perceived Ease of Use (PEU), Perceived Usefulness (PU), Relative Advantage (RA), Compatibility (C), and Trialability (T). The items are taken and adapted from the Intention to Participate in microlearning questionnaire by Puah and Shah [23] and Raghu's [25] survey of university students adopting online proctored examinations. The third section of the questionnaire consists of 16 items to assess the respondents based on three independent variables, which are Subjective Norm (SN), Peer Influence (PI) and Faculty Influence (FI). The items are taken and adapted from The Intention to Participate in microlearning questionnaire by Puah and Shah [24]. The final section of the questionnaire consists of 25 items to assess the respondents based on five independent variables: Perceived Behaviour Control (PBC), Self-efficacy (SE), Resource Facilitating Condition (RFC), Technology Facilitating Condition (TFC) and Behavioural Intention (BI). The items are taken and adapted from The Intention to Participate in microlearning questionnaire by Puah and Shah [23].

The five-point Likert scale was used to determine the student's acceptance towards e-assessment. The numerical number below represents the agreement level for each item in the questionnaire. A higher mean score on this scale shows a higher level of acceptance, while a lower mean score shows the least acceptance.

The reliability test is important to prove that the instrument is reliable to be used for the study. A pilot study was conducted on users who have used Linguaskill before. Table 1 shows the results for the Cronbach alpha value for items. The reliability coefficient (Cronbach's alpha) was calculated for the 10 responses collected. As per Cronbach [26], a construct's questionnaires are deemed reliable if the reliability coefficient (Cronbach's alpha) exceeds 0.7.

Table 1. Cronbach Alpha value of the instrument

Section	Variables	Cronbach Alpha value	Category
B	Attitude	0.907	Very reliable
	Perceived ease of use	0.801	Very reliable
	Perceived usefulness	0.855	Very reliable
	Relative advantage	0.919	Very reliable
	Compatibility	0.929	Very reliable
	Trialability	0.964	Very reliable
C	Subjective Norm	0.961	Very reliable
	Peer Influence	0.866	Very reliable
	Superior Influence	0.914	Very reliable
D	Perceived behavior control	0.969	Very reliable
	Self-efficacy	0.883	Very reliable
	Resource facilitating condition	0.930	Very reliable
	Technology Facilitating condition	0.957	Very reliable
	Behavioral Intention	0.938	Very reliable

Based on the data in Table 1, each of the questionnaire items demonstrated a Cronbach's alpha value that exceeded this threshold, signifying that the items consistently measure the intended construct. This high level of reliability suggests that the responses are consistent and that the questionnaire is effective in capturing the relevant information, making it a trustworthy tool for gathering data. As a result, the questionnaires were considered reliable for the purpose of the study.

C. Ethical Considerations

The researcher prioritised ethical considerations throughout the study, ensuring proper protection for all participants in both surveys and interviews. Consent forms clearly explained the study's purpose while emphasizing participants' right to withdraw. Given the personal nature of interview responses, strict confidentiality and anonymization protocols were implemented. Data analysis maintained objectivity to minimize potential bias. Prior to collecting data, ethics approval was secured from the university's research ethics review board committee and all conflicts of interest were disclosed. The process required careful balance between protecting participant identities while accurately presenting valuable insights.

D. Data Analysis

The data in this research were analysed using SPSS for Windows version 29.0 statistical software and descriptive statistics. The participant's questionnaire items were analysed to identify which factor influenced the participant's acceptance of the online assessment. To analyse experience and identify how it can be carried out effectively, the recorded interviews were transcribed and analysed using a systematic coding process to ensure comprehensive insight despite the small sample size. The researcher identified key themes and patterns to search for important main points related to the participant's acceptance of using the Linguaskill assessment. The codes were then organised to present the factors that affected the participants' experiences and suggestions to improve the Linguaskill CBT platform.

IV. Result and Discussion

A. The Correlation between Research Variables

Pearson's product-moment correlation was used to compare perceived ease of use, perceived usefulness, relative advantage, compatibility, trialability, attitude, peer influence, faculty influence, subjective norm, self-efficacy, resource facilitating condition, technology facilitating condition, perceived behavioural control and behavioural intention. The behavioural intentions were tested for correlation to conduct further multiple regression analysis of the variables whose correlations reach statistically significant differences (multiple regression analysis). The correlation matrix results show that all variables and behavioural intentions were positively correlated, and all with statistical significance ($p < 0.001$).

