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Uncovering the Dynamics of Innovation Adoption Among University Students: A Structured Review of Determinants and Factors

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ABSTRACT

This paper mainly discusses the concept of institutional innovation in higher education and its relevance to the further promotion of academic excellence, practice, and institutional performance. The research highlights various types of innovations, including improvements to the curriculum and the adoption of new technologies, which aim to instil a culture of constant learning and empower learners in a fast-changing world. The paper, as a case study, utilises the Malaysian higher education environment to illustrate how systematic changes have helped increase student enrolment and research output. The research is based on the main theoretical frameworks, such as TRA, TAM, and UTAUT, to clarify the factors that have a modulating influence on the process of acceptance and adoption of institutional innovations by students. Some of the fundamental variables that have been identified to influence adoption are the perceived ease of use, perceived usefulness, behavioural intention, social influence, and attitude towards usage. The results highlight the fact that the factors are key in supporting innovative culture in institutions and in improving educational practices that will place students in a better position to deal with current challenges competently in the future. The research will end by describing policy and practice that would facilitate the enhancement of institutional innovations in Malaysian public universities.

Keywords: Adoption, determinants, institutional innovation, Malaysia, sustainability

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INTRODUCTION

As part of increased educational delivery, learning experience and overall institutional effectiveness in higher education has

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resulted in the intentional development and implementation of new practices, strategies, structures and methods, which is commonly understood as institutional innovation (Hasanefendic et al., 2017; Vidicki et al., 2023). The concept of institutional innovation does not just cover governance change and overall changes in the organisation in the context of higher education, but also incorporates the implementation of digital technologies. García-Álvarez-Coque et al. (2017) develop the opinion that it consists of technological features, e.g. virtual labs, mobile apps, e-learning systems, and non-technological ones, e.g. institutional independence, policy changes, leadership style and funding processes. Overall, institutional innovation serves to mirror and bring to fruition the process of delivering better teaching and learning, reinforced organisational performance, and an overall enhanced level of institutional efficiency throughout the higher educational institutions.

The Malaysian case of higher education offers a rather interesting framework in the context of analysing these dynamics. Because of that, over the past decades, the sector has been in a continuous process of transformation in the impact of neoliberal policy orientations, growing institutional autonomy, liberalising and nationalistic priorities (Jamaludin et al., 2023; Sritharan et al., 2025). As is seen and reported by Adelina et al. (2018), Nataliia et al. (2023) and Shanti et al. (2024), these changes have placed Malaysia more in the limelight of the international market of higher education by registering high increases in its student enrolment, institutional innovation, creation of centres of excellence, and increase in research capacity.

In the meantime, it is necessary to add that higher education might not be entirely the driver of the national development, though it has a key role in human capital development, productivity of research and innovation development. Despite this, the current world studies concerning innovation adoption and technology acceptance in higher institutions of learning are still scattered compared to the current literature. Nor does much of the literature take an interest in discrete digital equipment, which would provide scant evidence as to the way learners interact with institutional innovations, which might involve governance changes, financial changes, and structural programs. This is especially clear in the case of Malaysian public universities, where innovations at the technological and policy level occur in parallel. In reaction to this weakness, this paper provides a meta-analytic survey of factors that influence the institutional innovation adoption of university students. Therefore, the article attempts to explain the way attitudes and behaviours of students are shaped, in addition to how universities can develop the enabling environment of continuous learning, pedagogical change and sustained innovation.

Although previous studies have extensively examined technology acceptance in higher education, much of the existing literature concentrates on isolated technological systems such as

e-learning platforms, mobile applications, and online learning tools. Limited scholarly attention has been devoted to institutional innovation adoption as a broader multidimensional phenomenon that simultaneously incorporates technological, organisational, governance, and policy-related transformations within universities. Furthermore, existing studies often examine these determinants independently without providing an integrated synthesis of how behavioural, institutional, and socio-cultural factors collectively shape students' innovation adoption behaviours, particularly within Malaysian public universities. Therefore, this study contributes to the literature by offering a structured synthesis of the determinants influencing institutional innovation adoption among university students through the integration of TRA, TAM, and UTAUT frameworks within the Malaysian higher education context. The study further contributes by identifying converging determinants, contextual inconsistencies, and institutional implications that may guide future policy and innovation strategies in higher education.

LITERATURE REVIEW

Temporal process through which higher education institutions launch and assimilate new organisational processes, practices, concepts, or technologies to enhance performance and results is the so-named institutional innovation adoption. It was argued by Sonja et al. (2021) that in a more knowledge-based global economy and within the current universities, innovation adoption has not only been strongly associated with their institutional effectiveness and competitiveness, but also their sustainability. This is largely also prompted by the knowledge management capacity, globalisation pressure, and the technological development and the strategic capabilities of institutions to respond to a changing environment (Ashok, 2023; Dinara et al., 2022; West, 2013). This means that in the world of higher education, the adoption of innovation does not usually take a straight or more technical path, but instead, it results from the social processes, the policy frameworks, and technological innovation interacting.

