ASSESSING THE PERCEPTION OF UNIVERSITY MALAYSIA KELANTAN ON GAMIFICATION IN FINANCIAL EDUCATION

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KELANTAN

Assessing The Perception Of University Malaysia Kelantan Students On Gamification In Financial Education

by

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2024

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Abstract	Problem is vague, does not provide a summary of the whole project	Summarizes problem, method, results and conclusions with limited details	Summarizes problem, method, results, and conclusions but lacks some details	Clearly states problem to be resolved, coherently summarizes method, results, and conclusions	____ x 5 / 12 =
Introduction	Fails to identify a relevant research topic or is not clearly defined and/or the paper lacks focus throughout.	Identifies a research topic but may be too broad in scope, somewhat unclear and needs to be developed further.	Identifies a relevant research topic that provides adequate direction for the paper with some degree of interest for the reader.	Identifies a relevant research topic that provides direction for the paper that is engaging and thought provoking.	____ x 15 / 12 =
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Research Topic: Assessing The Perception of University Malaysia Kelantan Students on Gamification in Financial Education

NO.	CRITERIA		PERFORMANCE LEVEL				WEIGHT	TOTAL
			POOR (1 MARK)	FAIR (2 MARKS)	GOOD (3 MARKS)	EXCELLENT (4 MARKS)		
1.	**Content (10 MARKS)** (Research objective and Research Methodology in accordance to comprehensive literature review) Content of report is systematic and scientific (Systematic includes Background of study, Problem Statement, Research Objective, Research Question) (Scientific refers to researchable topic)		Poorly clarified and not focused on Research objective and Research Methodology in accordance to comprehensive literature review.	Fairly defined and fairly focused on Research objective and Research Methodology in accordance to comprehensive literature review.	Good and clear of Research objective and Research Methodology in accordance to comprehensive literature review with good facts.	Strong and very clear of Research objective and Research Methodology in accordance to comprehensive literature review with very good facts.	____ x 1.25 (Max: 5)	
			Content of report is written unsystematic that not include Background of study, Problem Statement, Research Objective, Research Question and unscientific with unsearchable topic.	Content of report is written less systematic with include fairly Background of study, Problem Statement, Research Objective, Research Question and less scientific with fairly researchable topic.	Content of report is written systematic with include good Background of study, Problem Statement, Research Objective, Research Question and scientific with good researchable topic.	Content of report is written very systematic with excellent Background of study, Problem Statement, Research Objective, Research Question and scientific with very good researchable topic.	____ x 1.25 (Max: 5)	
2.	**Overall report format**	*Submit according to acquired format*	The report is not produced according to the specified time and/	The report is produced according to the	The report is produced on time, adheres to the format	The report is produced on time, adheres to the	____ x 0.25	

	(5 MARKS)		or according to the format	specified time but fails to adhere to the format.	but with few weaknesses.	format without any weaknesses.	(Max: 1)
		Writing styles (clarity, expression of ideas and coherence)	The report is poorly written and difficult to read. Many points are not explained well. Flow of ideas is incoherent.	The report is adequately written; Some points lack clarity. Flow of ideas is less coherent.	The report is well written and easy to read; Majority of the points is well explained, and flow of ideas is coherent.	The report is written in an excellent manner and easy to read. All of the points made are crystal clear with coherent argument.	____ x 0.25 (Max: 1)
		Technicality (Grammar, theory, logic and reasoning)	The report is grammatically, theoretically, technically and logically incorrect.	There are many errors in the report, grammatically, theoretically, technically and logically.	The report is grammatically, theoretically, technically and logically correct in most of the chapters with few weaknesses.	The report is grammatically, theoretically, technically, and logically perfect in all chapters without any weaknesses.	____ x 0.25 (Max: 1)
		Reference list (APA Format)	No or incomplete reference list.	Incomplete reference list and/ or is not according to the format.	Complete reference list with few mistakes in format adherence.	Complete reference list according to format.	____ x 0.25 (Max: 1)
		Format organizing (cover page, spacing, alignment, format structure, etc.)	Writing is disorganized and underdeveloped with no transitions or closure.	Writing is confused and loosely organized. Transitions are weak and closure is ineffective.	Uses correct writing format. Incorporates a coherent closure.	Writing include a strong beginning, middle, and end with clear transitions and a focused closure.	____ x 0.25 (Max: 1)
3.	**Research Findings and Discussion**		Data is not adequate and irrelevant.	Data is fairly adequate and irrelevant.	Data is adequate and relevant.	Data is adequate and very relevant.	____ x 1 (Max: 4)

	(20 MARKS)	Measurement is wrong and irrelevant	Measurement is suitable and relevant but need major adjustment.	Measurement is suitable and relevant but need minor adjustment.	Measurement is excellent and very relevant.	____ x 1 (Max: 4)
		Data analysis is inaccurate	Data analysis is fairly done but needs major modification.	Data analysis is satisfactory but needs minor modification.	Data analysis is correct and accurate.	____ x 1 (Max: 4)
		Data analysis is not supported with relevant output/figures/tables and etc.	Data analysis is fairly supported with relevant output/figures/tables and etc.	Data analysis is adequately supported with relevant output/figures/table and etc.	Data analysis is strongly supported with relevant output/figures/table and etc.	____ x 1 (Max: 4)
		Interpretation on analyzed data is wrong.	Interpretation on analyzed data is weak.	Interpretation on analyzed data is satisfactory.	Interpretation on analyzed data is excellent	____ x 1 (Max: 4)
4.	**Conclusion and Recommendations (15 MARKS)**	Implication of study is not stated.	Implication of study is weak.	Implication of study is good.	Implication of study is excellent	____ x 1.25 (Max: 5)
		Conclusion is not stated	Conclusion is weakly explained.	Conclusion is satisfactorily explained.	Conclusion is well explained.	____ x 1.25 (Max:5)
		Recommendation is not adequate and irrelevant.	Recommendation is fairly adequate and irrelevant.	Recommendation is adequate and relevant.	Recommendation is adequate and very relevant.	____ x 1.25 (Max:5)
					TOTAL (50 MARKS)	

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NO.	CRITERIA	PERFORMANCE LEVEL				WEIGHT	TOTAL
		POOR (1 MARK)	FAIR (2 MARKS)	GOOD (3 MARKS)	EXCELLENT (4 MARKS)		
1.	Determination	Is not determined and does not put in any effort in completing the research report	Is determined but puts in little effort in completing the research report	Is determined and puts in reasonable effort in completing the research report	Is very determined and puts in maximum effort in completing the research report	____ x 1 (Max: 4)	
2.	Commitment	Is not committed and does not aim to complete on time and/ or according to the requirements	Is committed but makes little effort to complete according to the requirements	Is committed and makes reasonable effort in fulfilling some of the requirements	Is very committed and makes very good effort in fulfilling all the requirements, without fail.	____ x 1 (Max: 4)	
3.	Frequency in meeting supervisor	Has not met the supervisor at all.	Has met the supervisor but less than five times.	Has met the supervisor for at least five times.	Has met the supervisor for more than five times.	____ x 1 (Max: 4)	
4.	Take corrective measures according to supervisor's advice	Has not taken any corrective action according to supervisor's advice.	Has taken some corrective actions but not according to supervisor's advice, or with many mistakes.	Has taken some corrective actions and most are according to supervisor's advice, with some mistakes.	Has taken corrective actions all according to supervisor's advice with few mistakes.	____ x 1 (Max: 4)	
5.	Initiative	Does not make any initiative to do the research.	Make the initiative to work but requires consistent monitoring.	Make the initiative to do the research with minimal monitoring required.	Makes very good initiative to do the research with very little monitoring required.	____ x 1 (Max: 4)	
	TOTAL (20 MARKS)						/20

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TOTAL MARKING SCHEME

Assessment	Marks Given By Supervisor	Marks Given By Examiner	Total
(A) Effort (10%)			
(B) Oral Presentation (20%)			/ 2 =
(C) Research Report (60%)			/ 2 =
(D) Peer Evaluation (10%) i)			i)
ii)			ii)
iii)			iii)
iv)			iv)
Grand Total			i)
Grand Total			ii)
Grand Total			iii)
Grand Total			iv)

Name of Supervisor/ Examiner: _____Signature: _____Date: _____

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LIST OF ABBREVIATIONS

UMK	University Malaysia Kelantan
BI	Behavioral Intention
COVID-19	Coronavirus Disease 2019
FAE	Faculty of Architecture and Ekistics
FBI	Faculty of Language Studies and Human Development
FBKT	Faculty of Bioengineering and Technology
FHPK	Faculty of Hospitality, Tourism and Wellness
FIAT	Faculty of Agro Based Industry
FKP	Faculty of Entrepreneurship and Business
FPV	Faculty of Veterinary Medicine
FSB	Faculty of Earth Science
FSDK	Faculty of Data Science and Computing
FTKW	Faculty of Creative Technology and Heritage
RO	Research Objectives
RQ	Research Questions
SPSS	Statistical Package for Social Science
std. deviation	Standard Deviation
TAM	Technology Acceptance Models
UI	User Interface
UKM	University Kebangsaan Malaysia
UTAUT	Unified Theory of Acceptance and Use of Technology
UX	User Experience

LIST OF SYMBOLS

α	Alpha Value
<	Less Than
>	More Than
≥	Greater Than
=	Equal
±	Plus-Minus
%	Percentage
-	Hyphen
Std.	Standard
Sig.	Significance
S	Sample
N	Population
;	Semicolon

ABSTRACT

This study investigated the perception of students at University Malaysia Kelantan (UMK) regarding the integration of gamification in financial education, using Unified Theory of Acceptance and Use of Technology (UTAUT) theory. Data were collected from 382 respondents using a quantitative approach through survey methods. Findings showed that performance expectancy factors (p-value: 0.874) strongly influence students' propensity to adopt gamification to enrich their financial knowledge. The limitation of this study was the existence of biased data due to unbalanced data collection. Besides, its exclusive focus on the East Coast region, making it less applicable to the West Coast region. Therefore, this study can focus on a single faculty but with varying academic levels and conduct research on the West Coast as well to obtain accurate research findings. The education industry should emphasize the importance of gamification in modern education to enhance student understanding and inform innovative strategies. The results of this study contribute to the originality of the field of financial literacy, offering valuable insights for educators, policy makers, and researchers who aimed to refine financial education strategies through gamification.

Keywords: Perception, Gamification, Financial Education, University Students, UTAUT.

ABSTRAK

Kajian ini menyiasat persepsi pelajar Universiti Malaysia Kelantan (UMK) berhubung integrasi gamifikasi dalam pendidikan kewangan, menggunakan Unified Theory of Acceptance and Use of Technology (UTAUT). Data dikumpul daripada 382 responden menggunakan pendekatan kuantitatif melalui kaedah tinjauan. Dapatan menunjukkan bahawa faktor jangkaan prestasi (nilai-p: 0.874) sangat mempengaruhi kecenderungan pelajar untuk menggunakan gamifikasi untuk memperkaya pengetahuan kewangan mereka. Batasan kajian ini adalah wujudnya data berat sebelah kerana kutipan data yang tidak seimbang. Selain itu, tumpuan eksklusifnya di wilayah Pantai Timur, menjadikannya kurang terpakai untuk wilayah Pantai Barat. Oleh sebab itu, kajian ini boleh berfokus kepada satu fakulti tetapi tahap akademik yang berbeza dan menjalankan kajian di Pantai Barat juga untuk mendapat dapatan kajian yang tepat. Industri pendidikan harus menekankan kepentingan gamifikasi dalam pendidikan moden untuk meningkatkan pemahaman pelajar dan memaklumkan strategi inovatif. Hasil kajian ini menyumbang kepada keaslian bidang celik kewangan, menawarkan pandangan berharga untuk pendidik, pembuat dasar dan penyelidik yang bertujuan untuk memperhalusi strategi pendidikan kewangan melalui gamifikasi.

Kata kunci: Persepsi, Gamifikasi, Pendidikan Kewangan, Pelajar Universiti, UTAUT

CHAPTER 1

INTRODUCTION

1.1 Introduction

Chapter 1 described the purpose of conducting this study, which was related to assessing UMK students' perception of gamification in financial education. This chapter encompassed several elements, including an introduction, background of the study, problem statement, scope of the study, research objectives, research questions, significance of the study, operational definition, and a summary of this chapter.

1.1 Introduction	→	1.2 Background of The Study	→	1.3 Problem Statement
1.4 Research Questions	→	1.5 Research Objectives	→	1.6 Scope of The Study
1.7 Significance of The Study	→	1.8 Operational Definition	→	1.9 Summary
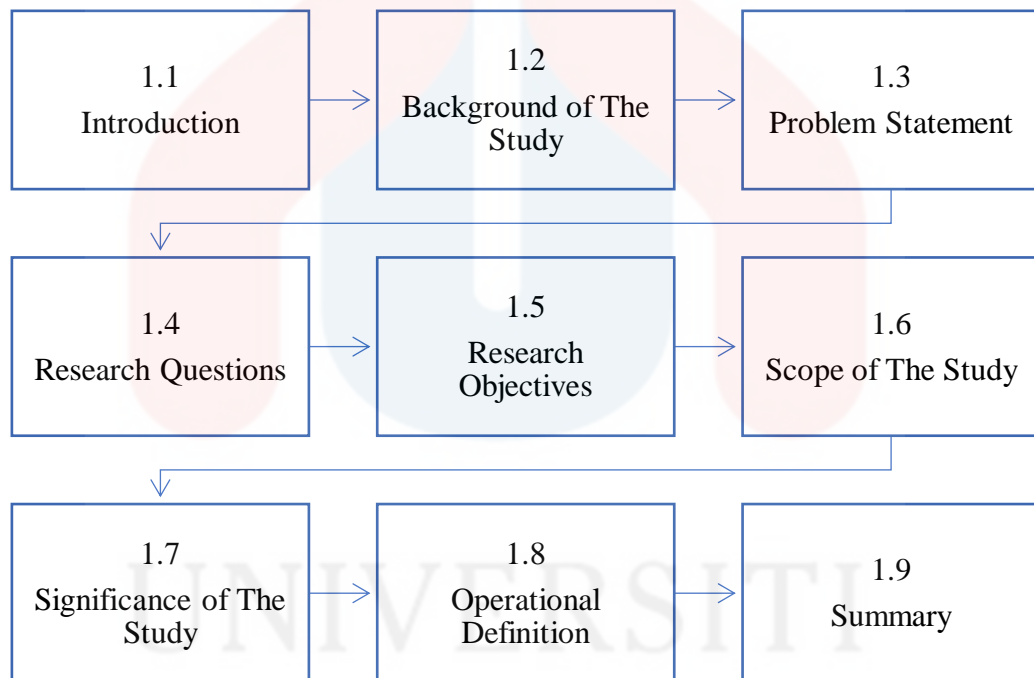
Figure 1.1: Outline for Introduction

1.2 Background of The Study

Financial literacy was a fundamental understanding of financial concepts, recognized as a crucial life skill in the era of the Industrial Revolution 4.0. Financial education was the skill or ability to comprehensively understand and manage an individual's financial situation through the analysis and understanding of financial concepts (Hussin & Rosli, 2019). Financial education also encompasses awareness, behaviour, and skills required for making sound financial decisions and cultivating personal financial well-being (Nuansonsri et al., 2023). As stated by Turner (2023), statistics on money literacy by generation reveal that Gen Z (1997-2012) had a low financial literacy level, standing at 38%. While millennials exhibit a higher level of knowledge regarding investments and cryptocurrencies compared to baby boomers, they might have face greater financial constraints due to debt, unlike baby boomers who were content with their finances.

On the authority of Abu Bakar (2019), individuals with a high level of financial literacy were more likely to save money and less likely to report excessive spending. For university students, a high level of financial literacy enables them to better prepare for the financial challenges they might encountered both during their university life and after graduation when economic stability was less assured. Students were advised to proactively prepare to tackle financial challenges and made well-informed financial plans and decisions from this point onward (Nuansonsri et al., 2023). The study by Abd Majid et al. (2020), the youth face an alarming rate of bankruptcy, with 7,164 individuals aged 35 to 44 being declared bankrupt. This was primarily due to excessive spending, overreliance on credit cards, and purchasing based on wants rather than needs. University students who lack financial management skills, particularly those who depended on their parents' income, scholarships, and loans, also face this challenging situation. Therefore, authorities implemented various initiatives to enhance

financial literacy among university students, including the use of learning apps, seminars, workshops, and more.

Gamification was a crucial element in the design of User Interface (UI) and User Experience (UX). Games are regarded as elements capable of fostering individual motivation and engagement across various contexts, including education, health, and the workplace. Gamification could be defined as a factor that transforms systems, activities, services, and organizational structures to be more enjoyable (Klock et al., 2020). It could also be defined as incorporating game design elements into non-game contexts (González-González, 2023). However, this definition could vary depending on the context. This definition of gamification first emerged in 2002 when Nick Pelling described it as the application of electronic transactions in a more engaging manner (González-González, 2023). Gamification enables individuals to engage with various game elements, including challenges, achievements, rewards, and cooperation (Bitrián et al., 2021). Gamification was a catalyst for enhancing intrinsic motivation, elevating user engagement, fostering customer loyalty, and enhancing educational effectiveness (Bayuk & Altobello, 2019).

In the realm of gamification in education, it was recognized for its potential to bring about positive changes for both students and teachers. Numerous learning methods incorporate gaming elements to motivate and enhance student engagement in subjects. In a study conducted by Feiz Abadi et al. (2022), the aim was to assess the advantages and disadvantages of gamification in the context of learning. This study involved data retrieval from electronic databases like Scopus, EMBASE, ERIC, and others. The review of pertinent journal articles underwent multiple stages before reaching a conclusion. This study identified several benefits of gamification in learning, including the encouragement of student engagement, increased motivation, acquisition of knowledge, and improved communication with peers. However, it could also present disadvantages, including high costs, security issues, fraud, and regulatory

concerns. This study provided a fresh perspective to stakeholders regarding the role of gamification in learning. Nevertheless, the outcomes of this study might had varied if it were conducted in a qualitative or quantitative manner to gather the perspectives of students and teachers. This study also expressed the hope that future studies could assess the effectiveness of gamification used various assessment criteria.

Another previous study by Rosli et al. (2019) examined the effectiveness of board games in accounting subjects. The study included 49 non-accounting students who were given a questionnaire before and after using the board game to assess the effectiveness of gamification in education. The research findings revealed that most students provided positive feedback about the game, as it made learning more engaging and prompted them to think critically and respond quickly to accounting questions. Additionally, most respondents agreed that incorporating game elements into learning could enhance their understanding of accounting. This study was anticipated to raise awareness about educational games, particularly in the fields of entrepreneurship and accounting. The relationship between financial literacy and financial education was examined in a study by Liyana & Liyana, (2019), where they investigate the factors influencing the level of financial literacy. The study's results indicate that financial education factors had a positive influence on and were correlated with financial literacy. Quality financial education led to improved understanding and financial literacy. Consequently, this study explored how the gamification approach in education could enhance financial literacy among university students.

1.3 Problem Statement

The issue of financial literacy within the global community was considered a significant concern. A study conducted by Lusardi (2019), the FLat World project, which covers 15 countries, reveals that only 30% of the population answered all three 'Big Three' financial

literacy questions correctly. Meanwhile, 50% of the population answered only two out of three questions correctly, indicating a low level of financial knowledge. The questions pertained to knowledge about inflation and interest rates, totalling only three questions. Lusardi also noted that individuals with high incomes were not necessarily financially literate. In the United States, for instance, many of them were over 40 years old and lacked an understanding of proper financial management practices. Low financial literacy was also prevalent among young people, particularly students who struggled with managing their student debt. Indeed, the presence of digital banking had led many young people to spend extravagantly.

Within the context of financial literacy in Malaysia, previous studies revealed that the level of financial literacy in the country remains low, despite the implementation of various financial literacy programs. A study conducted by, Nor Izzati and Salina (2020) revealed that one in three Malaysians lacked confidence in financial management. As stated by Yin et al. (2022), Malaysians between the ages of 18 and 44 encounter significant debt issues, while the older generation confronted financial challenges as they approached retirement. 75% of Malaysians were unable to save RM1000 for emergency expenses, 60% lacked a long-term retirement plan, and 25% had no investments. Moreover, Malaysians lacked effective financial planning to manage their finances and expenses. This became evident during the COVID-19 pandemic, with 60% of the population facing financial difficulties. Young people were also burdened with high levels of debt, with nearly 38 percent depending on loans and 47% relying on credit cards for their expenses. This indicated that Malaysians, both young and old, lacked fundamental knowledge of financial management.

In the context of university students, multiple studies indicated that the level of financial literacy was moderate to low. Hairunnizam and Siti Aisyah (2020), who conducted a study on the financial literacy level among students at University Kebangsaan Malaysia (UKM), found that students possessed a moderate level of financial knowledge with a mean score of 3.65.