Based on Dancey and Reidy's [27] interpretation of the Pearson correlation coefficients (Table 2), the variables with the strongest relevance were attitude and behavioural intention ($r = 0.741$, $p < 0.001$), as well as compatibility and behavioural intention ($r = 0.706$, $p < 0.001$). The variables with moderate strength with behavioural intentions were relative advantage ($r = 0.697$, $p < 0.001$), perceived usefulness ($r = 0.694$, $p < 0.001$), technology facilitating conditions ($r = 0.620$, $p < 0.001$), perceived behavioural control ($r = 0.613$, $p < 0.001$), peer influence ($r = 0.584$, $p < 0.001$), subjective norm (r = 0.565, $p < 0.001$), perceived ease of use ($r = 0.512$, $p < 0.001$) and self-efficacy ($r = 0.509$, $p < 0.001$). The variables with lower-level correlations with behavioural intention were resource facilitating condition ($r = 0.441$, $p < 0.001$), trialability ($r = 0.422$, $p < 0.001$) and faculty influence ($r = 0.706$, $p < 0.001$).

Table 2. Pearson correlation matric of the variables and behavioural intention

Variables	PEU	PU	RA	C	T	A	PI	SI	SN	SE	RFC	TFC	PBC	BI
PEU	1													
PU	0.693**	1												
RA	0.766**	0.757**	1											
C	0.747**	0.772**	0.818**	1										
T	0.512**	0.444**	0.489**	0.565**	1									
A	0.750**	0.797**	0.831**	0.820**	0.597**	1								
PI	0.356**	0.491**	0.477**	0.469**	0.207	0.466**	1							
SI	0.126	0.214*	0.218*	0.363**	0.371**	0.255*	0.395**	1						
SN	0.245*	0.472**	0.387**	0.509**	0.463**	0.479**	0.611**	0.428**	1					
SE	0.623**	0.523**	0.612**	0.591**	0.397**	0.697**	0.340**	0.153	0.355**	1				
RFC	0.650**	0.558**	0.494**	0.594**	0.448**	0.576**	0.178	0.121	0.157	0.506**	1			
TFC	0.658**	0.540**	0.564**	0.666**	0.386**	0.651**	0.403**	0.177	0.370**	0.589**	0.685**	1		
PBC	0.793**	0.671**	0.729**	0.767**	0.428**	0.782**	0.373**	0.138**	0.313**	0.752**	0.673**	0.811**	1	
BI	0.532**	0.694**	0.698**	0.706**	0.422**	0.741**	0.584**	0.337**	0.565**	0.509**	0.441**	0.620**	0.613**	1

** $p < 0.001$. *$p < 0.005$

B. Predictor of Students' Acceptance in Using Online Assessment

A stepwise multiple regression was performed to predict factors that influence learners' acceptance towards Linguaskill assessment (perceived ease of use, perceived usefulness, relative advantage, compatibility, trialability, attitude, peer influence, faculty influence, subjective norm, self-efficacy, resource facilitating condition, technology facilitating condition, perceived behavioural control). Table 3 shows the statistics test of significance at the 0.05 (F (0.85) = 49.057, p = < 0.001). Table 4 also shows the multiple correlation coefficient (0.801), indicating approximately 64.2% of the variance of students' acceptance towards Linguaskill assessment. Based on the results presented in Table 5, Attitude has contributed 61.8% of the variance in students' acceptance towards Linguaskill assessment. Followed by Peer Influence, contributing 32.5%, and Technology Facilitating Condition, 24%. Attitude emerged as the most influential factor, contributing 61.8% of the

variance in students' acceptance. Learners demonstrated a positive disposition toward Linguaskill, viewing it as an effective tool for language assessment. They particularly appreciated its user-friendly interface and the flexibility it offered, allowing them to take the test at their convenience and in familiar settings. This flexibility was noted to reduce test anxiety and potentially enhance performance.

Peer influence was identified as the second most significant factor, accounting for 32.5% of the variance. Students were notably influenced by their peers' recommendations and experiences with the Linguaskill test. The social aspect of test-taking, where learners could share experiences and support each other, proved particularly effective in encouraging test participation and fostering positive attitudes toward the online assessment format.