According to Qurtubi & Fauzi (2023), institutional innovation has changed in accordance with the changes in the regulatory framework and wider societal expectations, which is why the process of its adoption is necessarily context-specific and complicated. Through this, the focus has been directed to the experiences and perceptions of the institutional actors. This can be approved of by the research of Dinara et al. (2020) where innovation management through the lens of the academic staff was studied. Based on their study, they demonstrate the success of institutional projects when people actively respond to themselves. They also went ahead to show how the adoption of innovation can not only help in enhancing teaching and learning practices, but it can also prepare students for the unknown and unpredictable professional life. Arguably, compared to those that do not adapt to innovation, universities become

better equipped to meet the needs of students and stakeholders as they emerge (Fullan, 2013; Rymarzak et al., 2022).

Nevertheless, in the school context, several studies found that relevant variables that determine innovation adoption are important. The motivation determinants can be summarised as organisational support, leadership commitment, compatibility with existing practice, ease of use, perceived usefulness and the availability of sufficient resources and training (Halyna et al., 2019; Anderson et al., 2001; Hafizul et al., 2018; Ibrahim et al., 2025). All this is an indicator that adoption is tremendously reliant on the institutional conditions, as it is on the nature of the innovation itself. Social influences are not within the technical and structural factors. The way in which innovation is viewed and adopted or not is also influenced by these social determinants that may consist of peer interaction, the involvement of stakeholders and organisational culture (Fullan, 2013; Zahir et al., 2024). Another article by Garanin (2022) also highlights the importance of both public financing and human capital, arguing that long-term innovation must not only be backed by favourable policy conditions but also institutional capacity.

Existing studies demonstrate considerable theoretical convergence regarding the determinants of innovation adoption in higher education; however, important conceptual differences remain. TAM-based studies predominantly emphasise cognitive evaluations such as perceived usefulness and perceived ease of use as direct predictors of technology acceptance (Davis, 1989; Trubitsyna & Demchenko, 2020). In contrast, UTAUT-oriented studies extend beyond individual cognition by incorporating facilitating conditions, effort expectancy, and social influence as institutional and environmental determinants of behavioural intention (Venkatesh et al., 2003; Adedimeji & Adekoya, 2019). While both models consistently identify behavioural intention as a central predictor of adoption, inconsistencies emerge regarding the relative strength of social and institutional influences across different educational contexts. For example, studies conducted in collectivist learning environments, including Malaysia, report stronger effects of peer influence and institutional culture on innovation adoption behaviour compared to studies conducted in more individualistic settings (Siti et al., 2018). Furthermore, recent extensions of UTAUT incorporating trust, compatibility, enjoyment, and resource availability suggest that innovation adoption cannot be sufficiently explained through technological characteristics alone, but rather through interactions between institutional structures, socio-cultural contexts, and students' behavioural perceptions. These inconsistencies indicate the need for a broader integrative synthesis capable of connecting behavioural, technological, and institutional determinants within higher education innovation research."

As the example provided by the work of Trubitsyna and Demchenko (2020) Qurtubi & Fauzi, (2023), Hsu and Lin (2022), Vidicki et al. (2023), and Omoola et al. (2023) have shown numerous times, the adoption

performance expectancy, behavioural intention, and perceived ease of use are powerful predictors. The social characteristic of adoption is also supported by studies about the importance of experiential learning and collaborative learning settings, such as the one conducted by Pokidina et al. (2023). The results of other research working in Malaysia indicate that attitude continues to play an important role in determining innovation-related behaviours of students in certain contexts (Siti et al., 2018). These dynamics have continued to be influenced by structures of funding and institutional independence in Malaysian institutions of higher learning. Garanin (2022) ponders policy-related shifts and perceptions, which impact adequate resources, institutional credibility, and a long-term orientation towards innovation. Therefore, a study of the interaction between these broad conditions on the student attitudes and behavioural intentions is thus critical to the development of a holistic picture of institutional innovation adoption in the context of Malaysian higher learning.

Institutional Innovation Adoption: Theoretical Underpinnings

Theory of Reasoned Action (TRA)

It has come up with various theoretical frameworks that are used to explain how innovation adoption takes place within organisations and institutions. The Theory of Reasoned Action (TRA) suggested by Fishbein & Ajzen in 1975 is one such popular theory that tried to predict, explain and highlight the significance of behaviours and attitudes in the decision to adopt an innovation (Davis, 1989; Conner & Sparks, 2015).

