THE INFLUENCE OF E-LEARNING SERVICE QUALITY ON GEN Z STUDENTS' LOYALTY IN MALAYSIAN HIGHER EDUCATION INSTITUTIONS

BY

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Degree Awarded : Bachelor of Marketing (Honours)

Faculty : Faculty of Business and Finance

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ABSTRACT

The primary goal of this research is to make a clearer connection between students' loyalty and E-learning service quality. The IVs proposed in our research align with the theory with an additional variable. The proposed variable consists of tangible (TAN), reliability (REL), responsiveness (RES), assurance (ASS), empathy (EMP) and switching costs (SC). A total of six hypotheses were developed, to examine whether the E-learning service quality would influence Gen Z students' loyalty in Malaysia HEIs. Likewise, with 384 Gen Z respondents who have experienced online E-learning were collected through the questionnaire distributed. In this research, Statistical Software Package for Social Science (SPSS) software was utilized and analysed on the reliability test, Pearson's Correlation Coefficient Analysis, and Multiple Regression Analysis to illustrate the relationship between IVs and DV. Based on the result of our findings states that all the IVs, except ASS, have a significant relationship with DV. The dimension of SERVQUAL, which is the EMP consists of the largest influence on the students' loyalty in the E-learning context. Finally, this research contributes a better understanding of students' loyalty based on the dimension of SERVQUAL and the additional variable, which is the SC in an E-learning context, to the government, policymakers, owners and service providers of HEIs.

Keywords: E-Learning Service Quality, Gen Z, Students' Loyalty, Malaysia, Higher Education Institutions

Subject Area: LB2326.4-2330 Institutions of Higher Education

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LIST OF ABBREVIATIONS

E-Learning	Electronic Learning
HEIs	Higher Education Institutions
MOHE	Ministry of Higher Education
MCO	Movement Control Order
COVID-19	Coronavirus disease 2019
DV	Dependent Variable
IV	Independent Variable
SL	Students' Loyalty
TAN	Tangibles
REL	Reliability
RES	Responsiveness
ASS	Assurance
EMP	Empathy
SC	Switching Costs
MLR	Multiple Linear Regression
SPSS	Software Package for Social Sciences
ANOVA	Analysis of Variance
SOP	Standard Operating Procedures

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CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This research paper aims to study "the influence of E-learning service quality on Gen Z Students' loyalty in Malaysian HEIs." Chapter 1 consists of the outline, which will discuss the background, problems, objectives, and significance of this research.

1.1 Research Background

Saif et al. (2022) stated that the key element of human society is education, as it is the foundation of a country since it helps to create a good society and the nation (Mad et al., 2020). Likewise, Azman and Abdullah (2020) claimed that Malaysia's higher education system is anticipated to make a contribution to the country's economic, political, and social development by producing quality citizens, which are the workforce with outstanding talents and skills, as well as fresh knowledge citizens. Meanwhile, the Ministry of Higher Education (MOHE) claimed that Malaysia has a number of 105 community colleges, 36 polytechnics, and 20 public universities. Moreover, to the state higher education institutions, Malaysia has up to 434 private HEIs (PHEIs). This makes the total number of HEIs under the MOHE direct control 595 (Policy Planning and Research Division & Ministry of Higher Education Malaysia, 2022).

Originally, the learning process with the face-to-face system was the main model in higher education (Priatna et al., 2020). Yet, over the past few decades, the educational system has experienced many transformations (Saif et al., 2022). Because of the COVID-19 pandemic, traditional face-to-face learning was discontinued in about 120 countries, impacting the education of about a billion students globally (Shahzad et al., 2020). Likewise, the application of a Movement Control Order (MCO) to stop COVID-

19 in Malaysia has significant effects, particularly on Malaysia's educational system (Salleh et al., 2020). For instance, the majority of universities have chosen to use E-learning as the safest way to continue education (Salleh et al., 2020; Amarneh et al., 2021).

Besides that, Malaysia is a developing nation that keeps using E-learning, particularly in HEIs (Jafar et al., 2022). Meanwhile, it's widely believed that higher education will offer E-learning in the future (Liu et al., 2020). Additionally, Jeevita (2024) stated that HEIs were forced to move online by COVID-19, but after three years, a globalized educational environment, a focus on lifelong learning, and shifting student preferences suggest that E-learning is here to stay. Over the forecast period of 2024–2033, the market share of online education is predicted to grow at a rate of 13.9% annually (The Business Research Company, 2024).

Likewise, E-learning systems are being used by HEIs to deliver lectures and other educational services (Ali et al., 2022), particularly among students in Generation Z (Nordin et al., 2021). Besides, 67% of Malaysians have access to the internet, which represents the seventh-highest rate in Asia. This sets Malaysia in a strong position to utilize the use of online learning to increase access to high-quality information and improve the standard of instruction and learning (Ministry of Education Malaysia, n.d.). Meanwhile, the HEIs are currently mostly enrolling Gen Z students (Chan & Lee, 2023), which refers to a person who was born between 1997 and 2012 (Abbasi et al., 2022), and they are the generation who have essentially displaced Millennials in undergraduate programs (Chan & Lee, 2023). Moreover, Gen Z's communication and learning style is even more technologically savvy than that of Millennials (Nordin et al., 2021). In the coming years, the tech-native Generation Z comprises the whole global education system (Saxena & Mishra, 2021).

Furthermore, the services that universities and other educational institutions offer to their students are a good indicator of their service quality (Dayanti & Ilham, 2022), and students constantly evaluate them (Camilleri, 2021). Moreover, there is a growing

demand to motivate loyal customers (Vilkaitė-Vaitonė & Skačkauskienė, 2020) as there is strong competition in the education market (Ali et al., 2021b). Additionally, maintaining the students' loyalty is essential to the industry's sustainability (Hassan & Shamsudin, 2019) since universities depend heavily on the loyalty of their students (Pham et al., 2020). Therefore, universities must improve their standards of quality in response to growing competition to inspire students to stay at the same institution for their further studies (Ali et al., 2021b).

1.2 Research Problem

Based on Nafuri et al. (2022), the circumstances of HEIs within Malaysia are quite concerning. According to several scholars (Naim & Alahmari, 2020; Shahzad et al., 2020), developing quality E-learning services is one of the key and serious difficulties faced by E-learning in HEIs, and it requires immediate attention. For instance, according to Nordin et al. (2021), there is still a low engagement and completion rate among groups of Gen Z in online learning, even though Generation Z students currently dominate higher education (Nordin et al., 2021). Furthermore, while E-learning is popular among younger people, there is still a high dropout rate in this field (Qiu et al., 2018; Abuhassna, 2020, as mentioned in Nordin et al., 2021).

Moreover, although the online learning environment has many facilities, it still has many important problems (Mubarak et al. 2020). For example, student engagement is inappropriate in the E-learning environment, which affects students' academic performance and results. When compared to traditional education, the dropout rate among students also becomes an important problem (Mubarak et al., 2020). Likewise, certain related research highlighted that the E-learning dropout rate was more than 20% as compared to traditional face-to-face learning (Mubarak et al., 2020). According to Frankola's research, students who participate in E-learning programs have a greater dropout rate (20–50%) than those who enroll in physical learning programs (10–20%) (as mentioned in Jafar et al., 2023). Moreover, throughout the COVID-19 pandemic

that lasted from March 2020 to July 2021, 21,316 students dropped out of school in Malaysia alone (Jafar et al., 2023). This is thought to be the result of teaching and learning online (as mentioned in Jafar et al., 2023). Additionally, Mubarak et al. (2020) stated that dropout rates have negative impacts on both students and educational institutions, and they also restrict the advancement of online education.

Likewise, the quality of service offered to students acts as an essential role in the ability of an institution to retain both student enrolment and loyalty (Mulyono et al., 2020; Çınkır et al., 2022). Furthermore, according to several scholars, service quality both positively and antecedently affects customer loyalty (Dam & Dam, 2021). Therefore, any organization, including the education sector, must take user loyalty into account (Hidayah et al., 2023). Yet, achieving customer loyalty tends to be getting more difficult (Närvänen et al., 2020), especially in an online context. For instance, compared to traditional brick-and-mortar stores, creating customer loyalty in the virtual world is more challenging due to the lack of physical interaction (Deepika et al., 2023). Furthermore, E-learning also comes with several problems that need to be addressed, such as a decline in motivation caused by an absence of face-to-face interaction (Felix et al., 2023). Besides that, Sattayawaksakul (2020) claims that Gen Z presents lower brand loyalty due to their limited attention spans than earlier generations. Regarding the importance of students' loyalty to E-learning, it seems necessary to investigate the factors influencing Gen Z students' loyalty to E-learning. Therefore, this research attempted to examine the "Influence of E-learning Service Quality on Gen Z Students' Loyalty in Malaysian Higher Education Institutions".

Furthermore, Mbango and Ngobeni (2022) emphasize the necessity for researchers to look into how students' loyalty is impacted by service quality. Moreover, Baig et al. (2021) stated that even with the rise in E-learning research, comprehensive analyses of E-learning in higher education are still lacking. Moreover, the SERVQUAL model has been widely used in many studies, especially in the higher education industry (Alfy & Abukari, 2019). Yet very few studies have used this model to examine the E-learning service quality, particularly within the context of Malaysian Gen Z in HEIs. Therefore,

this research can close the gap in the literature field since our topic specifically focuses on using the SERVQUAL model to evaluate the influence on students' loyalty to E-learning within our context. In this research, along with the five dimensions of service quality, we added the switching costs as additional independent variables that influence students' loyalty to expand the field of research, and it will be discussed further in Chapter 2.

