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Table of Contents

SL.	Title	Page No.
1	IMPLEMENTATION OF PROPHETIC MOTIVATIONAL STRATEGIES ON ONLINE STUDENTS Farzana Kausar, Muhammad Salama	1-30
2	UNDERGRADUATES' READINESS AND SELF- EFFICACY FOR ONLINE LEARNING Jill Ling Pei Wah, Ong Sing Ling	31-59
3	EFFECTS OF INTEREST RATE (<i>RIBA</i>) ON ISLAMIC BANKS & ECONOMY Sif Eddine Mebarki, Mohamed Hassan Mohamed	60-81
4	IMPLEMENTATION OF THE FATWÁ OF INDONESIAN ULEMA COUNCIL ON SHARĪAH- COMPLIANT FINANCIAL TECHNOLOGY SERVICE PRODUCTS IN INDONESIA Didik Adji Sasongko, Nissar Ahmad Yatoo	82-111
5	ASSESSMENT OF AGRICULTURAL LAND-USE INTENSIFICATION PRACTICE AND ITS DETERMINANTS AMONG FOOD CROP FARMERS IN SOUTH-WESTERN, NIGERIA J O Oladeebo, M O Ganiyu, Puleng Letuma	112-147
6.	ACCEPTANCE OF ONLINE LEARNING AMONG AFRICAN GRADUATES Afroza Bulbul Afrin, Muhammad Ahsan, Abdelkader Laallam	148-188
6	AUTHORS' BIO	189-191

IMPLEMENTATION OF PROPHETIC MOTIVATIONAL STRATEGIES ON ONLINE STUDENTS

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ABSTRACT

Modernization and globalization have caused a paradigm shift in student education from a face-to-face traditional classroom setting to an online environment. Instructors are increasingly adopting motivational strategies suitable for online studies. Motivation is the key element in keeping students focused and to prevent them from dropping out of online studies. The present study is aimed at exploring pedagogical motivational strategies utilized by Prophet Muḥammad (ﷺ) on his companions from authentic Ḥadīth and implementing the extracted motivational strategies on online students. The motivation of students must be kept high in order to keep pace with development, to counter its gradual decrease over a period of time. A conceptual framework for the motivation of students is formulated by tailoring Western theories in compliance with motivational strategies implemented by Prophet Muḥammad (ﷺ). Overall, this study encourages online instructors to implement Prophetic motivational strategies on students.

Keywords: Motivation, strategies, attrition, motivator, Prophet Muḥammad (ﷺ), pedagogy.

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1. INTRODUCTION

Social and individual reform can only be brought about through educating and nurturing each child in the right way. Islām has always emphasized the fact that educators have the most important responsibility towards those with whom they are entrusted. This responsibility begins from the early childhood years to adolescence until the child reaches the age of discretion (fully mature). An ideal society constitutes a righteous family with each member contributing their part in the path of reformation (Ulwan, 2004).

Acquiring and imparting knowledge through teaching and learning or by sharing information for survival has led to several changes in the process of education. Thus, a systematic evolution in the mode of imparting education has been observed during the past several years (Anchal, 2008).

The traditional form of education is a process of delivering direct instructions to students and in turn students learn through listening, writing, visualizing, and observing; modern education incorporates all of these along with modern pedagogical skills in a formal way. The modern methodology of imparting education has evolved to be an interactive process. With the advancement of technology, the traditional classroom method, which is teacher-centric education, has shifted to student-centric education over the past decades. (Sathish, 2020) The conventional mode of education consisted of passing on the values, manners, customs, and traditions to the next generation. This traditional education has been gradually replaced by modern education which deals with educating students about various skills of science and technology. Satish et al mention that modern education is an evolution of traditional education, mainly focused on an interactive methodology which includes listening, writing, visualizing, imaging, and thinking skills. It has been noticed that the main difference between traditional and modern education can also be observed in the method of testing the comprehension level of students (Anchal, 2008).

Active participation of students in the learning process, enhanced problem-solving abilities facilitated by teachers directly, equal learning opportunities, social bonding, discipline, improvement in communication skills, counselling support are some of the benefits offered by traditional education to the students, while online learning has its own drawbacks in the above-mentioned fields (Fairgaze, 2020).

In spite of several advantages in traditional education, students opt for online classes. Students find traditional education as a modality restrictive, inflexible, and impractical. Traditional education involves teacher-centric learning and expects students to learn passively while online education is student-centric and requires active learning (Paul, 2019). With significant advancement in the medium of interaction, communication and collaboration, the learning mode has shifted to the online environment (Anchal, 2008).

The paradigm shifts in imparting knowledge to students from traditional to online teaching due to several reasons has created a new body of students facing their own unique challenges and drawbacks. Various research studies have emerged for the comparison of the effectiveness of online versus traditional instruction and proposed suggestions to evaluate which mode of education caters better to the needs of students.

