

# Interaction Influence of Organisational Support on the Educators' Acceptance, Personality Traits, and Technological Competence towards Intention to Adopt the Virtual Learning Environment

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## ABSTRACT

In the contemporary educational landscape of rapid technological advancements, understanding the factors influencing the intention to adopt the virtual learning environment (VLE) is imperative. This study intended to examine the interaction influence of organisational support on individual technology acceptance behaviours, personality traits, and technological competency toward their intention to adopt VLE. Utilising a sample of 450 respondents with 232 valid responses, Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to analyse these moderation effects. The findings reveal a significant moderating role for organisational support in the relationship between perceived usefulness, perceived ease of use, attitude, neuroticism and technology competency toward intention to adopt VLE. Interestingly, high levels of organisational support mitigate the negative impacts of neuroticism, fostering more positive perceptions of the VLE and enhancing behavioural intention. This result argues the conventional insight that neuroticism is a barrier to the intention to adopt the VLE. Instead, this study underscores the importance of creating supportive organisational environments to facilitate the effective integration of technology for individuals with high neuroticism. This research contributes to the growing body of literature on technology acceptance, personality traits and technological competence by demonstrating the pivotal role of organisational support in strengthening educators' acceptance and competencies while mitigating the negative perception of neuroticism. The findings offer valuable insights for educational policymakers and practitioners seeking to optimise technology adoption strategies. Finally, several limitations and future directions of the study are also discussed.

**Keywords:** acceptance, big five personality traits, intention to adopt, organisational support, technological competency, virtual learning environment

## INTRODUCTION

Technology has become a significant benchmark for growth and development, driving transformative changes across business activities, commerce, market structures, the labour market, workplace environments, and educational settings globally (Kajamaa et al., 2019; Nadrljanski et al., 2018). The rapid growth of novel technologies is influenced by technological innovation, the merging of technologies, cost reduction, and the emergence of the internet (United Nations, 2018). In alignment with Sustainable Development Goal 4 (SDG 4), these advancements emphasise developing information technology skills and equipping individuals with the digital literacy required for better job opportunities in the 21st century (Montoya, 2018). Technology has a strong potential to support educators' teaching and learning activities by creating new or revised existing resources in the learning courses. In an educational context, using technology aims to improve the interest and efficiency in teaching and broaden the student's perspective on learning (Gao, 2021). Thus, educators are prompted to react to this evolution, and it should be enacted in educational settings to enhance students' learning experience.

In response to these shifts, educational institutions worldwide increasingly integrate information technology courses into their curricula, aiming to prepare students with the modern technological skills necessary for the

future workforce (Alshehri et al., 2019; Herrador-Alcaide et al., 2020). With the internet and technology integration, the educational environment reaps the benefits of utilising e-learning in its education practices. E-learning or virtual learning environment (VLE) is defined as a digital platform of a web-based communication medium, allowing educators and students to interact, share resources, and conduct learning activities such as course information, course content, discussion boards and instructor's assistance that can be accessed at their own convenience (Ahmad et al., 2022; Md Ajis et al., 2017). The concept of VLE, or e-learning, heavily depends on the capabilities of an advanced platform known as a Learning Management System (LMS). Educational institutions may choose open-source platforms such as Canvas, Moodle, Eliademy, ATutor, or Chamilo, while others may opt for commercial solutions or develop their own systems (Md Ajis et al., 2017). The LMS serves as the backbone of VLE implementation and lesson delivery, streamlining many task-oriented responsibilities traditionally handled by humans and significantly enhancing the efficiency of teaching and learning support.

This new paradigm encourages personalized production, collaborative networks, and digital transformation within the learning environment, fostering the exploration of new ideas, enhancing technical skills, and creating enriched learning experiences (Atabek, 2020; Kajamaa et al., 2019). Research has shown VLE positively impacts learning environments both cognitively and effectively, supporting improved student engagement, participation, and understanding of complex topics easily (Nelson et al., 2019). This is because VLE is designed with a set of integrated tools that facilitate diverse learning and teaching experiences for both students and educators. Implementing VLE has been favourable in education as it encompasses essential technologies for creating learning materials, digital platforms for delivering these materials, and standardized structures to enhance the overall learning experience (Rashid et al., 2021). Furthermore, VLE can be applied across mixed subjects, accessed remotely and allows easy distribution of learning materials while streamlining the processes involved in preparing and distributing content (Al Rawashdeh et al., 2021).

However, despite these benefits, the function of VLE is only useful when a person is willing and ready to use it. Although the potential advantages for both learners and educators are well recognized, the integration of this technology is hindered by various barriers, including a lack of interest, insufficient knowledge, inadequate institutional support, and unawareness of the necessary changes (Ahmad et al., 2022; Asonitou, 2020; Christopoulos et al., 2020; Henriksen et al., 2018). In order to improve the adoption of VLE, organisational support plays a vital role by providing the necessary resources, training, and encouragement that employees need to feel confident and competent in using technological tools. When employees perceive that their organisation values their efforts and is committed to professional development, they are more likely to embrace and effectively integrate new technologies into their daily work routines. This support can manifest in various forms, such as offering continuous learning opportunities, creating a culture that encourages innovation, and ensuring employees have access to the technological infrastructure needed to succeed. As manifested in organisational support theory (Baran et al., 2012; Kurtessis et al., 2017), support from the organisation is an essential factor that influences employees' beliefs regarding how much their organisation values their contributions and cares about their well-being. This perception can significantly impact their motivation, job satisfaction, and willingness to embrace new initiatives, including the adoption of new technologies in the workplace.

Nevertheless, there is limited understanding of how organisational support interacts with individual acceptance, personality, and competence level towards the intention to adopt the VLE. Since the VLE is one of the functions in modern teaching methods impacted by technology, it is important to understand the factors that may enhance educators' efforts to leverage technological usage in teaching practice. Without addressing these psychological and organisational factors, the widespread and effective implementation of educational technologies will likely remain constrained, preventing the realisation of their full potential in enhancing teaching and learning outcomes.

This study aims to bridge this gap by exploring the interaction influence between organisational support and the combined influence of acceptance, five-factor traits and technology competency on the intention to adopt VLE. Specifically, this study intends to examine how the level of support perceived by individuals within an organisation influences the strength and direction of the relationship between their personality traits, acceptance, and competence in technologies. According to Chang et al. (2020), organisational support can either enhance or diminish the impact of personality traits on an individual's willingness to embrace and integrate VLE into their teaching practice. It is critical to understand the varying levels of technology adoption across different personality profiles and design strategies that leverage organisational support to optimize technology acceptance

and usage in enhancing the quality of education in the digital age. Therefore, based on the discussion above, this study aims to address the following research objective:

1. To examine how organisational support moderates the relationship between acceptance, personality traits, and technological competency in the context of educators' intention to adopt the virtual learning environment (VLE).

## LITERATURE REVIEW

### Intention to Adopt Virtual Learning Environments (VLE)

Researchers have utilised various models and theories to explain educators' intentions to adopt technology, highlighting that educators can be either motivated or demotivated to integrate technology into teaching (Baddar & Khan, 2023; Uerz et al., 2018; Watjatrakul, 2020). Some studies opined that individual interests, personality, and social influence are crucial factors influencing individuals' intentions to adopt technology, with personal interest shaped by affective information, past behaviour, cognitive information, and social influence linked to social pressure, such as subjective norms (Agyei et al., 2020; Vlachogianni & Tselios, 2022). Other studies found that educators' attitudes and ability to use technology are primary factors in successful integration. Alshmrany and Wilkinson (2017) mention that while information and communication technology is seen as a tool to improve teaching performance and outcomes, some educators remain disinterested due to attitudes and a lack of organisational support.

Research on VLE adoption among educators received major concerns and outlined mixed results. For instance, Md Ajis et al. (2017) found that educators inadequately practice most VLE functions and processes. This issue is contributed by poor infrastructure and support from the organisation and the educators' behaviour that lack engagement in utilising technology. On the other hand, Awang et al. (2018) found that the adoption of VLE among educators is still at a moderate level due to the excessive workload, accessibility, competency, and acceptance. Conversely, Rashid et al. (2021) identified that when VLE is regarded as valuable and easy to use, educators' intention to integrate them into their teaching will increase. This is in accordance with Watjatrakul (2020), who claimed that when technology is perceived as enhancing the teaching process, engaging students in learning, and promoting effective teaching practices, educators are more likely to invest effort in acquiring new skills and utilising that technology. Moreover, a positive attitude driven by enjoyment, trust, and satisfaction, is essential for the optimal integration of technology into education Chao (2019). Other than that, social factors, competency, technological support, enhanced training, and resources can motivate educators to use VLE and facilitate this integration intention (Ahmad et al., 2022). All these factors discussed in the literature demand studies that investigate other areas surrounding the issue of continuous usage of VLE.