1.3 Research Objectives

1.3.1 General Objectives

The objective of our research is to examine the influence of E-learning service quality and switching costs on Gen Z Students' loyalty in Malaysian Higher Education Institutions.

1.3.2 Specific Objectives

1. To examine the influence of tangibles on Gen Z Students' loyalty to E-learning.
2. To examine the influence of reliability on Gen Z Students' loyalty to E-learning.
3. To examine the influence of responsiveness on Gen Z Students' loyalty to E-learning.
4. To examine the influence of assurance on Gen Z Students' loyalty to E-learning.
5. To examine the influence of empathy on Gen Z Students' loyalty to E-learning.

6. To examine the influence of switching costs on Gen Z Students' loyalty to E-learning.

1.4 Research Questions

1. Do tangibles influence Gen Z Students' loyalty to E-learning?
2. Does reliability influence Generation Z Students' loyalty to E-learning.?
3. Does responsiveness influence Gen Z Students' loyalty to E-learning?
4. Does assurance influence Gen Z Students' loyalty to E-learning?
5. Does empathy influence Gen Z Students' loyalty to E-learning?
6. Do switching costs influence Gen Z Students' loyalty to E-learning?

1.5 Research Significance

1.5.1 To Academics

From the theoretical viewpoint, the findings of this research allow academics to gain valuable insights; for instance, researchers or students gain and expand their knowledge and information base about the influence of E-learning service quality and switching costs on Gen Z students' loyalty to Malaysian HEIs. Moreover, academics can adapt the SERVQUAL Model into an online setting to explore and examine how E-learning service quality influences Gen Z students' loyalty. By using this model, a more systematic and comprehensive perspective on the influence of E-learning service quality on Gen Z students' loyalty can be presented.

As mentioned, comprehensive analysis of E-learning in higher education is still

lacking. Therefore, studying our research will close this research gap for academics. Besides, the results of the hypothesis from this research could provide a better understanding of each specific relationship between each IV towards DV instead of only looking from the general points of view. Hence, it helps them gain additional knowledge and insights into the relationships.

Consequently, this research may offer valuable ideas that serve as a starting point and guidance on methods adopted by researchers who may conduct their upcoming research in an E-learning service context. As a result, they may avoid the potential limitations and have a clearer perspective and basic knowledge of topics that are related to E-learning.

1.5.2 To Practitioners

From a practical perspective, a better understanding of the influence of E-learning service quality and switching costs on students' loyalty was contributed to this research, and there are few practitioners involved in E-learning able to gain benefits from it.

Firstly, the government such as the Ministry of Higher Education (MOHE) could gain insight into the students of Malaysian HEIs' perspective towards E-learning services. By gaining this insight, MOHE could develop policies or standard operating procedures on how to deliver E-learning to HEIs to increase the Gen Z students' continuance usage of E-learning.

Secondly, owners or operators of Malaysian HEIs could gain a better insight into how the E-learning service quality and switching cost affect the students' loyalty towards their E-learning services, either in positive or negative ways. By understanding students' perspective, HEIs are able to raise students' loyalty by increasing their E-learning service quality, ultimately reducing the dropout rates.

Meanwhile, service providers of educational institutions, especially those who have direct interaction with students, can gain better insight into students' perceptions and focus on E-learning service quality and their perceived switching costs through this research. As a result, they could make improvements to their style of providing E-learning services based on students' preferences, which will ultimately lead to stronger loyalty to E-learning services among their students.

1.6 Conclusion

Overall, we covered the overall focus and aim of our research in Chapter 1, and it does present an initiative point for the following chapter by discussing the research background, problems, objectives, as well as significance of this research. First, the research background briefly described the overview of our title. Likewise, the research problem covers the research problems that motivated us to conduct this research and the uniqueness of this research, while the research objectives and problems show the purposes desired to be achieved in our research. Lastly, the research's significance shows the contribution of our research paper to academics and practitioners.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Chapter 2 investigated the relevant underlying theory and defined each variable which includes the dependent and independent variables. Besides, this chapter discovered the influence of E-learning service quality on Gen Z Students' Loyalty in Malaysian HEIs by the proposed conceptual framework and hypothesis.

2.1 Underlying Theory- SERVQUAL

Figure 2.1: SERVQUAL MODEL

Adapted from Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*. https://psycnet.apa.org/record/1992-37673-001

Parasuraman, Zeithaml, and Berry (1985) developed and refined the SERVQUAL instrumentation in 1988 and 1991. They initially proposed ten dimensions for their model, but in 1988 they revised it and dropped some of the dimensions to just five (as cited in Ghotbabadi et al., 2015) that represent SQ, which are tangibles (TAN), reliability (REL), responsiveness (RES), assurance (ASS), and empathy (EMP) (Hwang & Choi, 2019).

The use of SERVQUAL in educational settings is highly prevalent (Alfy & Abukari, 2019). In the higher education field, several scholars have adopted the SERVQUAL measure (Hwang & Choi, 2019). Nonetheless, many studies have been conducted to evaluate students' experiences with higher education service quality using general service quality models such as SERVQUAL, SERVPREF, GROONOSG, and others. However, among these models, the SERVQUAL instrument, which measures perceived quality in the higher education sector, has garnered the greatest attention (Annamdevula, 2012). Meanwhile, according to Latif et al. (2017), the SERVQUAL developed by Parasuraman et al. (1985), has been the most extensively used tool for assessing service quality in education. For instance, Cuthbert (1996) was one of the first academics to study the use of SERVQUAL to assess the quality of higher education services perceived by students (as cited in Pham et al., 2019). Therefore, SERVQUAL has served as a significant factor that has been widely used across industries due to its proven reliability and validity, including in the higher education industry (Alfy & Abukari, 2019).

Likewise, one of the most crucial factors in HEIs is the E-learning service quality (Li et al., 2018). As E-learning becomes popular, instruments for assessing the quality of e-education receive increased attention. From the viewpoint of users, they will pay closer attention to the quality of service offered by E-learning systems. Hence, it is necessary to quantify and assess the level of service quality in E-learning (Wang et al., 2010) by using the SERVQUAL model.

SWITCHING COST (SC)

As mentioned, SC will be the additional IV that we investigate in our research. In fact, the image of university, student satisfaction, and service quality as the indicators of student loyalty have received most of the attention in the past, while university SC have been largely ignored (Ali et al., 2021b). Based on Mazhar & Masood (2018), SC, which is a very essential antecedent of the customer loyalty concept, has not been employed to examine loyalty in the university education context, despite several studies using it as the determinant of customer loyalty. Besides, service providers should concentrate on SC when developing a plan to increase client loyalty (Willys, 2018). According to Koo et al. (2020), the loyalty program plays a crucial function in fostering consumer loyalty by raising the SC. Meanwhile, according to Bell et al. (2005), SC assist service providers in mitigating the unavoidable changes in service quality. Additionally, the SC can be influenced by the length of a relationship, and this can have an impact on loyalty.

As mentioned, a popular tool for assessing service quality is the SERVQUAL model, while SC is a critical factor in affecting customer loyalty. Therefore, to make this research more comprehensive, we integrate the five dimensions of SERVQUAL and SC as our IVs to examine their influence on students' loyalty.

2.2 Review of Variables

2.2.1 Students' Loyalty (SL)

Students' loyalty is the dependent variable of this research. According to Snijders et al. (2020), SL is the level of a students feel a connection to the institution and how their attitudes and/or behaviours reflect this relationship. While loyalty is described as "e-loyalty" in the online setting (Santika et al., 2020), Likewise, SL in E-learning refers to a student's willingness, trust, and sustained commitment to utilizing the E-learning resources and services of the university, as well as their tendency to encourage other students, both current and potential, to sign up for online courses offered by their educational institution (Pham et al., 2020).

Additionally, it was discovered by Amoroso et al. (2018) that loyalty is a sign of continuance intention. Likewise, the continuance intention is the degree to of an individual plans to act a specific action on a regular basis (Amoroso et al., 2018). Moreover, since the result of continuance intention is repeated purchasing behavior over time, it may be argued that customers' continuance intention has a huge impact on E-loyalty building (Amin et al., 2023). Moreover, Chang (2013) is one academic who previously defined E-learning SL as an intention to continue learning (as cited in Dangaiso et al., 2022). Hence, we conclude that continuance intentions are interchangeable with SL. In our research, SL is defined as the continued intention of students towards E-learning services after they have experienced E-learning in HEIs.

2.2.2 Tangibles (TAN)

According to Ali et al. (2021a), TAN is described as the actual, tangible form of the services that the students might use to assess their quality. Furthermore, Setiono and Hidayat (2022) stated that "TAN" is tangible physical evidence, such as updated machinery, attractive facilities, neat and formal-looking personnel, and resources linked to physically appealing services. Moreover, TAN relates to the online learning platforms (Marlena et al., 2022). According to Sumi and Kabir (2021), TAN can be called online platforms since they are used as an infrastructure for communication and material sharing between educators and online learners. In this research, TAN is defined as the online tangibles form of the services, such as learning materials or online learning platforms, when students are involved in E-learning.