TRA suggests that the behavioural intention of an individual is one of the key determinants of behaviour and that an individual's behavioural intention is influenced by the attitude towards the behaviour (attitude) and perceived pressure of the significant others (subjective norms) (Figure 1).

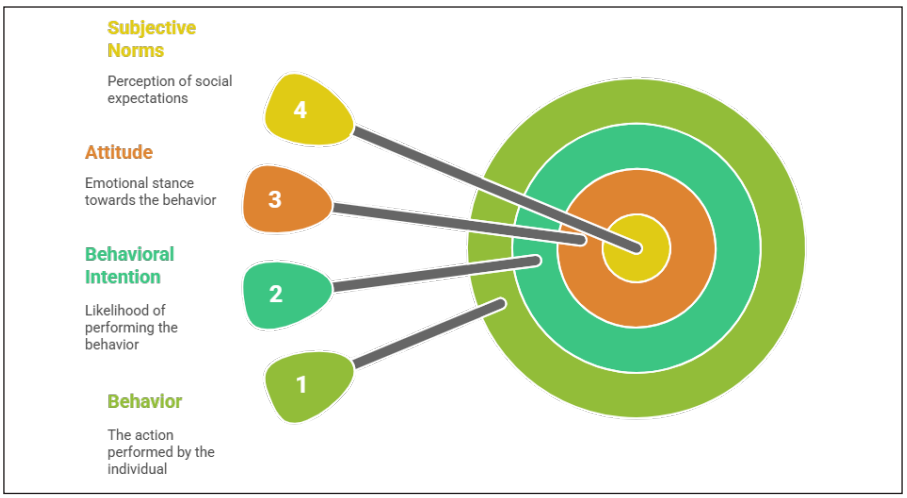

Figure 1. Theory of reasoned action

A behavioural intention refers to the personal probability of an individual carrying out a certain behaviour, whereas attitude is the emotional orientation that the individual has to the behaviour, and subjective norms are the perception that the individual has of social expectations of the behaviour, as presented by Davis (1986). Overall, this framework, as proposed by Fishbein and Ajzen (2005), posits that the three essential constructs guiding rational decision-making depend on individuals' intentions, attitudes, and social influences. Simply put, TRA is based on behavioural intention, which could be the probability of performing the behaviour and attitude, which could be the level of positive or negative evaluation of the behaviour in the same manner as subjective norms are perceptions of expectations of the important people (Kirkpatrick & Kirkpatrick, 2006; Granić, 2023).

Technology Acceptance Model (TAM)

Based on the underpinning Theory of Reasoned Action (TRA) in psychology, advances of which were first proposed by Davis (1986) (with further expansion in 1989) as the Technology Acceptance Model (TAM), has evolved into an important paradigm of understanding the determinants of human behaviour in respect to the acceptance or the rejection of technology in several situations, especially concerning educational technology.

Davis used TRA to construct TAM, which is now one of the foundations of internet technology adoption and human behaviour (Figure 2). Davis transformed the use of technology by modifying the use of TRA to emphasise attitudes and not intentions. When Davis (1986) presented his thesis on the doctoral dissertation of TAM, the description of the relationship among attitude towards a system, attitude towards using, and actual system use was postulated; that user attitude towards a system (attitude towards using) was strongly associated with the adoption or rejection of the system (actual system use).

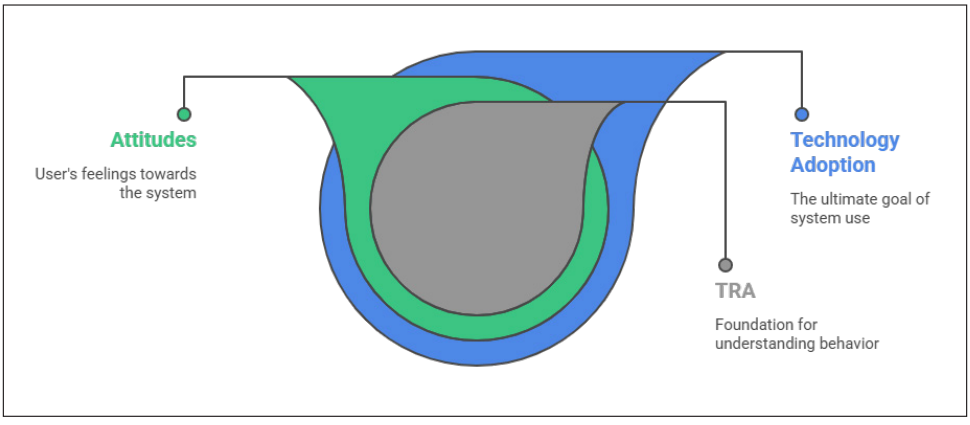

Figure 2. Technology adoption model

This user attitude, in turn, depends upon two basic beliefs, which are perceived usefulness and perceived ease of use, where perceived ease of use directly affects the perceived usefulness. Perceived usefulness is a measure of how interested an individual is that the use of the system would improve their work, and that perceived ease of use is the extent to which an individual thinks that working with the system can be an effortless process (Davis, 1986; Granić, 2023).