Based on feedback from respondents at UKM, it was observed that students struggle with proper expense management and had difficulty distinguishing between needs and wants. Furthermore, a previous study by Barreto and Gamble (2020), focused on enhancing financial literacy among university students, recommended future research to investigate the most effective methods for imparting information on financial education like debt, inflation, and investment. While according to Putra and Priyatmojo (2021), this study was relevant for educational institutions as to support the advancement of rapid technology. Consequently, the aim was to investigate whether the gamification approach in financial education could enhance the financial literacy of university students, with the expectation that it was contributed to improving their financial literacy.

1.4 Research Questions

The research questions articulated specific problems addressed in this investigation. The study specifically tackled the following questions:

1. What was the relationship between performance expectancy and the perception of UMK students on gamification in financial education?

2. What was the relationship between effort expectancy and the perception of UMK students on gamification in financial education?

3. What was the relationship between social influence and the perception of UMK students on gamification in financial education?

4. What was the relationship between facilitating conditions and the perception of UMK students on gamification in financial education?

5. What was the relationship between hedonic motivation and the perception of UMK students on gamification in financial education?

6. What was the relationship between price value and the perception of UMK students on gamification in financial education?

7. What was the relationship between behaviour and the perception of UMK students on gamification in financial education?

1.5 Research Objectives

The research objectives were derived from the research questions, serving as the ultimate outcomes for this study. Seven objectives were formulated.

1. To determine the relationship between performance expectancy and the perception of UMK students on gamification in financial education.

2. To determine the relationship between effort expectancy and the perception of UMK students on gamification in financial education.

3. To determine the relationship between social influence and the perception of UMK students on gamification in financial education.

4. To determine the relationship between facilitating conditions and the perception of UMK students on gamification in financial education.

5. To determine the relationship between hedonic motivation and the perception of UMK students on gamification in financial education.

6. To determine the relationship between price value and the perception of UMK students on gamification in financial education.

7. To determine the relationship between behaviour and the perception of UMK students on gamification in financial education.

1.6 Scope of The Study

This study was conducted among UMK students, involving three campuses (City Campus, Bachok Campus, Jeli Campus). The population of the three campuses was a total of 11,760 active students, with a total number of students in City Campus, Bachok Campus and Jeli Campus being 6,656, 2,579 and 2,524 students, respectively. A survey research design has been employed, used questionnaires as the primary data collection method. The questionnaires were distributed online through the Google Form platform.

1.7 Significance of The Study

Previous studies had highlighted that financial literacy among university students remained at a moderate level, with education being the most crucial factor in enhancing students' financial literacy. Hence, this study aimed to investigate the potential of a gamification approach to enhance financial education among university students, particularly at UMK. While there had been previous studies examining the effectiveness of gamification in education to enhance financial literacy among university students in Malaysia, cultural variations across states could had led to differences. Furthermore, gamification was regarded as an effective educational tool for engaging and motivating students to acquire financial management skills. In a prior study conducted by Khairina & Norhaiza (2019), the effectiveness of board games in accounting subjects was investigated. The students responded positively to the implemented game elements, demonstrating improved abilities to think quickly when faced with questions and increased interaction with lecturers and friends.

Moreover, university students were at a crucial stage in their lives where they need to make prudent financial decisions. Proficiency in financial literacy equipped them with the ability to effectively manage their finances and debt in the future. This empowered them to make informed financial decisions, thereby enhancing their personal financial well-being and

contributing to the overall economic development of the country. Furthermore, given that students were immersed in an era of advanced technology, integrating gamification elements into financial education was highly suitable, in line with technological advancements. The university could seize the opportunity by developing an educational intervention, such as software on the e-campus platform, where students could monitor their financial progress and their decision-making in various situations.

This intervention could not only provide opportunities for the university to incorporate gamification elements into financial education at UMK. Additionally, the bank could had developed a system that assisted students in managing their finances more effectively by creating an easily accessible and data-protected application. Given that Bank Islam and RHB Bank were the primary banks serving UMK, this study could had served as a pilot project for these banks to design software incorporating gamification elements, particularly for digital banking. This insight was expected to guide the development of improved educational interventions aligned with the needs of students in the era of financial technology.

1.8 Operational Definition

With the goal to enhance comprehension of this research, the following terminology were explicitly well-defined within the framework of this study, related to dependent variable which was the perception on gamification in financial education, and independent variables included performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behaviour.

1.8.1 The Perception on Gamification in Financial Education

As believed by Putra and Priyatmojo (2021), student perception refers to the depiction of students' feelings towards something. When viewed in the context of gamification, it related

to how students responded to gamification approaches in financial education. Student perception was important in forming educational policies that were in line with current technological advances. Different perceptions among individuals could cause miscommunication with others if no in-depth investigation was conducted.

1.8.2 Performance Expectancy

Performance expectancy was defined as a person's belief in the advantages and usefulness obtained from used technology and systems (Tamrin et al., 2022). This article discusses the extent to which students expect that the use of gamification in their learning would help improve their performance in the development of understanding any subjects. Furthermore, a work of Ibrahim (2018), these variables were the primary determinants in examining an individual's behaviour towards a particular matter. Although from an educational perspective, performance expectancy was considered limited to assessing students' potential, it was agreed that the outcomes might surpass expectations.

1.8.3 Effort Expectancy

In line with Ibrahim (2018), effort expectancy refers to the perceived ease associated with the use of a system or technology for individuals. In a study by Alsamawi and Kurnaz (2021), if the use of the system was not complicated and requires minimal effort, users would be more inclined to use it repeatedly. In the context of financial education, considering that the users were students, the creation of any application should prioritize simplicity and a gameplay process that dit not require substantial effort and in-depth understanding before engaging with gamification.

1.8.4 Social Influence

In the opinion of Tamrin et al. (2022), social influence could be defined as the influence of other individuals on a person's beliefs and practices, both consciously and subconsciously. Typically, the use of gamification would be influenced by close individuals, such as family, friends, lecturers, etc (Silva R et al., (2021). Furthermore, Vanduhe et al. (2020) stated that these variables would influence students' perceptions whether they want to use it and its user-friendliness during learning sessions. If the gamification approach was introduced widely, indirectly, it could be seen if students were more enthusiastic to learn and understand the subject more enjoyably.

1.8.5 Facilitating Conditions

In accordance with de Oliveira et al. (2019), facilitating conditions referred to the degree to which an individual felt that the institutional or technological structure existed to facilitate the implementation of a specific type of system. The more technical support obtained, the greater the tendency to use it. These variables involved creating an environment that supported active participation, engagement, and learning by incorporating elements of gaming, real-world relevance, and personalized experiences.

1.8.6 Hedonic Motivation

Reserch of Kuttimani Tamilmani et al. (2019), hedonic motivation was the pleasure experienced when used technology. This enjoyment serves as a primary determinant for users to accept and adopt technology. A study conducted by Jan van Elderen & Esther (2019), a gamification approach involving elements such as points, leaderboards, as well as social games and teamwork received positive feedback from students. In the study, 89 percent (89%) of

students expressed agreement that the point system could enhance their engagement in learning.

1.8.7 Price value

In the word of Venkatesh et al. (2012), price value could be defined as "consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost for using them. Even though price value was often excluded from studies or deemed insignificant, costs, including effort and resources required to access e-learning, could impact the overall perceived value of learning and influence performance expectations.

1.8.8 Behaviour

Behaviour refers to the individual's behaviour actively and progressively participating in a particular learning, and it became automatic (Yang et al., 2022). This variable was measured through the level of interaction and their habitual use of technology. This behaviour could be observed through the frequency with which individuals interact with video games, indicating a strong inclination to use this gamification approach.

1.9 Summary

This research specifically examined the UMK students' perception of gamification in financial education, particularly emphasising undergraduate students as the target respondents. Chapter 1 functions as an initial part that encompasses background of study, overview of topic, research questions, research objectives, the study's significance, and the definition of keywords. Chapter 2 includes comprehensive explanations of the literature review and an initial part that establishes the conceptual foundation, examines prior research, offers the hypothesis statement, explains the conceptual framework, and closes with a summary. Chapter

3 focused on research methodologies, including an introduction, research paradigm, data collection methods, population and sample size, sampling procedures, research instrument development, measurement of variables, process for data analysis, and summary. In Chapter 4, the data analysis and conclusions were presented. The data were analysed using descriptive analysis and differential statistical methods. Chapter 5 included the examination and last remarks of this research, which included implications, limitations, recommendations, and conclusions.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the dependent variable and independent variables were addressed for a better understanding of this study. The dependent variable of this study was the perception of UMK students on gamification in financial education. While the dependent variables were derived from UTAUT theory, including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behaviour. This was followed by a hypotheses statement, theoretical framework, and the summary at the end of this chapter.

2.1 Introduction	2.2 Underpinning Theory	2.3 Literature Review
2.4 Hypotheses Statement	2.5 Conceptual Framework	2.6 Summary
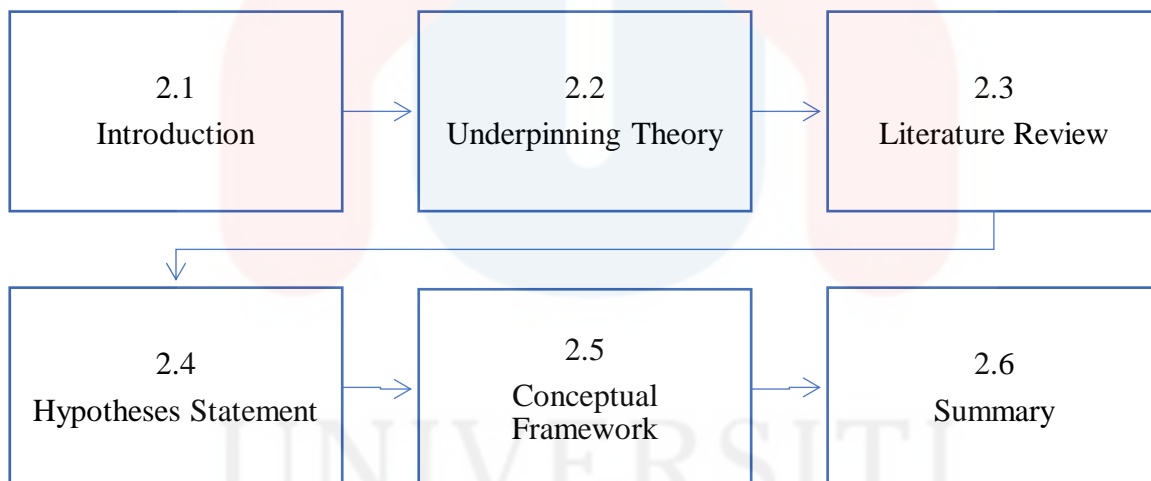
Figure 2.1: Outline for Literature Review

2.2 Underpinning Theory

In this section, the study discussed the theoretical framework that supported this study. It stood for the fundamental ideas, concepts, or models that directed and influenced the technique, research design, and interpretation of the findings. For the underpinning theory, the study used the UTAUT Model (Venkatesh et al., 2003).

2.2.1 UTAUT2

This study selected theories that aligned with this study, including the Unified Theory of the Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and the extended versions of the Unified Theory of the Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2012). In line with Venkatesh et al. (2012), empirical comparisons and consolidation of acceptance literature led to the development of the Unified Theory of the Acceptance and Use of Technology (UTAUT). This framework enhanced the explanatory capability of previous technology acceptance models (Venkatesh et al., 2003, 2012). While TAM had been used to explain learner adoption of technology-enhanced learning (Mehta et al., 2019 extended models like UTAUT (Venkatesh et al., 2012) and UTAUT (Venkatesh et al., 2003) underscored the significance of social and physical context, along with consumer judgement, in shaping learner behaviour when using educational technology. UTAUT was asserted to be more precise than TAM. The direct effect hypothesis explained 44% of the variation in behavioural intent and 35% of the variation in technology use. In the quantitative analysis for this study intends to utilise the various determinants from UTAUT.

Referring to Venkatesh et al. (2012), the UTAUT provided the theoretical framework to understand the factors that influenced students' acceptance and adoption of a gamified approach in financial education to improve financial literacy. The UTAUT model (Venkatesh et al., 2012) was an extension of the earlier UTAUT model (Venkatesh et al., 2003), which

encompassed only the first four elements: performance expectancy, effort expectancy, social influence, and facilitating conditions. Three additional elements, namely hedonic motivation, price value, and behaviour were incorporated into the revised UTAUT model (Venkatesh et al., 2012).

The first element in this theory was performance expectancy. In the words of Venkatesh et al. (2003), performance expectancy was defined as "the degree to which an individual believed that using the system would help them attain improvements in job performance." This encompassed factors such as the perceived usefulness of new technology and the external motivation derived from the gamified approach. This investigation explored performance expectations as a potential explanation for students' acceptance and adoption of the gamified approach to enhancing financial education. The next element was effort expectation. Based on Venkatesh et al. (2003), effort expectancy was defined as "the degree of ease associated with the use of the system." This explored how students' acceptance and adoption of the gamified approach were influenced or explained by their perceptions of the effort required to use the gamified approach. The third element was social influence, which could be defined as "the degree to which an individual perceived that important others believed they should use the new system" (Venkatesh et al., 2003). Regarding social influence, this study examined the social context and individual factors influencing UMK students' perceptions of gamification in financial education. In accordance with Venkatesh et al. (2003), facilitating conditions referred to "the degree to which an individual believed that an organizational and technical infrastructure existed to support the use of the system." In this study, we aim was to assess UMK students' perceptions of gamification in financial education. It examined their perceptions of the intervention's general perceived behavioural control, compatibility, and support, and how these factors influenced their adoption of the gamification approach.

The UTAUT 2 model introduced hedonic motivation, defining it as "the fun or pleasure derived from used technology, and it had been shown to play an important role in determining technology acceptance and use" (Venkatesh et al., 2012). This study explored the factors that influenced UMK students' acceptance and adoption of a gamified approach, focusing on the influence of hedonic motivation. Price value was defined as "consumers' cognitive trade-off between the perceived benefits of applications and the monetary cost of using them" (Venkatesh et al., 2012). Regarding price value, this study examined whether it described UMK students' perception of a gamified approach to enhancing financial education. The last construct of the UTAUT model was behaviour. In the research of Venkatesh et al. (2012), behaviour was defined as a habit with a new technology that becomes automatically performed due to learning. Experience was necessary but not a sufficient condition for the formation of behaviour (Venkatesh et al., 2012). They also noted that depending on how simple the technology was used and how the user interacts with it, using a new technology would result in distinct levels of behaviour. In other words, the explanation for behaviour could found in the fact that it had developed into a habit due to previous experience.

The findings of Thusi and Maduku (2020), factors influencing students' acceptance and adoption of a gamified approach were significantly affected by performance expectancy, facilitating conditions, behaviour, perceived risk, and institution-based trust. Facilitating conditions, perceived risk, and behavioral intention also significantly influenced the desire of students at UMK to enhance their financial literacy through education. The purpose of this study was to determine whether there were additional variables from the UTAUT model that might influence how students at UMK perceive and respond to the potential of gamified approaches to improve financial literacy. The mediating factors of age, gender, and experience were also included in the model (Venkatesh et al., 2012). When examining whether the model's variables contributed to explaining students' attitudes and perceptions, these moderating

variables were taken into consideration. However, only the effects of the seven UTAUT model constructs—performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behaviour—were considered. Even though the UTAUT model was not used in this study to measure how independent variables affected attitudes and perception related to technology use, it did offer a useful framework for understanding some of the factors that might help to explain and give a greater comprehension of the factors influencing students' acceptance and adoption of gamified approaches for financial literacy improvement.
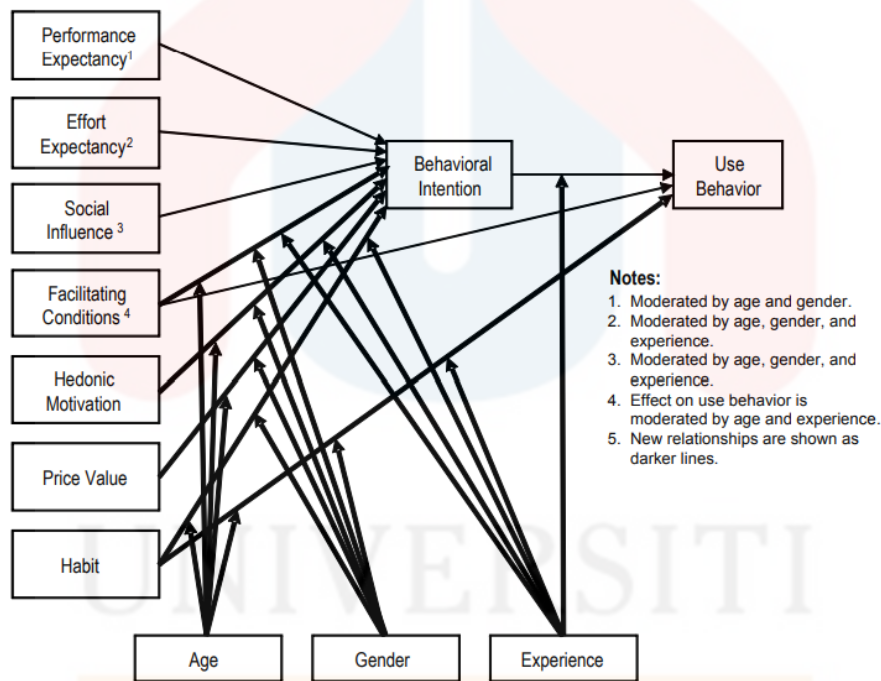
Source: Venkatesh et al. (2012)

Figure 2.2: Model of UTAUT Theory

2.3 Literature Review

This section discussed the literature review by emphasizing the term of financial education, the dependent variable which was the perception on gamification in financial education. The independent variable including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behaviour. This section emphasized on identifying gaps, justifying this study and hypotheses.

2.3.1 Financial Education

Financial education was defined as the knowledge and skills required to address financial challenges and make every day financial decisions (Sohn et al., 2012). Based on Fernando (2023), financial education among youth or students should be cultivated to assist them in managing their finances once they achieve self-reliance through their own income. Based on a recent study, the absence of financial knowledge could impact students' capacity to make informed financial decisions in their lives (Jorgensen and Savla, 2010). The level of financial knowledge was a critical factor in financial management behaviour, as a lack of financial knowledge could result in debt burdens (Norvilitis et al., 2006).

Behaviour and practices related with spending, investment, savings, and financial knowledge that were cultivated since childhood could contribute to becoming a proficient financial manager (Sherraden et al., 2013). The research by Albeerdy & Gharleghi (2015), uncontrolled spending could lead to financial problems and had adverse consequences. Students were exercise caution when shopping and the behaviour of saving should be instilled in each student as it could provide relief during financial difficulties. Accumulated savings could assist individuals in resolving future financial challenges (Peetz & Davydenko, 2021). Referring to Ngah et al., (2021), savings did not need to be substantial, but consistent savings over time could accumulate, akin to the saying "a little adds up over time". The study by Fan

et al., (2021), individuals who maintained savings accounts since childhood tended to develop strong financial practices as they mature.

Furthermore, financial issues among young individuals could be accentuated in the context of credit card usage. Consequently, some young individuals started using credit cards at a young age, even while still being students. Referred to the data from the National Bank's report, the amount of accumulated credit card debt increased from RM696 million in 1992 to RM5 billion in 2012. The consequences of this surge in credit card usage suggested that consumers engaged in negative practices, such as excessive credit card usage, which ultimately led to inefficiency in managing their cards. Consequently, this led to bankruptcy at a young age. For instance, statistics released by the National Bank in 2005 indicated 16,251 bankrupt individuals in Malaysia, with the majority being youths aged 21 to 45.

2.3.2 Perception on Gamification in Financial Education

Gamification could be defined as the act of "applying game mechanics to other web properties to increase engagement" (McKeown et al., 2016). The term gamification was now used more broadly to describe "the utilization of game design elements in non-game contexts" (Deterding et al., 2011) or "employing game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems" (Mauroner, 2019). Gamification was no longer limited to web properties. According to Gee (2013), in game-based learning, the skills tested in the game corresponded to the learning task. Gamification related too, but was distinct from, game-based learning. Gamification involved applying game design features in non-game contexts, whereas gamified learning entailed using actual games to acquire skills or knowledge.

Based on Cheong & Filippou, (2013) study such as the multiple-choice quiz app in the current study, the distinction between a gamified experience and game-based learning became

blurred. Gamification "can be seen as a spectrum that spans from serious games at one end to regular activities with added game elements at the other end" (Cheong & Filippou, 2013). This was where the gamified multiple-choice quiz software enters the picture. The straightforward learning process of memorizing a collection of facts was transformed into a game by presenting the knowledge in a quiz format. However, this quiz structure lacks crucial game components such as progression, rewards, and competition. To incorporate these components, the program experimented with gamification mechanics such as avatars, experience points, and badges. Consequently, instead of being a dedicated educational game, the program could be characterized as a gamified multiple-choice quiz, like the application used by Cheong & Filippou, (2013).