2.2.3 Reliability (REL)

REL is the capacity to deliver services that are reliable, promised, consistent, and meet expectations (Budiyanti et al., 2020). Besides, REL is also described as the degree to which all service functions operate regularly and normally and that any problems are promptly fixed (Li & Shang, 2020). Additionally, REL was shown by the E-learning website or system in having an effective performance, performing accurately, and delivering all the services according to what the system has promised (Naveed et al., 2021). Employees in the education sector have demonstrated reliability by providing services that are exact, accurate, and prompt, and by their roles and responsibilities (Fathurrochman et al., 2020). Moreover, students enrolled in online education are given an appropriate assessment format from the institution, as this will give these students a solid and reliable space to complete their evaluations (Ali, 2021). In this research, REL is defined as the reliability of the E-learning services that are provided by the institutions for students.

2.2.4 Responsiveness (RES)

According to Murray et al. (2019), one way to conceptualize responsiveness is the service provider's readiness to assist their consumer in finishing the task speedily and productively. Besides, RES is the lecturer's ability to assist students who are having trouble in their academics and being able to promptly and accurately provide services to students (Fathurrochman et al., 2020). Moreover, in terms of RES, the degree of RES can be evaluated by how the lecturers respond to student inquiries and how much valuable feedback they provide for their difficulties in an acceptable amount of time (Sumi & Kabir, 2021). Additionally, to address students' issues in a responsive way, institutions should have an online office to handle student inquiries and provide timely, accurate, and consistent services (Agarwal et al., 2021). In this research, RES is described as the prompt E-learning services provided by the lecturers in the E-learning process.

2.2.5 Assurance (ASS)

ASS is related to service providers' expertise, politeness, and capacity to inspire confidence and trust (Fathurrochman et al., 2020; Setiono & Hidayat, 2022). Besides, ASS can refer to the lecturer's assurance to be impartial and fair in evaluating students' accomplishments and talents (Tere et al., 2020). Moreover, the ASS dimension is directly linked to students' certainty because E-learning participants desire a lecturer with well-prepared lectures, wealthy industry experience, and a sincere concern for their well-being (Agarwal et al., 2021). Furthermore, one of the most essential variables in assessing a teacher's quality is ASS, which measures the teacher's mastery, abilities, and clarity of the teaching materials (San-Martín et al., 2020). In this research, ASS is referred to as the fairness, politeness, knowledge, and required characteristics of the service providers.

2.2.6 Empathy (EMP)

Moreover, Setiono and Hidayat (2022) claimed that EMP involves user understanding, good communication, and ease of relationships. Likewise, EMP is a type of institutional attention or care to students who desire a sense of understanding and importance for the institutions during the process of receiving services, which are delivered by lecturers who play a significant position in the context of the E-learning process (Marlena et al., 2022). Within the context of education, EMP is described as the lecturer's involvement in the students' experiences, emotions, and feelings to understand their inner world (Stavroulia & Lanitis, 2019). Furthermore, Chen et al. (2023) claimed that throughout the EMP stage, lecturers are able to recognize and understand the needs of their students, such as their learning challenges, to define the educational problem with EMP. Besides, EMP involves lecturers expressing concern for their students and encouraging them to achieve their best (Tere et al., 2020). In our research, EMP is described as the lecturer's understanding, care, and attention to students' needs during E-learning.

2.2.7 Switching Costs (SC)

The term "SC" describes the one-time expense incurred when a user switches from one product or service to another (He et al., 2023). Additionally, SC indicate how much time, effort, money, and psychological attention the transition may require (Lin et al., 2021). Moreover, when a user switches to a newly constructed platform from a traditional platform, it shows how SC are sacrificed by the user (Lin et al., 2021). However, SC have different concepts depending on the circumstances. Chen and Keng (2019) claimed that SC are defined as the decrease in students' efficiency of learning when they switch their learning platform from offline to online. Meanwhile, the concept of SC refers to the actual or perceived costs that a person considers while deciding to

move from the status quo to a new position. For example, the psychological discomfort that the changes make from physical learning to E-learning is referred to as the emotional SC (Niranga et al., 2022). In this research, SC is described as a student's loss of time, effort, money, learning efficiency, and other one-time expenses incurred when they switch from offline to online learning methods.

2.3 Proposed Conceptual Framework

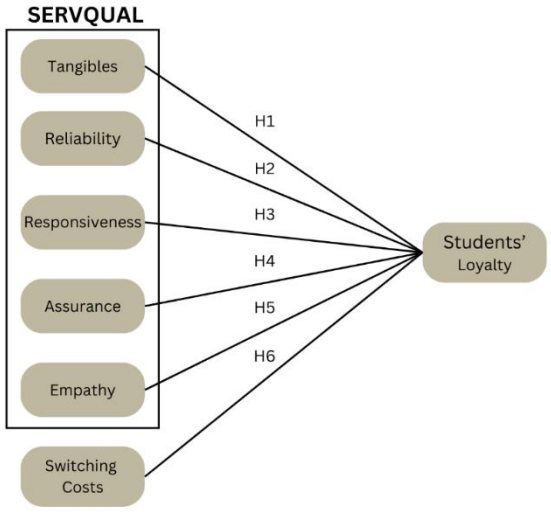

Figure 2.2: Proposed Conceptual Framework

2.4 Hypotheses Development

2.4.1 Relationship between TAN and SL

Rashid et al. (2020) showed that tangibles and consumer loyalty have a positive and strong relationship. Likewise, according to Afifah and Kurniawati (2021), during the situation to predict customer loyalty, tangibles service quality is the most significant factor. Furthermore, while the students consider whether they are going to continue using the E-learning platform after completing their present courses, the students place a high value on the quality of the educational materials they take online (Zhang et al., 2022). Besides, if the information and course material offered by the E-learning system are high quality, learners may be more likely to continue using the system (Cheng, 2020). Moreover, according to Wang et al. (2021), students have a greater willingness to continue participating with an E-learning platform if they find it useful. Based on this explanation, the hypotheses built into this research are:

H1: Tangibles significantly influence the Gen Z student's loyalty to E-learning in Malaysian HEIs.

2.4.2 Relationship between REL and SL

According to a previous study, reliability and customer loyalty are positively and significantly correlated (Rashid et al., 2020). Besides, Sutanto (2023) stated that, as work consistency and trustworthiness are illustrations of reliability indicators, they positively affect customer loyalty. According to Ramadiani et al. (2019), within the dimensions of SERVQUAL, reliability is one of the

dimensions that has a major impact on continuance intention. Moreover, Rashid et al. (2020) claimed that loyal customers seek more precise and promised services, which will subsequently enhance their loyalty. Likewise, according to Filieri et al., (2020), if consumers consistently receive reliable information, they will be more inclined to continue using the same platform in the future. Moreover, the capacity of an E-learning platform to provide a service accurately and consistently are elements that indirectly influence the intention to continue (Ramadiani et al., 2019). Considering this, this research hypothesized that:

H2: Reliability significantly influences the Gen Z student's loyalty to E-learning in Malaysian HEIs

2.4.3 Relationship between RES and SL

Being responsive to consumers fosters long-term relationships with them in addition to helping them become more loyal (Mahmood et al., 2018). Besides, the immediacy and readiness of employees to assist and serve students, known as responsiveness, has a direct and favorable impact on the loyalty of a customer since it creates values by motivating students to build enduring, mutually beneficial relationships (Sutanto, 2023). In an online course, the lecturer's responsible assistance, namely managing the online assignments and quickly resolving the concerns and needs of the students, motivates students to continue their studies (Cidral et al., 2018). Likewise, Souza et al. (2021) found that providing quality feedback promptly and actively listening to students' perspectives positively impacts their loyalty to the platform. With this support, a hypothesis is developed:

H3: Responsiveness significantly influences the Gen Z student's loyalty to E-learning in Malaysian HEIs

2.4.4 Relationship between ASS and SL

There is a positive and significant correlation between assurance and consumer loyalty (Abed et al., 2022). Likewise, customers develop loyalty when the assurance they receive from personnel satisfies their expectations (Mahmood et al., 2018). Likewise, when customers feel assured about the expertise and knowledge of employees, it strengthens their trust and builds a sense of confidence, which eventually encourages the growth of customer loyalty (Sutanto, 2023). However, by referring to one similar online education context, for the instructor, expressing a strong desire and intent to continue teaching online requires more than just perceived assurance (San-Martín et al., 2020). Likewise, according to Fathurrochman et al. (2020), based on the observation by the researchers in terms of assurance, when a student needs something and the lecturer appears uninterested in helping, some lecturers may not be friendly enough towards their students. Likewise, although the staff members in the student division can treat the students fairly, the ability to build students' confidence is still lacking (Fathurrochman et al., 2020), and it will lower students' loyalty towards E-learning services (Muharam et al., 2021). As the points stated on top, the following hypothesis is proposed in this research:

H4: Assurance significantly influences the Gen Z student's loyalty to E-learning in Malaysian HEIs.

2.4.5 Relationship between EMP and SL

According to Murray et al. (2019), the existence of empathy in employee-customer relationships promotes the kinds of emotional bonds and relationships that also improve consumer loyalty. When it comes to educational services, building strong bonds with students is essential for maintaining brand loyalty

(Todea et al., 2022). Besides, the intention of students to continue in E-learning is motivated by the values they get from the instructors online, namely empathy, care, motivation, and others (Dangaiso et al., 2023). However, the study results from Bahadur et al. (2019) suggest that a key factor in determining service loyalty is empathy, but empathy does not have a direct effect. Additionally, given the practical limits of E-learning courses, online learners do not appear to require high levels of empathy as part of the E-learning experience (Uppal et al., 2017). Therefore, the following hypothesis is developed:

H5: Empathy significantly influences the Gen Z student's loyalty to E-learning in Malaysian HEIs.