In the end, both ideologies are speculated to be influenced directly by the nature of the system design. By being able to realise the interdependence between these factors, researchers will be able to predict and manipulate technology acceptance better. Thus, the Technology Acceptance model outlines the usefulness perceived and ease of use as determinant factors that drive the attitude towards the use of technology and after that, actual use. In brief, it can be well argued that user motivation towards the adoption of technology is based on three major factors that incorporate: perceived ease of use (effortless experience); perceived usefulness (increase in the overall task/ project performance); and attitude towards the usage (system acceptance or rejection). TAM assumes that these beliefs affect attitude, which consequently promotes the actual technology use. This revolution of work carried out by Davis (1986) points to the importance of system design features in developing these beliefs, which form a dependable model that can be used to foresee the adoption of technology.

Unified Theory of Acceptance and Use of Technology (UTAUT)

As its name suggests, Unified Theory of Acceptance and Use of Technology (UTAUT) is a philosophical perspective that has achieved the result of consolidating theories as a way of remodelling technology acceptance (Granić, 2023). The current theoretical framework, previously established by Venkatesh et al. (2003) triggered the process of a complete revision of the existing models and theories associated with the acceptance of new technologies. The theory is an incredibly striking amalgamation and includes eight developed user acceptance models. They comprise augmented TAM (A-TAM), Innovation Diffusion Theory (IDT), Motivational Model (MM), Social Cognitive Theory (SCT), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB) and Model of Personal Computer Utilisation (MPCU) (Marikya & Papagiannidis, 2021). Other researchers like Marikyan, & Papagiannidis (2021), López (2023) and Venkatesh et al. (2023), have therefore gone a notch higher to show how the theory has been used to assess the acceptance of e-learning by students, such as postgraduate scholars, and a study on the attitudes of the students towards the adoption of online classes during the COVID-19 pandemic. The UTAUT model was further extended and modified by Abbad (2021) through the introduction of the single construct possibility that consisted of perceived cost to evaluate the use of e-learning systems among the students of developing countries.

In a more recent study by Granić, (2023), the opinion of the UTAUT models in adopting new technologies. This paper gives valuable information on variables, including social influences, effort expectancy and performance expectancy, which are the trio of constructs that foster and directly influence behaviour intention towards adoption or acceptance of innovation. It was also hypothesised that predictors of actual behaviour are behavioural intention and facilitating conditions. This could be why intention and usage, as the core determinants of the UTAUT model, have played a pivotal role in different research projects. The performance expectancy, or the perception that an innovation improves academic performance, is very similar to the national agenda of Malaysia to develop a workforce that is prepared for Industry 4.0 and has skills development that can be adopted in the future (Jamaludin et al., 2023). The expectancy of effort, as the perception of the ease of the interaction with a system, can be heard in the context where students of different digital literacy levels may either speed up or slow down the adoption process. The social influence is an important factor in the context of the Malaysian collectivist cultures; the attitudes towards the innovative practices are predominantly influenced by peer groups, lecturers, and champions of the institution (Siti et al., 2018). Similarly, what form state-led policies and resource allocations are facilitating conditions of good infrastructure, funded institutes and supportive governance reforms that in turn either facilitate or hamper the adoption of innovation (Garanin, 2022; Shanti et al., 2024).

Comparative Perspective on TRA, TAM, and UTAUT

The theories that support the study provide complementary but different perspectives on the behavioural patterns of students. According to (Fishbein & Ajzen, 1975), the front line Theory of Reasoned Action (TRA), suggesting norms about a behaviour (subjective norms) and attitudes towards a behaviour (attitudes towards a behaviour) jointly impact the degree of behaviour intention and, subsequently, state the outcome of actual behaviour, appeared to be a proposed theory that was used to explain the process through which behavioural intention is created.