Universities which switched to online courses to meet the growing demands of learners have tried to integrate online learning with respect to student needs. Both students and teachers find online learning convenient because they can access the content anytime and anywhere according to their own schedule. (Hassan, 2014) According to Kearsley (2000), online learning has become a widely accepted medium for education for students who are unable to attend the traditional mode of education. Online learning is an effective alternative method of education for the students who are goal-oriented, self-

disciplined, mature, well organized and have good time management skills with high motivation (Kumar, 2015).

The role of the instructor is crucial in keeping the student's self-efficacy high and attaining the desired behavior by keeping them motivated. (Wu He, 2014) Bailey (2009) points out that online instructors are needed to engage the students actively for better understanding of the course content. Strategies are required to accomplish the task of motivating students by utilizing emails and online discussion boards, responding promptly to discuss questions and organizing course materials.

Even though the basis of teaching in both the traditional and online education is the same for every modality – that is to focus strongly on content, pedagogical method and assessment – the interaction between the teachers and students may get affected in online courses. The main drawback of online studies is the loss of motivation in students, thereby dropping out from online learning. In order to stay motivated during online sessions and not get distracted, online instructors need to adopt strategies which engage students actively during the online discourse of concepts. Ulwan (2004) states that an effective instructor tries to assist students to attain the best personality, character and rationality and provides a foundation for the preparation of students spiritually, psychologically, and socially. The perfect example for nurturing learners can be seen in the role model of Prophet Muḥammad (ﷺ).

2. REVIEW OF LITERATURE

According to Kearsley (2000), online learning has become a widely accepted medium for education for students who are unable to attend the traditional mode of education. Although online learning has become a largely accepted mode of studies, the attrition or dropout rate from enrolled courses is alarmingly increasing (Hurley, 2008).

Online learning is an effective alternative method of education for students who are goal-oriented, self-disciplined, mature, well organized, with good time management skills and high motivation. (Kumar, 2015) The role of the instructor is crucial in keeping the student's self-efficacy high and attaining the desired behavior by keeping them motivated. (Wu He, 2014) Thalheimer (2004) identifies that the key role of motivating a student will help students not to drop out from the course and will reduce the stress of being isolated and lack of support. Khan (2021) pointed out that one of the challenges faced by teachers is that they could not give extra attention to slow learners which affected the teacher's productivity along with student's learning experience. Untrained teachers in the field of the latest technology had to face this challenge without prior knowledge. The psychological state of both teachers and students has to be tackled by introducing appropriate motivational strategies for learning. Research studies show that e-learning has influenced learner performance negatively and as a result, 30 percent of learners have dropped out of school due to inadequate means for learning. (Mahyoob, 2020)

However, Islām lays emphasis on delayed gratification as well as giving incentives for a believer to accomplish their work in the best possible way. Allāh The Almighty bestows rewards based on the motives upon human personality and behavior. The best model is found in Qur'ān as well as in Prophet's behavior in motivating his Companions (Utz, n.d). The Prophet Muhammad (ﷺ) included theoretical, spiritual and practical motivational techniques which directly link to innate human nature (fiṭrah). This study mainly focuses on the techniques of motivation employed by Prophet Muhammad (ﷺ) on his companions, who were striving hard to achieve the desired goal in this world and in the Hereafter. Ulwan (2004) opined five effective means to educate a learner, which are as follows:

- **Setting A Good Example**

Virtuous morals, good reputation, kind treatment and noble Islamic attributes should be imbibed from the tutor's character to instill these noble attributes in students. Witnessing these good attributes in the instructor's personality and character would have an immense impact on the one witnessing it. This is exactly what happened during the era of Prophet Muḥammad (ﷺ). The companions of Prophet Muḥammad (ﷺ) learnt the new religion, principles, and problem-solving techniques by directly observing the Prophet Muḥammad (ﷺ) and the fruit of having the best role model was the formation of the early Muslim Ummah, which was the best of generations.

- **Establishing Beneficial Habits**

Every child is naturally inclined towards worshipping only One God (monotheism), the instructor plays an essential role in providing an appropriate surrounding environment for learners to inculcate good habits, manners and values. This can be achieved when the instructor is conscious of Allāh constantly and is able to internalize the belief that he is obliged to fulfil all his entrusted duties without negligence or shortcomings.

- **Admonishing Wisely**

Effective moral admonition has lasting psychological effects and impressions on the intellectual mind and motivational effects on the logical mind. In the Qur'ān, Allāh The Almighty has employed narrative stories of the Prophets, people of certain towns and civilizations to reflect upon and obtain lessons.

- **Observation**

A well-balanced and integrated human being can be developed only by establishing a firm Islamic foundation while taking care of learners and

observing students from all aspects of life (beliefs, moral, intellectual, academic, social behavior, psychological, spiritual).