2.4.6 Relationship between SC and SL

Accordingly, both behavioural and attitude loyalty are influenced by perceived switching costs (Ali et al., 2021b). Likewise, users who are sensitive to the presence of switching costs are less likely to make changes and retain the use of original services (Xu et al., 2021). Moreover, switching costs have been shown to decrease consumers' intention to switch from the service they currently using to another and enhance loyalty towards the service (Viitikko, 2023). Meanwhile, after selecting a learning platform, users are unlikely to switch it rapidly due to the costs of switching and the continuation of the course learning (Xu et al., 2021). Yet, because of the use of broad measurements and classifications, switching costs have inconsistent impacts on consumer loyalty (Ganaie & Bhat, 2021). Thus, the following hypothesis is tested out by this research:

H6: Switching costs significantly influence the Gen Z student's loyalty to E-learning in Malaysian HEIs.

2.5 Conclusion

This chapter introduces the SERVQUAL model, and a total of 7 variables which are the 5 dimensions within this model, additional IV (SC) as well as DV (SL) have been defined as well. Moreover, we proposed a new framework that examines the relationship between IVs and DV by referring to previous articles.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

A comprehensive analysis of the research methodology is shown in this chapter, including the research design, which wraps up the sampling design, the method for data collection, and the proposed data analysis tools. Likewise, we carried out a 30 respondents of pilot test to figure out the research's feasibility. Moreover, an assessment of the intended data analysis tools was also covered to ensure the reliability of this research.

3.1 Research Design

3.1.1 Quantitative Research

The survey method used in this research is a quantitative research technique, which would be applied to investigate the data collected from target respondents to understand the variables and hypotheses in our research. Meanwhile, quantitative research is described as "a research strategy that emphasizes quantification in the collection and analysis of data" (Rahman, 2020). Moreover, according to Ahmad et al. (2019), quantitative research is a type of research that utilizes the techniques of the natural sciences, which generates real facts and numerical data. It uses mathematical, computational, and statistical techniques to demonstrate the correlation between two variables. Likewise, since it can be carefully and accurately measured, the research is also called as empirical research (Ahmad et al., 2019).

Additionally, according to Rahman (2020), the quantitative approach is more frequently used than the qualitative approach in the setting of assessment research. Moreover, the quantitative research process is more apparent and systematic, and identifying links between numbers is considered to be more rigorous than determining meaning from words and actions (Adler, 2022). Besides, the quantitative method is the most efficient for assessing hypotheses, examining group correlations, and explaining the interdependence of variables (Al-Sharafi et al., 2023). Likewise, a greater sample size can be involved, and less time is required for data collection when using quantitative research techniques (Rahman, 2020).

3.1.2 Descriptive Research

Moreover, we utilized descriptive research to describe the market characteristics of the respondents that we are targeting and explore any potential relationships between the variables in our research. Based on Korkmaz and Toraman (2020), through the application of data to describe people or groups and assess the nature of the current environment, descriptive studies offer an overview of an actual occurrence. Moreover, it provided answers to the following questions: who, what, where, when, and how, but not why (McCombes, 2023). Likewise, a variety of research techniques can be used to investigate one or more variables in a descriptive research design (McCombes, 2023).

3.1.3 Cross-Sectional Study

In this research, we investigated the influence of service quality on students' loyalty in an E-learning context by adopting the cross-sectional study. Furthermore, Wang and Cheng (2020) stated that cross-sectional studies are observational research projects that examine demographic data collected at one

particular period in time. In contrast to other kinds of observational research, cross-sectional studies don't keep track of participants over time, and they are typically simple to carry out and cost-effective (Wang & Cheng, 2020).

3.2 Sampling Design

3.2.1 Target Population

The target population we targeted for this research was Malaysian Generation Z, who have experienced E-learning in higher education. A person who was born between 1997 and 2012 makes up Generation Z (Abbasi et al., 2022). According to Tjiptono et al. (2020), by making up 29% of the total population, Generation Z is the largest age group in Malaysia at present. Additionally, the age range of Gen Z is within the range of students in HEIs who are aged 17 onwards (Study Malaysia, 2022), so they are qualified to be learners of HEIs.

3.2.2 Sampling Frame and Location

The sampling frame is available but not accessible due to Malaysia's Generation Z who have experience in E-learning in higher education representing a huge population of people, so we are unable to obtain the exact number or complete name list of the population. Additionally, it is also inaccessible, as we are unable to get their comprehensive and private personal information, such as names and contact numbers.

As mentioned, we targeted Generation Z in Malaysian HEIs; therefore, we had access to the respondents from the whole Malaysian population instead of

restricting the location. Moreover, as mentioned before there are 595 HEIs in Malaysia, and all the Gen Z students from the HEIs all qualify as our target respondents. Besides, the internet has the benefit of being geographically unrestricted; we reached a wide range of target respondents by distributing the research surveys online through Google Forms. Hence, we would not have any specific sampling location for this research.

3.2.3 Sampling Technique

Non-probability sampling was utilised for this research and the participants were chosen for a sample group according to the researcher's judgment or the sample's accessibility (Elfil & Negida, 2017; Berndt, 2020). The primary concern with non-probability survey samples is that they are biased and do not represent the intended population. According to Dudovskiy (2018), not every member of a population is eligible to participate in part in this research.

In our research, the snowball effect and judgment sampling were chosen. A snowball sampling method picks initial respondents and identifies the remaining respondents within the target population until the needed sample size is met (Hair et al., 2019). Additionally, when utilizing the judgment sample, the researcher will select and obtain particular components with a specific goal in mind (Hair et al., 2019). Hence, judgment sampling and snowball sampling are appropriate for our research, as we targeted Malaysian Generation Z, aged 17 to 27, who have experienced E-learning in higher education.

3.2.4 Sample Size

Based on Hair et al. (2019), to analyze a large population's characteristics, researchers must identify the right sample size before any data are collected to avoid inaccurate findings that do not fairly represent the study population. Moreover, the most recent update from Worldometer (n.d.) states that 35,629,963 people are living in Malaysia (refer to Appendix 3.1), with 29% of them belonging to Generation Z (Tjiptono et al., 2020).

Gen Z Population = 35,629,963 (*Malaysian Population) x 29% = 10,332,689.*

However, by referring to Appendix 3.2, there are no precise population sizes of 10.03 million listed in the Krejcie and Morgan sample size table, which has a total population cap of 100,000. As a result, it is expected that 384 samples have to be chosen in our research with a 95% confidence level and a maximum sample size of ±.05 of the population.

3.3 Data Collection Methods

3.3.1 Primary Data

According to Mazhar et al. (2021), primary data refers to original, fresh, and first-hand data, namely observation techniques, interviews, and questionnaires. Additionally, the primary data was collected for this research from the targeted respondents by employing the online questionnaire method, which uses Google Forms. Moreover, the questionnaires are distributed through social media sites such as WhatsApp, Facebook, and Instagram. Additionally, to reach a larger number of respondents, we also distribute the questionnaire to our target respondents through email to get more responses.

3.3.2 Questionnaire Design

The questionnaire had been designed in Google Forms in English, and we distributed it via online mode to our target respondents. Our survey is split into two main components, which are Section A and Section B (refer to Appendix 3.3). Moreover, Section A contains three demographic questions, which are their gender, age, and education level, as well as one screening question. Likewise, to be qualified for the subsequent section, our respondents have to answer one screening question, which is "Have you experienced E-learning in higher education?" as the last question within Section A before they proceed to Section B.

As per Appendix 3.3, Section B consists of twenty-seven questions that assess the Gen Z students' perspective on E-learning service quality and how it affects their loyalty to Malaysian HEIs. Moreover, a seven-point Likert scale, spanning from 1 (strongly disagree) to 7 (strongly agree), was used to create the questions in Section B. According to Taherdoost (2019), while some academics claim that 5-point rating scales are easier to understand and boost response rates, other scholars have found that the seven-point item scale performed best as compared with other Likert scales and that the respondents had discovered that it is the most straightforward and accurate to use. Furthermore, a 7-point Likert scale is the most appropriate to ensure the reliability and validity of the scale (Tanujaya et al., 2022).

3.3.3 Pre-test

Based on Hashim et al. (2022), a pre-test is an essential component of a quantitative study, and it's an essential step completed before the data is collected. To make sure that the actual data collection can be carried out properly, it is crucial to perform a pretest (Hashim et al., 2022). Additionally, pretesting the survey questionnaire is done to make sure that the questions are understood by the

respondents and that the style of writing is appropriate (Sekaran & Bougie, 2016; Stockemer, 2019 as cited in Hashim et al., 2022). Besides, face validity was a component of the pre-testing process. The process of determining face validity involves a systematic assessment of the measurement, which is based on the expert's subjective opinion (Abdulameer et al., 2020) to confirm that the measurements in the study are capable of measuring the intended things (Abdulameer et al., 2020). Therefore, we sent the research instrument to two experts from the UTAR Marketing Department, which are Dr. Chim Weng Kong and Dr. Lam Siew Yong, to help us improve the validity of the questionnaire by identifying any errors or shortcomings in the research instrument. As a result, we made modifications to our questionnaire, such as deleting the unnecessary measurement items and also modifying the sentence to amend the grammar mistakes based on suggestions from Dr Chim and Dr Lam.