The gamification approach had a positive impact on improving students' financial education. Gamification could promote interaction among peers (Hartt et al., 2020), foster a sense of belonging in gaming (Alabbasi, 2017), enhance collaboration, and encourage active engagement (Yen et al., 2020). Qualitative findings from the research by Yildiz & Şimşek (2021) demonstrated that the use of educational games (EG) enabled students to continue learning independently, without the need for teacher guidance. The game elements integrated into the gamification platform assisted students in tracking their learning progress (Alabbasi, 2017). In addition, gamification proved effective in group play (Barata et al., 2014). The team mode in the Kahoot application promoted collaboration in discussions and fostered a positive perception among students (Rahmahani et al., 2020). Gamification not only enhances cognitive effectiveness but also created an enjoyable learning environment and teaching experience (Hartt et al., 2020). Gamification elements could enhance financial education. Interview findings from the research conducted by Aguilar Cruz & Álvarez Guayara, (2021) demonstrate that the Bethe Challenge improved reading skills and students' grammar skills. Supported the statement that the use of Quizlet elements was effective for students in learning English

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vocabulary (Setiawan & Wiedarti, 2020). The used of gamification through Edupuzzle enabled students to complete tasks efficiently and encouraged active engagement (Zou, 2020). Furthermore, in this study illustrated how the incorporation of gaming elements could enhance the learning outcomes, benefiting students' capacity to focus, retain information, and acquire skills for the UMK students.

2.3.3 Performance Expectancy

Performance expectancy was defined as an individual's belief in the benefits and usefulness gained through the usage of technology and systems (Venkatesh et al., 2003). Performance expectancy had a significant impact on students' ability to improve their financial literacy (Vleeshouwer, 2015). Students who believed that gamification approaches could enhance their financial literacy tended to do so more frequently than those who did not. In another study, performance expectancy was found to be a crucial factor influencing students' adoption of games that enhance teaching and learning (Tamrin et al., 2022). Performance expectancy further influenced the perception of university students to adopt a gamified approach in their financial management (Chao, 2019). Indeed, a recent article by Chung et al. (2020) revealed that performance expectancy had the most significant impact on students' perceptions regarding gamification in financial education. In this study, performance expectancy measured the extent to which students believe that the use of gamification could enhance their financial literacy through financial education. In other words, performance expectancy was understood to be the level of efficiency in financial education when students participated in gamification approach. Students who believed that gamification could enhance their financial education would likely utilize this method. Hence, this study utilized performance expectancy elements in this study to try to understand UMK students' perceptions

of gamification in financial education, which was crucial in preparing the framework for this study. Therefore, hypotheses could be formulated to demonstrate their relationship.

H[1]: There was a positive relationship between performance expectancy and the perception of UMK students on gamification in financial education.

2.3.4 Effort Expectancy

Effort Expectancy was described as the degree to which people quickly join and employ a technological system (Venkatesh et al., 2003). This study emphasized the ease with which consumers participated in gamification (Abou-Shouk & Soliman, 2021). Effort expectancy originates from the work of Rogers (2003) and specifically referred to the construct "ease of use," which also incorporated into the TAM model by Davis (1989) and TAM 2 by Venkatesh and Morris (2000). This indicated the extent to which the used of the system was perceived as easy. Based on this study, this generated conclusions on how students perceive effort expectancy in relation to the gamified approach to financial education. It determined whether students perceive the gamified system as easy to use and identify any variables that might had influence this perception. The study considered that studying UMK students' perceptions of gamification in financial education would be very helpful in constructing the framework for this study, which was why the aspects of effort expectation were used in it. Hence, hypotheses could be formulated to demonstrate the relationship between independent and dependent variables.

H[2]: There was a positive relationship between effort expectancy and the perception of UMK students on gamification in financial education.

2.3.5 Social Influence

Social influence refers to the impact of others, both intentional and unintentional, on an individual's beliefs and behaviour (Venkatesh et al., 2003). In regard to Al Marshedi et al. (2016), the adoption of gamification was influenced more by social factors than technological ones. As stated by a recent study by Marcelo et al., (2021), social influence plays a crucial role in shaping accounting students' attitudes towards used game-based learning. Social influence also had an impact on the intention to implement gamification for training in higher education (Vanduhe, 2020). Based on Asiri's study (2019) an increase in the social influence of gamification significantly predicted a female teacher's intention to use gamification in an English as a Foreign Language (EFL) classroom. In the context of UMK students' perceptions on gamification in financial education, social influence appears to be a significant variable. This could be illustrated by a teacher introducing gamification into the classroom, it indirectly encouraging students to enhance their learning experience and apply gamified techniques to their financial literacy studies. User preferences could be influenced by the influence of family, friends, and co-workers, as they were easily perceived and could significantly influence consumer intent and behaviour on an e-commerce platform as evidenced by linked studies (Abou-Shouk & Soliman, 2021). To prepare for this study, it was considered that understanding UMK students' perceptions of gamification in financial education would be very helpful. For this reason, study included the elements of social influence in this study. Hence, hypotheses were formulated to demonstrate the relationship between independent and dependent variables.

H[3]: There was a positive relationship between social influence and the perception of UMK students on gamification in financial education.

2.3.6 Facilitating Conditions

Facilitating conditions referred to "the extent to which an individual believed that an organizational and technical infrastructure was in place to support system usage" (Venkatesh et al., 2003). The impact of various variables on behavioural intentions, indicated that facilitating conditions might not had a significant effect on individuals' intentions (Dhingra & Gupta, 2020). Building on this line of inquiry, in this study examined students' perceptions on gamification in financial education by assessing the level of support provided by the university for the implementation of the gamified strategy. This involved factors such as teacher support, institutional policies promoting financial literacy programs, and the integration of gamification into the curriculum or extracurricular activities. This understanding of UMK students' perceptions of gamification in financial education was useful in preparing this study, and it was believed that it truly helped in constructing the framework, Therefore, hypotheses were be formulated to demonstrate the relationship between independent and dependent variables.

H[4]: There was a positive relationship between facilitating conditions and the perception of UMK students on gamification in financial education.

2.3.7 Hedonic Motivation

Hedonic motivation as the pleasure derived from adopting a technology (Venkatesh et al., 2012). It reflects a student's impression of a gamified approach as engaging and enjoyable for educational purposes (Smiderle et al., 2020). In line with motivation theory, which plays a pivotal role in influencing technology adoption among users (Moorthy et al., 2019). Several studies had confirmed the positive relationship between hedonic motivation (HM) and Behavioral Intention (BI) (Moorthy et al., 2019). The role of hedonic motivation in this study was gamification components encouraging student involvement by making learning more interactive and fun. When students found activities exciting and enjoyable, they were

encouraged to participate passionately. In these analyses how effectively gamification components, such as points, challenges, and progress tracking, motivated students to actively engage in learning. This element also became a crucial part of understanding UMK students' perceptions of gamification in financial education. This study considered it beneficial in the framework's construction. Therefore, hypotheses were be formulated to demonstrate the relationship between independent and dependent variables.

H^5: There was a positive relationship between hedonic motivation and the perception of UMK students on gamification in financial education.

2.3.8 Price Value

In accordance with Venkatesh et al. (2012) defined price value as individuals' perceptions of the trade-off between the benefits they receive and the monetary cost they pay when adopting technology. Individual customers usually bear the cost of adopting technology, unlike organizational users (Moorthy et al., 2019). However, the cost of implementing and maintaining the gamified strategy might indirectly influence students' perspectives through factors such as favourable conditions and performance expectations. For this study discovered more the effectiveness of a gamified strategy was influenced by students' performance expectations, and if implementation and maintenance costs were low, students more likely to perceive positive educational benefits. Thus, in this study could implement these frameworks for this study. Therefore, hypotheses were be formulated to demonstrate the relationship between independent and dependent variables.

H^6: There was a positive relationship between price value and the perception of UMK students on gamification in financial education.

2.3.9 Behaviour

Behaviour refers to an individual's tendency to perform actions automatically in the learning process (Venkatesh et al., 2012). Based on this study on how students perceive a gamified approach to improving financial literacy, students who demonstrated a higher degree of automaticity in utilizing gamification techniques were more likely to have a stronger intention to engage with the gamified approach compared to students with lower levels of automaticity. In other words, behaviour refers to the use of technology based on knowledge, experience, and talents, allowing students to easily adapt to gamified approaches and improve their financial education. The study included behavioural components in this study because understanding UMK students' perceptions of gamification in financial education would assist a lot in preparing this study, and in this study would consider it helps with constructing the framework. Consequently, hypotheses were be formulated to demonstrate the relationship between independent and dependent variables.

H[7]: There was a positive relationship between behaviour and the perception of UMK students on gamification in financial education.

2.4 Hypotheses Statement

This study identified several hypotheses that derived from dependent variable and independent variables, which were:

Table 2.1: Summary of Hypotheses Development

H[1]	There was a positive relationship between performance expectancy and the perception of UMK students on gamification in financial education.
H[2]	There was a positive relationship between effort expectancy and the perception of UMK students on gamification in financial education.
H[3]	There was a positive relationship between social influence and the perception of UMK students on gamification in financial education.
H[4]	There was a positive relationship between facilitating conditions and the perception of UMK students on gamification in financial education.
H[5]	There was a positive relationship between hedonic motivation and the perception of UMK students on gamification in financial education.
H[6]	There was a positive relationship between price value and the perception of UMK students on gamification in financial education.
H[7]	There was a positive relationship between behavior and the perception of UMK students on gamification in financial education.

2.5 Conceptual Framework

This part focuses on the framework, which outlines the direction of the investigation and formulates hypotheses. With the goal to adhere to the established structure, this research examined seven hypotheses for validation. The conceptual framework was as follows:
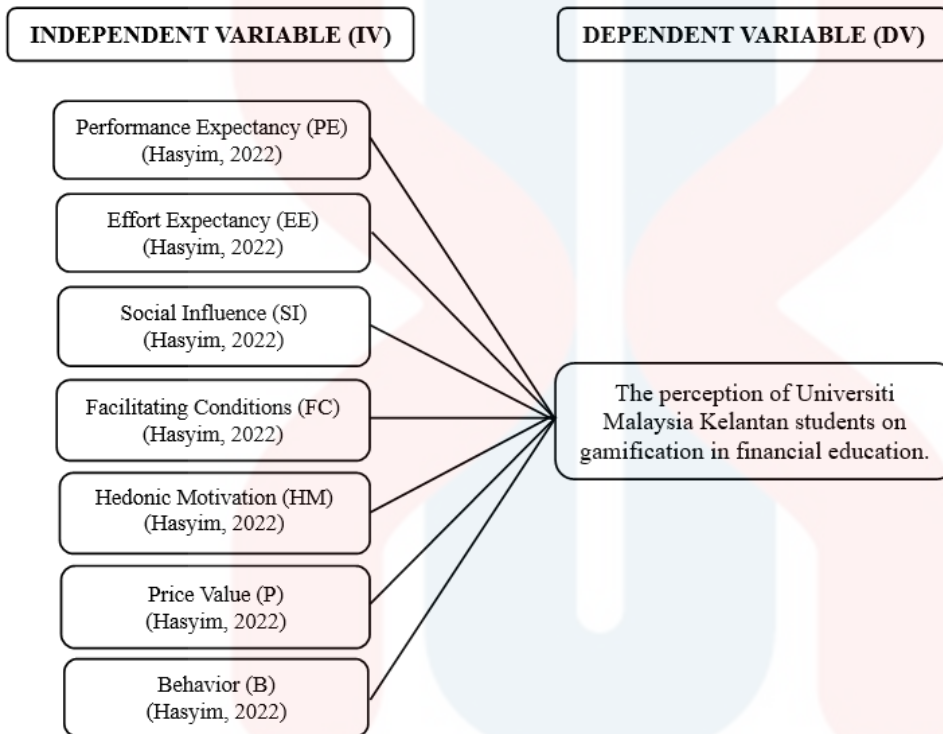
Figure 2.3: Conceptual Framework

2.6 Summary

This chapter focused on the ongoing study efforts of earlier of this study. It had given an overview about the literature on the study variables. UTAUT was the underpinning theory that had been used across the study about perception. The theoretical framework and hypotheses for this study were explained and developed in detail. The techniques employed and pilot test in this study would be explained in the next chapter.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The research model was evaluated using several approaches to determine its fit with the hypotheses and data gathering processes. This chapter provided an extensive examination of research design, sampling methodologies, questionnaire design and development, techniques for measuring variables and constructs, data collection methods, and statistical analysis techniques. The next part presents the outcomes of the pilot test and offers a summary of the chapter. The questionnaire functioned as the main data source for this quantitative investigation.

3.1 Introduction	→	3.2 Research Paradigm	→	3.3 Data Collection Methods	→	3.4 Population of Study
3.5 Sample Size	→	3.6 Sampling Technique	→	3.7 Research Instrument Development	→	3.8 Measurement of Variables
3.9 Procedure for Data Analysis	→	3.10 Pilot Test	→	3.11 Summary		
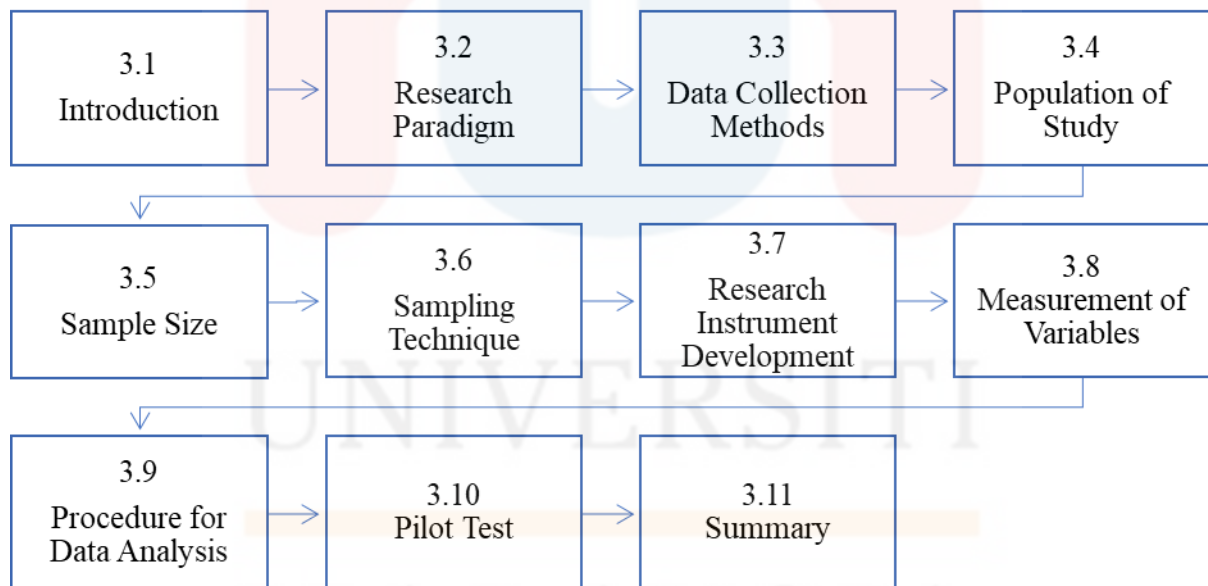
Figure 3.1: Outline for Research Methodology

3.2 Research Paradigm

Being able to understand and articulate our beliefs about the nature of reality, what we could learn about it, and the methods we used were important for this study. These components form the research paradigm. Methodology was one of the components of the paradigm used in this research. The specific steps or methods used to identify, select, process, and analyze information about the topic were described. The methodological section of the research article gave the reader the opportunity to assess the general validity and reliability of the study.

3.3 Data Collection Methods

The data for this study were collected utilizing a quantitative research methodology and a random sampling technique, with 382 undergraduate students from UMK representing various faculties and year groups participating in a structured questionnaire survey. The questionnaire aimed to investigate the connections between numerous variables such as performance expectation, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, behaviour, and students' perception of gamification in financial education.

3.4 Population of Study

This study focused on UMK undergraduate students, including three campuses: City, Bachok, and Jeli. However, this study targeted population based on faculty. The table below displays the registration data of active bachelor's degree students for the 2022/2023 session, categorized by program and semester of study pursuant to their respective majors. All data was obtained from the faculty office based on majors on the three campuses.

As stated on the table below, the total number of students registered at City Campus was 6,656 people obtained from the respective faculties. At Bachok Campus, the total number

of students for the FTKW, FAE and FBI courses was 2,579. Data for the FTKW and FAE courses was obtained from the faculty department, while for the FBI course, data was obtained via email from the faculty.

Likewise, for UMK Jeli, the number of students for the FIAT, FSB, and FBKT courses was 2,524. Data for the FBKT and FSB courses was obtained from the faculty department, while for the FIAT course, data was obtained via email from the faculty.

Table 3.1: Total number of UMK undergraduate students by faculty

CAMPUS	FACULTY	THE MAJOR	NUMBER OF STUDENTS
UMK BACHOK CAMPUS	Faculty of Creative Technology and Heritage (FTKW)	SCK	1065
		SCW	909
			1,974
	Faculty of Architecture and Eistics (FAE)	SGL	121
		SGA	120
		SGD	150
			391
	Faculty of Language Studies and Human Development (FBI)	SLB	156
		SLA	56
			214
TOTAL			**2,579**
UMK CITY CAMPUS	Faculty of Entrepreneurship and Business (FKP)	SAR	841
		SAK	816
		SAL	813

		SAL01	17
		SAB	822
		SAE	202
		SAA	124
			3,635
	Faculty of Hospitality, Tourism and Wellness (FHPK)	SAH	677
		SAS	684
		SAP	1,315
			2,676
	Faculty of Veterinary Medicine (FPV)	SDV	220
			220
	Faculty of Data Science and Computing (FSDK)	SST	125
			125
	TOTAL		**6,656**
UMK JELI CAMPUS	Faculty of Agro Based Industry (FIAT)	SBH	230
		SBL	246
		SBP	152
		SBF	250
			886
	Faculty of Earth Science (FSB)	SEN	268
		SEG	243
		SEL	132
		SES	183
			826

		SBT	292
Faculty of Bioengineering and Technology (FBKT)		SEB	260
		SEH	260
			812
TOTAL			**2,524**
TOTAL OF STUDENTS			**11,760**

3.5 Sample Size

The sample for this study was taken from UMK students, covering three campuses: City, Bachok, and Jeli. These sample sizes for the study were representative of the total population. As said by Krejcie and Morgan's (1970) user-friendly table for determining a population's sample size filled the existing gap. The sample size consisted of students from all three campuses, totalling 11,760 students. Pursuant Krejcie and Morgan's (1970), user-friendly table was for determining a population's sample size filled the existing gap. However, we obtained 382 respondents as a precaution in case of outliers in the data.

3.6 Sampling Techniques

Sampling facilitated the acquisition of precise data from a substantial number of samples taken from the target population. The objective of this research was to get a sample that precisely reflected the student population of UMK. Four scientific and systematic sampling strategies were identified for obtaining representative samples from the population: random, randomized, clustered, and purposive sampling methods. The research used simple random sampling procedures due to their superior suitability in comparison to other approaches. This was since the probability sampling process was often linked with quantitative research. It offers

the chance for every individual in the population to be chosen as a sample and is regarded as a representation of all the features found in this research population.

Before executing the probability sampling, this research first ascertained the population size. Subsequently, the sample size was established in accordance with the population. Respondents were picked using random selection by utilizing the sample list. The procedure of probability sampling proceeded as follows:

Figure 3.2: The Process of Probability Sampling

| Identify the target population which was UMK students. | → | Determine the sample size based on the Krejcie Morgan Table. | → | Choose a random sampling method of respondents. | → | Distribute the questionnaire to the sample. |
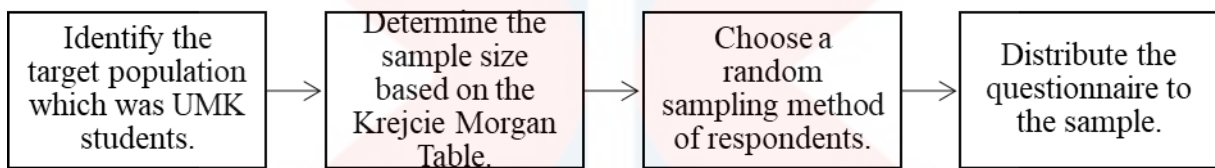
The questionnaire was distributed online through the Google Forms platform. The questionnaire was accessible and distributed for one month. This study used the WhatsApp application to distribute the questionnaire by sending a memo and a Google Form link. Participation in this questionnaire was voluntary, and responses were confidential. All information was kept confidential to ensure respondent privacy.