Technology facilitating conditions emerged as the third key factor, contributing 24% of the variance. Students' confidence in using various devices (i.e., computers, laptops, mobile phones, and tablets) for the assessment played a crucial role in their acceptance. The availability of technical support, from practice trials to real-time assistance from invigilators, was vital in alleviating concerns about potential technical difficulties during the assessment. This comprehensive support system ensured a smooth testing experience and enhanced learners' confidence in the online assessment platform.

These findings align with previous research [25, 28, 29], confirming the significance of these factors in technology acceptance for educational assessment purposes.

Table 3. ANOVA table of significance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	44.656	3	14.885	49.057	< 0.001
Residual	24.881	82	0.303		
Total	69.537	85			

Table 4. Model summary of multiple correlation coefficients

R	R Square	Adjusted R Square	F Change	df1	df2	Sig. F Change
0.801	.642	0.629	0.55084	1	82	0.034

Table 5. Coefficient

	Unstandardized B		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	−0.826	0.393		−2.102	0.039
MEAN_A	0.618	0.115	0.487	5.349	< 0.001
MEAN_PI	0.325	0.088	0.280	3.712	< 0.001
MEAN_TFC	0.240	0.112	0.190	2.153	0.034

C. Predictors of Acceptance towards Online Assessment

The results of the study show that Attitude, Peer Influence, and Technology Facilitating Condition were the main predictors of students' acceptance towards using Linguaskill. The study found that participants generally have a positive attitude in using Linguaskill for language assessment. This is consistent with studies [24, 30], which found that attitude is a strong predictor in technology adoption and usage behaviour. Puah investigated the intention of working adults to participate in microlearning and found that attitude, encompassing usefulness, ease of use, and compatibility, showed that the participant had an overall positive attitude towards microlearning. For this study, many participants believe it is a good idea to use Linguaskill and that it is an effective tool for assessing their language proficiency. They find the idea of an online, flexible language assessment appealing as it gives them the flexibility to take the test whenever it is convenient for them and in a familiar setting, which lowers anxiety and improves performance. Furthermore, the participants were highly satisfied with Linguaskill because of its user-friendly interface and ease of use.

Peer influence was one of the determinants in encouraging the participants to take Linguaskill. Many respondents relied on their peers' opinions and recommendations before taking the assessment. This is also supported by a researcher who found that peer influence is a significant factor in customers' acceptance towards Islamic home financing [22]. From the current study, positive test-taking experiences were shared by peers, which inspired others to take the test. Users may find this peer support system helpful since it fosters a feeling of belonging and common goal-setting. Peer influence is especially powerful in educational settings because students often exchange and discuss materials that can improve their academic performance.

The accessibility of essential technologies was a critical determinant of participants' usage of Linguaskill. This finding reflects the challenges noted in early studies on TOEFL CBT implementation [31, 32] highlighting the importance of technical support and infrastructure for test-taker acceptance. However, more recent research [30] shows that even though users are now more confident in using technology, having a more user-friendly interface would increase their acceptance.

D. Acceptance Factors and Its Effect on Participants' Online Language Assessment Experience

A total of 9 respondents were interviewed, consisting of four test participants and five test invigilators. A thematic analysis of the interview data was carried out. They reveal several recurrent factors about online test experiences.

1) Behavioural beliefs

What do you believe are the advantages of Linguaskill?

The respondents highlighted a few variables in their responses: Relative Advantage, Perceived Ease of Use, Perceived Usefulness, Compatibility, and Trialability.

a) Relative advantage

Respondent 3: *Yes, I believe there are advantages because it is flexible to the students especially to those that have transport problems. Another thing is I like online setting because I think first is flexible second is you can do it everywhere anytime that you prefer*.