3.3.4 Pilot Test

A pilot study was conducted to start collecting data for the current research project (Abdulameer et al., 2020). Moreover, Saunders et al. (2009) claimed that a pilot test is a small-scale study to test an interview checklist, observation schedule, or questionnaire to minimize the possibility that respondents will have difficulty answering the questions or recording the data, as well as enable some assessment of the validity of the questions and the reliability of the data that would be collected (as cited in Abdulameer et al., 2020). Besides, according to Hill (1998) and Isaac & Michael (1995), 10 to 30 participants are a sufficient number for a pilot study (Memon et al., 2017). Hence, a pilot test was conducted on 30 target respondents who are qualified for this research.

3.4 Proposed Data Analysis Tool

3.4.1 Descriptive Analysis

According to Kaur et al. (2018), descriptive statistics are used to organize data by describing the relationships between variables in a sample or population. When conducting research, descriptive statistics computation is a crucial preliminary step that always needs to occur before inferential statistical comparisons. In addition to measurements of central tendency, frequency, position, and variation, descriptive statistics also include other kinds of variables. Descriptive statistics allow researchers to evaluate particular populations in a more comprehensible format by condensing data into a simpler summary (Kaur et al., 2018).

3.4.2 Reliability Test

Based on Cronbach (1951), reliability is the consistency of a test or measurement (as cited in Bernardo, 2020). Likewise, reliability is the degree to which test results or data remain consistent over time (Kennedy, 2022). By referring to Gottems et al. (2018), the instrument's internal consistency was assessed by using Cronbach's alpha. Furthermore, when the values are closer to 1, it is known as a greater indicator of reliability. The following is the Cronbach Alpha Reliability classification: Moderate ($0.60 < \alpha \leq 0.75$), High ($0.75 < \alpha \leq 0.90$), Very low ($\alpha \leq 0.30$), Low ($0.30 < \alpha \leq 0.60$), and very high ($\alpha > 0.90$).

3.4.3 Result of Reliability Test

As the result shown in Table 3.1 indicates the questionnaire is reliable for each dimension, due to the Cronbach's alpha values being between 0.716 and 0.899, it illustrated a great reliability that is between the range of moderate to high.

Table 3.1:

Pilot Test of Reliability Analysis

Variables		No of Items	Cronbach's Alpha	Results
DV	**SL**	4	0.899	High
IVs	**TAN**	4	0.763	High
	REL	4	0.860	High
	RES	4	0.716	Moderate
	ASS	4	0.736	Moderate
	EMP	4	0.849	High
	SC	3	0.727	Moderate

3.4.4 Inferential Data Analysis

Inferential statistics is the area of statistics that uses sample data analysis to draw inferences about the population as a whole (Levine et al., 2007).

3.4.4.1 Pearson's Correlation Coefficient Analysis

Based on Baak et al. (2020), the strength and direction of the linear connection between two (or more) interval variables are determined by Pearson's Correlation Coefficient. Furthermore, the objective of this research is to evaluate how strongly

the IVs (TAN, REL, RES, ASS, EMP, SC) are associated with DV (SL). According to Balogun and Tella (2022), correlation values range from -1 to 1. A correlation coefficient that is nearer -1 indicates a weaker relationship, whereas a coefficient that is closer to +1 indicates a more solid relationship.

Table 3.2

Rule of Thumb for Pearson's Correlation Coefficient

Correlation Coefficient Range	Level of Correlation
0.00 - 0.19	None
0.20 - 0.39	Weak
0.40 - 0.59	Moderate
0.60 - 0.79	Strong
0.80 - 1.0	Very Strong

Adapted from Alaloul, W. S., Musarat, M. A., Liew, M. S., Qureshi, A. H., & Maqsoom, A. (2021). Investigating the impact of inflation on labour wages in the construction industry of Malaysia. Ain Shams Engineering Journal, 12(2), 1575–1582. https://doi.org/10.1016/j.asej.2020.08.036

3.4.4.2 Multiple Regression Analysis

Multiple linear regression (MLR) refers to a statistical method that makes use of multiple explanatory variables to predict an answer variable's outcome. Besides, MLR is used for calculating the linear relationship that will be examined between the independent variables (IVs) and dependent variable (DV) (Maulud & Abdulazeez, 2020). According to Keith (2019), the regression equation was statistically significant. The following is the equation for multiple linear regression between variables:

$$Y' = A + \beta 1X1 + \beta 2X2 + \beta 3X3 + ... + \beta nXn + e$$

For the equation shown above, Y' represents the DV, which is the students' loyalty to E-learning in HEIs; X1 represents TAN; X2 represents REL; X3 represents RES; X4 represents ASS; X5 represents EMP; and X6 represents SC. Therefore, by applying this equation, this research will use the following equation:

$$(SL) = A + \beta1\ (TAN) + \beta2\ (REAL) + \beta3\ (RES) + \beta4\ (ASS) + \beta5\ (EMP) + \beta6\ (SC)$$

- Y = Gen Z Students' Loyalty
- A = Constant
- X1 = TAN
- X2 = REA
- X3 = RES
- X4 = ASS
- X5 = EMP
- X6 = SC

3.5 Conclusion

This chapter offers a comprehensive discussion of the research methodology used in this research.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter makes use of IBM SPSS Statistics 29 software to analyze and interpret data collected from the questionnaire of this research, including demographic data of respondents as well as descriptive and inferential analysis. As a particular situation occurs in this research, we sent out a total of 461 questionnaires to our target respondents. However, only 384 respondents were accepted, as the 39 respondents were filtered out due to no prior experience with E-learning, and 38 respondents were straight-line respondents. When survey participants use the same response scale to answer questions in a set of questions, this phenomenon is known as "straight-lining," which can lower the quality of the data (Kim et al., 2018).

4.1 Descriptive Analysis

4.1.1 Gender

Figure 4.1 displays the amount of each gender among the respondents, it shows in the number and percentage. Based on Figure 4.1, there are a total of 69.01% of respondents (N = 265) who are female, while the rest of the respondents, which consist of 30.99% (N = 119), are male.

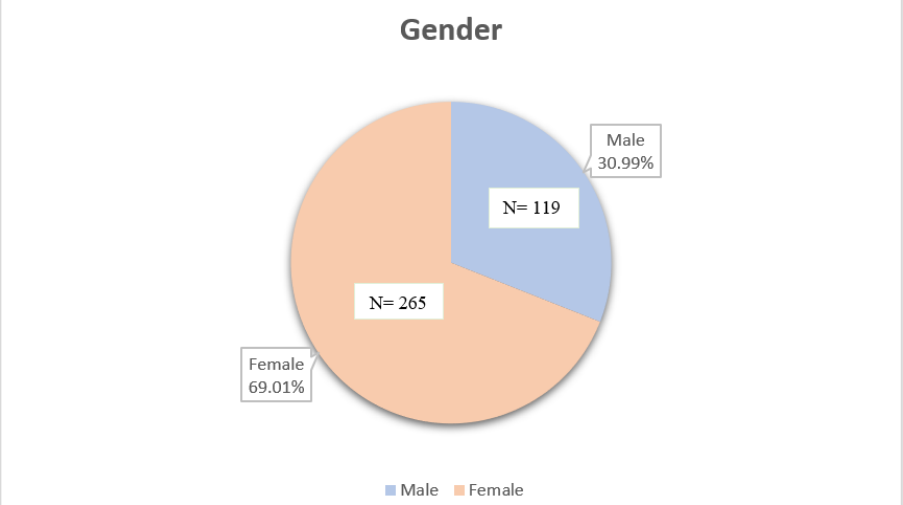

Figure 4.1 Gender of Respondents

4.1.2 Age

Figure 4.2 shows the percentage and number of respondents from each age group: most of the Gen Z respondents in our research are between the ages of 21 and 23, making up a majority of 58.07% (N = 223), followed by respondents who are aged between 18 and 20, making up 37.23% (N = 143), and respondents who are between the ages of 24 and 27, making up 4.68% (N = 18).

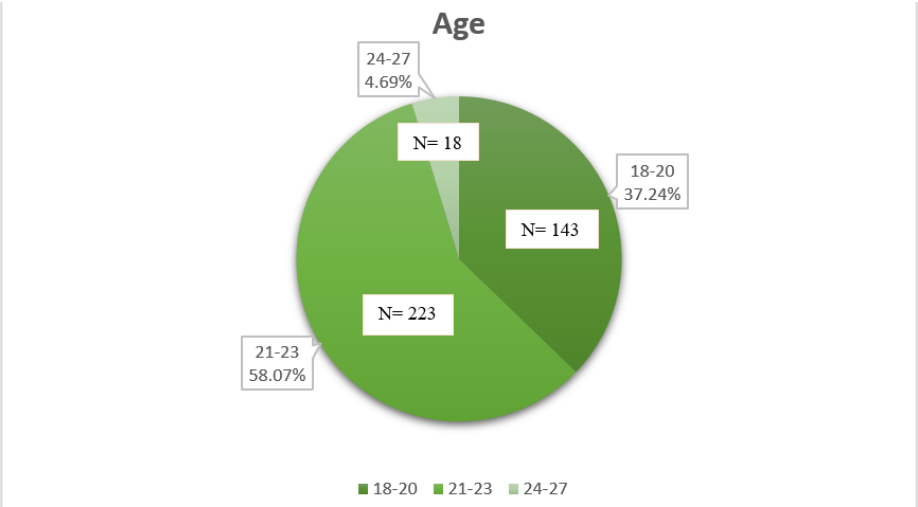

Figure 4.2 Age of Respondents

4.1.3 Education Level

Figure 4.3 demonstrates that most of the respondents are pursuing their studies for a bachelor's degree at a percentage of 89.32% (N = 343). Additionally, foundation students consist of 7.29% (N = 28), followed by diploma students at 2.6% (N = 10), and 2% (N = 0.52) of respondents are currently studying at the master level. Lastly, only 0.26% (N = 1) of respondents are currently studying at the doctorate level.