3.7 Research Instrument Development

An instrument was a tool used to gather the necessary data for addressing formulated research questions. In contrast, this study instrument referred to the process of briefly obtaining information through a single data collection. This study provided tools for administering surveys to ensure that respondents provided information consistent with the research questions. Consequently, this study opted for a questionnaire as the instrument to be used in this study. The collected data were analysed used the research methods which had been designed.

The major research instrument used in this study was a questionnaire comprising particular inquiries. Specifically, the tool used was a self-administered

questionnaire. The self-administered questionnaires included inquiries specifically formulated to collect data from participants, enabling them to independently complete the questionnaires without any involvement from the researcher throughout the data-collecting phase.

3.7.1 Questionnaire design

The primary approach used in this investigation was a questionnaire. The survey collected data from the individuals who completed it. The questionnaire consisted of three parts, namely Parts A, B, and C. The inquiries in Part A pertained to the demographic characteristics of the participants, including their gender, age, level of education, faculty, the significance of financial education, and experience with gamification. In addition to simple choice questions, there were also determinant choice questions, which presented respondents with many fixed alternative options. Section B included five inquiries to assess the dependent variable.

Then, in Section C of the inquiry questions, there were seven categories, each with at least five questions. It contained questions to measure independent variables, which were factors that influenced priority, namely effort expectancy, performance expectancy, social expectancy, facilitating expectancy, hedonic motivation, price value, and behaviour.

This research used the Likert 5-point scale in Sections B and C to assess the level of agreement or disagreement of the respondents with the statement. The Likert scale used a range of scores, ranging with a minimum score of 1 (indicating strong disagreement) and concluding with a high score of 5 (indicating strong agreement) (Mohamad Najib, 2003). A score of 2 indicated disagreement, a score of 3 indicated minor agreement, and a score of 4 indicated agreement. Previous research has shown that a 5-point scale gives responders higher quality feedback than a scale with less than 5 points.

It was also practical pursuant to the specifics of the study such as variables, limitations of questionnaire space, and the nature of the survey respondents (Preston & Colman, 2000; Revilla, Saris & Krosnick, 2014; Dawes, 2008). The assertion of the 5-point rating scale that researchers loved for public use in survey studies (Weijters, Cabooter & Schillewaert, 2010).

3.7.2 Validity

The reliability of the content was assessed to ensure that the questionnaire questions accurately measured the desired constructs and effectively captured the topic of interest in this research. Furthermore, it assessed the degree to which content capabilities aligned with measuring scales. The research relied on exploratory methods to examine the literature and validate the variables via expert evaluation. This research included two forms of content validation: expert and peer validation.

- Peer Validation

Peer assessment and feedback were widely used in network and face-to-face collaborative learning environments (Jan-Willem Strijbos., 2010). The use of Language or peer understanding was easier to understand. Therefore, this study provided questionnaires from past study sources that were collected and restructured to five peers. It was distributed to five peers among UMK students on November 6, 2023. They identified whether the questionnaire questions were comprehensible or not and collected for analysis.

- Expert Validation

Expert verification methods could check the understanding and verification of the questionnaire, determining whether it was able to address this study's objectives or not. It aims was to obtain relevant and reliable details or data in this study. Therefore, expert validation was also utilized in this study. Questionnaires collected from previous studies and peer validation were provided to an expert to be analysed and evaluated for their ease of understanding or

complexity. The expert, a lecturer at UMK, was given this task on 7 November 2023. Additionally, the expert also analysed and compared the questionnaire from previous studies with those from peer verification. The evaluator's expert view of the variable to be measured was essential, especially in providing input for improvement.

3.8 Measurement of Variables

Beginning with the studies of Galton and Binet, which measured individual abilities, the concept of evaluation had evolved to the point where several related terms, such as measurement, evaluation, and assessment, had emerged. This study utilized the measurement method, which involves obtaining a statistical description of an individual's characteristics. Typically, it involves assigning a numerical measurement to an individual's performance or opinion to reflect their experience and ability. The intent was to assess the extent to which individuals varied on study variables. In this study, the primary instrument of inquiry was the questionnaire. Hence, the questionnaire was employed ordinal scale methods for measuring variables.

3.8.1   Ordinal Scale

The ordinal scale was a measurement that helped to organize data from low to high or from weak to excellent, which was an arrangement that symbolizes a hierarchical form. It was simply sorted accordant to the hierarchy to symbolize the difference or position of an individual relative to another individual. For this ordinal scale, this study chooses a 5-point Likert scale to be used. It was a type of psychometric scale and was founded by organizational psychologist Rensis Likert. The Likert scale was often used to measure the attitudes, opinions, and perceptions of a group of individuals from the population related to the research subject (Sugiyono, 2014) by letting them express their agreement or disagreement with the stated

statement. Therefore, Part B contains 5 questions to measure the dependent variable which was financial literacy. Then Part C contains questions to measure independent variables which were factors that influence preferences such as effort expectations, performance expectations, social expectations, facilitation expectations, hedonic motivation, price value, and behaviour.

3.9 Procedure for Data Analysis

There were two possible approaches to analysing the respondents' data. The initial method was referred to as qualitative data analysis, while another approach was called quantitative data analysis. However, considering our findings, this study deliberately chose a quantitative methodology to analyse the data. Therefore, all data obtained were analysed used the Statistical Package for Social Science (SPSS) Version 29 to see and assess the statistics of UMK students' perceptions of gamification in financial education. The decision to use SPSS for data analysis in the research was based on its extensive adoption in academic and commercial domains, rendering it the predominant software in its category (Daniel Arkkelin, 2014). SPSS applications included several methodologies for data analysis. However, this research used a limited range of analytical methods, including descriptive analysis, reliability tests, and Pearson's correlation coefficient, to accomplish its aims.

3.10 Pilot Test

The pilot test used Cronbach's alpha approach to assess the reliability of the test. A Cronbach's alpha coefficient ranging from 0.6 to 0.9 was chosen as an adequate scale for evaluating confidence in testing. A preliminary test was done with 33 participants using Google Forms, while 382 individuals were invited to participate in the full field research. The survey for this pilot test was given for a duration of just 3 days, from the 13th of November to the 15th of November 2023. Nevertheless, the test findings were used to verify the authenticity of the

variables. The Cronbach's alpha scale findings may be referenced in Table 3.2 to identify the most suitable standards for conducting reliability testing.

Table 3.2: Scale of Cronbach's Alpha.

No.	Scale	Internal Consistency
1	$\alpha \geq 0.9$	Excellent
2	$0.9 > \alpha \geq 0.8$	Good
3	$0.8 > \alpha \geq 0.7$	Acceptable
4	$0.7 > \alpha \geq 0.6$	Questionable
5	$0.6 > \alpha \geq 0.5$	Poor
6	$0.5 > \alpha$	Unacceptable

Source: Adapted from Chua et al. (2020)

3.10.1 Reliability Test for Pilot Test

Table 3.3: Reliability Analysis for Pilot Test.

No.	Variables	Cronbach's Alpha	No. of Items	Level of Reliability
1	Perception	0.844	5	Good
2	Performance Expectancy	0.839	5	Good
3	Effort Expectancy	0.878	5	Good
4	Social Influence	0.882	5	Good
5	Facilitating Conditions	0.747	5	Acceptable
6	Hedonic Motivation	0.881	5	Good
7	Price Value	0.891	5	Good

| 8 | Behaviour | 0.935 | 5 | Excellent |

Based on Table 3.3, the reliability test results were determined through Cronbach's alpha. The dependent variable shows a value of 0.844, indicating a good level of reliability in the measurement (Chua et al., 2020). In addition, the dependent variable related to behaviour showed an excellent level of reliability, with a Cronbach's alpha of 0.935. Regarding performance expectancy, effort expectancy, social influence, hedonic motivation, and price value all showed strong reliability with Cronbach's alpha values of 0.839, 0.878, 0.882, 0.881, and 0.891, respectively. These results indicate good internal consistency in the measurement of each variable. However, the reliability test for facilitating conditions produced a Cronbach's alpha of 0.747, indicating an acceptable level of reliability. Although slightly lower than the other variables, this still suggests reasonable internal consistency in the measurement to simplify the situation (Chua et al., 2020).

3.11 Summary

Chapter 3 provides an overview of the methodology used to align with the objectives of this research. Employing the appropriate methodology facilitates accomplishing the established goals in this research. It might also be seen as a first phase of planning, determining the route research will follow and whether it leads to success. This research aimed to assess students' opinions of gamification strategies in financial education. The findings revealed a beneficial influence on the students. In this chapter's conclusion, all research elements should be readily applied in future research.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter aimed to analyze the data obtained from the 382 questionnaires that were delivered. Surveys were delivered at all three UMK campuses, including Kota, Bachok, and Jeli. Subsequently, the acquired data was scrutinized using SPSS Version 29. The chapter starts by providing a detailed examination of the demographic characteristics of the participants, including variables such as gender, age, academic year, faculty, their perception of the importance of financial education, and their level of familiarity with gamification in financial education. The subsequent part encompasses assessments of validity and reliability, tests for normality, examination of Pearson's correlation coefficient, and hypothesis testing, and concludes with a concise summary of the chapter.
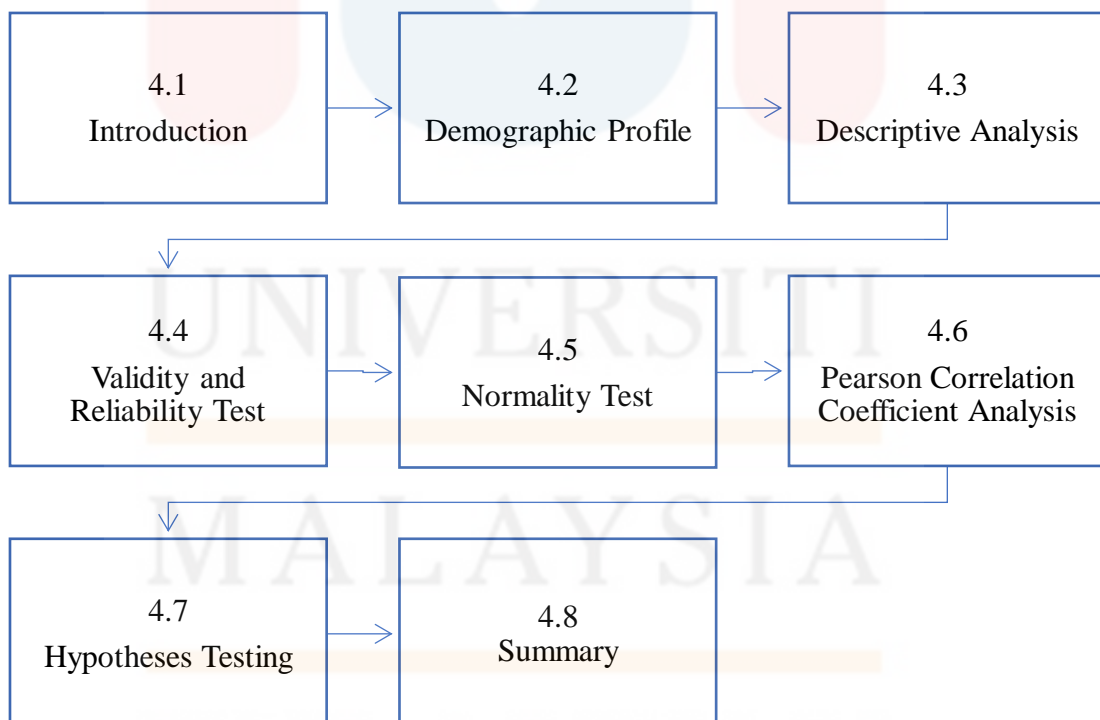
Figure 4.1: Outline for Data Analysis and Findings

4.2 Demographic Profile of Respondents

Questionnaires were distributed to all undergraduate students at UMK. Based on the questionnaires provided, six questions were included, covering gender, age, year of study, faculty, the perceived importance of financial education, and familiarity with gamification in financial education.

4.2.1 Number of Respondents based on Gender.

Table 4.1: Demographic Data; Gender

No.	Descriptions	Frequency	Percentage
1	Female	253	66.2
	Male	129	33.8
	Total	**382**	**100.0**

In the gender demographic data presented in Table 4.1, a total of 382 respondents were surveyed. The result show that 253 respondents was female, representing 66.2%. While 129 respondents were male, accounting for 33.8%. In conclusion, respondents from different UMK campuses were dominated by female.

4.2.2 Number of Respondents based on Age.

Table 4.2: Demographic Data; Age

No.	Descriptions	Frequency	Percentage
2	18 - 20 Years	63	16.5
	21 – 23 Years	232	60.7
	24 – 26 Years	85	22.3

27 Years Old and Above		2	0.5
Total		**382**	**100.0**

Table 4.2 indicates a detailed breakdown of the surveyed respondents based on age. Most respondents fell within the 21-23 years range, with a frequency of 232 respondents with 60.7% of the entire sample. While the 24-26 years range accounted for 85 respondents or 22.3%. Following that, the 18-20 years age group represented 16.5% comprise of 63 respondents. Remarkably, a small percentage of respondents which was 0.5% with a frequency of two respondents, consisted of individuals aged 27 years and above.

4.2.3 Number of Respondents based on Years of Study.

Table 4.3: Demographic Data; Years of Study

No.	Descriptions	Frequency	Percentage
3	1	60	15.7
	2	41	10.7
	3	68	17.8
	4	213	55.8
	Total	**382**	**100.0**

Table 4.3 provided a detailed overview of the surveyed participants based on years of study, revealing the frequency and percentage distribution among the study population. The largest group consisted of participants in their fourth year, with a frequency of 213, making up 55.8% of the total sample. The third-year students were closely followed by 68 responders, indicating 17.8%. Meanwhile, the first-year students account for 60, or 15.7%. While second-year students comprise of 41 respondents accounting for 10.7%.

4.2.4 Number of Respondents based on Faculty.

Table 4.4: Demographic Data; Faculty

No.	Descriptions	Frequency	Percentage
4	FBI	11	2.9
	FBKT	20	5.2
	FHPK	30	7.9
	FIAT	25	6.5
	FKP	229	59.9
	FPV	8	2.1
	FSB	24	6.3
	FSDK	11	2.9
	FAE	8	2.1
	FTKW	16	4.2
	Total	**382**	**100.0**

Table 4.4 shows the demographic data illustrating the distribution of participants across various faculties. FKP stood out as the most prevalent group, constituting the majority with a frequency of 229, accounting for 59.9% of the total sample. Following that, FHPK represents 7.9% comprise of 30 respondents, FIAT with 25 respondents (6.5%), FSB with 24 respondents (6.3%), and FBKT with 20 respondents or 5.2%. The comprehensive breakdown further highlighted the involvement of FTKW with 16 respondents, accounting to 4.2%. FBI and FSDK shared the same frequency, compromising 11 respondents, representing 2.9% of the total sample. Similarly, FPV and FAE also share the same frequency which was eight respondents each with the percentage of 2.1%.

4.2.5 Number of Respondents based on Importance of Financial Education.

Table 4.5: Demographic Data; Importance of Financial Education

No.	Descriptions	Frequency	Percentage
5	Is financial education important to you?		
	No	3	0.8
	Yes	379	99.2
	Total	**382**	**100.0**

Upon examining the significance of financial education, as shown in Table 4.5, the above statistics reveal that respondents, namely 379 individuals or 99.2%, replied affirmatively to the questionnaire. Conversely, a mere 0.8% or three participants responded negatively, suggesting they did not consider financial education vital.

4.2.6 Number of Respondents based on Familiarity with Gamification in Financial Education.

Table 4.6: Demographic Data; Familiarity with Gamification in Financial Education.

No.	Descriptions	Frequency	Percentage
6	Are you familiar with gamification in financial education?		
	No	107	28.0
	Yes	275	72.0
	Total	**382**	**100.0**

Table 4.6 shows whether a total of 382 respondents familiar with gamification in financial education or not. A significant majority, comprising 72.0% of the participants answered "yes", affirming that they were familiar with gamification in financial education, with a corresponding frequency of 275 respondents. In contrast, 28.0% of respondents

answered "no", indicating that they were not familiar with gamification in financial education, accounting for 107 respondents.

4.3 Descriptive Analysis

In this section, this study discussed the descriptive analysis in this study. This study explains the mean and standard deviation for each variable. By used the 5-Likert Scale, this study could assess the respondents' responses.

Table 4.7: The 5-Point Scale Interpretation

SCALE	MEAN SCORE RANGE	MEAN RATING	FURTHER INTERPRETATION
5	4.21 – 5.00	Strongly Agree	Very Positive
4	3.41 – 4.20	Agree	Positive
3	2.61 – 3.40	Slightly Agree	Moderate
2	1.81 – 2.60	Disagree	Negative
1	1.00 – 1.80	Strongly Disagree	Very Negative

Source: Adopted from Onyeabor et al. (2023)

4.3.1 Descriptive Analysis for Dependent Variable

Table 4.8: The Perception on Gamification in Financial Education

No	Descriptions	N	Mean	Std. Deviation
1	A gamification approach increases my interest in finance.	382	4.17	0.823
2	A gamification approach combination into the financial platform helped me to understand the financials better.	382	4.16	0.823
3	A gamification approach motivates learning to improve my financial knowledge.	382	4.30	0.769
4	A gamified approach in finance becomes more effective if communicate more with my friends.	382	4.15	0.826
5	Gamification approaches were fun.	382	4.25	0.823

Table 4.8 discussed students' perceptions of gamification in financial education. The table above showed that the mean score for "A gamification approach motivates learning to improve my financial knowledge" was 4.30, interpreted as very positive (Onyeabor et al., 2023). This indicated that the respondents agree that gamification could motivated them to learn about finance. Meanwhile, the mean score for "A gamified approach in finance becomes more effective if more communicated with my friends" was 4.15, representing the lowest mean value but could still interpreted as a positive variable (Onyeabor et al., 2023). This suggested that respondents slightly agree that the approach was more effective when shared with their friends, indicating the importance of social interaction in learning.

4.3.2 Descriptive Analysis for Independent Variables

Table 4.9: Performance Expectancy

No	Descriptions	N	Mean	Std. Deviation
1	I can enhance my learning efficiency in finance through a gamified approach.	382	4.19	0.756
2	I can improve my understanding of financial education by using a gamified approach.	382	4.18	0.846
3	I can manage my finances more effectively by using a gamified approach.	382	4.16	0.879
4	I find a gamified approach more beneficial for improving my financial knowledge compared to other methods.	382	4.12	0.792
5	I believe my financial performance through a gamified approach will be better.	382	4.21	0.791

Table 4.9 showed the mean value for performance expectancy. The highest mean score was associated with the statement "I believe my financial performance through a gamified approach will be better" scoring 4.21, indicating a very positive outlook (Onyeabor et al., 2023). The respondents agree that gamification positively influenced their financial performance. In contrast, the lowest mean score but still interpreted as positive was "I find a gamified approach more beneficial for improving my financial knowledge compared to other methods" scoring 4.12 (Onyeabor et al., 2023). The students did not agree that only gamification method could help them understand finance, not strongly as the belief in its impact on financial performance.

Table 4.10: Effort Expectancy

No	Descriptions	N	Mean	Std. Deviation
1	I find it easy to access information about financial knowledge through gamification.	382	4.15	0.827
2	I find learning finances through gamification was easy.	382	4.26	0.821
3	I think it was easy to use gamification in financial education.	382	4.20	0.817
4	I had a clear understanding of how gamified financial education works.	382	4.07	0.877
5	I am confident in my ability to apply gamified techniques to enhance my financial knowledge.	382	4.16	0.830

Table 4.10 presented an analysis of effort expectancy in the context of gamifying financial education. The statement "I find learning finances through gamification was easy" had the highest average score of 4.26, indicating a very positive perspective (Onyeabor et al., 2023). This suggested that the implementation of gamification undoubtedly enhanced the learning process by increasing engagement and enjoyment, contributing to their pleasant experience. In contrast, the statement "I had a clear understanding of how gamified financial education works" had the lowest mean score of 4.07 but still held on the positive level (Onyeabor et al., 2023). This implied that although they found gamified financial education beneficial for learning, they might had encountered certain aspects of its functioning that were less comprehensible to them in compared to other components of the learning experience.

Table 4.11: Social Influence

No	Descriptions	N	Mean	Std. Deviation
1	I am motivated to explore gamified techniques for learning about finances if my peers recommend it.	382	4.13	0.801
2	I am likely to use gamification in financial education due to recommendations from influential people.	382	4.19	0.770
3	I have a positive attitude toward the use of gamification in financial education.	382	4.23	0.805
4	I believe that lecturers support the integration of gamified financial education for learning financial concepts.	382	4.15	0.823
5	I highly value the opinions of people who prefer using gamified financial education.	382	4.30	0.757

Table 4.11 provided valuable insights into students' perception when examining social influence on gamification in financial education. The statement "I highly value the opinions of people who prefer using gamified financial education" got a mean score of 4.30, suggesting a very positive viewpoint pursuant to Onyeabor et al. (2023). These findings indicated that the participants valued the viewpoints of individuals who supported the gamification approach. However, the statement "I am motivated to explore gamified techniques for learning about finances if my peers' recommend it" scoring 4.13, indicated a positive viewpoint (Onyeabor et al., 2023). From the perspective of some respondents, they might had thought that peers did not significantly influence them to use gamification approach.