Respondent 9: *All right, so if I'm a working professional, I want to get certified. Our country, the government has always championed certification, lifelong learning. So for me, if I want to get certified, obviously as a busy father, as a busy person working in the corporate world, it's very silly to force me to travel, don't know how many km, look for parking just to take a test and then have to reserve a space and then have to wait for time slots and things like that, given that we already have so many online kind of solutions to do these things. So that's what I was trying to say. I really like the part where it's really easier.*

The respondents repeatedly emphasised the flexibility and

convenience of taking the Linguaskill assessment online. This theme features ease of access, the ability to take the test from anywhere, and flexibility in scheduling.

b) Perceived ease of use

Respondent 4*: As I remember, I don't have any difficulties or issues. It's like for the internet, this is I think that the assessment is quite interactive. And also, it's smooth in operating because I'm judging as of engineer. So, I think my user experience as a user is quite good.*

Respondent 1: *...it helps the graduates in terms of the need to face their career world. And secondly, the advantage is for us to be more globally accepted such as in a multinational company or even if we are in a local company, we can go abroad and brings the company to the global level.*

Respondent 4: *So, by having this Linguaskill certificate I can show the employers what is my level in English language, so I feel that that are the major advantages of Linguaskill.*

The second variable highlighted was Perceived Ease of Use, which is the degree to which a person believes that using a particular system would be free of effort [33, 34]. The respondents did not notice any significant challenges or unpleasant experiences. The Linguaskill assessment's interactive nature operated smoothly without any difficulties or issues.

c) Perceived usefulness

Another variable, which is Perceived Usefulness is clearly articulated by the respondents. They believe Linguaskill is highly useful due to the proficiency assessment to prepare them for the job market, career confidence and recognition by employers. The study found that participants valued Linguaskill for career development and professional recognition.

d) Compatibility

The variable of Compatibility was also identified in one of the responses. The respondent stated that the adaptive nature of Linguaskill helps the users to get questions that are within their language ability.

Respondent 8: *In that case, I would say it opens up more possibilities for the students because well, they have different skills, they have different ways of thinking, and they have different comprehension levels. Hence, if the questions were to adapt to their understanding, to their ways of comprehending a certain question, hence, their abilities would Sure, not sure, but better.*

Respondent 6: *The test questions that were given to them. I think it's different. It's not the same. I think they randomize everything. Because computer-based tests, they adapt the question based on the student's proficiency.*

2) Normative beliefs

Are there any individual or groups who would approve your usage of Linguaskill?

Analysing the respondents' transcripts, it can be observed how normative beliefs, such as subjective norms and peer influence, shape their acceptance and attitudes towards Linguaskill.

a) Subjective norm

Respondent 4: *I think majority of the people out there. They would support taking a Linguaskill because we can see that the importance of Linguaskill exams is getting more attention to coming back to the same concept where if we are fresh graduates, of course, we need a supporting evidence or certificate to prove that we have gone through this it was still assessment and you are good to go. So, meaning that you have passed the test. You have passed the assessment and you a person who can talk communicate listen English language, so yes, definitely.*

The respondent noted that Linguaskill is getting widely recognised.

b) Peer influence

Respondent 2: *I think this would be my course mates because we took the assessment together and the following the flow we support and guide each other for this assessment. Preparation while using this assessment you get some feedback on what we can improve. Our case is speaking. So, we practice quite a few times just to listening each other.*

The mutual encouragement and shared goal of improving language skills highlight the significant role of peer influence in their collective preparation and perception of the assessment.

3) Control beliefs

What factors or circumstances would enable you to use Linguaskill?

Control beliefs, which include perceived behavioural control, resource facilitating conditions, and technology facilitating conditions, play a significant role in shaping the participants' attitudes and behaviours towards using Linguaskill. The responses provide insights into these factors.

a) Resource facilitating condition

In the context of the Decomposed Theory of Planned Behaviour (DTPB), resource facilitating conditions refer to the availability of resources and support to perform a behaviour. The quote illustrates resource facilitating conditions through the comprehensive guidance provided by the instructor.

Respondent 5: *...Prior to taking the test, we actually inform the student. Let's say throughout the exam you face any difficulty or any technical problem. They are to WhatsApp us immediately. WhatsApp or chat, anything. So, this student did WhatsApp me like my laptop went blank for a while. Can you give me a few minutes? And then after he resumed back, I'll just continue.*

Respondent 7*: We would just watch them take the test and also give them instructions on how to answer the test and if they have any problems, they could ask."*

This preventive action ensured that the users understood how to report issues and take immediate action. This approach emphasises the importance of providing clear communication instructions and addressing problems quickly to minimise disruptions during online assessments.

b) Technology facilitating condition

While the respondents' overall experience with Linguaskill was positive, they shared some minor technical issues. Although not major, these issues caused temporary disruptions and stress.