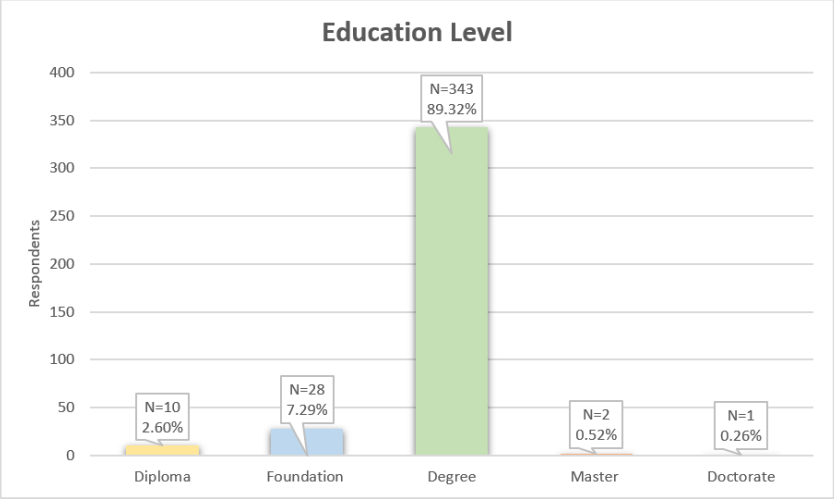

Figure 4.3 Education Level of Respondents

4.2 Scale of Measurement

4.2.1 Reliability Test

In this research, a reliability test is carried out by using 384 usable responses collected, and the results are displayed in Table 4.1. From the results below, all of the variables are regarded as reliable as the values of Cronbach's Alpha are more than 0.7 which meets the minimum requirement. Likewise, Taber (2017) claimed

that acceptable internal consistency is indicated by Cronbach alpha values of 0.7 or above. Moreover, according to Gottems et al. (2018), the Cronbach Alpha Reliability can be classified as follows: very high ($\alpha > 0.90$), high ($0.75 < \alpha \leq 0.90$), moderate $0.60 < \alpha \leq 0.75$), low ($0.30 < \alpha \leq 0.60$), and very low ($\alpha \leq 0.30$).

Table 4.1

Reliability Test Result

Variables		No of Items	Cronbach's Alpha	Results
DV	**SL**	4	0.874	High
IVs	**TAN**	4	0.825	High
	REL	4	0.790	High
	RES	4	0.756	High
	ASS	4	0.795	High
	EMP	4	0.842	High
	SC	3	0.797	High

4.3 Inferential Analysis

4.3.1 Pearson Correlation Coefficient Analysis

According to Table 4.2, SL is strongly connected with TAN (r = 0.462), REL (r = 0.464), RES (r = 0.481), ASS (r = 0.403), EMP (r = 0.451), SC (r = 0.228). Besides, findings indicate that the scores of Pearson Correlation of every IV, with an R-value between 0 and 1, have a positive connection with DV. According to Turney (2024), for the correlation coefficient, the range of values between 0.3 to 0.5 is regarded as a moderate correlation while 0 to 0.3 is considered a weak correlation. Therefore, the majority of the results of this research (5 out of 6) are within the range of moderate correlation, yet, 1 out of 6 are within the range of weak

correlation

Table 4.2:

Pearson Correlations Coefficient Analysis Result

	TAN	REL	RES	ASS	EMP	SC	SL
TAN	1.0						
REL	.694	1.0					
RES	.663	.691	1.0				
ASS	.621	.613	.735	1.0			
EMP	.551	.555	.669	.727	1.0		
SC	.162	.222	.216	.218	.283	1.0	
SL	.462	.464	.481	.403	.451	.228	1.0

**. Correlation is significant at the 0.01 level (2-tailed)

Source: Created for research purpose

4.3.2 Multiple Regression Analysis

By referring to Table 4.3, TAN, REL, RES, ASS, EMP, SC, and SL show a positive correlation of R=0.554. Additionally, the R square value is 0.307, which indicates all the IVs explain a 30.7% variation of E-learning service quality on Gen Z Students' Loyalty in Malaysian HEIs.

Table 4.3:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.554	.307	.296	1.02279

Based on Table 4.4, the F-value of this research is obtained as 27.846 and the significance level is less than 0.001, which is essentially less than 0.05. Therefore, there is a statistically significant difference in the mean of E-learning service quality on the loyalty of Gen Z students in Malaysian HEIs among the various variables. The six IVs are considered fit and able to explain the influence on DV (SL).

Table 4.4

Table of Anova

	Sum of Squares	df	Mean Square	F	Sig.
Regression	174.779	6	29.130	27.846	<.001[b]
Residuals	394.377	377	1.046		
Total	569.156	383			

By referring to Table 4.5, the standard coefficients of the IVs presented indicate that EMP has the most significant impact on the DV ($\beta = 0.188$), followed by RES ($\beta = 0.182$) and TAN ($\beta = 0.176$). By taking significance tests into account, it can be seen that TAN, REL, RES, EMP, and SC ($p < 0.05$), which fall within the acceptable ranges, show a significant connection on the Gen Z SL in Malaysian HEIs towards E-learning service quality. Yet, the p-value for ASS is more than 0.05, indicating a low significance connection between the Gen Z SL in Malaysian HEIs towards E-learning service quality. Thus, the interpretation of the multiple

regression equation is as follows:

(SL) = 0.811 + 0.214 (TAN) + 0.182 (REL) + 0.232 (RES) + 0.213 (EMP) + 0.085 (SC)

Since ASS has a less significant correlation with the DV (SL), hence it has been excluded from the equation above.

Table 4.5

Coefficients of Equation

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.811	.340		2.384	.018
	TAN	.214	.079	.176	2.705	.007
	REL	.182	.085	.143	2.141	.033
	RES	.232	.095	.182	2.457	.014
	ASS	-.108	.093	-.085	-1.163	.245
	EMP	.213	.075	.188	2.831	.005
	SC	.085	.041	.094	2.093	.037
a.	Dependent Variable: SL					

4.4 Conclusion

Chapter 4 presents all the interpretations and analysis of our data which are shown in table form. In sum, this research proved that out of six hypotheses generated in the previous chapter, five of them were supported, however, one of them was not supported.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

In Chapter 5, the summary of statistical results as well as the discussion of the major findings will be shown. Moreover, implications for the theoretical and practical part will also be discussed, along with an explanation of the research's limitations and recommendations to enhance the quality of future research.

5.1 Overview of Statistical Analysis

Table 5.1 provides an overview of the results of hypothesis testing (H1-H6) that were developed.

Table 5.1

Summary of the hypotheses testing results

Hypothesis	Sig.	Result
H1: Tangibles significantly influence the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.007	Supported
H2: Reliability significantly influences the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.033	Supported
H3: Responsiveness significantly influences the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.014	Supported
H4: Assurance significantly influences the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.245	Not Supported
H5: Empathy significantly influences the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.005	Supported
H6: Switching costs significantly influences the Gen Z Student's Loyalty to E-learning in Malaysian HEIs.	.037	Supported
Source: Created for research purpose		

5.2 Discussion of Major Findings

5.2.1 Relationship between TAN and SL

As indicated by our findings, β is 0.176, t is 2.705, and the p-value is lower than 0.05. This indicates that when the E-learning platform is easy to use, the online teaching material is modern and pleasant, and content in the course and information on the E-learning platform is readily available to students, their loyalty towards the E-learning service will increase. This finding is consistent with the research conducted by Wang et al. (2021), who found that students will have

greater willingness and continue to use an E-learning platform when they perceive its usefulness and find suitable course content.

5.2.2 Relationship between REL and SL

Our results show that β is 0.143, t is 2.141, and p-value is lower than 0.05. This indicates that the students in HEIs are more concerned with the REL and feel that the E-learning service is delivered as promised and can be relied upon, keeping the records of students' activities accurately, leading to an increase in students' loyalty towards E-learning. Our finding aligns with Naveed et al. (2021), who found that reliability is the effective performance of an E-learning system to operate with good structure and functionality, and it does include the accuracy of the E-learning system and deliver all the services with what the system has promised.

5.2.3 Relationship between RES and SL

Our findings indicate that β is 0.182, t is 2.457, and p-value is lower than 0.05. This indicates that the students in HEIs may become loyal and continue using e-learning when they find their lecturers respond quickly, show a willingness to help, and always welcome them to ask questions or comment during the e-learning section. Our findings are consistent with Sutanto (2023), who found that the relationships between RES and SL are as significant as the promptness and readiness of lectures to help and accommodate students. Since it will motivate students to create enduring and developing relationships, it will be beneficial to their loyalty to E-learning.

5.2.4 Relationship between ASS and SL

As stated in our findings, β is - 0.085, t is -1.163 and the p-value is more than 0.05. This represents that the assurance received from personnel such as fairness, politeness, and knowledge is not sufficient to increase the students' loyalty in the process of E-learning. This finding is supported by the research conducted by San-Martín et al. (2020), which shows that in an online education context, from the instructor's perspective, intention to continue teaching online requires more than just perceived assurance. Moreover, although the staff members can treat the students fairly, the ability to build students' confidence is still lacking (Fathurrochman et al., 2020), and it will lower students' loyalty towards E-learning services (Muharam et al., 2021).