Technology Acceptance Model (TAM) (Davis, 1989) builds the argument of TRA further to utilise the context, i.e. the use of technology through the introduction of perceived ease of use (PEOU) and perceived usefulness (PU), which has the capacity to mediate attitude and intention. The theory is a strong concept that dwells on the perception of people at large without looking at the wider social or institutional grounds in enhancing the predictability of technology adoption. The integration of the features of the different theories, including TRA and TAM, is captured in the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). The theory indicates the integration of effort expectancy, facilitating conditions, social influence, and performance expectancy as the direct influences on the behavioural intention and usage.

That is why institutional resources, policy changes, and peer networks, impacting students significantly in their choices to embrace institutional innovations, organisational support, and social context, specially make the UTAUT model more applicable. Based on this, we can assume that since TRA offers a general framework of behaviour, TAM narrows down the target of specific technology-related perceptions, and UTAUT offers a more general one that features cultural, infrastructural and institutional variations. Based on this, we can observe that the combination of these models will ensure a sensitive interpretive insight into the determinants that support innovation adoption among students in Malaysian universities.

Conceptual Framework for Institutional Innovation Adoption

Figure 3 is a conceptual model of how university students have adopted innovation as formulated based on the literature. The model relates key determinants such as Perceived Usefulness (PU), Social Influence (SI), Behavioural Intention (BI), Attitude Towards Usage (ATU), and Perceived Ease of Use (PEOU) that culminate in the outcome of the Institutional Innovation Adoption. As observed, PU, SI, and ATU, in conjunction, affect BI, whereby PEOU and PU directly affect ATU, which, in turn, directly predict actual adoption behaviour.

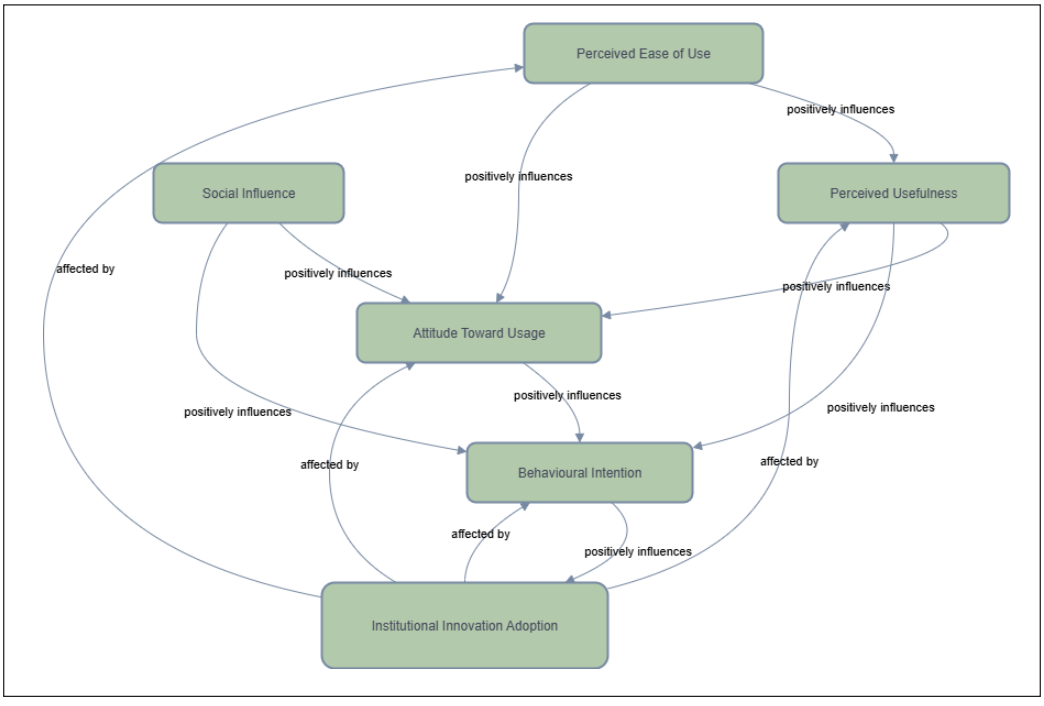

Figure 3. Conceptual framework illustrating the relationships among variables

METHODS

This study adopted a structured literature review approach to synthesise existing studies on institutional innovation adoption among university students. The structured review method was considered appropriate because the study aimed to integrate and critically analyse conceptual, theoretical, and empirical findings across diverse higher education contexts rather than conduct statistical meta-analysis.

Relevant literature was retrieved from major academic databases, including Scopus, Web of Science, Google Scholar, ScienceDirect, and SpringerLink. The search process was conducted using combinations of keywords such as 'institutional innovation adoption', 'technology acceptance', 'higher education innovation', 'university students', 'TAM', 'TRA', 'UTAUT', 'innovation culture', and 'Malaysia'. Boolean operators ('AND', 'OR') were applied to refine search outcomes.