Table 4.12: Facilitating Conditions

No	Descriptions	N	Mean	Std. Deviation
1	I can implement gamification in financial education with the resources I have.	382	4.09	0.829
2	I can readily seek help from others when facing challenges with this gamified approach.	382	4.10	0.853
3	I have the technical proficiency to apply gamification techniques in the realm of financial education.	382	4.10	0.848
4	I am capable of enhancing financial knowledge by employing a gamified approach.	382	4.17	0.829
5	I believe a good internet connection and signal were essential for using a gamification technology in financial education.	382	4.23	0.814

Examining students' perspectives on the impact of facilitating conditions, Table 4.12 presented the highest mean score of 4.23 for statement "I believe a good internet connection and signal were essential for using a gamification technology in financial education". As said by Onyeabor et al. (2023), the score gave a very positive impact on students' perception to use gamification. Indicating that a connection and signal would made them more motivated to use this approach. In contrast, the statement "I can implement gamification in financial education with the resources I have" received a positive yet the lowest mean score of 4.09. This implied that while they had a positive inclination towards the concept of incorporating gamification in financial education, there might had been certain concerns or obstacles related to the existing resources for its actual execution.

Table 4.13: Hedonic Motivation

No	Descriptions	N	Mean	Std. Deviation
1	I find utilizing gamification in financial education very engaging.	382	4.19	0.788
2	I find using gamified technology very entertaining.	382	4.30	0.810
3	I think using gamification in financial education was fun.	382	4.24	0.788
4	I think gamification can make finance subjects more enjoyable.	382	4.20	0.855
5	I believe using gamification was beneficial to learn about finances.	382	4.30	0.798

Table 4.13 revealed the data for hedonic motivation. There were two statements that got the same mean scores which was 4.30 (very positive) but with different standard deviation. The statement "I believe using gamification was beneficial to learn about finances" indicated better reliability which a standard deviation of 0.798. The high score indicated that most participants viewed the gamified method to be useful and beneficial in the context of financial education. Meanwhile, the statement "I find utilizing gamification in financial education very engaging" had a positive mean score (Onyeabor et al., 2023) but on the lowest score which was 4.19. These indicates that some aspects needed to be improved to made it more engaging for the students.

Table 4.14: Price value

No	Descriptions	N	Mean	Std. Deviation
1	I am willing to use a gamification approach to improve my financial knowledge if it was free.	382	4.18	0.872
2	I am dedicated to invest in gamification technologies to enhance my financial education	382	4.14	0.880
3	I think the gamification used in financial education offers good value for the money.	382	4.13	0.821
4	I think the subscription fee charged for gamification technology was reasonable	382	4.15	0.882
5	I believe that gamification in financial education offers good value in the market.	382	4.15	0.813

From Table 4.14 which provided the data of the students' viewpoint on the impact of price value on gamification inf financial education. The highest mean score was 4.18 (positive) with the statement "I am willing to use a gamification approach to improve my financial knowledge if it was free". It showed the willingness and positive sentiment of students to use gamification approach if they were accessible without any cost. While for the statement "I think the gamification used in financial education offers good value for the money" got the lowest mean score of 4.13 but still on the positive level (Onyeabor et al., 2023). Even though the participants' perspective on gamification approach was strongly positive, but there might had been a lower perception of its value for the money compared to other aspects on gamification.

Table 4.15: Behaviour

No	Descriptions	N	Mean	Std. Deviation
1	I feel positive when using gamification in financial education.	382	4.08	0.855
2	I feel consistent with involvement in the gamification of financial education.	382	4.17	0.866
3	I consider using gamification as a part of my financial learning journey.	382	4.15	0.844
4	I consider gamification an indispensable part of my financial knowledge improvement.	382	4.19	0.779
5	I can develop a behaviour of using gamification for improving my financial literacy.	382	4.17	0.788

The dataset in Table 4.15 revealed the students' opinion on the impact on behaviour to use gamification in financial education. With a mean score of 4.19, the statement "I consider gamification an indispensable part of my financial knowledge improvement" indicated a positive interpretation (Onyeabor et al., 2023). This illuminates that student viewed gamification as crucial in their learning in enhancing their financial knowledge. In contrast, the statement "I consider using gamification as a part of my financial learning journey" received a mean score of 4.15 with the interpretation of positive value (Onyeabor et al., 2023). It indicated that students still expressed a positive view on gamification.

4.4 Validity and Reliability Test

Table 4.16: Cronbach's Alpha Interpretation

CRONBACH'S ALPHA	INTERNAL CONSISTENCY
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: Hassan et al. (2022)

The most prevalent method used to assess survey internal consistency and reliability was Cronbach's Alpha. Scale reliability was measured by this metric's 0 to 1 correlation. Alpha values below 0.6 were considered indicative of unreliable findings. In the research of Hassan et al. (2022), the criteria for Cronbach's Alpha calculation helped test this study's hypotheses, specifically focusing on whether the independent and dependent variables were accepted. This methodology facilitated hypothesis testing and recognition of variable measurement consistency. The result needed to be above the 0.6 threshold for approval, signifying the study's trustworthiness.

Table 4.17: Cronbach's Alpha Interpretation for Variables

Variables	Cronbach's Alpha Value	N of Items	Strength
Perception (S)	.892	5	Good
Performance Expectancy (PE)	.900	5	Good
Effort Expectancy (EE)	.901	5	Excellent
Social Influence (SI)	.902	5	Excellent
Facilitating Conditions (FC)	.896	5	Good
Hedonic Motivation (HM)	.911	5	Excellent
Price value (PV)	.898	5	Good
Behaviour (B)	.926	5	Excellent

According to the data in Table 4.17, Cronbach's alpha value for perception was 0.892, suggesting that 89.2% of the questions used to measure the dependent variables were reliable. The Cronbach's Alpha value of 0.892 was slightly lower than the coefficient alpha value of 0.90, indicating a high level of reliability for the independent variables used to explain the dependent variable.

The Cronbach's alpha coefficient for performance expectancy was 0.900, indicating that 90.0% of the questions used to measure the dependent variables were trustworthy. Furthermore, Cronbach's alpha coefficient for the effort expectancy was calculated to be 0.901, suggesting that 90.1% of the questions used in this research to assess the dependent variables were deemed trustworthy. Given that Cronbach's Alpha score exceeded the coefficient alpha of 0.90 by 0.001, it was considered to possess exceptional dependability. The Cronbach's alpha coefficient for the social influence variable was 0.902. The research demonstrated that 90.2% of the questions used to assess the dependent variables exhibited reliability. With a Cronbach's Alpha score of 0.902, which is higher than the coefficient alpha of 0.90, the dependability of the data may be classed as outstanding.

The Cronbach's alpha coefficient for facilitating conditions was determined to be 0.896, as shown in Table 4.17 above. The research showed that 89.6% of the questions used to assess the dependent variables were found to be trustworthy. The Cronbach's Alpha value of 0.892 was found to be slightly lower than the coefficient alpha value of 0.90, indicating a high level of reliability for the independent variables used to explain the dependent variable. The Cronbach's alpha coefficient for hedonic motivation was 0.911, indicating that 91.1% of the questions used in this research to measure the dependent variable were trustworthy. The Cronbach's Alpha score of 0.911 exceeded the coefficient alpha of 0.90, indicating a high level of reliability for the four independent variables used to explain the dependent variable.

According to the data in table 4.17, the Cronbach's alpha coefficient for the price value was 0.898. The research demonstrated that 89.8% of the questions used to assess the dependent variables were considered credible. The Cronbach's alpha for behaviour was 0.926. The research showed that 92.6% of the questions used to assess the dependent variables were found to be reliable. The Cronbach's Alpha score of 0.926 exceeded the coefficient alpha of 0.90, indicating outstanding dependability.

4.5 Normality Test

Table 4.18 presented the result of the normality test, encompassing skewness and kurtosis statistics, standard error, and mean for each variable. The aim of this test was to ascertain whether the sample data was normally distributed or not.

Table 4.18: Skewness and Kurtosis

No.	Variables	Mean	Skewness		Kurtosis	
			Statistics	Std. Error	Statistics	Std. Error
1	Perception	4.2052	-0.515	0.125	-0.493	0.249
2	Performance Expectancy	4.1723	-0.432	0.125	-0.649	0.249
3	Effort Expectancy	4.1681	-0.683	0.125	0.335	0.249
4	Social Influence	4.2000	-0.547	0.125	-0.398	0.249
5	Facilitating Conditions	4.1377	-0.439	0.125	-0.380	0.249
6	Hedonic Motivation	4.2455	-0.756	0.125	0.164	0.249
7	Price Value	4.1476	-0.572	0.125	-0.389	0.249
8	Behaviour	4.1534	-0.555	0.125	-0.380	0.249

Table 4.18 displayed the results of the dependent variable which was perception, and the dependent variables, including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behaviour. Given that, the sample size exceeded 300, with a total of 382, the appropriate normality test utilized Skewness and Kurtosis, where numerical data analysis was employed for interpret the data. According to Mishra et al. (2019), the sample size surpasses 300, normality of the data could be assessed through graphical means (histogram, steam-and-leaf plot) or numerical/statistical means, i.e. -

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2 and +2 were used to determine large normality. Looking at the skewness table, the statistical values for all variables range from -0.432 to -0.756. Meanwhile, the kurtosis value ranges from 0.164 to -0.649. Looking at the range, both statistical values fell within the -2 to +2, indicating that the data distribution was normal.

4.6 Pearson Correlation Coefficient Analysis

This section shows the results of the correlation test for the variables. Correlation tests was performed to identify the strength and direction of the relationship through the correlation coefficient whether strong or weak and positive or negative. It was suitable for identifying the relationship between dependent variable and independent variables to achieve the objective of this study. Table 4.19 shows the interpretation of the positive or negative sign of the correlation coefficient value and it determines the direction of the variable relationship.

Table 4.19: Interpretation of The Correlation Coefficient.

Size of Correlation	Interpretation
±0.91 to ±1.00	Very Strong Positive/Negative Correlation.
±0.71 to ±0.90	Strong Positive/Negative Correlation.
±0.41 to ±0.70	Moderate Positive/Negative Correlation.
±0.21 to ±0.40	Weak Positive/Negative Correlation.
±0.20 to ±0.10	Very Weak Positive/Negative Correlation.

Sources: Hair et. al. (2010)

4.6.1 Correlation between Performance Expectancy and Perception on Gamification in Financial Education

Table 4.20: Relationship Between Performance Expectancy and Perception.

Variables	Items	P	PE
Perception (S)	Pearson Correlation	1	.874**
	Sig. (2-tailed)		.000
	N	382	382
Performance Expectancy (PE)	Pearson Correlation	.874**	1
	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.20 shows the relationship between performance expectancy and the perception of University Malaysia Kelantan students on gamification in financial education. As an outcome of the significant value $P < 0.01$, there was a statistically significant relationship between performance expectancy and perception towards gamification. The value of the correlation coefficient was 0.874 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The performance expectancy, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.2 Correlation between Effort Expectancy and Perception on Gamification in Financial Education

Table 4.21: Relationship Between Effort Expectancy and Perception.

Variables	Items	P	EE
	Pearson Correlation	1	.849**
Perception (S)	Sig. (2-tailed)		.000
	N	382	382
	Pearson Correlation	.849**	1
Effort Expectancy (EE)	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.21 shows the relationship between effort expectancy and the perception of University Malaysia Kelantan students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between effort expectancy and perception toward gamification. The value of the correlation coefficient was 0.849 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The effort expectancy, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.3 Correlation between Social Influence and Perception on Gamification in Financial Education

Table 4.22: Relationship Between Social Influence and Perception.

Variables	Items	P	SI
Perception (S)	Pearson Correlation	1	.845**
	Sig. (2-tailed)		.000
	N	382	382
Social Influence (SI)	Pearson Correlation	.845**	1
	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.22 shows the relationship between social influence and the perception of University Malaysia Kelantan students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between social influence and perception towards gamification. The value of the correlation coefficient was 0.845 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The social influence, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.4 Correlation between Facilitating Conditions and Perception on Gamification in Financial Education

Table 4.23: Relationship Between Facilitating Conditions and Perception.

Variables	Items	P	FC
	Pearson Correlation	1	.836**
Perception (S)	Sig. (2-tailed)		.000
	N	382	382
	Pearson Correlation	.836**	1
Facilitating Conditions (FC)	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.23 shows the relationship between facilitating conditions and the perception of UMK students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between facilitating conditions and perception towards gamification. The value of the correlation coefficient was 0.836 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The facilitating conditions, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.5 Correlation between Hedonic Motivation and Perception on Gamification in Financial Education

Table 4.24: Relationship Between Hedonic Motivation and Perception.

Variables	Items	P	HM
Perception (S)	Pearson Correlation	1	.846**
	Sig. (2-tailed)		.000
	N	382	382
Hedonic Motivation (HM)	Pearson Correlation	.846**	1
	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.24 shows the relationship between hedonic motivation and the perception of UMK students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between hedonic motivation and perception towards gamification. The value of the correlation coefficient was 0.846 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The hedonic motivation, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.6 Correlation between Price value and Perception on Gamification in Financial Education

Table 4.25: Relationship Between Price value and Perception.

Variables	Items	P	P
	Pearson Correlation	1	.792**
Perception (S)	Sig. (2-tailed)		.000
	N	382	382
	Pearson Correlation	.792**	1
Price Value (PV)	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.25 shows the relationship between price value and the perception of UMK students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between price value and perception towards gamification. The value of the correlation coefficient was 0.792 indicating the value fell under the alpha coefficient range of 0.70 to 0.90. The price value, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.6.7 Correlation between Behavior and Perception on Gamification in Financial Education

Table 4.26: Relationship Between Behaviour and Perception.

Variables	Items	P	B
Perception (S)	Pearson Correlation	1	.813[**]
	Sig. (2-tailed)		.000
	N	382	382
Behavior (B)	Pearson Correlation	.813[**]	1
	Sig. (2-tailed)	.000	
	N	382	382

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

Table 4.26 shows the relationship between behavior and the perception of UMK students on gamification in financial education. As an outcome of the significant value $P<0.01$, there was a statistically significant relationship between behavior and perception towards gamification. The value of the correlation coefficient was 0.813 indicating the value fell under the alpha coefficient range of 0.71 to 0.90. The behavior, which was an independent variable, had a positive relationship with the perception based on the results shown above. Hence, it proved a strong positive correlation in line with the interpretation of the correlation coefficient Hair et. al. (2010).

4.7 Hypotheses Testing

There were seven hypotheses that had been tested in this study:

4.7.1 Performance Expectancy (Hypotheses 1)

Table 4.27: Hypotheses; Performance Expectancy

Hypotheses	Statement
H^0	There was no relationship between performance expectancy and the perception of UMK students on gamification in financial education.
H^1	There was a relationship between performance expectancy and the perception of UMK students on gamification in financial education.

Table 4.20 revealed a significant correlation between UMK students' perceptions of gamification in financial education and performance expectations. The p-value (0.000) and significant value (0.01) were shown between performance expectancy and perception. Since p-value (0.000) < H^1 (0.01), the null hypothesis (H^0) was rejected and hypothesis 1 (H^1) was accepted (Table 4.27).

4.7.2 Effort Expectancy (Hypotheses 2)

Table 4.28: Hypotheses; Effort Expectancy

Hypotheses	Statement
H^0	There was no relationship between effort expectancy and the perception of UMK students on gamification in financial education.
H^2	There was a relationship between effort expectancy and the perception of UMK students on gamification in financial education.

Table 4.21 revealed a significant correlation between UMK students' perceptions of gamification in financial education and effort expectations. The p-value (0.000) and significant value (0.01) were shown between effort expectancy and perception. Since p-value (0.000) < H^2 (0.01), the null hypothesis (H^0) was rejected, and hypothesis 2 (H^2) was accepted (Table 4.28)..

4.7.3 Social Influence (Hypotheses 3)

Table 4.29: Hypotheses; Social Influence

Hypotheses	Statement
H^0	There was no relationship between social influence and the perception of UMK students on gamification in financial education.
H^3	There was a relationship between social influence and the perception of UMK students on gamification in financial education.

Table 4.22 revealed a significant correlation between UMK students' perceptions of gamification in financial education and social influence. The p-value (0.000) and significant value (0.01) were shown between social influence and perception. Since p-value (0.000) < H^3 (0.01), the null hypothesis (H^0) was rejected, and hypothesis 3 (H^3) was accepted (Table 4.29).

4.7.4 Facilitating Conditions (Hypotheses 4)

Table 4.30: Hypotheses; Facilitating Conditions

Hypotheses	Statement
H^0	There was no relationship between facilitating conditions and the perception of UMK students on gamification in financial education.
H^4	There was a relationship between facilitating conditions and the perception of UMK students on gamification in financial education.

Table 4.23 revealed a significant correlation between UMK students' perceptions of gamification in financial education and facilitating conditions. The p-value (0.000) and significant value (0.01) were shown between facilitating conditions and perception. Since p-value (0.000) < H^4 (0.01), the null hypothesis (H^0) was rejected, and hypothesis 4 (H^4) was accepted (Table 4.30).

4.7.5 Hedonic Motivation (Hypotheses 5)

Table 4.31: Hypotheses; Hedonic Motivation

Hypotheses	Statement
H^0	There was no relationship between hedonic motivation and the perception of UMK students on gamification in financial education.
H^5	There was a relationship between hedonic motivation and the perception of UMK students on gamification in financial education.

Table 4.24 revealed a significant correlation between UMK students' perceptions of gamification in financial education and hedonic motivation. The p-value (0.000) and significant value (0.01) were shown between hedonic motivation and perception. Since p-value (0.000) <

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H^5 (0.01), the null hypothesis (H^0) was rejected, and hypothesis 5 (H^5) was accepted (Table 4.31).

4.7.6   Price Value (Hypotheses 6)

Table 4.32: Hypotheses; Price value

Hypotheses	Statement
H^0	There was no relationship between price value and the perception of Universiti UMK on gamification in financial education.
H^6	There was a relationship between price value and the perception of Universiti UMK on gamification in financial education.

Table 4.25 revealed a significant correlation between UMK students' perceptions of gamification in financial education and price value. The p-value (0.000) and significant value (0.01) were shown between price value and perception. Since p-value (0.000) < H^6 (0.01), the null hypothesis (H^0) was rejected, and hypothesis 6 (H^6) was accepted (Table 4.32).

4.7.7   Behavior (Hypotheses 7)

Table 4.33: Hypotheses; Behaviour

Hypotheses	Statement
H^0	There was no relationship between behaviour and the perception of UMK students on gamification in financial education.
H7	There was a relationship between behaviour and the perception of UMK students on gamification in financial education.

Table 4.26 revealed a significant correlation between UMK students' perceptions of gamification in financial education and behaviour. The p-value (0.000) and significant value (0.01) were shown between behaviour and perception. Since p-value $(0.000) < H^7 (0.01)$, the null hypothesis (H^0) was rejected, and hypothesis 7 (H^7) was accepted (Table 4.33).