Respondent 2*: ...A minor problem I can record that I am having some technical issue while negative navigating the portal first time. It's more on the experience using the portal. I can't move to the next section but again, I think it's a minor*

issue, but I think because I quite panicking. I cannot hear the audio. I think I just refresh the page, and the assessment continue. I think it was listening. I don't know how it was resolved, but I was not confident to refresh because I can't see my progress at all. But, just a minor problem.

Respondent 4: *...I would say sometimes. I'm not sure how updated is the system right now, but, when I took the assessment, it was lagging at a few parts where you have to click twice... minor errors minor problems that could be rectified.*

Respondent 6: *...So, there was some of them that has a problem with their audio, and they are listening and everything. So, we actually asked them to. Okay, we have to rearrange back the time. We have to reschedule the time.*

4) Suggestions to improve efficiency

What further improvements that you might make to make the experience to take Linguaskill better for users?

Based on the interview sessions, the respondents shared a few concerns and suggestions that can be used to improve the efficiency of the Linguaskill assessment.

a) User interface

Respondent 2: *Friendly. Yes, it is. Maybe It on the bottom and just maybe a UI. I'm not sure but then facing some issues with the interface how to navigate, I think."*

One respondent highlighted the user interface (UI) problems she experienced when utilising Linguaskill. To solve these problems, she recommends making the platform more user-friendly. Improved UI design, improved navigation, and more explicit instructions can benefit her and other users. These changes will improve user experience and lessen annoyance, increasing platform usage and satisfaction.

b) Academic integrity

Respondent 5: *In terms of answering, but we still cannot avoid(cheating). If, let's say they are not in front of us, online exams still can be conducted. Maybe we can have in an exam hall, maybe we don't have to use any pen and pencil, but they can use their own laptops and everything. And then they run this lockdown browser and then they can still take their exam. I feel that if we can conduct such way of online exam, it will be better.*

Respondent 6: *Honestly, I think it's not a problem if you want to do online tests for this one, but, it's just that you have to do online tests at a specific centre, perhaps, so that students cannot cheat and everything. But then when you want to do speaking tests, you might have to sort out the students into different isolation rooms. So that might take some things that might take taste and time, because we are moving towards computer-based tests and everything. Right. So, I think it's okay. But as long as the students are evolving, the invigilators have to evolve as well. So, yes, we have to be quick with that kind of knowledge as well.*

The respondents addressed the difficulties and factors to be considered when administering exams online, including ensuring the participants don't cheat. She proposed that one way to lessen this problem may be to have the participants take online exams at a designated location. It stresses how important it is to have safe spaces, particularly for speaking exams, where separating the participants into different isolation rooms may be necessary to keep them from overhearing the others. Although this method may require more effort and time, it is consistent with the trend toward computer-based testing. The speaker also mentions that to supervise and handle these online assessments properly, invigilators must adapt to and become knowledgeable about the technology utilised in online testing.

c) Communication between invigilators

Respondent 8: *...I would say, in terms of codes, sometimes the codes given to the students were not accessible, is it was it? It wasn't accessible. So, we had to contact Buddy again because it was second-hand communication. It was indirect communication with the Buddy. Hence, getting the codes to work with was kind of hard because I had to wait for it. And then I had to contact somebody and it says, the Buddy had to work it out. And hence, it was hard.*

The respondent discussed a specific issue related to the accessibility of codes provided to the participants for the assessment. The problem arises from indirect communication, where the codes had to be obtained through a "Buddy" system, causing delays and complications. The respondent had to wait for the Buddy to resolve the issue, which was challenging and time-consuming. This highlights the inefficiency and potential for miscommunication in the current process, suggesting a need for more direct and efficient communication and resource distribution methods to ensure smooth and timely access to necessary materials. The suggestion may include a direct code distribution system where a backup code repository is accessible independently when needed.

V. Practical Implications

This study reveals significant implications for various stakeholders in online language assessment. The findings suggest several key areas for improvement across different domains. For platform developers, the research highlights critical areas for enhancement in the Linguaskill platform. User interface improvements are needed, particularly regarding navigation features. Respondents reported difficulties with the bottom page navigation, suggesting that a more intuitive design would increase user acceptance and platform preference. Technical infrastructure requires improvement, as users experienced issues with microphone functionality and audio system stability. Implementing a backup system and adding instant redirection capabilities for system disruptions would enhance reliability. Additionally, developing an integrated troubleshooting mechanism would provide immediate support during assessment sessions.