Prior research also relates various theories and models to understand educators' intention to adopt VLE in their teaching and learning process. For example, the technology acceptance model (TAM) has been used by Rienties et al. (2016) in their experimental study revealed that academic staff are more likely to accept and use technology when they find it easy to complete tasks with it. Meanwhile, Baddar and Khan (2023), documented that educators' perceptions of their competence, perceived usefulness and ease of use of technology, and peer influence are the factors for educators' intention to adopt VLE. Vaidyanathan (2018) did a study that focused on finding factors that lead to adopting VLE in hybrid or blended learning courses and stated that personal traits, such as competence in information technology and attitude toward computers, positively impact VLE adoptions. On the other hand, Hizam et al. (2021) utilise the task-technology fit theory indicating that some components in digital competencies, such as technology literacy, knowledge deepening, presentation skills, and professional skills, are essential factors that influence educator's intention to adopt VLE. Nevertheless, the initial use and the intention to use can be different in the future due to unavoidable circumstances which underscores the need to explore factors that influence the intention (Awang et al., 2018; Rashid et al., 2021)

From the perspective of studies on technology acceptance and adoption, behavioural intention can be influenced by both voluntary and non-voluntary use, with choices driven by individual beliefs or organisational settings (Durodolu, 2016; Opoku & Enu-Kwesi, 2020; Scherer et al., 2019; Venkatesh & Davis, 2000). Although educators' behaviour, attitudes, and beliefs are critical elements in understanding their intentions to adopt the

technology, further exploration is needed to identify other patterns and characteristics of educators who embrace technology (Palta, 2019). Hence, understanding educators' intentions to adopt VLE by examining acceptance, personality traits, and technological competence could be key influencing factors.

## Technology Acceptance

The user acceptance of technology is an essential factor for the success or the failure of such technology to be assimilated (Ayele & Birhanie, 2018; Opoku & Enu-Kwesi, 2020). Integrating technology for educational change is a complex process, and understanding the acceptance of technology and behavioural intention among educators is still challenging for academic institutions (Khlaif, 2018). A myriad of literature related to educators' adoption to accept educational and learning technology has specified factors, such as behaviour, personal belief, attitudes, and perceptions, as the primary subjects of the investigation to ensure successful integration and adoption of technologies in education (Ghavifekr et al., 2016; Granic, 2022; Khlaif, 2018; Santi, 2022; Setiyawan & Santoso, 2022). Behaviour and personal belief are observable acts associated with individuals' persuasive or attitudinal feelings. This implies that an individual's behaviour, to some extent, can result in positive or negative feelings, reflecting their attitude that depends on their observations and performance (Abbasi et al., 2015; Kanwal & Rehman, 2017).

In order to understand educators' acceptance, many studies have used TAM to predict and explain individuals' acceptance of the technology. For example, TAM was used to measure user intention towards personal computer usage (Igbaria et al., 1995); database management system (Szajna, 1994); voice mail, email and graphics (Karahanna & Straub, 1999); e-service, spreadsheets, manufacturing services, and social networking sites (Al-Ghaith, 2015; Al Hashlamoun, 2017; Chang et al., 2018). All these research works imply that TAM is a robust theoretical model whereby the validity can be extended in various information systems and technology-related context research. This is also confirmed by Scherer et al. (2019), who advocate TAM as a powerful model that conjectures direct and indirect mechanisms that led to educators' adoption of the technology. The ability of TAM is also highlighted in Baturay et al. (2017), who mentioned that TAM could explain the user acceptance and use of technology based on its two signature constructs, which are perceived usefulness (PU) and perceived ease of use (PEU).

Perceived usefulness (PU) is defined as the individual's tendency to believe that using a particular system could improve their job performance (Lai, 2017). Individual perception of usefulness is often based on the capacity of a particular technology or system believed to have a more positive use than another (Durodolu, 2016) while also being reliable, effective, and cost-effectiveness (Tanduklangi, 2017). Meanwhile, perceived ease of use (PEU) is a person's tendency to believe that using a particular system could be free of effort (Momani & Jamous, 2017). An individual's initial perception of the ease of using a particular technology is shaped by their general beliefs about the system or technology. This perception typically relates to the belief that the technology is user-friendly, effortless, helpful, flexible, and reduces uncertainty (Hussain et al., 2016). Numerous studies in the technology acceptance literature have explored this concept by examining various aspects of technology adoption.

Other than the PEU and PU, another aspect that could influence educators' intention to adopt technology is their attitude (AU). In describing educators' attitudes (AU) towards technology, Abedalaziz et al. (2013) found that educators' confidence is one factor that leads to a positive attitude to accommodate technologies in the teaching-learning process or other associated activities. Conversely, Nikian et al. (2013) reveals that educators' perception is the main predictor that can influence individuals' attitudes toward technology acceptance since perception is related to perceiving, insight, intuition, or awareness of something with senses in which educators' perception using technology in teaching represent their feeling whether such technology is necessary. Nevertheless, educators' attitude toward ICT in education positively impacts their ICT intention to adopt in educational practice (Herrador-Alcaide et al., 2020; Palta, 2019; Tondeur, 2018). As technology continually drives changes in the education field, educators' attitudes toward technology will influence whether or not it will be integrated into teaching practice. This was evident in several research works (Guillén-Gámez & Mayorga-Fernández, 2020; Kumar & Mantri, 2021; Yulisman et al., 2019) that found educators who reflect positive attitudes when using technology will apply them during the teaching and learning process. These authors explained that educators' positive attitude would build their perception and trigger their intention to adopt such technologies.



## The Five-Factor Traits

The Big Five Personality Traits model is one of the most prominent models used in contemporary studies to comprehend the most salient features of personality. Prior studies have led to the development of a five-factor model of personality originating from two main sources: lexical research and numerous research studies assessing the traits of many personality inventories.

With the countless studies of personality conducted across disciplines, some researchers often identify the Big Five personality traits with different labels, for example, 'Big Five' or 'Five-Factor Model' (Soto, 2018). Some researchers also use acronyms of 'OCEAN', 'NEOAC' or 'CANOE', indicating the same dimensions: openness to experience (O), conscientiousness (C), extraversion (E), agreeableness (A), and neuroticism (N) (Göncz, 2017). Regardless of the label used by researchers, the trait theory is the most prominent feature that made the Big Five commonly used in personality research (Oshio et al., 2018). In essence, the Big Five dimensions of personality traits could provide an ample conception in studying educator's intention to adopt technology since they are treated as universal predictors, which can be found in almost any measure of personality in many languages and cultures (Dalpé et al., 2019; Günaydın, 2021; Kim et al., 2019).

Since individual attributes and characteristics are related to personality, this study is also interested in understanding the predisposition characteristics of educator personality and their relations to the intention to adopt VLE in teaching. This is in accordance with Göncz (2017), who suggests that studies on educators' technology adoption should consider psychological factors, including educators' typologies, professional identity, and personality traits. As this personality affects individuals' beliefs, the Big Five personality model is widely used as a psychometric construct and can be found extensively in empirical studies (Günaydın, 2021; Thohir et al., 2021; Vlachogianni & Tselios, 2022). Early studies provide evidence that personal characteristic has the potential propensity towards the intention to adopt such technology (Camadan et al., 2018; Katrmpouza et al., 2017; Ramírez-Correa et al., 2019; Watjatrakul, 2020; Xu et al., 2016). It significantly correlates with people's intention to use the internet, online applications, information sharing and web browsers. Besides, there are numerous studies assessing personality traits to comprehend the behavioural intention over technology adoption as there is a rising interest in personality as an explanatory tool in information system literature (Farhad Khan et al., 2014; Siddiquei & Khalid, 2018). Moreover, Kounenou et al. (2014) claimed that research so far had explored many factors pertaining to educators' reluctance and the behavioural intention of technology adoption and one of them is personality traits.

Looking at each element of the Big Five personality traits, previous studies indicated that individuals high in openness to experience trait are the users and adopters of various communication technology tools (Xu et al., 2016). Hence, individuals with openness to experience are expected to be more likely to become technology adopters. Meanwhile, in a cross-sectional study, Aftab et al. (2018) found that conscientiousness trait is significantly and positively related to organisational citizenship behaviour. With this in mind, an individual will voluntarily perform any auxiliary activities supporting the organisational goals and objectives, including efforts to integrate technology. Therefore, it is expected that conscientiousness individuals intend to adopt technology since this trait also characterised by dependability, responsible, being careful, thorough, organised, playful, flexible learners, and time savvy (Dalpé et al., 2019). Sanjebad and Iahad (2014) suggested that a highly conscientious individual is believed to have a positive intention toward technology adoption developed when they view the technology characteristics as dependable, convenient, and enhancing job performance. Extraverted individuals are more engaged in smartphone usage, indicating that they are inclined to adopt technology better due to their nature and are prone to developing social interaction and interpersonal relationships using technology (Oshio et al., 2018). On the contrary, a study by Xu et al. (2016) narrowed their focus on how personality traits impact mobile app adoption. They discovered that although extraverts are often keen to develop interaction, there was no positive relationship to adopting mobile social apps; instead, less extraverted individuals are more likely to adopt mobile gaming apps. Nevertheless, Aftab et al. (2018) identified that extraversion is highly related to organisational citizenship behaviour, and they are likely to embrace technology to support organisational objectives.