4.8 Summary

This chapter used many statistical techniques, including frequency statistics, reliability statistics, descriptive statistics, correlation statistics, and hypothesis testing. Based on the results of the reliability research, all the independent variables demonstrated high levels of dependability. Moreover, the descriptive statistics indicated a strong preference for the gamified approach in the variables. This choice could be accountable for the overall score of the complete population, as well as the mean and standard deviation. The average score was about 4, suggesting a high consistency corresponding to connections. Both the independent and dependent variables demonstrated normality thereafter. Hence, correlation analysis was used to determine the extent and nature of the relationship between the independent and dependent variables. The independent variables had a strong positive association with the dependent variable, which is the impression of the gamified method. The acquired results definitively proved this connection. Chapter 5 included the presentation and analysis of the findings, discussions, implications, limitations, and recommendations.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter focused on summarizing all the discussion above. The chapter contained an introduction, followed by findings, discussion, implications of the study, limitations of the study, and recommendation or suggestion for future research. Overall, Chapter 5 would provide a clear picture of this study.
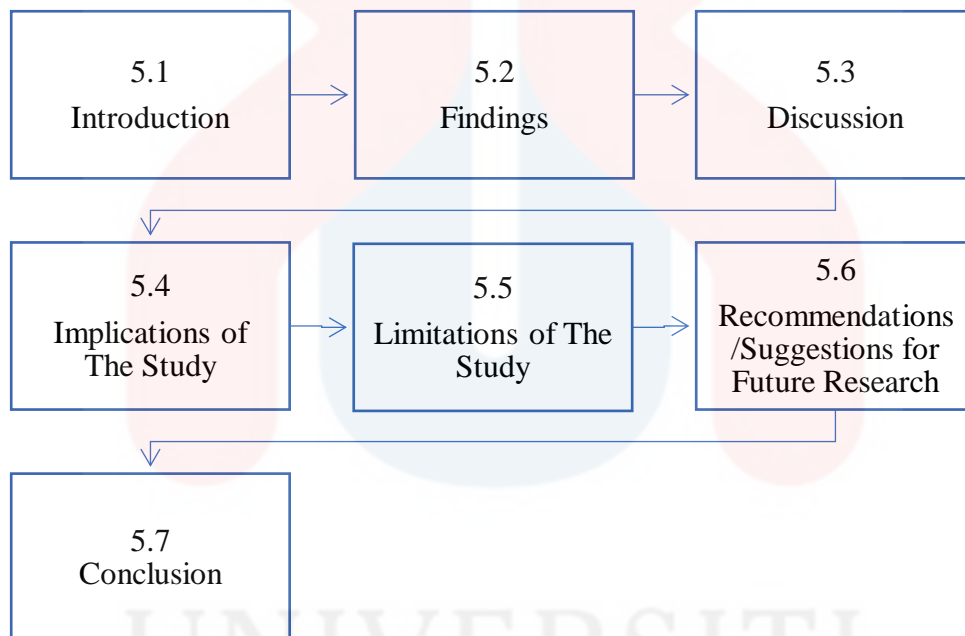
Figure 5.1: Outline for Discussion and Conclusion

5.2 Findings

In this section, this study discussed about the descriptive analysis for demographic which important components in questionnaire, as it provided with valuable information about the characteristics of survey respondents. This segmentation was needed for targeted analysis and understanding potential responses from various demographic groupings. Other than that, this study explained the findings of the independent variables that obtained in this study.

5.2.1 Descriptive Analysis

The data presented the findings of the normality test on all independent variables (performance expectancy, effort expectancy, social influence, facility condition, hedonic motivation, price value, and behaviour) and dependent variable (the perception towards gamified approach).Two tests were run: the Skewness and Kurtosis to determine whether the sample data was normally distributed or not. The normality of the data could be seen through graphical means (histogram, steam-and-leaf plot) or numerical/statistical means, i.e. -2 and +2 could be used as reference values to determine 46 large normalities. Looking at the skewness table, the statistical values for all variables ranged from - 0.432 to -0.756. Meanwhile, the kurtosis value was between 0.164 to -0.649. Looking at the range, both start values ranged from -2 to +2. This indicated that the data distribution was normal. The p values were P<0.01, indicating a significant relationship with the variables. These findings demonstrated that there was a normal distribution pattern in the data for this variable.

A total of 382 questionnaires were distributed to all three campuses of UMK which were City Campus, Bachok Campus, and Jeli Campus. SPSS Version 29 had generated and evaluated the data obtained. The first step in the analysis of this study was to analyse the descriptive analysis for demographics. Descriptive statistics was numbers that summarized data with the purpose of describing what was happening in a sample. Thus, this study analysed

six elements in demographics, namely gender, age, years of study, faculty, the importance of financial education and familiar with gamification in financial education. The data was obtained from a questionnaire distributed to the data section of the respondents

Thus, the biggest findings for the gender of the respondents showed that 253 respondents were female, representing 66.2 percent meanwhile the smallest were male with 129 respondents, accounting for 33.8 percent. Then followed by the age group with the highest group were fall within the 21-23 years range with a frequency of 232 respondents with 60.7 percent and the lowest group consist of individuals aged 27 years and above with 0.5 percent which was 2 respondents. Next most respondents were their fourth year, with a frequency of 213, making up 55.8 percent while the minority were second-year students comprise of 41 respondents accounting for 10.7 percent. Moreover, FKP stand out as the largest group, constituting the majority with a frequency of 229, accounting for 59.9 percent and followed by the least group FPV and FAE also share the same frequency which was 8 respondents each with the percentage of 2.1 percent. Furthermore, this study found that most of the respondents of this study had agreed the financial education was importance which indicates 379 respondents or 99.2 percent while the least of the respondents do not agree the financial education was importance which was 0.8 percent, or 3 respondents. Finally, this study found that significant majority of the respondents answered "yes", affirm that they were familiar with gamification in financial education, with a corresponding frequency of 275 respondents comprising 72.0 percent. In contrast, 28.0 percent of respondents answered "no", indicate that they were not familiar with gamification in financial education, accounting for 107 respondents.

5.2.2 Findings of Variables

Table 5.1: Findings; Performance Expectancy

RO[1]	To determine the relationship between performance expectancy and the perception of UMK students on gamification in financial education.
RQ[1]	What was the relationship between performance expectancy and the perception of UMK students on gamification in financial education?
H[1]	There was a relationship between performance expectancy and the perception of UMK students on gamification in financial education.

Based on the results obtained, the objective was to determine the relationship between performance expectancy and the perception of UMK students on gamification in financial education, the research question was what the relationship between performance expectancy to determine the perception of UMK students on gamification in financial education. At the initial stage, hypothesis of this study says that there was significant, but this study was not sure whether it was strong or not. However, the results that had been implemented show research objective 1 was acceptance with p-value $(0.000) < $ H[1] (0.01). This shows that the research objective 1 for the research question 1 was significant and the problem statement was answered. The result of this study showed gamification could improve UMK student's financial education through a stronger willingness to accept performance expectations. Through this, students were driven to continue their financial education path if they were willing to accept performance standards. Also, students might feel more accomplished and motivated to continue developing their personal financial skills when they experience gamification. Based on the evidence of Vleeshouwer (2015), performance expectancy significantly influences students' financial literacy improvement, with those who believe gamification could enhanced it performing more frequently than those who do not. Thus, hypothesis 1 was accepted.

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Table 5.2: Findings; Effort Expectancy

RO^2	To determine the relationship between effort expectancy and the perception of UMK students on gamification in financial education.
RQ^2	What was the relationship between effort expectancy and the perception of UMK students on gamification in financial education?
H^2	There was a relationship between effort expectancy and the perception of UMK students on gamification in financial education

In context of the results in this study were able to achieve, the objective was to determine the relationship between effort expectancy and the perception of UMK students on gamification in financial education, the research question was what the relationship between effort expectancy was to examine the perception of UMK students on gamification in financial education. this study's initial hypothesis states that there was significant, although it was unclear. On the other hand, the applied results indicate that acceptance of research objective 2 was achieved with p-value (0.000) < H1 (0.01). This demonstrates that the problem statement was solved and that the research objective 2 for the problem statement was significant. Based on this study, by effort expectancy, findings were generated about students' perceptions in connection to the gamified financial education approach. Students' desire to participate in the gamified financial education approach might rise if they believe it to be easy and accessible. A positive expectation helps the engagement levels to investigate and complete financial learning activities. This study emphasizes the ease with which consumers participate in gamification (Abou-Shouk & Soliman, 2021). Hence, hypothesis 2 was accepted.

Table 5.3: Findings; Social Influence

RO³	To determine the relationship between social influence and the perception of UMK students on gamification in financial education.
RQ³	What was the relationship between social influence and the perception of UMK students on gamification in financial education?
H³	There was a relationship between social influence and the perception of UMK students on gamification in financial education

Other than that, the objective was to determine the relationship between social influence and the perception of UMK students on gamification in financial education, the research question was what the relationship between social influences to determine the perception of UMK students on gamification in financial education. Despite being uncertain, this study's third hypothesis claims that there was considerable. However, the applied data show that, with p-value (0.000) < H1 (0.01), approval of research objective 3 was attained. This proves that the problem statement was resolved, and that the problem statement's third research objective was important. Considering the findings of this study, for example when a teacher incorporates gamification into the classroom, it indirectly motivates students to improve their education and use gamified methods in their financial literacy coursework. This could be supported by previous studies of (Abou-Shouk & Soliman, 2021), user preferences could influenced by the influence of family, friends, and co-workers, as they were easily perceived and could significantly influence consumer intent and behaviour on an e-commerce platform. So, hypothesis 3 was accepted.

Table 5.4: Findings: Facilitating Conditions

RO[4]	To determine the relationship between facilitating conditions and the perception of UMK students on gamification in financial education.
RQ[4]	What was the relationship between facilitating conditions and the perception of UMK students on gamification in financial education?
H[4]	There was a relationship between facilitating conditions and the perception of UMK students on gamification in financial education

The objective, given to determine the relationship between facilitating conditions and the perception of UMK students on gamification in financial education. The research question asked what the relationship was between facilitating conditions and the perception of UMK students on gamification in financial education. Although it's uncertain, the study original hypothesis claims that there was considerable. However, the applied data show that, with p-value (0.000) < H1 (0.01), approval of study aims 4 was attained. This proves that the problem statement was resolved, and that the fourth problem statement's research objective was important. Based on the result, students' perceptions of gamification in financial education increase by the support of the institute provided the university for the implementation of the gamified strategy such as teacher support, institutional policies promoting financial literacy programs, and the integration of gamification into the curriculum or extracurricular activities. The impact of various variables on behavioural intentions, indicating that facilitating conditions might not had a significant effect on individuals' intentions (Dhingra & Gupta, 2020). Thus, hypothesis 4 was accepted.

Table 5.5: Findings; Hedonic Motivation

RO[5]	To determine the relationship between hedonic motivation and the perception of UMK students on gamification in financial education.
RQ[5]	What was the relationship between hedonic motivation and the perception of UMK students on gamification in financial education?
H[5]	There was a relationship between hedonic motivation and the perception of UMK students on gamification in financial education

As stated by the results gained, the objective was to determine the relationship between hedonic motivation and the perception of UMK students on gamification in financial education, the research question was what the relationship between hedonic motivation to determine the perception of UMK students on gamification in financial education. In the beginning of the stage, hypothesis of this study says that there was significant however, this study was unsure about its strength. Turns out, the results that had been implemented show research objective 5 was acceptance with p-value $(0.000) <$ H[1] (0.01). This shows that research objective 5 for research question 5 was significant and the problem statement was answered. The result of this study showed hedonic motivation played a part in this study by encouraging student participation through gamification elements that made learning more engaging and enjoyable. Students were encouraged to participate enthusiastically in events when they found them interesting and entertaining. The effectiveness of gamification elements like points, challenges, and progress monitoring in the study encouraging students to participate actively in their education was examined. It reflects a student's impression of a gamified approach as engaging and enjoyable for educational purposes (Ahmed, 2016). It reflects a student's impression of a gamified approach as engaging and enjoyable for educational purposes (Smiderle et al., 2020). So, hypothesis 5 was accepted.

Table 5.6: Findings; Price Value

RO[6]	To determine the relationship between price value and the perception of UMK students on gamification in financial education.
RQ[6]	What was the relationship between price value and the perception of UMK students on gamification in financial education?
H[6]	There was a relationship between price value and the perception of UMK students on gamification in financial education

The result in this study obtained was based on the research question, research objective and hypothesis of this study. The objective was to determine the relationship between price value and the perception of UMK students on gamification in financial education, the research question was what the relationship between price value to determine the perception of UMK students on gamification in financial education. this study hypothesis states at the start of the stage that there was significant, but this study was unclear of the strength of it. As it happens, research objective 6 was accepted with a p-value of (0.000) H1 (0.01) pursuant to the data that were put into practice. The success of a gamified technique was shown to be impacted by students' performance expectations, and students were more likely to perceive positive educational advantages if installation and maintenance expenses were minimal. A study conducted by Moorthy et al., (2019). individual customers usually bear the cost of adopting technology, unlike organizational users. Therefore, hypothesis 6 was accepted.

Table 5.7: Findings; Behaviour

RO[7]	To determine the relationship between behaviour and the perception of UMK students on gamification in financial education.
RQ[7]	What was the relationship between behaviour and the perception of UMK students on gamification in financial education?
H[7]	There was a relationship between behaviour and the perception of UMK students on gamification in financial education

Finally, the last objective was to determine the relationship between behaviour and the perception of UMK students on gamification in financial education, the research question was what the relationship between behaviour to determine the perception of UMK students on gamification in financial education. The last hypothesis of this study was that there was significant, however it was unclear if it was strong or not. However, research objective 7 was accepted with a p-value of $(0.000) < H1 (0.01)$ pursuant to the results of the implementation. This demonstrates that the issue statement was resolved and that the research objective for research question 7 was significant. Behaviour was the use of technology pursuant to skills, knowledge, and abilities. This made it simple for students to adjust to gamified learning environments and advance their financial literacy. In this study, this study incorporated behavioural components, since knowing how UMK students see gamification in financial education would be helpful. Based on Venkatesh et al. (2012), individual's tendency to perform actions automatically in the learning process. Hence, hypothesis 7 was accepted.

In further research, it would have been possible to compare the East Coast and West Coast areas to investigate the opinions of students about the cultural distinctions that exist between the two locations. This study would have been able to determine if there were any

parts that need adjustment and enhancement if they had the opportunity to compare them. In addition to that, there might had been discernible changes introduced.

5.3 Discussion

The results of the above study indicate a favorable link that highlights the importance of giving attention to gamification in education, particularly at UMK. The UTAUT hypothesis states that several pivotal aspects influence students' inclination to use gamification. The components of performance expectancy, effort expectancy, social influence, and hedonic motivation had the strongest association, ranging from 0.874 to 0.845. It was crucial to highlight every single one of these elements while developing the most effective gamification methods.

Previous study indicates that performance expectation had a significant influence on students' views. Research by Alsahafi & Mendoza (2020) and Wan Ishak & Yamin (2020), gamification plays a crucial role in facilitating students' adoption of a certain learning strategy. Furthermore, in terms of descriptive analysis, the question "I believe my financial performance would improve through a gamified approach" received the highest average score of 4.21 (indicating a very positive response). This suggests that students had a strong belief that gamification could enhance their financial performance, with a thorough comprehension.

In addition, the level of work expected by students also had a significant influence on their attitudes towards using gamification methods. This study demonstrates that financial education was easily understandable and readily available. The statement "I found that learning finances through gamification was easy" had the highest average score of 4.26, indicating a very favorable evaluation (Onyeabor et al., 2023). The statement illustrates the consensus among students that gamification offers them a convenient means of comprehending financial topics.

In the context of hedonic motivation, which had a strong positive correlation of 0.846, it also plays a significant role in the aspects that need emphasis in this study (Hair et al., 2010). This suggests that motivation might serve as an encouragement for students to persist in using the gamification strategy in acquiring financial information. In addition, this variable provides more evidence to support earlier study that suggests a connection between hedonic motivation and behavioral intention (Alalwan et al., 2017; Herrero & San Martin, 2017; Kang, Liew, Lim, Jang, & Lee, 2015). Two questions obtained an average score of 4.30 (indicating a very positive response), namely "I find using gamified technology very entertaining" and "I believe using gamification was beneficial to learn about finances." This illustrates that implementing an enjoyable and advantageous gamification strategy had a substantial influence on its use.

The variable that exhibits the fourth greatest connection was social influence, with a correlation coefficient of 0.836. Social impact encompasses the attitudes and actions shown by people. These findings provide further support to the conclusions drawn by Al Marshedi et al. (2017) that the adoption of gamification methods was mostly driven by social factors rather than technical considerations. Furthermore, the analysis of the question with the highest average score (4.30)," I highly value the opinions of people who prefer using gamified financial education" suggests that most participants had a strong regard for the perspectives of others when it comes to employing gamification. To summarize, the correlation between social impact and students' views underscores the significance of peer influence and the surrounding context in promoting the adoption of gamification.

However, facilitating conditions, price value, and behaviour (with respective ranges of 0.836, 0.813, and 0.792) show moderate to relatively low correlations compared to the others. This suggests that these three factors were not the primary factors influencing students' perceptions. Moreover, it was crucial to recognize the constraints highlighted in the abstract, namely the narrow concentration on the East Coast area, which might affect the extrapolation

of the results. Subsequent study endeavours might examine the impact of cultural differences on individuals' interpretations of gamification in the context of financial education or delve into design components that enhance user satisfaction.

These results had important implications for educators, policymakers, and this study in financial education. They highlight the need to carefully analyse the impact of elements like performance expectation and effort expectancy when applying gamification tactics. The favourable reception of gamification by UMK students indicates its capacity as a beneficial instrument for improving financial literacy, therefore opening opportunities for more advancements and improvements in financial education tactics.

5.4 Implication of The Study

According to the conducted research, this research could conclude that seven main factors namely performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and behavior had a positive relationship with UMK students' perception of gamification in financial education. The objective of this study was to see their perception of whether this gamification approach could help them in improving their financial literacy. For this reason, each of these factors was very important for financial education to be more competitive to improve student knowledge. This section would delve into the practical, educational, and theoretical implications derived from the study.

5.4.1 Practical Implication

Firstly, this study could apply in financial education practices. Through this study, performance expectancy shows a high Pearson correlation of 0.874 (significantly positive). This indicates that students were confident that a gamified approach could assist them in better understanding financial concepts. Moreover, when examining the descriptive statistics, the

statement "I believe my financial performance through a gamified approach will be better" received the highest mean score of 4.21, further reinforcing the assertion that gamification could enhance their performance in comprehending financial matters. Educators could leverage this study to implement gamification approaches, making financial learning more engaging and easily comprehensible for students.

Additionally, this study could be a guidance for policymakers. The strong positive values for Pearson correlation, namely 0.902 for social influence and 0.846 for hedonic motivation, could serve as benchmarks for policymakers to consider formulating policies that encourage the integration of gamification into broader educational strategies. Examining the descriptive statistics, for social influence, the statement "I highly value the opinions of people who prefer using gamified financial education," with a mean score of 4.30, demonstrates that the sustained use by loyal users would capture students' attention and encourage them to use it as well. Moreover, the statement "I consider gamification an indispensable part of my financial knowledge improvement," with a mean score of 4.19, indicates that the gamification approach had become a crucial aspect of their financial learning.

Considering the close relevance of this study to education, the gamification approach could be implemented in financial education. This was supported by the study, which had proven that students strongly endorse the expansion of gamification in education. Examining the highest mean score (4.30) on the perception question, "A gamification approach motivates learning to improve my financial knowledge." Moreover, the current technological era further emphasizes the importance of the gamification approach. However, looking at the statistically significant positive correlation with price value (Pearson correlation: 0.892), educational institutions need to address cost issues because most respondents agree to use it if it was free, as indicated by the question "I am willing to use a gamification approach to improve my financial knowledge if it is free," which received the highest score of 4.18. This gamification

approach could be used as a method to test students about subjects that had been studied especially with rewards or accumulated points.

5.4.2 Theoretical Implication

Considering the theoretical implications in this study significantly contributes to understanding the factors influencing UMK students' perceptions of accepting the gamification approach. The use of UTAUT in this study demonstrates the relevance of each variable. This was particularly important as study on this topic utilizing the UTAUT theory was still lacking. With this study, it was evident that it could enhance this study using this theory. For instance, the Pearson correlation for price value was significantly strong and the highest compared to other variables. This emphasizes the significance of price value considerations in the acceptability and use of gamified financial education. This integration broadens the scope of UTAUT's application in a variety of educational contexts.

In addition, this study indirectly reveals nuances in the dynamics of UTAUT theory. A robust and significant Pearson correlation coefficient analysis would contribute to a deeper investigation of how individual variables influence students' perceptions of gamification in financial education. The approach taken to conduct a study based on UTAUT would encourage further research in the future to explore more complex relationships. The insights gathered here pave the way for further investigation into the multidimensional terrain of technology acceptability in educational contexts.

5.5 Limitations of The Study

The rationale of these study was conducted to investigate the perception of UMK students regarding gamification in financial education. The study encompasses all three campuses, namely City Campus, Bachok Campus, and Jeli Campus with sample size of 382

respondents. However, this study faced challenges in data collection, as the highest number of respondents, totalling 278 individuals, was from City Campus compared to the other two campuses. Similarly, concerning faculties, FKP obtained the highest number of respondents, which was 229 individuals. This poses a challenge to the accuracy and reliability of data analysis, potentially impacting the final outcomes of this study. The factor that might contribute to the high number of respondents for City Campus and FKP was that this study had a network within FKP located at City Campus. This limits the generalizability of the findings to other campuses or faculties within the university.

The findings of the study were cantered on UMK, which was in the East Coast area. The results were thus inappropriate for applicability in the West Coast area owing to the possibility of cultural variations among the people there. It was a choice that was driven by practical concerns to focus on the East Coast since it made it easier to get responses from respondents. In the context of the West Coast area, this had resulted in the generalizability of this study being restricted to a certain extent. The limitation arises from the fundamental disparities in cultural dynamics, which might impact the generalizability of the study's findings outside the East Coast. Therefore, it was advisable to be more careful when extending these results to a wider geographical context.