As for educational institutions, the study emphasises the need for comprehensive support systems within educational institutions. This includes establishing dedicated technical support teams, ensuring access to appropriate testing devices, and providing stable internet connectivity. Institution-level preparation should include familiarisation sessions for test-takers to reduce assessment anxiety and improve performance. The findings also highlight the importance of thorough invigilator training in both test administration and technical troubleshooting to ensure smooth assessment delivery. Additionally, faculty and peers should play a role in promoting the usage of Linguaskill to other learners.

For Test Administrators, several operational improvements emerged from the invigilator perspective. First,

establishing clear, multi-channel communication systems for immediate technical support during assessments is essential. Second, developing comprehensive guidelines for remote proctoring and test monitoring would standardise procedures and improve efficiency. Third, implementing more secure identity verification protocols would enhance test security and credibility. These measures would collectively strengthen the integrity and reliability of the assessment process.

These enhancements would significantly improve the overall assessment experience while maintaining test validity and reliability.

VI. Conclusion

As assessment methodologies evolve from traditional pen-and-paper formats to digital platforms, online assessments are increasingly favoured for their convenience and flexibility. This shift highlights the importance of understanding participants' acceptance and concerns regarding new assessment tools, such as Linguaskill. Research into the acceptance of Linguaskill assessments is crucial for gaining insights into participant preferences and worries. The study also aims to identify the determinant factors influencing participants' intentions to use Linguaskill from the planned behaviour perspective.

Using the Decomposed Theory of Planned Behaviour (DTPB) model, the study confirms the significance of three primary constructs: Attitude, Subjective Norm, and Perceived Behavioural Control. Each construct is vital in shaping participants' intentions and behaviours towards using Linguaskill. Attitude encompasses participants' positive or negative experience of using Linguaskill, reflecting their belief that it is a beneficial and appealing tool for language assessment. Subjective Norm involves the perceived social pressure from friends, peers, and significant others who recommend or support the use of Linguaskill. Finally, Perceived Behavioural Control pertains to participants' beliefs about their ability to successfully use Linguaskill, influenced by the availability of resources and support.

By understanding these constructs, valuable insights were gained into the user experience, which can help in promoting and improving the Linguaskill assessment. For instance, enhancing attitudes towards Linguaskill could involve highlighting its benefits. Strengthening the subjective norm could be achieved by leveraging peer influence and testimonials from respected individuals to promote more users to opt for Linguaskill as their preferred language assessment. Improving perceived behavioural control might focus on providing ample technical support, resources, and trial opportunities to build confidence among users.

Furthermore, addressing concerns related to the accessibility and reliability of the assessment platform can enhance user acceptance. Ensuring that participants have smooth and supportive experience from the initial trial phase through to the actual assessment can lessen technical anxieties and foster a positive attitude towards Linguaskill. By utilising the insights gained from applying the DTPB model, stakeholders can strategically enhance user adoption and satisfaction, ultimately making Linguaskill a preferred choice for language proficiency assessment.

VII. Limitations and Future Work

The researcher acknowledges the limitations of this study. The study focused only on tertiary education as the test takers were all undergraduate students. Additionally, the study's participant was limited to only 86 students from selected faculties in a single university that have taken the Linguaskill test via remote proctoring. The scope of the study can be expanded to include participants from other institutions. The interview also had a small number of respondents (9 respondents), though steps were taken to ensure the depth of the data was sufficient to explore the experience. The study aims to look at only one online assessment tool, Linguaskill. Hence, the result of this study may not provide feedback for all kinds of online assessment tools available on the internet. Factors of acceptance received by each participant may vary due to existing extraneous factors. The results from the findings cannot be generalised to any other computer-based tests available. Future work may include a comparison between the different computer-based language assessments like IELTS or TOEFL.

Conflict of Interest

The authors declare no conflicts of interest.

Author Contributions

Assoc. Prof. Dr. Nooreen Noordin (PI) and the team prepared the proposal and secured funding. Bazilah conducted the research; all authors had approved the final version.

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