Meanwhile, agreeableness is another dimension that has been reported to influence the intention to adopt the technology positively. This was evident in research that found a positive association between agreeableness and

perceived usefulness of technology and social networking behaviour (Lane & Manner, 2011; Sriyabhand & John, 2014). These authors revealed that the trait could motivate individuals to adopt technology. Furthermore, Ramírez-Correa et al. (2019) suggest that agreeable individuals are also characterised as self-controlled and impulsive; hence, they are more inclined to integrate technology voluntarily. The last dimension of Big Five personality traits is neuroticism, which is commonly related to an individual's emotional instability caused by anxiety, depression, hostility, and personal insecurity (Azucar et al., 2018; Oshio et al., 2018). Some studies described neurotic people tend to view technology as threatening and stressful to their daily routine, which reduces their technology adoption. However, other studies argued neuroticism trait positively influences the intention to adopt and accept the technology. Concerning this, individuals with neuroticism may use technology, such as social networking sites, to seek support for their anxious and nervous tendencies (Tang et al., 2016). Some authors believed that neuroticism's negativity could be rehabilitated towards positive outcomes, especially when surrounded by a supportive environment (Bendersky & Shah, 2013; Uppal, 2017). Moreover, scholars in psychology study confirmed that certain features in technologies, such as interesting graphics, visuals, music, facial expressions, and colours, would trigger certain brain chemicals and evoke certain emotional responses to be more positive (Burnett-Zeigler et al., 2018).

### Technological Competence

Technological competence is a critical factor influencing educators' intention to adopt virtual learning systems in teaching and learning. Competency is broadly defined as skills, know-how, abilities, and qualifications (Al-Furaih & Al-Awidi, 2020). In applying technology in the educational context, competencies extend to include knowledge, skills, creativity, and attitudes necessary for using digital media effectively in learning and applying that knowledge for societal benefit (Krumsvik, 2014; Wei et al., 2016). Arballo et al. (2019) further defined technological competencies in education as the use of technological devices and services through technical skills and innovation to enhance teaching, provide meaningful learning experiences, and foster learning autonomy.

Technological competence involves not only the ability to use digital devices and operate software but also the integration of complex skills, emotional, sociological, motor, and cognitive abilities that are necessary for effective use of technology in educational settings (Hizam et al., 2021; Saad et al., 2020). Given the multifaceted nature of educators' roles, integrating technology presents challenges when educators need to align technological tools with pedagogical content. A lack of knowledge, skill, and competency can become a significant barrier to technology adoption. Educators must not only master classroom management and teaching practices but also effectively embed technology into curriculum planning and student learning processes (Al-Furaih & Al-Awidi, 2020). Integrating educational technology such as VLE into the curriculum is crucial, as educators are expected to be responsive and technologically agile in transforming their teaching practices (Ahmad et al., 2022).

Prior research has explored the relationship between technological competencies and educators' intention to adopt technology. For instance, Wei et al. (2016) found a strong positive relationship between educators' ICT competency, particularly in computer usage, and their intention to use a learning management system. Similarly, Baturay et al. (2017) and Tondeur (2018) reported significant positive associations between educators' technological competencies, attitudes toward computer-assisted education, and their intention to accept and use technology in teaching. This is also stated in Baddar and Khan (2023), who found that competence exhibits the strongest influence on educators' intention to use digital resources such as VLE.

Conversely, the lack of digital competencies may hinder educators from integrating technology, causing them to have trouble with pedagogical compatibility and causing the absence of social awareness in teaching (Al Khateeb, 2017). This is also emphasised in a meta-analysis by Uerz et al. (2018) asserted that educators must first use, understand, and apply technology themselves for practical integration into education. Despite proficiency in common technologies like online searches, email, and presentation software, educators often lack experience with more complex tools. Uerz et al. (2018) also highlighted the higher education community is still unfamiliar with Web 2.0 technologies, which emphasise collaborative, participatory, and dispersed practices in learning environments hence signifies a dire need for educators to upgrade their technological competencies in teaching and learning practices.

The rapid evolution of technology requires educators to continuously explore its applications in teaching and

learning to remain viable and competent. As pedagogical approaches evolve with technological advancements, educators must enhance their competencies to strategically design and implement technology-driven teaching (Arballo et al., 2019; Baddar & Khan, 2023; Saad et al., 2020). Effective technology integration requires educators to transition from merely transmitting knowledge to serving as sources of human, social, and decisional capital, thereby becoming companions to students by proficiently utilising digital resources in learning environments (Santoso & Lestari, 2019). This shift necessitates sufficient technological competence to embed technology effectively into education.

### **Interaction Influence of Organisational Support (OS)**

Namazi and Namazi (2017) posited that the moderating variable could provide more realistic and accurate findings to any investigation as it could modify the form or strength of the relation between the independent and dependent variables. In this study, the organisational support (OS) is included as a moderating variable, which is expected to significantly impact the relationship between educators' attributes and their intention to adopt educational technologies. OS is the manifestation of organisational support theory (OST), described as the principles to which an organisation values individuals' contribution and cares about their well-being (Kirkland, 2017). It is paramount to consider the employee-organisation relationship since it will influence organisational commitment, job satisfaction, and other attitudinal outcomes among individuals (Kurtessis et al., 2017). Employees with a high level of OS tend to demonstrate lower absenteeism and reduce withdrawal behaviour (Palmer et al., 2017; Tian et al., 2018), show better psychological well-being, display better work performance, higher job satisfaction (Eisenberger et al., 2016), actively involved in achieving the company's goals (Nartey et al., 2018) and encourage individual perceptions towards positive behavioural intention in performing specific tasks (Baturay et al., 2017). Organisational support also promotes employee creativity, inspiring them to enhance their skills, knowledge, and capability, resulting in increased productivity and performance (Akgunduz et al., 2018). Sufficient support from the organisation could improve individuals' affective commitment to the organisation, interpreted through their actions, behaviour and personality striving for superior job performance. As manifested from the OST, the moderation variable of organisational support could affect educators' attitude, including their affection, belief, and behavioural intention towards their work (Nartey et al., 2018); enhance psychological empowerment and subsequently boost individuals' self-efficacy; develop individual competency from multiple sources, such as the organisation itself, colleagues, and superior management towards using technology (Zheng et al., 2018).

In an educational context, organisational support, as explained above, is also important to educators since they are employees of an organisation. When educators receive fair treatment, are satisfied with the working condition, and are appreciated by the organisation, they will feel obligated with their daily duties and committed to achieving organisational goals. Conversely, lacking this support could lead to feeling demotivated, undervalued, and affect their work behaviour. Regarding utilising technology in teaching and learning, educators might feel intimidated by technology, thus, hesitant to use it (Al-Furaih & Al-Awidi, 2020; Khatib, 2016). In particular, the lack of organisational support for faculty development and training, the absence of robust technology and applications, and the lack of support for students enrolling in online courses are among the reasons for the faculty members' reluctance to adopt technology in the classroom (Gordon et al., 2018). Although educators have the necessary skills and motivation to apply technologies in class, without this support, such effort will pulverise without initiation. Organisational support needed by the educators may comprise governance & policy; training and mentoring; infrastructure, managerial support, and financial capability (Chang et al., 2020; Prasad et al., 2015).

Governance and policy play a critical role in encouraging the adoption of VLE. Policies introduced by educational institutions or governments can elicit both positive and negative reactions within the academic community. Significant changes to educators' traditional roles, for instance, often lead to resistance (Vu, 2017), frustration, and scepticism (Na-Nan et al., 2018). However, policies that clearly justify the selection and deployment of ICT and other technologies to enhance education are more likely to gain acceptance and support from individuals (Atabek, 2020). Training and mentoring are also essential for helping educators become familiar with new technologies. Tondeur (2018) and Ivala (2017) emphasise the positive relationship between educational technology training and educators' willingness to adopt these technologies in the classroom.

Additionally, organisational support, including managerial and financial resources, significantly influences technology adoption. Studies have shown that institutional support is crucial in facilitating educators' use of technology to improve teaching (Akgunduz et al., 2018; Kurtessis et al., 2017). Kirkland (2017) explains that organisational conditions and decisions significantly impact employees' perceptions of support. For example, organisations can demonstrate their support through benefits, autonomy, opportunities for professional development, promotions, and policies that promote a healthy work-life balance (Kurtessis et al., 2017). Organisational support encompasses time, financial resources, and recognition. However, Tian et al. (2018) argue that support for knowledge management and initiatives to encourage knowledge sharing are equally important. They suggest that organisational support enhances knowledge management and learning. Educators may resist adopting technology in their teaching and learning activities without such organisational support.

OS has been linked to a range of positive employee outcomes, including teamwork behaviour (Stephens, 2016), affective commitment, positive mood, conscientiousness, job satisfaction (Kirkland, 2017), increased responsibilities, and innovation on behalf of the organisation (Eisenberger et al., 2016). Organisational support plays a crucial role in establishing technology-enhanced learning environments. Key factors such as policy support, managerial support, and colleague support significantly influence individuals' willingness to use technology (Naujokaitiene et al., 2015). Tanduklangi (2017) further emphasises that management support, along with training and computing resources (e.g., manuals, books, technical assistance, and helpdesk), strongly impacts users' intentions to adopt information systems and their ability to accumulate knowledge and experience.