5.6 Recommendations/Suggestions for Future Research

In future research, the focus could be on specific faculties or universities while combining different academic levels, such as undergraduate versus postgraduate studies. This approach allows for a more nuanced exploration within specific faculties, addressing potential biases associated with a disproportionate number of respondents from specific faculties. In addition, this study could offer various views based on their academic development. Moreover, it could align the scope of this study within a particular faculty while at the same time

generalizing findings across faculties, providing valuable insights to educators and policymakers. It helps to gain a deeper understanding of the more complex phenomenon of gamification at UMK.

In addition, this study might be conducted to investigate the viewpoints of students about the cultural distinctions that exist between the East Coast and the West Coast areas. This study could discover areas that need alteration and upgrading via the use of such a comparison study, which enables them to get a more thorough grasp of the cultural dynamics taking place. Providing that this study was carried out, subsequent this study would be able to devise acceptable tactics because each state was experiencing various technological improvements. Not only could this technique made gamification study more relevant, but it could also give educators and policymakers with insights that might help them create an educational system that was more responsive to students' preferences.

For suggestion, using mixed methods in future research could improve the comprehensiveness of the study. Using a quantitative approach for undergraduate students and a qualitative approach for postgraduate students as a sample could help investigate students' perceptions, attitudes, and satisfaction levels regarding the implementation of gamification in financial education at UMK. Separate study focusing just on undergraduate students would allow us to properly analyse their perspectives without potentially complicating influences. Besides, expanding the investigation through qualitative methods could delve more deeply into important aspects related to UMK students. Interviews focusing on postgraduate students could provide with insights into the phenomena, motivations, experiences, and nuanced perspectives on the use of gamification in financial education. It could give a more comprehensive picture, supplementing quantitative data from surveys.

5.7 Conclusion

The objective of this study was to examine the perception of UMK students towards gamification in financial education. The framework used in this study was the UTAUT, which includes seven dimensions: performance expectations, effort expectations, social influence, facilitating conditions, hedonic motivation, price value, and behaviour. Based on previous studies, this study aims to determine whether the gamification approach could improve financial literacy, especially among students. This study uses a quantitative approach, with questions formulated based on dependent and independent variables. These questions were distributed to 382 respondents on the three campuses through a Google Form. Subsequently, the data underwent SPSS analysis, indicating that all variables exhibited reliability, normal distribution, and positive correlation with the perception of UMK students. The highest mean score was associated with hedonic motivation, while the lowest mean score was associated with the facilitating condition.

Overall, the findings of this study show that the price value dimension was the main perception of UMK students in determining whether they were ready to accept gamification in financial education. Therefore, educators, policy makers and game developers should consistently emphasize the issue of costs or fees associated with apps. This would be a major factor in influencing their acceptance to continue using gamification. With the implementation of this gamification approach, it was hoped to help students gain a better understanding of financial knowledge.

In the era of technological advancement, especially with the rise of Artificial Intelligence (AI), gamification was seen as an advanced learning tool that could help students master subjects more easily. Free gamification applications such as Kahoot or Quizizz serve as prime examples of online platforms that had greatly benefited users, especially educators and students. With gamification, students were tested on their understanding of a subject after

learning it, determining whether they understand the material. Continuous quizzes, coupled with rewards, consistently motivate students, fostering a competitive spirit among them. Therefore, the gamification approach in financial education would continue to grow, offering great benefits not only to educational institutions but also to industries such as banking and beyond.

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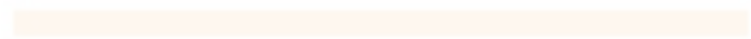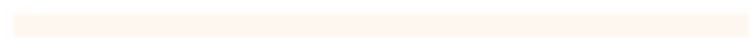
ASSESSING THE PERCEPTION OF UNIVERSITY MALAYSIA KELANTAN STUDENTS ON GAMIFICATION IN FINANCIAL EDUCATION

Assalamualaikum WBT and Salam Sejahtera,

We are final year students of Bachelor of Business Administration (Islamic Banking and Finance) with Honors from Faculty of Entrepreneurship and Business (FKP). We are currently conducting a survey regarding "**ASSESSING THE PERCEPTION OF UNIVERSITY MALAYSIA KELANTAN STUDENTS ON GAMIFICATION IN FINANCIAL EDUCATION"** for our Final Year Project.

This study was conducted due to the level of financial literacy among undergraduate university students still on moderate level. Even though there are some studies that has investigate about the perception of students on gamification in university in Malaysia. But there is still lack of research regarding University Malaysia Kelantan students' perception. This knowledge gap makes it difficult to understand whether students can accept gamification approach to learn about   financial.

The objective of this study is to empirically assess the perception of undergraduate students on gamification in financial education. This study aims to help researcher and educational institute to understand about the perception of students to use gamification approach (Kahoot, Simulation Game) to enhance their financial literacy.

There are three sections in this questionnaire which you must answer. Your honesty in answering this questionnaire will be greatly appreciated.

Thank you for your cooperation.

Prepared by:
NOR SHAHIDA BINTI ABD WAHAB
NOR SYAHIRAH BINTI ABDUL RAHMAN
NUR 'AQILAH BINTI ISMAIL
NUR AFIFAH BINTI HAIROUL NIZAM
* Indicates required question

SECTION A / BAHAGIAN A: DEMOGRAPHIC PROFILE / PROFIL DEMOGRAFI

Please fill in the appropriate information in the blanks provided to represent your answer. / Sila isi maklumat yang sesuai di tempat yang disediakan untuk mewakili jawapan anda.

1. Gender / Jantina
   o Male / Lelaki
   o Female / Perempuan

2. Age / Umur
   o 18 – 20 Years / Tahun
   o 21 – 23 Years / Tahun
   o 24 - 26 Years / Tahun
   o 27 Years Old and Above / Tahun ke atas

3. Years of Study / Tahun Pengajian
   o 1
   o 2
   o 3
   o 4

4. Faculty / Fakulti
   o FKP
   o FHPK
   o FPV
   o FSDK
   o FTKW
   o FAE
   o FBI
   o FIAT
   o FSB
   o FBKT

5. Is financial education important to you? / Adakah pendidikan kewangan penting kepada kamu?
   o Yes / Ya
   o No / Tidak

6. Are you familiar with gamification in financial education? / Adakah anda biasa dengan gamifikasi dalam pendidikan kewangan? (contoh: Kahoot, Stock Market Simulation Game, Budgeting Adventure App)
   o Yes / Ya
   o No / Tidak

SECTION B / BAHAGIAN B: DEPENDENT VARIABLE / PEMBOLEHUBAH BERSANDAR

Choose only one answer by using five-point Likert Scale. / Pilih satu jawapan sahaja berdasarkan skala Likert lima mata.

1. **Strongly Disagree /** *Sangat Tidak Setuju*
2. **Disagree /** *Tidak Setuju*
3. **Slightly Agree /** *Sedikit Setuju*
4. **Agree /** *Setuju*
5. **Strongly Agree /** *Sangat Setuju*

THE PERCEPTION OF UNIVERSITY MALAYSIA KELANTAN STUDENTS ON GAMIFICATION IN FINANCIAL EDUCATION. / PERSEPSI PELAJAR UNIVERSITI MALAYSIA KELANTAN TERHADAP GAMIFIKASI DALAM PENDIDIKAN KEWANGAN.

1. A gamification approach increases my interest in finance. / Pendekatan gamifikasi meningkatkan minat saya dalam kewangan.

   Strongly Disagree / Sangat Tidak Setuju
   o   1
   o   2
   o   3
   o   4
   o   5
   Strongly Agree / Sangat Setuju

2. A gamification approach combination into the financial platform helped me to understand the financials better. / Gabungan pendekatan gamifikasi ke dalam platform kewangan membantu saya memahami kewangan dengan lebih baik.

   Strongly Disagree / Sangat Tidak Setuju
   o   1
   o   2
   o   3
   o   4
   o   5
   Strongly Agree / Sangat Setuju

3. A gamification approach motivates learning to improve my financial knowledge. / Pendekatan gamifikasi mendorong pembelajaran untuk meningkatkan pengetahuan kewangan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

4. A gamified approach in finance becomes more effective if more communicate with my friends. / Pendekatan gamifikasi dalam kewangan menjadi lebih berkesan jika lebih banyak berkomunikasi dengan rakanrakan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

5. Gamification approaches are fun. / Pendekatan gamifikasi adalah menyeronokkan.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

SECTION C / BAHAGIAN C: INDEPENDENT VARIABLE / PEMBOLEHUBAH BEBAS

Choose only one answer by using five-point Likert Scale. / Pilih satu jawapan sahaja berdasarkan skala Likert lima mata.

1. **Strongly Disagree /** *Sangat Tidak Setuju*
2. **Disagree /** *Tidak Setuju*
3. **Slightly Agree /** *Sedikit Setuju*
4. **Agree /** *Setuju*
5. **Strongly Agree /** *Sangat Setuju*

PERFORMANCE EXPECTANCY / JANGKAAN PRESTASI
INDEPENDENT VARIABLE 1

1. I can enhance my learning efficiency in finance through a gamified approach. / Saya boleh meningkatkan kecekapan pembelajaran saya dalam kewangan melalui pendekatan gamifikasi.

   Strongly Disagree / Sangat Tidak Setuju
   - o 1
   - o 2
   - o 3
   - o 4
   - o 5
   Strongly Agree / Sangat Setuju

2. I can improve my understanding of financial education by using a gamified approach. / Saya boleh meningkatkan pemahaman saya tentang pendidikan kewangan dengan menggunakan pendekatan gamifikasi.

   Strongly Disagree / Sangat Tidak Setuju
   - o 1
   - o 2
   - o 3
   - o 4
   - o 5
   Strongly Agree / Sangat Setuju

3. I can manage my finances more effectively by using a gamified approach. / Saya boleh menguruskan kewangan saya dengan lebih berkesan dengan menggunakan pendekatan gamifikasi.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

4. I find a gamified approach more beneficial for improving my financial knowledge compared to other methods. / Saya mendapati pendekatan gamifikasi lebih bermanfaat untuk meningkatkan pengetahuan kewangan saya berbanding kaedah lain.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

5. I believe my financial performance through a gamified approach will be better. / Saya percaya prestasi kewangan saya melalui pendekatan gamified akan menjadi lebih baik.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

EFFORT EXPECTANCY / JANGKAAN USAHA
INDEPENDENT VARIABLE 2

1. I find it easy to access information about financial knowledge through gamification. / Saya rasa mudah untuk mengakses maklumat tentang ilmu kewangan melalui gamifikasi.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

2. I find learning finances through gamification is easy. / Saya mendapati pembelajaran kewangan melalui gamifikasi adalah mudah.

   Strongly Disagree / Sangat Tidak Setuju
   o 1
   o 2
   o 3
   o 4
   o 5
   Strongly Agree / Sangat Setuju

3. I think it is easy to use gamification in financial education. / Saya rasa mudah untuk menggunakan gamifikasi dalam pendidikan kewangan.

   Strongly Disagree / Sangat Tidak Setuju
   o 1
   o 2
   o 3
   o 4
   o 5
   Strongly Agree / Sangat Setuju

4. I had a clear understanding of how gamified financial education works. / Saya mempunyai pemahaman yang jelas tentang cara gamifikasi berfungsi dalam pendidikan kewangan.

   Strongly Disagree / Sangat Tidak Setuju
   o 1
   o 2
   o 3
   o 4
   o 5
   Strongly Agree / Sangat Setuju

5. I am confident in my ability to apply gamified techniques to enhance my financial knowledge. / Saya yakin dengan keupayaan saya untuk menggunakan teknik gamifikasi untuk meningkatkan pengetahuan kewangan saya.

   Strongly Disagree / Sangat Tidak Setuju
   o 1
   o 2
   o 3
   o 4
   o 5
   Strongly Agree / Sangat Setuju

SOCIAL INFLUENCE / PENGARUH SOSIAL
INDEPENDENT VARIABLE 3

1. I am motivated to explore gamified techniques for learning about finances if my peers' recommend it. / Saya bermotivasi untuk meneroka teknik gamifikasi untuk belajar tentang kewangan jika rakan sebaya saya mengesyorkannya.

    Strongly Disagree / Sangat Tidak Setuju
    - 1
    - 2
    - 3
    - 4
    - 5
    Strongly Agree / Sangat Setuju

2. I am likely to use gamification in financial education due to recommendations from influential people. / Saya berkemungkinan akan menggunakan gamifikasi dalam pendidikan kewangan kerana cadangan daripada orang yang berpengaruh.

    Strongly Disagree / Sangat Tidak Setuju
    - 1
    - 2
    - 3
    - 4
    - 5
    Strongly Agree / Sangat Setuju

3. I have a positive attitude toward the use of gamification in financial education. / Saya mempunyai sikap positif terhadap penggunaan gamifikasi dalam pendidikan kewangan.

    Strongly Disagree / Sangat Tidak Setuju
    - 1
    - 2
    - 3
    - 4
    - 5
    Strongly Agree / Sangat Setuju

4. I believe that lecturers support the integration of gamified financial education for learning financial concepts. / Saya percaya bahawa pensyarah menyokong integrasi gamifikasi dalam pendidikan kewangan untuk mempelajari konsep kewangan.

    Strongly Disagree / Sangat Tidak Setuju
    - 1
    - 2
    - 3
    - 4
    - 5
    Strongly Agree / Sangat Setuju

5. I highly value the opinions of people who prefer using gamified financial education. / Saya sangat menghargai pendapat orang yang suka menggunakan gamifikasi dalam pendidikan kewangan.

Strongly Disagree / Sangat Tidak Setuju
o   1
o   2
o   3
o   4
o   5
Strongly Agree / Sangat Setuju

FACILITATING CONDITIONS / KEADAAN YANG MEMUDAHKAN INDEPENDENT VARIABLE 4

1. I can implement gamification in financial education with the resources I have. / Saya dapat melaksanakan gamifikasi dalam pendidikan kewangan dengan sumber yang saya ada.

Strongly Disagree / Sangat Tidak Setuju
o   1
o   2
o   3
o   4
o   5
Strongly Agree / Sangat Setuju

2. I can readily seek help from others when facing challenges with this gamified approach. / Saya akan mudah mendapatkan pertolongan dari orang lain ketika menghadapi cabaran dengan pendekatan gamifikasi ini.

Strongly Disagree / Sangat Tidak Setuju
o   1
o   2
o   3
o   4
o   5
Strongly Agree / Sangat Setuju

3. I have the technical proficiency to apply gamification techniques in the realm of financial education. / Saya mempunyai kemahiran teknikal untuk mengaplikasikan teknik gamifikasi dalam pendidikan kewangan.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

4. I am capable of enhancing financial knowledge by employing a gamified approach. / Saya mampu meningkatkan pengetahuan kewangan dengan menggunakan pendekatan gamifikasi.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

5. I believe a good internet connection and signal are essential for using a gamification technology in financial education. / Saya percaya sambungan dan isyarat internet yang baik adalah penting untuk menggunakan teknologi gamifikasi dalam pendidikan kewangan.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

HEDONIC MOTIVATION / MOTIVASI HEDONIK
INDEPENDENT VARIABLE 5

1. I find utilizing gamification in financial education very engaging. / Saya mendapati penggunaan gamifikasi dalam pendidikan kewangan sangat menarik.

   Strongly Disagree / Sangat Tidak Setuju
   - 1
   - 2
   - 3
   - 4
   - 5
   Strongly Agree / Sangat Setuju

2. I find using gamified technology very entertaining. / Saya mendapati penggunaan teknologi gamifikasi sangat menghiburkan.

   Strongly Disagree / Sangat Tidak Setuju
   - 1
   - 2
   - 3
   - 4
   - 5
   Strongly Agree / Sangat Setuju

3. I think using gamification in financial education is fun. / Saya fikir menggunakan gamifikasi dalam pendidikan kewangan sangat menyeronokkan.

   Strongly Disagree / Sangat Tidak Setuju
   - 1
   - 2
   - 3
   - 4
   - 5
   Strongly Agree / Sangat Setuju

4. I think gamification can make finance subjects more enjoyable. / Saya fikir gamifikasi boleh menjadikan subjek kewangan lebih menyeronokkan.

   Strongly Disagree / Sangat Tidak Setuju
   - 1
   - 2
   - 3
   - 4
   - 5
   Strongly Agree / Sangat Setuju

5. I believe using gamification is beneficial to learn about finances. / Saya percaya menggunakan gamifikasi bermanfaat untuk mempelajari tentang kewangan.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

PRICE VALUE / HARGA
INDEPENDENT VARIABLE 6

1. I am willing to use a gamification approach to improve my financial knowledge if it is free. / Saya bersedia menggunakan pendekatan gamifikasi untuk meningkatkan pengetahuan kewangan saya jika ia percuma.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

2. I am dedicated to invest in gamification technologies to enhance my financial education. / Saya berdedikasi untuk melabur dalam teknologi gamifikasi untuk meningkatkan pendidikan kewangan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

3. I think the gamification used in financial education offers good value for the money. / Saya rasa gamifikasi yang digunakan dalam pendidikan kewangan menawarkan nilai wang yang baik.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

4. I think the subscription fee charged for gamification technology is reasonable. / Saya rasa yuran langganan yang dikenakan untuk teknologi gamifikasi adalah berpatutan.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

5. I believe that gamification in financial education offers good value in the market. / Saya percaya bahawa gamifikasi dalam pendidikan kewangan akan menawarkan nilai yang baik di pasaran.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

BEHAVIOR / TINGKAH LAKU
INDEPENDENT VARIABLE 7

1. I feel positive when using gamification in financial education. / Saya berasa positif apabila menggunakan gamifikasi dalam pendidikan kewangan.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

2. I feel consistent with involvement in the gamification of financial education. / Saya berasa konsisten dengan penglibatan dalam gamifikasi pendidikan kewangan.

Strongly Disagree / Sangat Tidak Setuju
o 1
o 2
o 3
o 4
o 5
Strongly Agree / Sangat Setuju

3. I consider using gamification as a part of my financial learning journey. / Saya mempertimbangkan untuk menggunakan gamifikasi sebagai sebahagian daripada perjalanan pembelajaran kewangan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

4. I consider gamification an indispensable part of my financial knowledge improvement. / Saya menganggap gamifikasi sebagai bahagian penting dalam peningkatan pengetahuan kewangan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

5. I can develop a behaviour of using gamification for improving my financial literacy. / Saya boleh membangunkan tabiat menggunakan gamifikasi untuk meningkatkan celik kewangan saya.

Strongly Disagree / Sangat Tidak Setuju
- o 1
- o 2
- o 3
- o 4
- o 5
Strongly Agree / Sangat Setuju

APPENDIX B: DRAFT OF PEER VALIDATION

ASSESSING THE PERCEPTION OF UNIVERSITY MALAYSIA KELANTAN STUDENTS ON GAMIFIED FINANCIAL EDUCATION

Gamified financial education involves learning about finance through engaging games, such as Kahoot, reward-based games, simulations, and more. The objective of this research is to understand University Malaysia Kelantan students' perceptions of learning finance through enjoyable games and activities. This technology has the potential to enhance students' financial literacy.