5.2.5 Relationship between EMP and SL

As per our results, β is 0.188, t is 2.831, and p-value is lower than 0.05. This indicates that the students' loyalty to HEIs will increase when the service providers pay attention and care, understand their needs, provide the best assessments, and motivate them to do their best during E-learning. Our findings align with Dangaiso et al. (2023), who found the values, namely empathy, care, and motivation that they get from their lecturers online would encourage the continuance intention of students' using E-learning services. As strong bonds are built between instructors and students, loyalty will be maintained (Todea et al., 2022).

5.2.6 Relationship between SC and SL

Based on our results, β is 0.094, t is 2.093 and p-value is lower than 0.05. This indicates that it is possible for the students in HEIs to perceive a high willingness

to continue using E-learning services when they perceive the high switching cost that will occur when they decide to switch from physical learning to online learning, such as time, effort, and learning costs. Rather than affording the high switching costs, students will rather continue their usage and keep their loyalty to E-learning services. Our findings are aligned with the findings that referred to Xu et al. (2021), users who are sensitive to switching costs are less likely to make changes and to retain the current status.

5.3 Implications of the Study

5.3.1 Theoretical Implications

The SERVQUAL model is a helpful theory in studying students' loyalty towards E-learning service quality in Malaysian HEIs. From a theoretical perspective, this research sheds light on the influence of TAN, REL, RES, ASS, and EMP on Malaysian HEI students' loyalty toward E-learning services by using a multidimensional model mentioned earlier also known as SERVQUAL. Likewise, we integrated SC as an additional IV in our research as SC had a strong impact on SL in previous studies that were conducted in different contexts. Moreover, the outcome of this research illustrates that TAN, REL, RES, EMP, and SC positively influence SL towards E-learning services, as the p-value is below 0.05. Yet, the p-value of ASS is above 0.05 in the regression analysis, suggesting that it has no noticeable impact on the SL. Likewise, future researchers may conduct research on why the majority of the IVs within the SERVQUAL model influence SL, while ASS has little or no impact on SL towards E-learning services but could have an impact in different research settings. Meanwhile, previous research has emphasized the dimensions of SERVQUAL in the context of education that targets a general population. Furthermore, the findings of this research offered a more

comprehensive and specific viewpoint on the E-learning context and a particular generation in Malaysian HEIs.

5.3.2 Practical Implications

According to our research's data findings with an R-squared value of 30.7%, SERVQUAL is responsible for 30.7% of the variation in loyalty levels of students towards E-learning in Malaysian HEIs. By delivering crucial results, it raises the importance of E-learning to the government. Therefore, the Ministry of Higher Education (MOHE) should promote the use of E-learning services within the HEIs to acquire a greater tendency among upcoming generations that prefer studying online. Moreover, those parties within the education market should pay attention to developing successful strategies of quality E-learning services to increase students' loyalty as well as continuance usage of E-learning services.

Among the 6 IVs in this research, the institutions need to pay more attention to empathy because it has the most influence on Gen Z students' loyalty to E-learning. Therefore, to enhance empathy, the institutions have to operate a feedback channel, provide academic and emotional support, as well as personalized service to their students. For example, the feedback channel offers a platform that lets them express their concerns, feedback, or opinions, and it helps the institutions understand better student needs, even virtually. Likewise, by providing academic and emotional support, such as mental health leave or study loans to students, they may receive warmth and compassion, and it will enhance institutions' empathy service towards the students. Meanwhile, in the E-learning context, providing personalized service to students, such as customizing the solution and providing support to students based on their own needs rather than offering a standardized service will increase the students' loyalty.

The responsiveness in this research is the second important factor that influences

the SL. In the HEIs, the more responsive the Institutions responding to the issues and questions asked by students will lead to a better continuance intention for the students to use the E-learning services. For example, when conducting the online teaching section, lecturers are always ready to answer students' questions promptly when students type their questions in the chat box. Additionally, the institutions may set an SOP for the staff members, which ensures they reply to the message or email within 1-2 working days. As a result, it will increase students' loyalty towards E-learning services since they can receive the responses and answers from the institutions on time.

Meanwhile, the institutions should be mindful when designing the e-learning platform as tangibles are one of the most important factors that influence Gen Z students' loyalty. To enhance the tangible part of E-learning, the institutions should make sure that the E-learning platform consists of a user-friendly interface that has a logical layout, and modern design, and it is easy to navigate by students. Moreover, institutions have to ensure the availability of comprehensive information within the E-learning platform. Besides, the institutions could provide multimedia elements such as animations, videos, and some interactive simulations, which will attract students' attention and make the E-learning experience more engaging and dynamic.

In terms of reliability, when the students receive reliable, promised, and consistent service in E-learning, it increases their loyalty toward E-learning services. It is suggested that the institution deliver reliable, promised, and consistent service to their students. For example, the institutions could release the coursework marks, results of the final examination, student bills, and even the bar list at the promised date and time. Furthermore, provide clear and reliable information about the application of loans or scholarships to students. Besides, to increase the reliability of the E-learning platform, the institutions may enhance the privacy and safety part of the platform, which avoids inappropriate disclosure of the private information of students to third parties. Moreover, to increase reliability, the institutions should

standardize the standard to evaluate students' assessments and keep the records accurately.

In terms of switching cost, given that Gen Z has limited attention spans compared to previous generations, institutions should adjust and manage the switching cost imposed on students carefully as it positively influences Gen Z students' loyalty. For instance, institutions can employ group projects and collaborative tools that are tightly integrated with the platform's functionalities to make it difficult to duplicate similar experiences anywhere else. Furthermore, the institutions could utilize adaptive learning technologies to personalize the educational experience based on students' learning style and speed, which aims to offer them a more unique and difficult-to-replicate experience and subsequently continue their usage of E-learning services.

Since our research only consists of limited sources, therefore although our research findings showed the relationship between assurance and students' loyalty is less significant when compared to others, the HEIs are still advised to emphasize the aspect of assurance. For example, institutions may provide training to their staff. By offering regular training to the staff members, they may be knowledgeable about their respective fields and promote an effective learning environment for the students. Moreover, the HEIs could also host a staff performance evaluation meeting regularly. The service provided by HEIs is in the online context. Hence, to understand the staff performance, it is crucial to constantly conduct a meeting to redress the problem such as resolve the issue of staff unfamiliar with the syllabus covered immediately. Additionally, by staff performance tracking, institutions may ensure their staff is fair, impartial, and have knowledge and skills in their teaching field. As a result, it will increase the perceived assurance received by students during E-learning.

5.4 Limitations of the Study

The first limitation based on our research is due to the male respondents do not match the requirement of 50% and above. By referring to the descriptive analysis results, the female respondents in this research consist of 69.01% and the male respondents only consist of 30.99%. Therefore, future research should ensure that male respondents are adequately represented and not overlooked. It is essential to include male participants to gain a comprehensive understanding of the research subject, as their perspectives and experiences can significantly contribute to the overall findings. By actively engaging male respondents and balancing the respondent's gender, researchers can avoid gender bias and enhance the validity and reliability of the research outcomes.

Likewise, the second limitation of our research is that our data findings of an R-squared value of 30.7% indicate that SERVQUAL only accounts for 30.7% of the variability in student loyalty levels in Malaysian HEIs. Therefore, it illustrates that the IV of our research is insufficient to make up for the variation in the DV. This could be due to missing key variables, non-linear correlations, or intrinsic variability in the data that the model cannot account for. Therefore, solely a part of the loyalty to the E-learning service can be explained by the research IVs.

5.5 Recommendations for Future Research

As mentioned earlier, the research's findings on gender might be poor as they do not accurately reflect the gender distribution of Gen Z in HEIs in Malaysia. To make sure the sample appropriately represents the gender distribution of the population, it is suggested to use the non-probability sampling technique of quota sampling instead of using the snowball effect. Future researchers can obtain a more balanced representation of male and female respondents by predetermining the population based on gender and investigating the effects based on the gender balance. By taking this approach, the

gender gap will be addressed, and it will be made sure that the study includes enough representation of male perspectives.

Given the relatively low R squared value, it has been shown that the assurance dimension is not the main factor that will lead to student loyalty. To gain better student loyalty, the future researchers suggested revising the approach of the SERVQUAL dimension. One of the methods is adding the intermediaries, as the dimension of SERVQUAL is not suggested to be replaced. In order to provide a deeper understanding of the relationships of each variable, and how it affects the students' loyalty, future researchers are suggested to add some related intermediaries such as students' experience, satisfaction, and retention between IVs and DV. As a result, the added intermediaries could better explain the variability of IVs towards Gen Z student loyalty in HEIs, as well as increase the accuracy of the research findings to researchers.

5.6 Conclusion

In conclusion, our research aims to examine "the influence of E-learning service quality and switching cost on Gen Z students' loyalty in Malaysian HEIs". Additionally, in this chapter, the implications based on our findings are highlighted for both academics and practitioners to help them gain advantages. Furthermore, this chapter identified and highlighted the limitations of this research and provided recommendations for future researchers to enhance their research quality.