A study by Ayele and Birhanie (2018) investigated the influence of organisational support on technology adoption, focusing on 400 educators from various universities in Ethiopia and their acceptance and use of e-learning systems. The study hypothesised that top management support, training, and incentives would impact educators' e-learning usage. The findings revealed that top management support, such as providing financial assistance and technical help and allocating time for educators to learn any educational technology, positively influenced and was a key determinant of educators' acceptance and use of e-learning. The institution's training initiatives also positively impacted educators' knowledge and skills necessary for using e-learning. However, incentives such as promotions, financial benefits, and reduced workload and time were not significant motivators for educators' technology acceptance and use.

A similar study by Porter and Graham (2016) found that financial support, tenure, and promotions do not significantly influence faculty members' intentions to adopt educational technology platforms. However, course load reductions were found to slightly impact their decision to integrate technology into teaching and learning practices. Based on the literature discussed, it can be concluded that OS has a strong moderating effect across diverse variables. Due to its flexibility, OS offers the capacity to experiment with various variables and predictors (Chang et al., 2020; Na-Nan et al., 2018; Tian et al., 2018). Furthermore, OS is closely linked to individuals' psychological and physiological needs, influencing behaviour and actions. Considering this and the impact of OS on individuals' outcomes, this study examines the role of OS as a moderator between acceptance, personality traits, technological competence, and the intention to adopt the VLE from educators' perspectives. Thus, the following interaction effect hypotheses are developed:

**H1:** Perceived usefulness (PU) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H2:** Perceived ease of use (PEU) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H3:** Attitude towards use (AU) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H4:** Openness to experience trait (OE) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H5:** Conscientiousness trait (CO) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)



**H6:** Extraversion trait (EX) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H7:** Agreeableness trait (AG) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H8:** Neuroticism trait (NE) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

**H9:** Technological competence (TCOM) and intention to adopt (INT) VLE will be stronger with high organisational support (OS)

## METHODS

The population of this study was educators in public and private universities in one of the developing countries in Southeast Asia. The respondents were selected using simple random sampling techniques sourced from the universities' website database, and the survey was distributed via email. Over six months, 232 completed responses were received. The questionnaire was divided into five sections. Section A gathered demographic information, while Section B assessed the intention to adopt VLE (INT1–INT15). Section C measured acceptance behaviour, focusing on perceived usefulness (PU1–PU7), perceived ease of use (PEU1–PEU7), and attitude towards use (AU1–AU7). Section D evaluated personality traits using 31 items categorized into five factors: openness to experience (OE1–OE6), conscientiousness (CO1–CO6), extraversion (EX1–EX6), agreeableness (AG1–AG6), and neuroticism (NE1–NE7). Meanwhile, 18 questions were included to measure technological competence (TCOM). Responses were recorded on a 5-point Likert Scale ranging from "Strongly Disagree" to "Strongly Agree." The questionnaire items were adapted from studies by Gholami et al. (2018), Abu Karsh (2018), Sultan et al. (2011), Agarwal and Prasad (1997), Barnett et al. (2015), and Al Khateeb (2017). Organisational support was measured using nine items developed by Porter and Graham (2016), labelled OS1 through OS9 for data analysis, following the same acronym standard as other variables in the study.

Data analysis was performed using the partial least squares (PLS) method, chosen for its suitability for causal-predictive analysis and exploration of potential relationships in the data (Ramayah et al., 2018; Shmueli et al., 2019). Unlike covariance-based structural equation modelling (CB-SEM), which requires larger sample sizes, PLS is more suitable for exploratory studies (Henseler et al., 2009). The SmartPLS 4.1.0.6 software was used for data analysis following established inner and outer model guidelines. This research has been conducted in strict adherence to ethical guidelines and principles provided by the institution. The privacy and confidentiality of all participants have been rigorously maintained and solely used for this study. All participants were fully informed about the nature and purpose of the research before giving their consent to participate.

As this study uses the constructs for its independent and moderating variables from reflective measurements as well as continuous scale to disclose its significance, hence a two-stage approach was used to examine the influence of the moderator (M) with the relationship between predictor (X) and the dependent variable (Y). This approach was chosen since this method of analysis aims to focus on parameter recovery, prediction and statistical power (Chin, 2010; Hair, Hollingsworth, et al., 2017). As this study is interested in revealing the significant relations of testing the moderation effects specified in the nine moderating hypotheses, the two-stage approach is the appropriate method for examining the interaction effects (Hair, Babin, et al., 2017). Specifically, for the two-stage approach, the moderation effect is established by covering the exogenous latent variable (X), the moderator (M) and the endogenous variable (Y). This approach creates a partial least square path modelling advantage in this situation when the latent variables score will be estimated explicitly through two different stages. Stage 1 was analysed using the main effect of PLS path model to gather the estimates of latent variables scores (LVS). Particularly, the latent variable with standardised score estimates (including the unstandardized construct scores) running using an algorithm are computed and preserved for subsequent analysis.

Meanwhile, in stage 2, the interaction term between the exogenous and moderating variables ( $X*M$ ) was developed as the element-wise product of the construct scores of X and M. Subsequently, this interaction term and the latent variable scores of X and M are utilised as exogenous variables in a multiple regression on the

latent variables scores of Y whereby the LVS produced from the stage 1 will become the indicators for the three variables (exogenous, endogenous and moderating). Moreover, using the two-stage approach, the original indicators with unstandardized construct scores from stage 1 can be persisted in the model by applying the mean-centred procedures before reaching stage 2. Therefore, using organisational support as the moderator (major role) in this study with the goal of the analysis is to reveal its moderation significance; thus, a two-stage approach will be equipped. As denoted in the nine hypotheses (H1 until H9), the results of the moderation effect analysis are presented in the next section, which is examined and performed using the current PLS-SEM requirement. Furthermore, the study’s framework (see Figure 1) is developed to examine the interaction effects of organisational support with acceptance behaviour, five-factor traits and technological competence in the context of intention to adopt a virtual learning environment.