NO	ITEM	QUESTIONS	PEER VALIDATION
1	The Perception of University Malaysia Kelantan Students on Gamified Financial Education	1. A gamification approach increases my interest in finance.	Peer 1: -
			Peer 2: -
			Peer 3: A gamified approach boosts my interest in finance.
			Peer 4: -
			Peer 5:
			Peer 6:
		2. A gamification approach blended into the financial platform helped me to understand the financials better.	Peer 1: I think the word **blended** is not appropriate to use, it is better to change it to combination, I understand.
			Peer 2: -
			Peer 3: A gamified approach integrated into the financial platform improved my understanding of finance.
			Peer 4: -
			Peer 5:
			Peer 6:
		3. A gamification approach motivates learning to improve my financial literacy.	Peer 1: -
			Peer 2: A gamification approach motivates learning to improve my financial knowledge.
			Peer 3: A gamified approach encourages learning to enhance my financial literacy.
			Peer 4: -
			Peer 5:
			Peer 6:

NO	ITEM	QUESTIONS	PEER VALIDATION
		4. A gamification approach in finance will be more effective by communicating more with my friends.	Peer 1: -
			Peer 2: -
			Peer 3: A gamified approach in finance becomes more effective through increased communication with my friends.
			Peer 4: -
			Peer 5:
			Peer 6:
		5. Gamification approaches are fun.	Peer 1: -
			Peer 2: Gamification approaches are enjoyable.
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
1	Performance Expectancy	1. I can enhance my learning efficiency in finance through a gamified approach.	Peer 1: -
			Peer 2: I can improve my understanding of financial knowledge by using a gamified approach.
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		2. I can improve my understanding of financial literacy by using a gamified approach.	Peer 1: -
			Peer 2: -
			Peer 3: I can enhance my understanding of financial literacy by employing a gamified approach
			Peer 4: -
			Peer 5:
			Peer 6:
		3. I can manage my finances more effectively by using a gamified approach.	Peer 1: -
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
			Peer 1: -

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NO	ITEM	QUESTIONS	PEER VALIDATION
		4. I find a gamified approach more beneficial for improving my financial literacy compared to other methods.	Peer 2: I find a gamified approach more beneficial for improving my financial knowledge compared to other methods.
			Peer 3: I find a gamified approach more advantageous for enhancing my financial literacy when compared to other methods.
			Peer 4: -
			Peer 5:
			Peer 6:
		5. I believe my financial performance through a gamified approach will be better.	Peer 1: -
			Peer 2: I believe my financial performance through a gamified approach will be better.
			Peer 3: I believe my financial performance will be enhanced through a gamified approach.
			Peer 4: -
			Peer 5:
			Peer 6:
2	Effort Expectancy	1. I think it is easy for me to find information about gamified financial education.	Peer 1: -
			Peer 2: -
			Peer 3: I find it easy to access information about gamified financial education.
			Peer 4: -
			Peer 5:
			Peer 6:
		2. I think it is easy to use gamified financial education.	Peer 1: -
			Peer 2: -
			Peer 3: I find gamified financial education is easy to use.
			Peer 4: -
			Peer 5:
			Peer 6:

NO	ITEM	QUESTIONS	PEER VALIDATION
		3. I find it easy to learn about finances through gamified financial education.	Peer 1: -
			Peer 2: -
			Peer 3: I find learning about finances through gamified financial education is easy.
			Peer 4: -
			Peer 5:
			Peer 6:
		4. I had a clear understanding of how gamified financial education works.	Peer 1: -
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		5. I feel confident in my ability to apply gamified techniques for improving my financial knowledge.	Peer 1: -
			Peer 2: I feel confident to apply gamified techniques for improving my financial knowledge.
			Peer 3: I am confident in my ability to apply gamified techniques to enhance my financial knowledge.
			Peer 4: -
			Peer 5:
			Peer 6:
3	Social Influence	1. I am motivated to explore gamified financial education to learn about finances at the suggestion of my peers.	Peer 1: -
			Peer 2: I am driven to learn more about gamified financial education for learning about finances at the suggestion of my peers.
			Peer 3: I am motivated to explore gamified financial education for learning about finances based on my peers' recommendation.
			Peer 4: -
			Peer 5:
			Peer 6:
			Peer 1: -

NO	ITEM	QUESTIONS	PEER VALIDATION
		2. I am inclined to use a gamified financial education system because influential people have recommended it.	Peer 2: I am tempted to implement a gamified financial education system due to the recommendation of influential individuals.
			Peer 3: I am inclined to use a gamified financial education system due to recommendations from influential people.
			Peer 4: -
			Peer 5:
			Peer 6:
		3. I have a positive attitude towards the use of gamified financial education.	Peer 1: -
			Peer 2: -
			Peer 3: I hold a favorable attitude toward the use of gamified financial education.
			Peer 4: -
			Peer 5:
			Peer 6:
		4. I believe that lecturers support the incorporation of gamified financial education in learning financial concepts.	Peer 1: -
			Peer 2: -
			Peer 3: I believe that lecturers support the integration of gamified financial education for learning financial concepts.
			Peer 4: -
			Peer 5:
			Peer 6:
		5. I highly value the opinions of people who prefer using gamified financial education platforms.	Peer 1: -
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
4	Facilitating Conditions	1. I have the necessary resources to implement gamified financial education.	Peer 1: I can implement gamified financial education with the resources I have.

NO	ITEM	QUESTIONS	PEER VALIDATION
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		2. I can effectively use a gamified approach to improve financial education.	Peer 1: -
			Peer 2: I am capable of enhancing financial education by employing a gamified approach.
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		3. I can easily seek assistance from others when facing challenges while using a gamified approach.	Peer 1: -
			Peer 2: -
			Peer 3: I can readily seek help from others when encountering challenges with a gamified approach.
			Peer 4: -
			Peer 5:
			Peer 6:
		4. I am confident that I can find support if I encounter issues with financial education.	Peer 1: -
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		5. I believe that internet and signal availability will influence the use of gamified approaches.	Peer 1: -
			Peer 2: -
			Peer 3: I believe having a good internet and signal will help when using gamified approaches for financial literacy.
			Peer 4: -
			Peer 5:
			Peer 6:
5	Hedonic Motivation	1. I think using such gamified technology is fun.	Peer 1: The questions look the same under hedonic motivation.
			Peer 2: I think using such gamified

NO	ITEM	QUESTIONS	PEER VALIDATION
			technology is enjoyable.
			Peer 3: I find using this gamified technology enjoyable.
			Peer 4: I feel all questions for iv 5 are same.
			Peer 5:
			Peer 6:
		2. I find using gamified financial education entertaining.	Peer 1: The questions look the same under hedonic motivation.
			Peer 2: -
			Peer 3: I have fun using gamified financial education.
			Peer 4: I feel all questions for iv 5 are same.
			Peer 5:
			Peer 6:
		3. I find using such gamified technology very enjoyable.	Peer 1: The questions look the same under hedonic motivation.
			Peer 2: -
			Peer 3: @maksud dia sama ngan no 1.
			Peer 4: I feel all questions for iv 5 are same.
			Peer 5:
			Peer 6:
		4. I find using such gamified technology very entertaining.	Peer 1: The questions look the same under hedonic motivation.
			Peer 2: -
			Peer 3: I find using this gamified technology highly entertaining.
			Peer 4: I feel all questions for iv 5 are same.
			Peer 5:
			Peer 6:

NO	ITEM	QUESTIONS	PEER VALIDATION
		5. I experience pleasure when using gamified financial education.	Peer 1: The questions look the same under hedonic motivation.
			Peer 2: -
			Peer 3: -
			Peer 4: I feel all questions for iv 5 are same.
			Peer 5:
			Peer 6:
6	Price value	1. I think the technology used in gamified financial education offers good value for the money. I believe the cost of gamified financial education technology is reasonable.	Peer 1: -
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		2. I am willing to use gamification to enhance my financial knowledge.	Peer 1: Can give the sentence a little clearer on how to relate it to IV price value?
			Peer 2: -
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		3. I am committed to investing in innovative technologies for improving my financial education.	Peer 1: -
			Peer 2: -
			Peer 3: I am dedicated to investing in innovative technologies to enhance my financial education.
			Peer 4: -
			Peer 5:
			Peer 6:
		4. I believe the cost of gamified financial education technology is reasonable.	Peer 1: -
			Peer 2: -
			Peer 3: I think gamified financial education technology is reasonably price valued.
			Peer 4: -
			Peer 5:
			Peer 6:
			Peer 1: -

NO	ITEM	QUESTIONS	PEER VALIDATION
		5. I believe that gamified financial education technology provides a good value in the market.	Peer 2: -
			Peer 3: I believe that gamified financial education technology offers good value in the market.
			Peer 4: -
			Peer 5:
			Peer 6:
7	Behaviour	1. I feel positive when using gamified financial education technology.	Peer 1: -
			Peer 2: I experience a sense of positivity when utilizing gamified financial education technology,
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:
		2. I feel a sense of consistency and engagement when using gamified financial education.	Peer 1: I feel consistency and engagement when using gamified financial education.
			Peer 2: -
			Peer 3: I feel consistent engagement when using gamified financial education.
			Peer 4: -
			Peer 5:
			Peer 6:
		3. I consider using gamified financial education as a regular part of my financial learning journey.	Peer 1: -
			Peer 2: -
			Peer 3: I feel using gamified financial education will be a regular aspect of my financial learning journey.
			Peer 4: -
			Peer 5:
			Peer 6:
		4. I consider gamified financial education an indispensable part of my financial knowledge improvement.	Peer 1: -
			Peer 2: I consider gamified financial education is an

NO	ITEM	QUESTIONS	PEER VALIDATION
			essential component in enhancing my financial knowledge.
			Peer 3: I regard gamified financial education as an essential component of my financial knowledge enhancement.
			Peer 4: -
			Peer 5:
			Peer 6:
		5. I have developed a behaviour of using gamified financial education for improving my financial literacy.	Peer 1: -
			Peer 2: I have developed a behaviour of using gamified financial education for improving my financial knowledge.
			Peer 3: -
			Peer 4: -
			Peer 5:
			Peer 6:

APPENDIX C: TABLE KREJCIE & MORGAN (1970)

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.

Source: Krejcie & Morgan, 1970

APPENDIX D: ENROLMENT OF ACTIVE STUDENTS BACHELOR'S DEGREE SESSION 2022/2023

a) **CITY CAMPUS**

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

		Semester 2			Semester 4			Semester 6			Semester 8			Semester 10			Semester 12			Semester 13		Jumlah		
		L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum
FAKULTI PERUBATAN VETERINAR	SDV - Doc.Vet.Medicine	13	31	44	12	34	46	15	30	45	10	27	37	17	27	44	1	2	3	1	1	68	152	220
	Jumlah Fakulti	13	31	44	12	34	46	15	30	45	10	27	37	17	27	44	1	2	3	1	1	68	152	220
	Jumlah Keseluruhan	13	31	44	12	34	46	15	30	45	10	27	37	17	27	44	1	2	3	1	1	68	152	220

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		Semester 2			Semester 4			Semester 5			Jumlah		
		L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum
FAKULTI SAINS DATA DAN KOMPUTERAN	SST - BIT(Hons)	28	45	73	20	25	45	3	4	7	51	74	125
	Jumlah Fakulti	28	45	73	20	25	45	3	4	7	51	74	125
	Jumlah Keseluruhan	28	45	73	20	25	45	3	4	7	51	74	125

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		Semester 1			Semester 2			Semester 3		Semester 4			Semester 5		Semester 6			Semester 7			Semester 8			Semester 9		Semester 10		Jumlah		
		L	P	Jum	L	P	Jum	P	Jum	L	P	Jum	L	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	Jum	L	P	Jum
FAKULTI HOSPITALITI, PELANCONGAN DAN KESEJAHTERAAN	SAH - B.Ent. (Hons)(Hospitality)				40	146	186			37	131	168			30	123	153	4	2	6	30	134	164					141	536	677
	SAP - B. Ent. (Hons.)(Tourism)	7	17	24	81	278	359	1	1	85	243	328	1	1	70	229	299		3	3	79	218	297	1	1	2	2	325	990	1315
	SAS - B.ENT. (HONS) (WELLNESS)				51	162	213	1	1	28	137	165	1	1	18	132	150		4	4	23	127	150					121	563	684
	Jumlah Fakulti	7	17	24	172	586	758	2	2	150	511	661	2	2	118	484	602	4	9	13	132	479	611	1	1	2	2	587	2089	2676
	Jumlah Keseluruhan	7	17	24	172	586	758	2	2	150	511	661	2	2	118	484	602	4	9	13	132	479	611	1	1	2	2	587	2089	2676

b) JELI CAMPUS

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

(Tabel pertama - FAKULTI BIOKEJURUTERAAN DAN TEKNOLOGI - tidak jelas/kabur)

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

			Semester 1			Semester 2			Semester 3			Semester 4			Semester 5			Semester 6			Semester 7			Semester 8			Semester 9		Semester 10			Semester 11			Jumlah		
			L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	Jum	L	P	Jum	P	Jum	L	P	Jum
FAKULTI INDUSTRI ASAS TANI	SBF -	B.Appl.Sc.(Hons)(Food Security)	1	2	3	9	42	51		2	2	16	46	62	1	1	2	11	63	74		1	1	16	42	58				1	1			54	200	254
	SBH -	B. Appl. Sc. (Hons.) (Animal Husbandry Sc.)	1	1	2	23	42	65		1	1	22	20	42		1	1	29	35	64				20	34	54	1	1						96	134	230
	SBL -	B.Appl.Sc. (Hons) (Agrotechnology)	5	9	14	21	16	37	2	2	4	31	22	53	1	1	2	24	41	65	4	1	5	26	42	68			1		1	1	1	1	115	135	250
	SBP -	B.Appl.Sc.(Hons)(Product Development Technology)		4	4	7	12	19	3	2	5	18	17	35		5	5	12	33	45		1	1	8	30	38									48	104	152
		Jumlah Fakulti	7	16	23	60	112	172	5	7	12	87	105	192	2	8	10	76	172	248	4	3	7	70	148	218	1	1	1	1	2	1	1		313	573	886
		Jumlah Keseluruhan	7	16	23	60	112	172	5	7	12	87	105	192	2	8	10	76	172	248	4	3	7	70	148	218	1	1	1	1	2	1	1		313	573	886

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ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

			Semester 1			Semester 2			Semester 3			Semester 4			Semester 5		Semester 6			Semester 7			Semester 8			Semester 9		Semester 10			Semester 12			Jumlah		
			L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum
FAKULTI SAINS BUMI	SEG -	B.Appl.Sc.(Hons)(Geoscience)	3	5	8	21	40	61				9	39	48			21	54	75	2	1	3	14	28	42	2	2	2	1	3		1	1	72	171	243
	SEL -	B.Appl.Sc(Hons)(Sustainable Sc.)													6	6	19	51	70				16	40	56									35	97	132
	SEN -	B.Appl.Sc.(Hons) (Nat. Res. Sc.)	4	1	5	25	68	93	1	3	4	33	50	83	6	6	14	21	35				6	35	41					1		1	1	84	184	268
	SES -	B.Appl.Sc (Hons) (env. Sustainability Sc.)	1	3	4	25	66	91	1	5	6	28	54	82																				55	128	183
		Jumlah Fakulti	8	9	17	71	174	245	2	8	10	70	143	213	12	12	54	126	180	2	1	3	36	103	139	2	2	2	1	3	1	1	2	246	580	826
		Jumlah Keseluruhan	8	9	17	71	174	245	2	8	10	70	143	213	12	12	54	126	180	2	1	3	36	103	139	2	2	2	1	3	1	1	2	246	580	826

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c) BACHOK CAMPUS

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

PMR012

FAKULTI PENGAJIAN BAHASA DAN PEMBANGUNAN INSAN	Semester 1			Semester 2			Semester 3		Semester 4			Semester 5		Semester 6			Jumlah		
	L	P	Jum	L	P	Jum	L	Jum	L	P	Jum	P	Jum	L	P	Jum	L	P	Jum
SLA - B.Arabic Lang (Honours)				4	25	29			5	22	27						9	47	56
SLB - B. Business Comm (Honours)	4	4	8	15	22	37	1	1	11	39	50	1	1	5	52	57	36	118	154
Jumlah Fakulti	4	4	8	19	47	66	1	1	16	61	77	1	1	5	52	57	45	165	210
Jumlah Keseluruhan	4	4	8	19	47	66	1	1	16	61	77	1	1	5	52	57	45	165	210

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

PMR013

FAKULTI TEKNOLOGI KREATIF DAN WARISAN	Semester 1			Semester 2			Semester 3			Semester 4			Semester 5		Semester 6			Semester 7			Semester 8			Semester 9			Semester 10		Jumlah		
	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum
SCK - B. CTech. (Hons.)	10	12	22	81	143	224	1	1	2	80	181	261	1	1	96	164	260	1	4	5	120	163	283	2	1	3	4	4	392	673	1065
SCW - B. HTage. (Hons.)	2	6	8	47	137	184	1		1	59	164	223			59	184	243	2	5	7	55	188	243						225	684	909
Jumlah Fakulti	12	18	30	128	280	408	2	1	3	139	345	484	1	1	155	348	503	3	9	12	175	351	526	2	1	3	4	4	617	1357	1974
Jumlah Keseluruhan	12	18	30	128	280	408	2	1	3	139	345	484	1	1	155	348	503	3	9	12	175	351	526	2	1	3	4	4	617	1357	1974

UNIVERSITI MALAYSIA KELANTAN
ENROLMEN PELAJAR AKTIF IJAZAH SARJANA MUDA SESI 2022/2023
(Mengikut Program dan Semester Pengajian)

PMR012

FAKULTI SENIBINA DAN EKISTIK	Semester 2			Semester 4			Semester 5		Semester 6			Semester 7			Semester 8			Semester 9			Semester 10			Semester 11			Semester 12		Jumlah		
	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	L	P	Jum	P	Jum	L	P	Jum
SGA - B.Sc.(Honours)Architecture	19	17	36	17	13	30	2	2	14	15	29				8	11	19	1		1	1		1	1		1	1	1	61	59	120
SGD - B.(Honours)Interior Architecture	9	31	40	16	20	36			10	15	25	1		1	15	30	45		1	1	1	1	2						52	98	150
SGL - B.(Honours)Landscape Architecture	14	23	37	8	17	25			11	13	24		1	1	12	19	31				1	1	2		1	1			46	75	121
Jumlah Fakulti	42	71	113	41	50	91	2	2	35	43	78	1	1	2	35	60	95	1	1	2	3	2	5	1	1	2	1	1	159	232	391
Jumlah Keseluruhan	42	71	113	41	50	91	2	2	35	43	78	1	1	2	35	60	95	1	1	2	3	2	5	1	1	2	1	1	159	232	391

APPENDIX E: GANTT CHART

GANTT CHART (PPTA I)														
ITEMS	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**	**Week 7**	**Week 8**	**Week 9**	**Week 10**	**Week 11**	**Week 12**	**Week 13**	**Week 14**
Distribution of group, supervisor, and evaluators	▓													
final year project process briefing		▓												
Meeting with supervisor (ongoing)		▓												
Database searching & reference manager class			▓											
Confirmation of appropriate title				▓										
CHAPTER 1: INTRODUCTION														
1.1 Background of the Study					▓				▓			▓		
1.2 Problem Statement					▓				▓			▓		
1.3 Research Question					▓				▓			▓		
1.4 Research Objectives					▓				▓			▓		
1.5 Justification of the Study					▓				▓			▓		
1.6 Scope of the Study					▓				▓			▓		
1.7 Operation Definitions					▓				▓			▓		
1.8 Summary					▓				▓			▓		

CHAPTER 2: LITERATURE REVIEW														
2.1 Introduction						X			X			X		
2.2 Underpinning Theory						X			X			X		
2.3 Literature Review						X			X			X		
2.4 Theoretical Framework						X			X			X		
2.5 Summary						X			X			X		
CHAPTER 3: RESEARCH METHODS														
3.1 Introduction							X		X			X		
3.2 Research Paradigm							X		X			X		
3.3 Data Collection Methods							X		X			X		
3.4 Study Population							X		X			X		
3.5 Sample Size							X		X			X		
3.6 Sampling Techniques							X		X			X		
3.7 Research Instrument Development							X		X			X		
3.8 Measurement of the Variables							X		X			X		
3.9 Procedure for Data Analysis							X		X			X		
3.10 Summary							X		X			X		
REPORT SUBMISSION													X	
PRESENTATION														X

GANTT CHART (PPTA II)														
ITEMS	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Questionnaire Distribution				██	██	██								
Run SPSS							██							
CHAPTER 4: DATA ANALYSIS AND FINDINGS														
4.1 Introduction								██						
4.2 Demographic Profile of Respondents								██						
4.3 Descriptive Analysis								██	██					
4.4 Validity and Reliability Test								██	██					
4.5 Normality Test								██	██					
4.6 Pearson Correlation Coefficient Analysis								██	██					
4.7 Hypotheses Testing								██	██					
4.8 Summary								██	██					
CHAPTER 5: DISCUSSION AND CONCLUSION														
5.1 Introduction										██	██			
5.2 Findings										██	██			
5.3 Discussion										██	██			
5.4 Implications of The Study										██	██			

5.5 Limitations of The Study										🟩	🟩			
5.6 Recommendations/Suggestions fpr Future Research										🟩	🟩			
5.7 Conclusion										🟩	🟩			
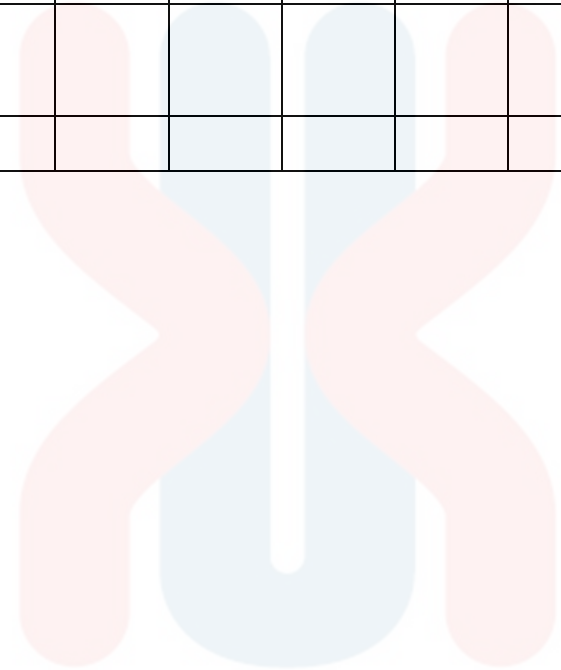
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No.Matrik/*Matrix No*: A20A1649
Tarikh/*Date*: 27/1/2024

Pengesahan
Penyelia/*Supervisor*: Dr. Hasannuddiin bin Hassan
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Tarikh/*Date:* 27/1/2024

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