The inclusion criteria consisted of: (1) peer-reviewed journal articles, conference papers, and scholarly book chapters; (2) studies published between 2010 and 2024; (3) studies focusing on innovation adoption within higher education settings; and (4) studies addressing behavioural, institutional, technological, or socio-cultural determinants of innovation adoption. Excluded studies included research conducted outside higher education contexts, purely technical system evaluations without behavioural analysis, duplicated studies, and publications lacking sufficient methodological or theoretical relevance.

Following the screening process, the selected studies were subjected to thematic synthesis. The analysis involved identifying recurring determinants, theoretical relationships, contextual differences, and emerging institutional patterns across the reviewed literature. Themes were subsequently categorised according to major theoretical constructs derived from TRA, TAM, and UTAUT frameworks, including perceived usefulness, perceived ease of use, social influence, behavioural intention, facilitating conditions, and attitude towards usage. This analytical process enabled the study to identify converging findings, contextual inconsistencies, and broader implications for institutional innovation adoption within Malaysian higher education.

RESULTS AND DISCUSSION

The synthesis demonstrates that innovation adoption among university students cannot be adequately explained through a single theoretical perspective. Rather, the reviewed studies collectively indicate that innovation adoption emerges through the interaction of cognitive evaluations, social environments, and institutional conditions. TAM predominantly explains how students evaluate the usefulness and ease of institutional innovations, while TRA highlights the influence of attitudes and subjective norms in shaping behavioural intention. UTAUT extends these explanations by incorporating facilitating conditions, effort expectancy, and institutional support mechanisms.

The reviewed evidence therefore suggests that institutional innovation adoption within Malaysian universities is simultaneously behavioural, technological, and socio-organisational in nature. This integrative perspective provides a more comprehensive explanation of students' adoption behaviours than isolated theoretical applications.

Determinants of Institutional Innovation Usage Among University Students

In general terms, numerous reasons stemming from the reading have been cited in an attempt to establish the progressiveness and facilitation of students to use the innovation introduced by their institutions. But published by Pokidina et al. (2023), in what can be called the second mention of this topic, educational institutions, through the joint experimental environments, pursue institutional innovation to propel growth through re-educating professions and introducing links with the industry as was the case with Oulu Game Lab. Speaking of which, a brief examination of the literature revealed that such factors as perceived ease of use, perceived usefulness, attitude towards usage, social influence, behavioural intention, effort expectancy and performance expectancy have been determined as crucial factors in the adoption of the innovative practices by students in the educational institutions (Damanpour, 1991; Rogers, 2010; Siti et al., 2018; Almohtadi & Aldarabah, 2020). The antecedents have been identified to affect the willingness of the students to embrace new technologies and practices which have been introduced by their institutions. It is paramount to argue that knowledge of these aspects can go a long way towards encouraging culture of innovativeness and development.

Perceived Ease of Use

Perceived ease of use (PEOU) is one of the main factors that determine the use of institutional innovation by students of universities. First, according to Davis (1989) perceived ease of use is the level to which an individual thinks the utilisation of a specific system or technology would not be hard (Davis, 1989; Siti, et al., 2018). In the case of university students, the same means online educational platforms, technology in education, or any novel gizmo that they were presented with in their school setting. In this connection, it is interesting to note that the probability of university students adopting innovation highly depends on whether it is a simple, incomplex, straightforward, manageable or not. That is such that innovations that are complex and very laborious to operate have lower chances of being adopted. This has been proven by several studies which have empirically proven the connection between perceived ease of use and the adoption of the innovation among students. As an example, a study by Alharbi & Drew (2014) and Alfred et al. (2022) provided a clear witness of the fact that perceived ease of use (PEOU) was a major factor in influencing the acceptance of e-learning systems among students in institutions of higher learning.

In a similar manner, research by Hsu and Lin (2022) provided examples of how the perceived ease of use was a key predictor of the intention of the students to use the mobile learning applications.

In further note-taking, this determinant that contributes to the readiness and eagerness of the students to embrace institutional innovation in Malaysia, Aithal et al. (2023), and Jamaludin et al. (2023) observed that in most cases, students will apply new technology, innovation or tools or systems depending on the level of ease. On average, the high effort expectancy may result in fear of using the technology, and students will be afraid to use this technology. This aspect has been identified as an element and priority in various technology acceptance theories, such as the Unified Theory of Acceptance and Use of Technology (UTAUT) postulated that greater impatience to use a technology can be achieved by worrying more about energy expectancy (Venkatesh et al., 2003). Similarly, perception of ease of use was presented as conclusive and made eminent by Venkatesh et al. (2012) on intentions to use e-learning systems among students. Essentially, PEEU minimises the retardation, tension and anxiety of students towards new technologies. The reason behind this is that when the students find a technology accessible, they will not experience intimidation and will not be overwhelmed by it. This decrease in anxiety ensures the ease with which we move on to the adoption of the innovations.