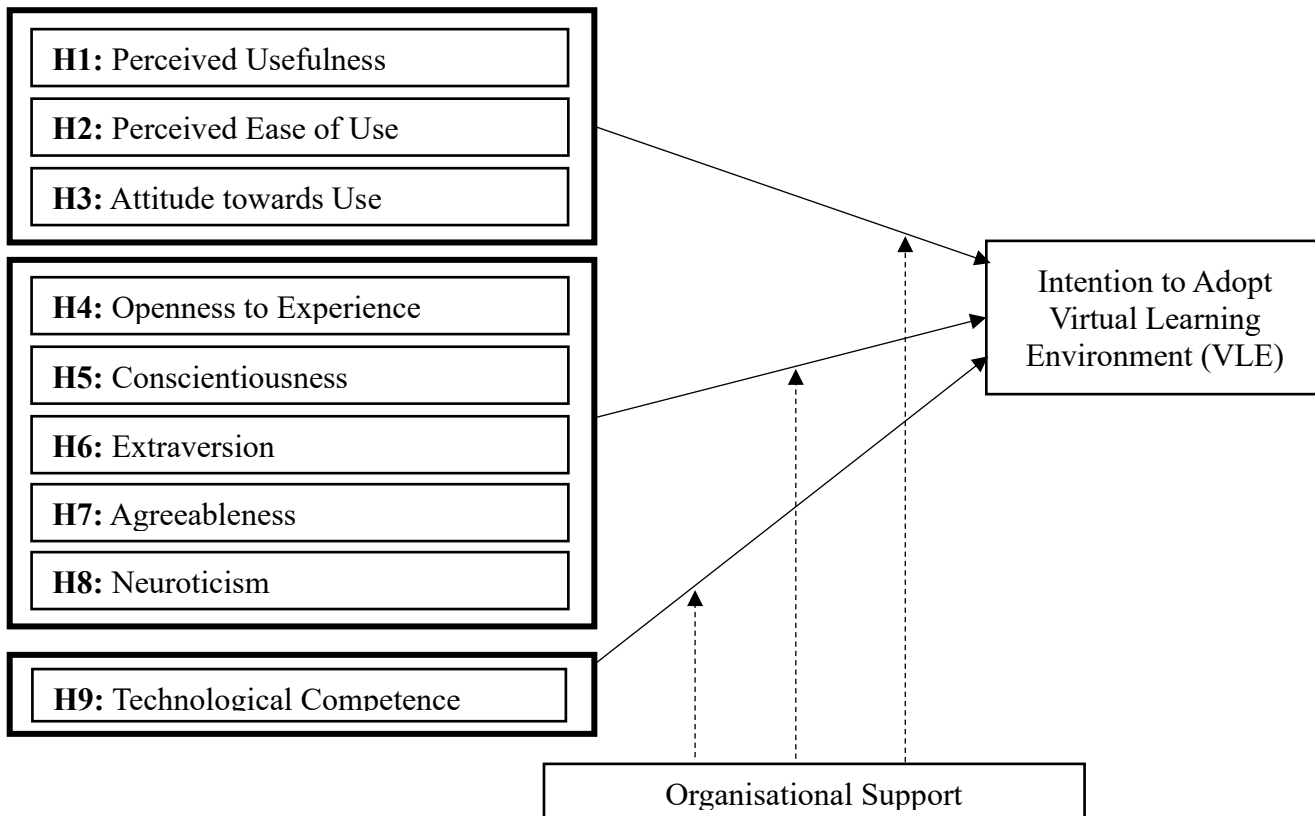


Figure 1: Framework of the study

## RESULTS AND FINDINGS

### Demographic of the respondents

The demographic profile of the respondents showed that 203 (87.6%) were female and 29 (12.4%) were male. The largest age group was individuals aged 40-49, making up 64.1% of the sample, followed by those aged 30-39 at 25.6%. Respondents under 30 accounted for 8.5%, while those over 50 comprised 1.8%. In terms of educational qualifications, 78.4% held a doctoral degree, and 21.6% had a master’s degree. The majority of participants were senior lecturers (54.6%), with associate professors making up 28.3% and junior lecturers 11.5%. Professor category represented 5.6%. In overall, the VLE adoption indicates a moderate level, with 62.5% of respondents reporting frequent use, while the remainder indicated occasional use in their teaching practices.

### Assessment of reflective measurement

In this part, several assessments have been performed to meet the rules of thumb such as internal consistency reliability, convergent validity and discriminant validity as the procedures to evaluate results. The study utilised a two-stage modelling approach, as outlined by Hair et al. (2018) and Benitez et al. (2020), to construct and assess the reflective measurement model. Initially, the focus was on evaluating the reliability and validity of individual items and constructs. The second stage involved analysing the structural relationships, following Hair,

Hollingsworth, et al. (2017). Reliability, convergent validity, and discriminant validity were assessed using guidelines from previous research (Chin, 2010; Hair, Babin, et al., 2017; Henseler et al., 2009; Roldán & Sánchez-Franc, 2012).

Reliability analysis showed factor loadings between 0.773 and 0.908, all significant at the 1% level, exceeding the 0.708 threshold for uni-dimensionality (Hair, Babin, et al., 2017). To meet the requirement that each indicator explains at least 50% of the variance, ten items with loadings below 0.5 were removed, in line with Avkiran and Ringle (2018). Additionally, items with loadings below 0.4 (e.g., Openness to experience-OE1: 0.331 and Conscientiousness-CO6: 0.211) were excluded to ensure convergent validity (Benitez et al., 2020; Fornell & Larcker, 1981). Item removal was kept below the 20% limit suggested by Hair et al. (2010) and Hair, Babin, et al. (2017). Both Dijkstra-Henseler’s  $\rho_A$  and Dillon-Goldstein’s  $\rho$  values exceeded 0.70, indicating high reliability of the constructs (Benitez et al., 2020; Dijkstra & Henseler, 2015; Hair et al., 2018). Redundancy scores remained below the critical threshold of 0.95.

To ensure discriminant validity, this study used the heterotrait-monotrait (HTMT) ratio and the values are below 0.90 and 0.85 thresholds (Franke & Sarstedt, 2019; Voorhees et al., 2016). The 95% confidence intervals for these ratios do not include 1, indicating clear differences between constructs (Henseler et al., 2015). This confirms the model’s discriminant validity. Figure 2 illustrates the modified measurement model after executing the indicator reliability assessment.

**Assessment of the structural model**

Before analysing structural relationships, checking for multicollinearity among exogenous constructs is important to ensure accurate causal effects. This study used the Variance Inflation Factor (VIF) to assess collinearity, considering values above 5 as problematic (Hair, Hollingsworth, et al., 2017) and values between 3 and 5 as requiring further scrutiny (Becker et al., 2015). Tolerance values below 0.2 also indicate potential issues (Hair et al., 2010). We set a strict VIF threshold of 3.3. Table 1 shows that all VIF values were below 3.3 and 5, and tolerance values were above 0.2, indicating no significant multicollinearity. Thus, all constructs remain valid for analysis.

Table 1: Collinearity Values among Exogenous Constructs

Exogenous Constructs	Endogenous Constructs	Variance Inflation Factor (VIF)
Perceived Usefulness	Intention to Adopt Virtual Learning Environment (VLE)	2.125
Perceived Ease of Use		2.855
Attitude towards Use		2.752
Openness to Experience		2.221
Conscientiousness		1.685
Extraversion		1.541
Agreeableness		2.245
Neuroticism		1.662
Technological Competence		2.133
Organisational Support*		1.121

Note: \*VIF for Organisational Support is analysed to meet the two-stage moderation approach reporting

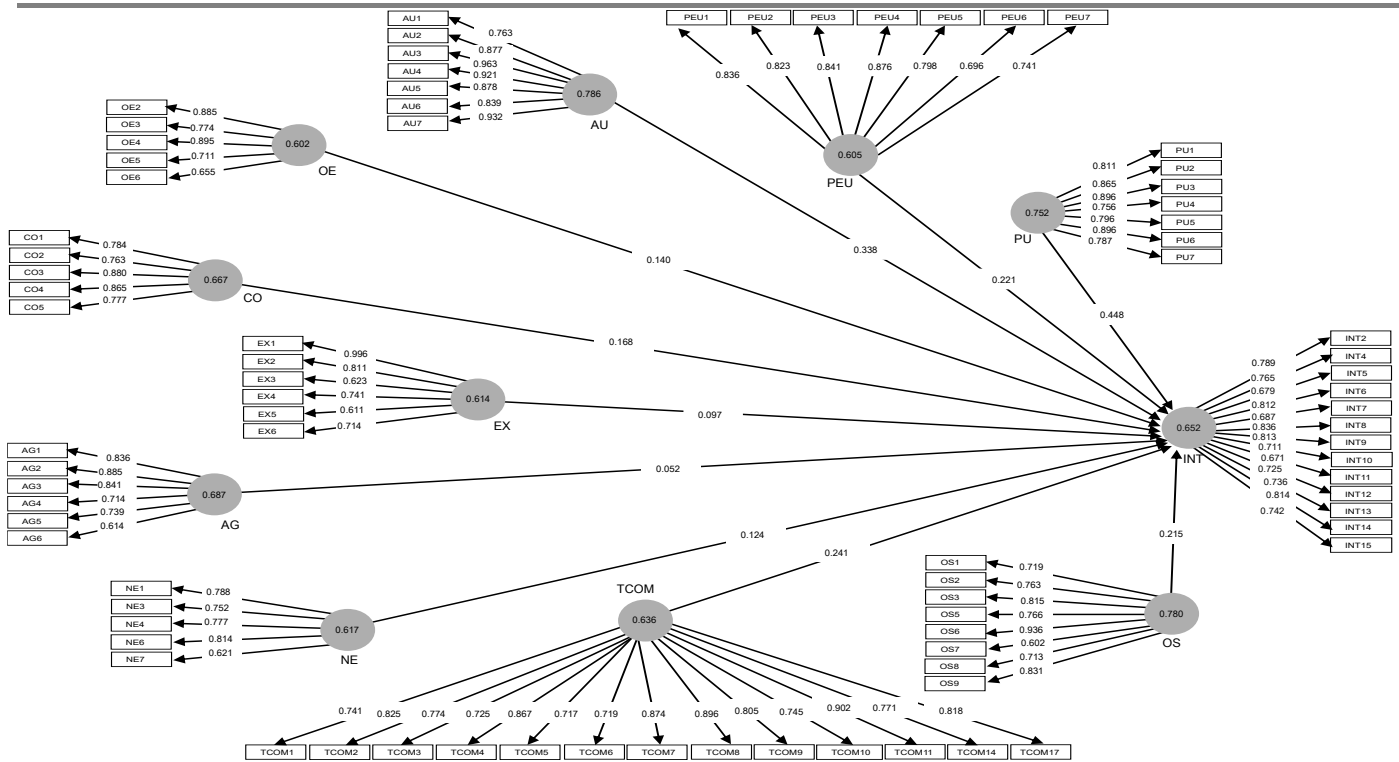


Figure 2: PLS algorithm of the modified measurement model

### Evaluation and Results of the Interaction Influence

In this section, Table 2 shows the collinearity diagnostics using the VIF values results from all indicators of OS1, OS2, OS3, OS5, OS6, OS7, OS8, and OS9 and all the 13 accepted items for endogenous variables in the modified structural model as well as the relative contribution for the measurements. Table 3 presents the changes in R2 analysis to identify the additional variance that occurred with the addition of the interaction term between OS and all constructs towards the INT. On the other hand, the results of the moderation effects in Table 4 illustrate the bootstrapping of the moderation model that shows significant interaction between the exogenous construct for this study (PU, PEU, AU, OE, CO, EX, AG, NE, and TCOM) and organisational support on the intention to adopt the VLE, hence demonstrating the supporting and non-supporting hypotheses.