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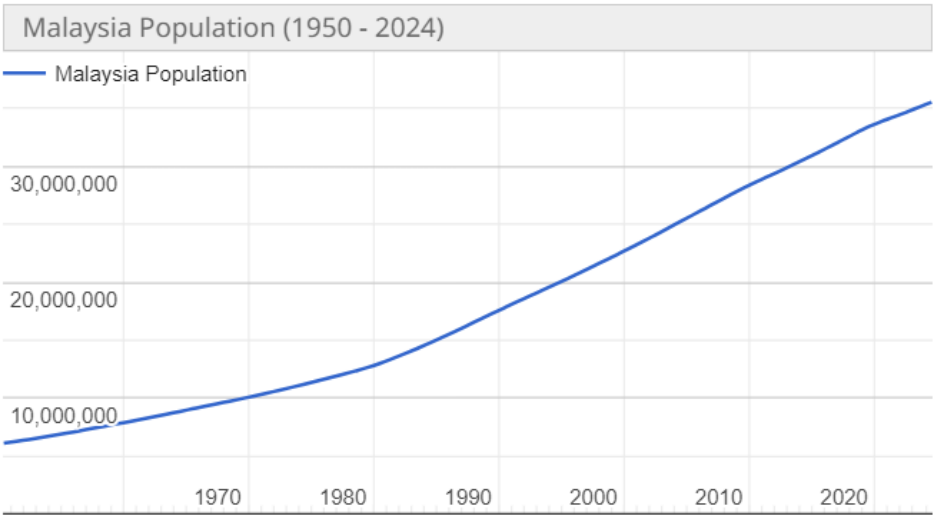
Appendices

Appendix 1: Worldometer Malaysia Population

Malaysia Population (LIVE)

35,629,964



Appendix 3.2: Krejcie and Morgan Sample Size Table

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

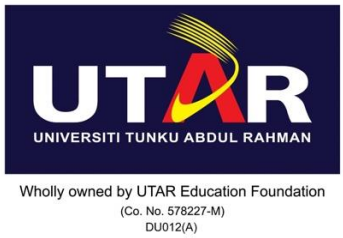
Appendix 3.3: Research Instrument

Variables	Items		Sources
Students' Loyalty	SL1	I intend to continue using E-learning.	Alam et al. (2022)
	SL2	I will keep using E-learning as regularly as I do now.	
	SL3	My intention is to continue using E-learning rather than using any alternative means.	
	SL4	I intend to increase my use of E-learning in the future.	
Tangibles	TAN1	Navigating the E-learning platform of my institution feels easy.	Delgado et al. (2022)
	TAN2	The course content on my institution's E-learning platform is readily available.	
	TAN3	Information about the courses on my institution's E-learning platform is easy to find.	
	TAN4	The online teaching material has a pleasant and modern appearance.	
Reliability	REL1	When my institution promises something at a certain point in time, they deliver it.	Abusaq et al. (2023)
	REL2	My institution's E-learning services	

		can be relied upon.	
	REL3	My institution's E-learning service is delivered on time.	
	REL4	My institution accurately keeps records of students' activities.	
Responsiveness	RES1	The lecturers quickly and efficiently respond to student needs when offering E-learning services.	Muqtadiroh et al. (2020)
	RES2	The lecturers are willing to go out of his or her way to help students during E-learning.	
	RES3	The lectures always welcome student questions and comments during E-learning sessions.	
	RES4	The service delivered through the E-learning platform is quick.	
Assurance	ASS1	Lecturers have knowledge in their respective fields when delivering E-learning services.	Tere et al. (2020)
	ASS2	Lecturers are fair and impartial in giving judgments during E-learning.	
	ASS3	The lecturer answers all student questions thoroughly during E-learning sessions.	

	ASS4	I believe lecturers have an understanding of the course material provided when delivering E-learning services.	
Empathy	EMP1	Lecturers pay attention to and care for students during E-learning.	Tere et al. (2020)
	EMP2	Lecturers understand the needs of students during E-learning.	
	EMP3	Lecturers provide the best assessments for students in E-learning.	
	EMP4	Lecturers encourage and motivate students to do their best in E-learning.	
Switching Costs	SC1	It would take a lot of time to switch to E-learning.	Monoarfa et al. (2023)
	SC2	It would take a lot of effort to switch to E-learning.	
	SC3	It would take a lot of learning costs to switch to E-learning.	

Appendix 3.4: Research Questionnaire



Greeting to all,

We are final year undergraduate students of Bachelor of Marketing (Hons), from Faculty of Business and Finance in Universiti Tunku Abdul Rahman (UTAR) Kampar campus. As part of our research, we are conducting a research project on **"The Influence of E-Learning Service Quality on Gen Z Students' Loyalty In Malaysian Higher Education Institutions "** This research aims to **explore and examine the influence of service quality and switching cost towards customer loyalty among Malaysian Gen Z on E-learning.**

This survey will only take you approximately **5 minutes**, and all participation towards this survey are voluntary. Rest assured that all the responses collected will be used solely for academic purposes and will be kept private and confidential. Thank you in advance for your time and cooperation in answering our questionnaire.

Your participation is highly appreciated.

For further inquiries, please contact us at **lowyien0610@1utar.my or sarahtan@1utar.my**

Yours sincerely,

Prepared by:
Low Yi En
Sarah Tan Woon Xin

Section A- Demographic Question:

This section serves to collect essential background information from survey participants, which is vital for data analysis purposes.

1. What is your gender?

   ☐Male

   ☐Female

2. What is your age?

   ☐ Below 17

   ☐18-20

   ☐21-23

   ☐ 24-27

   ☐ 28-30

3. What is your education level?

   ☐Diploma

   ☐ Foundation

   ☐ Degree

   ☐ Master

   ☐Doctorate

4. Have you experience E-learning in Higher Education Institutions

   ☐Yes

   ☐ No

Section B - The Influence of E-learning Service Quality on Gen Z Students' Loyalty in Malaysian Higher Education Institutions

Students' Loyalty Costs (SL)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
SL1	I intend to continue using E-Learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SL2	I will keep using E-learning as regularly as I do now.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SL3	My intention is to continue using E-learning rather than using any alternative means.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SL4	I intend to increase my use of E-learning in the future.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Tangibles (TAN)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
TAN1	Navigating the E-learning platform of my institution feels easy.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TAN2	The course content on my institution's E-learning platform is readily available.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TAN3	Information about the courses on my institution's E-learning platform is easy to find.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
TAN4	The online teaching material has a pleasant and modern appearance.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Reliability (REL)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
REL1	When my institutions promise something at a certain point in time, they deliver it.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
REL2	My institution's E-learning services can be relied upon.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
REL3	My institution's E-learning service is delivered on time.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
REL4	My institutions accurately keep records of students' activities.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Responsiveness (RES)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
RES1	The lecturers quickly and efficiently respond to student needs when offering E-learning services.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
RES2	The lectures are willing to go out of his or her way to help students during E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
RES3	The lectures always welcome student questions and comments during E-learning sessions.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
RES4	The service delivered through the E-learning platform is quick.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Assurance (ASS)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
ASS1	Lecturers have knowledge in their respective fields when delivering E-learning services.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ASS2	Lecturers are fair and impartial in giving judgments during E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ASS3	The lecturer answers all student questions thoroughly during E-learning sessions.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ASS4	I believe lecturers have an understanding of the course material provided when delivering E-learning services.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Empathy (EMP)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
EMP1	Lecturers pay attention and care for students during E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
EMP2	Lecturers understand the needs of students during E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
EMP3	Lecturers provide the best assessments for students in E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
EMP4	Lecturers encourage and motivate students to do their best in E-learning	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Switching Costs (SC)								
Questions		**Strongly Disagree**	**Somewhat Disagree**	**Disagree**	**Neutral**	**Agree**	**Somewhat Agree**	**Strongly Agree**
SC1	It would take a lot of time to switch to E-learning	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SC2	It would take a lot of effort to switch to E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
SC3	It would be a lot of learning costs to switch to E-learning.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Appendix 4.1 Pearson Correlation Coefficient Analysis

Correlations

		TAN	REL	RES	ASS	EMP	SC	SL
TAN	Pearson Correlation	1	.694**	.663**	.621**	.551**	.162**	.462**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	.001	<.001
	N	384	384	384	384	384	384	384
REL	Pearson Correlation	.694**	1	.691**	.613**	.555**	.222**	.464**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001
	N	384	384	384	384	384	384	384
RES	Pearson Correlation	.663**	.691**	1	.735**	.669**	.216**	.481**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001
	N	384	384	384	384	384	384	384
ASS	Pearson Correlation	.621**	.613**	.735**	1	.727**	.218**	.403**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001
	N	384	384	384	384	384	384	384
EMP	Pearson Correlation	.551**	.555**	.669**	.727**	1	.283**	.451**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001
	N	384	384	384	384	384	384	384
SC	Pearson Correlation	.162**	.222**	.216**	.218**	.283**	1	.228**
	Sig. (2-tailed)	.001	<.001	<.001	<.001	<.001		<.001
	N	384	384	384	384	384	384	384
SL	Pearson Correlation	.462**	.464**	.481**	.403**	.451**	.228**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	
	N	384	384	384	384	384	384	384

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 4.2: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.554[a]	.307	.296	1.02279

a. Predictors: (Constant), SC, TAN, EMP, REL, ASS, RES

Appendix 4.3: Table Of ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	174.779	6	29.130	27.846	<.001[b]
	Residual	394.377	377	1.046		
	Total	569.156	383			

a. Dependent Variable: SL

b. Predictors: (Constant), SC, TAN, EMP, REL, ASS, RES

Appendix 4.4: Multiple Regression Analysis - Coefficient Of Equation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.811	.340		2.384	.018
	TAN	.214	.079	.176	2.705	.007
	REL	.182	.085	.143	2.141	.033
	RES	.232	.095	.182	2.457	.014
	ASS	-.108	.093	-.085	-1.163	.245
	EMP	.213	.075	.188	2.831	.005
	SC	.085	.041	.094	2.093	.037

a. Dependent Variable: SL