Perceived Usefulness

Perceived usefulness goes hand in hand with perceived ease of use in ascertaining the enthusiasm of students in higher learning institutions in the innovation adoption. As a matter of fact, the perceived usefulness aspect defines the level at which students think that a particular innovation will enhance their learning and academic performance or achievement (Davis, 1989; Siti et al., 2017; 2018). It is consistent with the findings presented in the study by Ahmed et al. (2020), as this article identified the perceptions of the usefulness of mobile learning applications as one of the key determinants of the intention to use the technologies. Fundamentally, students can achieve greater levels of satisfaction in the case of a favourable user experience, which will be defined by ease of use. The more students find a technology easy and user-friendly, the more probable they will use it and recommend their colleagues to use it. This effect is upheld by the studies that show that perceived ease of use is strongly correlated with user satisfaction (Davis et al., 1989; Ramdanil, 2024; Siti et al., 2017). These discoveries usually refer to the fact that usefulness perception of a technology is a direct correlation of what the students think and the positive results that follow. Students become far more ready to embrace technologies which result in improved learning or provide what they need to achieve their academic ambitions.

Attitude Towards Usage

General assessment of the person using a technology, both positive and negative about it (Sarah et al., 2014; Tashcheva et al., 2021; Tidd et al., 2005). Such attitudinal response is significant in the educational settings as the choice towards adoption by the students often relies on their perception and feeling towards a technology and not by the technical qualities on their own. It is always found that the intention towards the usage is reinforced by the positive attitude towards usage, and this makes the student more likely to use new technologies (Satish et al., 2024; Rymarzak et al., 2022).

Attitude is also a mediating variable between the perceived usefulness and the adoption behaviour. A more positive attitude is more likely to make students use a technology that is perceived to be helpful, even in cases when it is perceived as having a positive effect (Ashok, 2023; Venkatesh & Davis, 2012). Attitude towards usage is also formulated by previous experience. The experience with similar technologies has a positive influence, and it is likely to develop confidence and openness, which leads to future adoption, whereas negative experiences would cultivate resistance even when they could be useful. Experimental research proves that experience and satisfaction play an important role and strongly determine attitudes and future adoption choices (Hsu & Lin, 2016; Krishnashree et al., 2020; Lusianus et al., 2019). On the whole, attitude to usage is a resolute determinant in the adoption of innovation in the first and second pathways among students.

Social Influence

Social influence is the other important consideration of institutional innovation adoption among university students. The concept refers to the extent to which thoughts, feelings, and tendencies of individuals are influenced by the actual or imagined existence of other people. Social influence in the framework of innovation adoption presents itself usually in the form of peer contacts, social norms, and the need to be accepted by a group (Ajzen, 1991; Venkatesh et al., 2012). It has been demonstrated that the attitude of students towards technology is greatly influenced by the peers and instructor opinions and behaviours (Nataliia et al., 2023; Pilar et al., 2017).

Social influence not only impacts the initial adoption, but also promotes further use of technologies. Mentioned by Siti et al. (2018), students placed within communities where innovations are encouraged and often adopted are more likely to continue using and maintaining the use of a new system throughout their lives. Positive attitudes and use behaviours are supported with the help of peers who are examples and embrace technological practices, as well as the leadership of educators. Essentially, social influence is used to highlight the effect that observation, peer pressure, and social norms have over the choices made by students thus, it is a compulsive factor in not only adopting but also in the continued use of institutional innovations.

Behaviour Intention

A key factor that determines the innovation adoption by students is the behavioural intention, which is determined by several factors that are interrelated. The studies have shown that attitude, subjective norms, and perceived behavioural control are the key factors that influence behavioural intention (Ajzen, 1991; Dinara et al., 2022). All of these factors in the educational situation lead to the student assessment of innovations, their perceived social pressure, and their belief in their capability to respond to the implementation of new technologies or practices.

Personal attitudes to a technology, the perceptions and behaviours of others and an instructor, and the self-belief about its use all affect the intention of the students to utilise the technology. The attitude is positive, and the presence of supportive social environments and the perception of easy use make a significant difference in the probability of students using an innovation and opting to continue using it. On the other hand, adoption can be inhibited by negative perceptions, the absence of support or low confidence.

Knowledge of these dynamics would be beneficial to the educators and policymakers as they would know what encourages or discourages students to adopt new technologies. Understanding the interdependency of attitudes, social influence, and perceived control, the institutions can establish supportive learning environments and interventions that facilitate adoption, maintain engagement, and create a culture of key technological innovation (Christensen et al., 2015; Singha & Singha, 2024).