Table 2: Collinearity Diagnostics using Variance Inflation Factor – Outer Values

Indicators After Reliability Assessments	Constructs	t-value	Variance Inflation Factor (VIF)
INT 2	Intention to Adopt Virtual Learning Environment (VLE)	13.593	1.866
INT 4		13.985	1.877
INT 5		15.253	2.897
INT 6		12.574	1.849
INT 7		14.043	1.746
INT 8		21.957	2.201
INT 9		25.427	2.213
INT 10		29.829	2.849



INT 11		15.101	2.846
INT 12		13.012	2.747
INT 13		20.715	2.695
INT 14		14.991	2.170
INT 15		10.964	1.636
OS1	Organisational Support	3.221	1.045
OS2		3.110	1.040
OS3		3.918	1.010
OS5		4.511	1.776
OS6		5.780	1.085
OS7		3.539	1.628
OS8		4.154	1.695
OS9		3.605	1.390

From the above diagnostics output, it can be concluded that there is no problem with the outer VIF values results as they show below 3.3 or 5, hence indicating no collinearity issues. Moreover, all the indicators also have met the t-value of >1.96, suggesting that relative contributions are established on the organisational support and the intention to adopt the VLE. Next, the following bootstrapping procedure results were used to examine the R<sup>2</sup> values included and excluded. This procedure has been executed one at a time for all exogenous constructs to reflect the nine moderating hypotheses in this study.

Table 3: R<sup>2</sup> for Main Effect and Interaction Effect Model

Hypothesis	R <sup>2</sup> (Interaction Effect Model) Included	R <sup>2</sup> (Main Effect Model) Excluded	f-squared	f <sup>2</sup> Cohen's (1998)	f <sup>2</sup> Kenny's (2018)
H1	0.44	0.39	0.05	Small to Medium	Medium to Large
H2	0.36	0.30	0.06	Small to Medium	Medium to Large
H3	0.44	0.38	0.06	Small to Medium	Medium to Large
H4	0.31	0.29	0.02	Small	Medium to large
H5	0.21	0.21	0.00	None	None
H6	0.23	0.22	0.01	None	Medium
H7	0.21	0.18	0.03	Small to Medium	Medium to Large
H8	0.19	0.17	0.02	Small	Medium to Large
H9	0.36	0.30	0.06	Small to Medium	Medium to Large

From Table 3, there is  $R^2$  change for the majority of items which indicates an additional variance for H1, H2, H3, H4, H6, H7, H8, H9 while there is one hypothesis which is H5 does not reflect any changes after including the interaction effects. The effect sizes for the significance variables (H1, H2, H3, H7, H8, H9) present a small to medium effect using Cohen (1988), while a medium to large effect is based on Kenny (2018). On the other hand, the other moderation effects show from none to medium, though not significant at all. The small to medium effect sizes here are consistent with the findings by scholars (e.g., Bakker et al., 2019; Kraft, 2018; Lindsay, 1993; Lipsey et al., 2012) for educational context and behavioural research.

**Table Error! No text of specified style in document.:** Bootstrapping Results for Moderation Effects

Hypothesis	Path Relationship	Path Coefficient	Mean	Std. Deviation	p-value	Confidence Interval	
						5%	95%
H1	<b>Moderation effect</b> (Organisational Support X Perceived Usefulness) → Intention	0.144	0.129	0.071	<b>0.012**</b>	0.057	0.228
H2	<b>Moderation effect</b> (Organisational Support X Perceived Ease of Use) → Intention	0.165	0.164	0.084	<b>0.001***</b>	0.085	0.244
H3	<b>Moderation effect</b> (Organisational Support X Attitude towards Use) → Intention	0.118	0.111	0.068	<b>0.025**</b>	0.077	0.233
H4	<b>Moderation effect</b> (Organisational Support X Openness to Experience) → Intention	0.066	0.062	0.068	0.185	-0.014	0.128
H5	<b>Moderation effect</b> (Organisational Support X Conscientiousness) → Intention	0.031	0.021	0.075	0.412	0.114	0.063
H6	<b>Moderation effect</b> (Organisational Support X Extraversion) → Intention	0.085	0.096	0.069	0.135	0.016	0.184
H7	<b>Moderation effect</b> (Organisational Support X	0.094	0.081	0.063	<b>0.067*</b>	0.038	0.197

	Agreeableness) → Intention						
H8	<b>Moderation effect</b> (Organisational Support X Neuroticism) → Intention	0.146	0.106	0.063	<b>0.003***</b>	0.056	0.231
H9	<b>Moderation effect</b> (Organisational Support X Technological Competence) → Intention	0.163	0.152	0.072	<b>0.007***</b>	0.062	0.246

Note: \*\*\* Significant at 1%  $p < 0.01$  (one-tailed), \*\* Significant at 5%  $p < 0.05$  (one-tailed), \* Significant at 10%  $p < 0.10$  (one-tailed)

From Table 4, the bootstrapping results signify that there are moderation effects (PEU, NE & TCOM) with p-value  $<.001$  (one-tailed), two moderation (PU, AU) with the p-value  $<.005$  (one-tailed), and one interaction of AG with p-value  $<.10$  (one-tailed). Nevertheless, the other moderation hypotheses described non-significance effects. Additionally, all significant interactions between PU, PEU, AU, NE, TCOM, and AG show a positive path coefficient. Thus, it can be concluded that the positive association between those variables and the intention to adopt the VLE would be stronger when organisational support is higher. Moreover, the confidence interval (5% and 95%) with the homogenous sign also supports the result in which both confidence interval bias values do not cover the zero. Therefore, it indicates that the interval estimate value gives a measure of significance, accuracy and level of precision. Hence, hypotheses H1, H2, H3, H8 and H9 are supported. However, for H7, even though it shows a significance p-value  $<0.10$ , this study only takes into account the 5% level of significance; hence, H7 is not supported.

The significance moderation effect with the supported five hypotheses was then further drawn using an interaction plot, as shown in Figure 3 until Figure 7 since the size and nature of this interaction effect are not easily described using the output from its coefficients. For this study, the two lines from the graph representing the educators’ perception of “Low Support” and “High Support” were plotted using the  $\beta$  values of the related constructs.

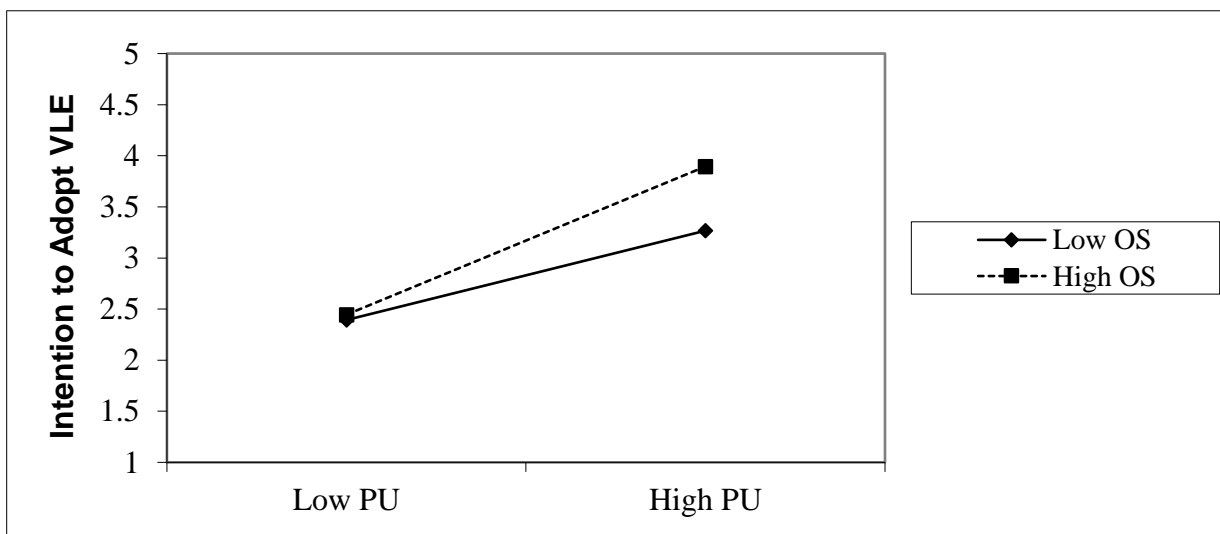


Figure 3: Interaction plot of moderation effect on the relationship between perceived usefulness and intention to adopt VLE

Figure 3 plots the perceived usefulness, organisational support, and the interaction effect ( $\beta = 0.144$ ) and intercept at 3. The two lines representing high OS have a steeper gradient when compared to low OS, which indicates that the positive relationship and significance of the interaction are indeed stronger when the OS is high. Specifically, the result implies that the high usefulness of the VLE will encourage the educator to adopt the high organisational support provided compared to the low organisational support situation. Hence, the difference in the organisational support between “high support” and “low support” situations provides a profound interaction effect between PU and OS, suggesting that the interaction is capable of moderating significantly between PU and INT. Thus, hypothesis H1 is supported by what was hypothesized before the analysis, and a moderation effect exists.

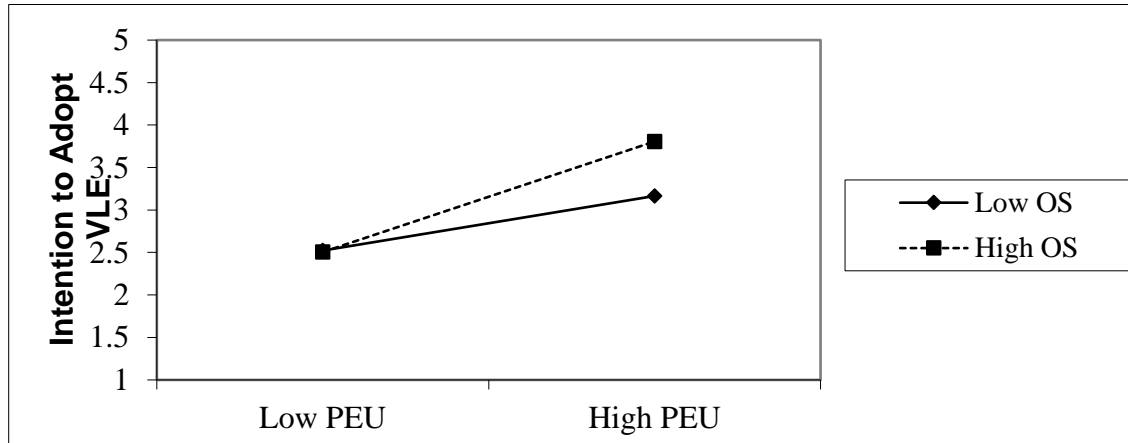


Figure 4: Interaction plot of moderation effect on the relationship between perceived ease of use and intention to adopt VLE

Next, Figure 4 shows the plotting of the perceived ease of use, organisational support and the interaction effect ( $\beta = 0.165$ ), and intercept at 3. The two lines representing high OS have a steeper gradient when compared to low OS, which indicates that the positive relationship and significance of the interaction are indeed stronger when the OS is high. Specifically, the result implies that the high perceived ease of use towards VLE would encourage the educator to adopt impacted by the high organisational support compared to the low organisational support situation. The difference in the organisational support between “high support” and “low support” situations provides a profound interaction effect between PEU and OS, suggesting that the interaction can significantly moderate PEU and INT. Therefore, the significance hypothesis of H2 is supported as hypothesized before the analysis; hence, a moderation effect exists.

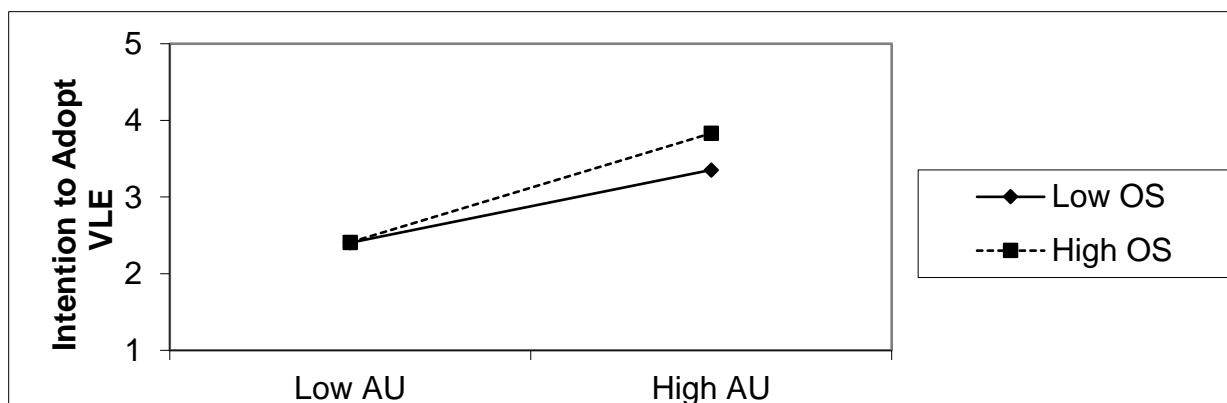


Figure 5: Interaction plot of moderation effect on the relationship between attitude towards use and intention to adopt VLE

The interaction plot from Figure 5 shows the plotting of attitude towards use, organisational support and the interaction effect ( $\beta = 0.118$ ), and intercept at 3. As reflected in the figure, the two lines representing high OS have a steeper gradient when compared to low OS, which indicates that the positive relationship and significant interaction are indeed stronger when the OS is high. Specifically, the result suggests that the high attitude towards



using VLE will motivate the educator to adopt with high support from their organisation compared to the low organisational support setting. Therefore, the difference in the organisational support between “high support” and “low support” situations provides a profound interaction effect between AU and OS, suggesting that the interaction can significantly moderate AU and INT. Thus, the significance hypothesis of H3 is supported, and the moderation effect exists.

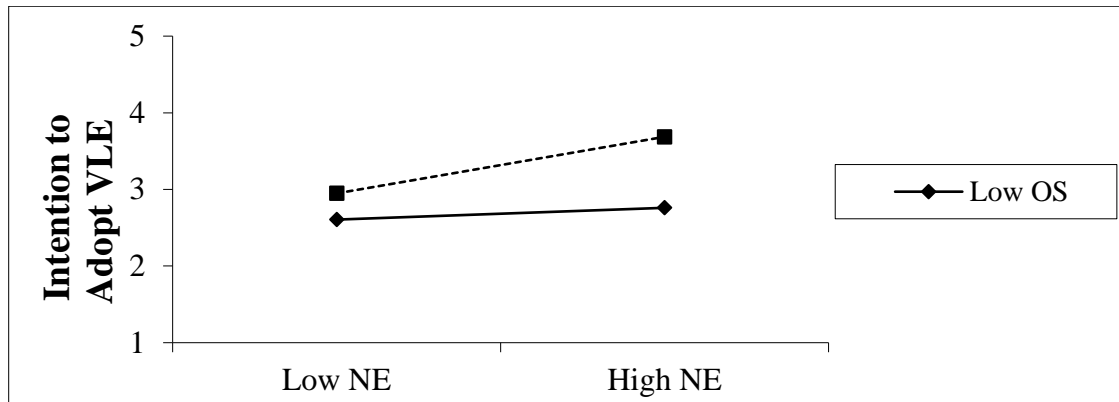


Figure 6: Interaction plot of moderation effect on the relationship between neuroticism trait and intention to adopt VLE

Moreover, Figure 6 also illustrates the plotting of the neuroticism trait, organisational support and the interaction effect ( $\beta = 0.146$ ), and intercept at 3. The two lines representing high OS have a slightly steeper gradient when compared to low OS, which indicates that the positive relationship and significance interaction are indeed stronger when the OS is high as demonstrated in the interaction plot. Specifically, the result specifies that the high neuroticism trait of the educator would persuade them to adopt VLE with high support from their organisation compared to the low organisational support situation. Therefore, there was a great difference in the organisational support between “high support” and “low support” situations. The profound effect between NE and OS suggests that the interaction is capable of moderating significantly between NE and INT. Hence, the significance hypothesis of H8 is supported and a moderation effect occurs.

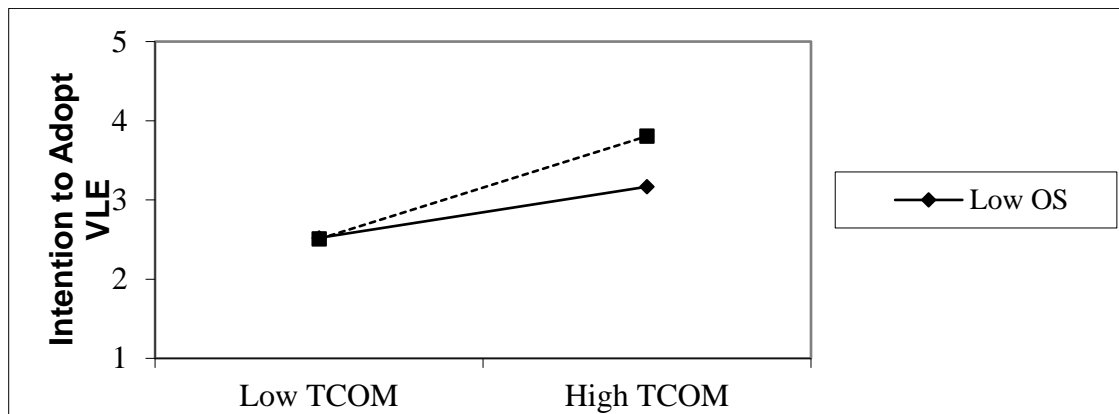


Figure 7: Interaction plot of moderation effect on the relationship between technological competence and intention to adopt VLE

Next, Figure 7 plots the technology competence, organisational support and the interaction effect ( $\beta = 0.163$ ) and intercepts at 3. The two lines representing high OS have a steeper gradient when compared to low OS, which indicates that the positive relationship and significance of the interaction are indeed stronger when the OS is high. Specifically, the result implies that the high technological competence towards VLE would encourage the educator to adopt VLE with high organisational support compared to the low organisational support situation. The difference in the organisational support between “high support” and “low support” situations provides a profound interaction effect between TCOM and OS, suggesting that the interaction is capable of moderating significantly between TCOM and INT. Hence, the significance hypothesis of H9 is supported as hypothesized before the analysis, and a moderation effect exists.