Beyond confirming established determinants such as perceived usefulness and perceived ease of use, the synthesis reveals that institutional innovation adoption within Malaysian universities is strongly mediated by contextual and socio-cultural conditions. In particular, the findings suggest that institutional trust, peer-driven learning cultures, governance transparency, and organisational support structures significantly shape students' willingness to adopt innovation. Unlike many technology acceptance studies conducted in purely digital environments, the reviewed literature demonstrates that innovation adoption in Malaysian higher education is embedded within broader institutional transformation processes involving policy reforms, funding structures, and institutional autonomy. This indicates that successful innovation adoption depends not only on technological functionality but also on the institutional credibility and social legitimacy surrounding innovation initiatives

Implications of the Study

It is this synthesis that determines the determinants that affect the adoption of institutional innovations by students in Malaysian universities, with implications of good consequences to practice, policy, and research. To institutional leaders and policymakers, an understanding of how the relationship between the perceived usefulness and perceived ease of use is

intertwined with attitude towards usage, social influence and intentions towards behaviour is inevitable in plotting strategies that promote successful adoption. The reviewed studies collectively indicate that successful institutional innovation adoption requires simultaneous investment in technological accessibility, institutional trust, and social learning environments. For Malaysian public universities specifically, the findings suggest that innovation strategies should move beyond infrastructure provision alone towards integrated institutional support systems. Universities should prioritise student-centred innovation design, continuous digital literacy programmes, peer-supported adoption initiatives, and transparent governance structures capable of improving institutional confidence in innovation processes. Furthermore, the strong influence of social interaction identified across the reviewed studies indicates that innovation diffusion is more sustainable when supported through collaborative learning communities, mentorship structures, and lecturer-led engagement strategies.

The interventions can be tailored to benefit educators and programme developers by including differences in student academic fields, digital literacy, and levels of experience. Social influence can be used by peer-based programs, like ambassador programmes, mentorship programs, or cross-disciplinary innovation workshops, to encourage both early adoption and continued use of institutional innovations.

To researchers, the results of their experiments indicate that the significance of both technological and non-technological aspects of innovation in the context of higher education should be considered. Future research may use longitudinal or mixed method designs to ask the questions on the interrelations of the key determinants, but comparative research along Malaysian universities may contribute to understanding how variations in funding, autonomy and organisational culture can explain adoption behaviours.

All these implications highlight the importance of ensuring institutional policies are in line with the needs of students and the realities they face in the context. By so doing, it is possible to develop an enduring culture of innovation at universities to not only support the uptake of new technologies and practices but also augment the effectiveness of organisations, the learning experience, and students with the skills and capacities required to thrive in a rapidly evolving learning environment.

CONCLUSION AND RECOMMENDATIONS

In summary, therefore, this paper has demonstrated the importance of the Malaysian public universities to continue innovating to become a more effective and competitive university. New technologies, new ways of doing things, and new structures not only enable the learning process but also equip the students to tackle the dynamic international environment (Sodiq et al., 2023).

The study indicates that there are several critical factors which propel our loyalties to innovation, and they include: the perceived ease of use, perceived usefulness, attitude towards use of this, social influence and the behavioural intention. Such models as TRA, TAM, and UTAUT allow us to take good insights and emphasise how personal perceptions, influences of other people, and future benefits can drag us into embracing institutional innovations.

It is extremely important to create an atmosphere that facilitates the development of innovative ideas, both on the university level and nationally. That is why campuses must implement measures that will bring us into the plane and continue to apply new practices. The "Innovation Ambassadors Program" is one of such innovative initiatives, according to which we select and train student leaders across the various faculties and make them disseminate the message about innovation, share their knowledge, and demonstrate how to use the new technology correctly (Ramdanil, 2024). Obtaining certificates, additional credits or honours can give impetus to more people to join, creating peer-to-peer networks that will promote good ways of adoption.

The following are therefore shortlisted as recommendations:

> Empirical: Import whatever we believe to be useful and usable into the digital commodity we consume; ensure the technology is sound, we can indeed be trained and that the regulations are transparent; engage lecturers and students' representatives as innovation ambassadors; and make whatever is happening to match whatever we learn, what stage we are at, and our technological competence.
>
> Conceptual: Having Innovation ambassadors and cross-disciplinary labs established in this way, we can collaborate and align the freedom the institution has and the money we acquire with what we ultimately consume.

Overall, these actions provide us with viable solutions to enhance the implementation of new ideas in universities, improve our education, and long-term innovation culture in the Malaysian public universities.

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