## DISCUSSION

Based on the findings of this study, educators are more likely to adopt the VLE and perceive it as useful and easy to use, as well as to have a positive attitude towards its use, if organisational support is present. The presence of organisational support as a moderating variable increases the explanatory power of TAM, addressing inconsistencies found in previous research (Opoku & Enu-Kwesi, 2020; Scherer et al., 2019).

These findings are consistent with organisational support theory, which posits that organisational support (OS) influences individuals' behaviour and actions (Eisenberger et al., 2016). OS as a moderator has demonstrated a strong impact due to its flexibility and effectiveness in various contexts (Chang et al., 2020; Cheng et al., 2016). For educators, organisational support, including efforts by faculty, departments, or universities to provide rationale and motivation for adopting the VLE can enhance teaching and learning productivity.

The findings indicate that organisational support significantly strengthens the link between perceived usefulness and the intention to adopt the VLE, hence H1 is supported. When educators perceive high OS, their recognition of technology's usefulness clearly enhances their intention to adopt (Milutinovic, 2022; Sherifi, 2018). High OS provides motivation and resources, amplifying the perceived benefits of technology (Gaiziuniene & Janiunaite, 2018; Lawrence & Tar, 2018). With the right approach and support, educators could recognise the usefulness of technology and improve their intention to adopt the VLE effectively. In contrast, if educators perceive technology as less useful, OS does not substantially influence their intention to adopt it (Johnson et al., 2016). Effective organisational support, such as encouragement and accessible tools, is crucial for increasing adoption rates and integrating technology into teaching practices (Kearney et al., 2017).

For hypothesis H2, the analysis shows that educators with a high level of perceived ease of use towards technology will adopt the VLE with organisational support. In an organisational setting, educators often assess the availability of technical support, instructional support and training (Khlaif, 2018; Yulisman et al., 2019) as supporting factors that ease their understanding of using technology for instructional purposes. These elements could provide a conducive environment and an adaptive system that supports learning through possible abilities. As a result, educators would respond better in a supportive environment to initiate their intention to use VLE.

Organisational support can positively influence individuals' attitudes, fostering commitment and improving work performance, as demonstrated by H3. For educators, high organisational support can enhance their attitude towards using technology and increase their behavioural intention. In contrast, those with a less favourable attitude may remain unaffected by varying levels of organisational support. To effectively integrate technology into teaching, educators need a positive attitude, which can be influenced by factors such as confidence, anxiety, comfort, age, gender, and prior experience with technology (Atabek, 2020; Herrador-Alcaide et al., 2020). The organisational support is crucial in shaping educators' attitudes and commitment, acting as a motivational factor that impacts their feelings, beliefs, and behavioural intention toward their work (Nartey et al., 2018). Thus, organisational support creates conditions that foster a more positive attitude and greater adoption to use VLE in teaching.

Meanwhile, the analysis of Big Five personality traits indicates that neuroticism positively influences the intention to adopt if there is strong organisational support; hence, H8 is supported. This finding is remarkable since researchers on the Big Five personality traits model consistently described neuroticism as associated with negative feelings and thoughts: fearful, anxious, prone to emotionally unstable and lack of confidence, making them feel that new technologies are frightening and demanding, resulting in less use (Agyei et al., 2020). However, this study found intriguing findings that high neuroticism educators would have a high intention to adopt the VLE when there is high organisational support. Interestingly, those with low neuroticism would also react and increase their intention to adopt VLE when there is high support. This suggests that the traits of neuroticism can be controlled and channelled into positive behaviours. This is following Uppal (2017), who stated that people with high neuroticism might have high anxiety, but instead of sinking into their life problems, these individuals act on their anxiety or fearful feelings that eventually motivate them to address the things causing the anxiety or fear.

Moreover, this study also reveals that organisational support moderates the relationship between technological

competency and educators' intention, thus, H9 is supported. This suggests that when educators feel supported by their institutions, their technological competencies are more likely to translate into a stronger intention to adopt VLE. This is reasonable when organisations offer substantial support, such as access to high-quality training, resources, and technical assistance; educators are more likely to feel confident in their technological abilities and motivated to apply them in their teaching (Ahmad et al., 2022). This support helps bridge the gap between knowing how to use technology and the willingness to integrate it into teaching practices. The literature emphasises that organisational support can come from multiple sources, such as the institution, colleagues, and management and dramatically influences the development of technological competencies (Cheng & O-Yang, 2018; Uppal, 2017). This result also corroborates with Park and Kim (2022), who mentioned that organisational support could indirectly influence individual psychological empowerment, leading to greater engagement and willingness to upskill their competencies and innovative work content.

On the other hand, organisational support indicates no significant interaction effect between the other four personality traits (H4, H5, H6 & H7) towards the intention to adopt the VLE. In this sense, regardless of personality type (e.g., openness to experience, conscientiousness, extraversion and agreeableness), educators do not perceive organisational support, whether high or low, could significantly improve or impair their intention to adopt. This is due to several factors specific to each trait. Educators high in openness to experience are inherently driven by their curiosity and creativity, leading them to explore new technologies independently of external support (Dalpé et al., 2019; Vlachogianni & Tselios, 2022). Similarly, conscientious educators rely on personal attributes such as discipline and organisational skills, which are not significantly altered by external support but are crucial for their technology adoption (Gaiziuniene & Janiunaite, 2018; Watjatrakul, 2020). For extraverted individuals, while organisational support like training might offer social opportunities, it often fails to meet their specific needs for interactive and engaging learning experiences, thus having limited effect on their technology adoption (Aftab et al., 2018). Lastly, agreeable educators, who are typically concerned with cooperation and others' well-being, may find organisational support inadequate if it does not align with their values or address their concerns about technology's impact on students (Akgunduz et al., 2018; Chang et al., 2020). These findings may suggest that individual personality traits are the primary drivers of intention to adopt, with organisational support playing a secondary role (Vlachogianni & Tselios, 2022; Yildirim et al., 2016).

## CONCLUSION

This study responded to the critical calls to investigate the interaction effects of organisational support on individual factors that influence them and this study's outcome. This variable is relevant to the study because individual beliefs and behavioural intentions in technology adoption are often influenced by the organisational support and commitment. Ultimately, it inspires them to enhance their skills, traits, knowledge, and technological capability, resulting in increased productivity and performance. Past studies confirmed that organisational support shows an association and an influential factor as a moderating effect between behaviour affective commitment, positive mood, conscientiousness, job satisfaction, responsibilities, level of competencies and innovation on behalf of the organisation with positive employee' outcomes. Therefore, examining organisational support as a moderating variable between acceptance, personality traits, competencies in relation to the intention to adopt the VLE is perhaps a pioneer for such an association.

Despite the absence of interaction effect for organisational support on OE, CO, AG, and EX the findings show a significant influence of the moderating variable on PU, PEU, AU, NE and TCOM towards the outcomes of this study. This condition provides strong evidence that organisational support plays a moderating role in influencing the intention to adopt the VLE in this study. It essentially shows that organisational support in higher education institutions is regarded as constructively beneficial to improve the behavioural intention to adopt the VLE from the perspectives of educators who tend to observe the VLE with a positive attitude, assume it as useful and easy to use as well as changing their neurotic trait as a positive effect. Furthermore, the moderating effect of OS was analysed using a two-stage approach of the PLS-SEM method to reveal the significance of the interaction. In addition, the significant results were illustrated using interaction plots.

Although this research has produced interesting findings on how organisational support interacts with individual factors such as acceptance, personality traits, and technological competencies to influence adoption intentions of VLE, it does have its limitations. These limitations are considered important and relevant for future

investigation. First, this study is subject to socially desirable responses. It might affect respondents' pure willingness to respond to personality trait questions if it was assumed to be a sensitive measurement, resulting in response bias. However, several early preventative steps have been mentioned in the survey, such as a guaranteed anonymity and confidentiality statement for the responses and using a positive statement instead of negative wording for neuroticism measures to minimise social desirability bias (Podsakoff et al., 2003). Secondly, due to the organisation's population distribution, the sampling method chosen for collecting data was the probability method. This technique is the most frequently used in quantitative research. In this study, the simple random sampling method was applied, and the preliminary expectation of receiving a high response rate is probable since all educators have an equal chance to be the respondent. The next limitation is the quantitative research method applied in this study. Therefore, in the future, a mixed-method approach can be used to examine the study objective. This approach could provide fruitful insight into the behavioural intention of VLE adoption among the targeted population and further explain the respondents' experience towards significant and insignificant results, especially personality traits. Finally, future research should target a larger sample size to increase the statistical power and results for more conclusive and robust findings.

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