- **Appropriate Punishment**

The instructor needs to be merciful towards students when they make a mistake or are unable to complete the assigned work on the designated time. Students vary in their intelligence and responsiveness, so an educator should take into account the nature of the students. Sometimes appropriate written, vocal and facial expressions can be used to caution the students. Bailey (2009) proposed the following ways to actively engage students during online studies:

1. Encouragement to use online technology.
2. Identifying learner questions about the material in advance.
3. Use of polls and other interactive technology to identify the level of student's comprehension and understanding of concepts.
4. Direct call to specific students (cold calling).
5. Conference call to discuss the topics.
6. Engaging students in small buzz group conversations via break out rooms.
7. Video, simulation, text and other various effective principles of pedagogy for online teaching like traditional teaching.
8. Set classroom norms and expectations beforehand.
9. Resolve technological issues in advance.
10. Share presentation slides, videos and images for students to access later for better in-depth understanding of the topics.

The role of instructors is not restricted to merely structuring and efficient delivery of the course but also includes concern for the student's social, moral and psychological development. The key to success of online instructors is to shift their traditional teaching methodology to a new way of thinking, visualizing and implementation in online sessions. The most sensitive role of the instructor is sustaining student participation and motivation (Baran, 2011). Thalheimer (2004) identified that motivating students played a key role in decreasing dropout rates among students and reduced the stress of being isolated and lack of support. Khan (2021) pointed out that among the challenges faced by teachers are that they are unable to give extra attention to slow learners, which also affects teacher productivity along with the student learning experience. Teachers who were untrained in the field of the latest technology have had to come forward to face the challenge of online classes without prior knowledge. The psychological state of both teachers and students must be tackled by introducing appropriate motivational strategies for learning. Research studies show that e-learning has influenced learner performance negatively and as a result, 30 percent of learners dropped out of school due to inadequate means for learning (Mahyoob, 2020). Even though online learning has become a largely accepted mode of studies, the attrition or dropout rates from online courses which students have already enrolled in the courses is alarmingly increasing (Hurley, 2008).

2.1 Lack of Motivation Increases Attrition

According to the Oxford Languages, attrition is defined as the process of reducing the strength or effectiveness of something through sustained attack or pressure. Attrition or dropout rates have been defined by Hurley (2008) as the number of students who enroll in a course but do not fulfill all the course requirements or complete the course. In several studies, researchers have found out that attrition is a serious problem with online education and have calculated attrition rates as high as 70 to 80% to low as 10 to 20% higher than that of the traditional education.

There are several causes for attrition from online courses. Hurley (2008) enlisted the causes as follow:

1. Lack of instructor training
2. Poor course design
3. Lack of student interaction
4. Personal commitments
5. Other causes like age, gender, ethnicity
6. Learning style
7. Constant interruption in online learning

Utz (n.d.) refers to motivation from the Islamic point of view and mentions that Allāh's favor is manifested by expanding one's chest and the tasks becomes easy to handle thereafter. This kind of spiritual motivation compels one to drive towards the fulfilment of the purpose in life and acknowledge Allāh The Almighty as His Creator and to be grateful for the blessings bestowed upon him.

Hassan (n.d.) states that self-motivated people gain Allāh's help, follow commandments, and stay away from the prohibitions in a way that is easy for one and will be at a greater level of ihsān. Therefore, constant supplication (du'ā) for expansion of the chest by Allāh would help one attain the light (guidance) from Allāh and focus on the attainment of the final goal i.e., jannah. This guidance which Allāh bestows on His slaves helps one to remember Allāh in all the aspects of life. The feeling of enthusiasm and tranquility given by Allāh to His slave helps him to identify the truth and not just fulfill the natural drives (physiological drives such as hunger, fatigue, and feelings of heat, pain or cold) in an acceptable manner by Allāh The Almighty which is prescribed in

Islamic law and with a feeling of gratitude. Utz (n.d.) argues that if human beings do not fulfill their drives in lawful gratification, it would lead one to deviate from the *fiṭrah* which will affect the personality and behavior in a destructive manner.

Motivation can be induced internally (motive) and externally (incentive). Spiritual motivation for attaining the pleasure of Allāh The Almighty, physiological motives which drive one to fulfil the natural needs of body i.e., hunger, thirst, love etc. and psychological motives can be in the form of external incentives received after doing a good action and internal i.e., knowing the consequence of a particular action in future. Humans are also affected by the psychological motives which we obtain in the form of incentives, reward and punishment. These motives highly influence the behavior of individuals by attracting them and inducing them to work harder and perform well to achieve high quality performance. At the same time, it will help one to avoid certain outcomes out of fear of punishment. This kind of motivation is often mentioned in Qur'ān.

Allāh has also blessed human beings with certain physiological motives, which must be fulfilled for the preservation of humans. Tension is created when there is no optimal functioning of humans and for the return of the body to homeostasis, this force is subsided by fulfilment. Individuals are obliged to perform tasks in a moderate manner and not according to their desires and whims but instead these motives have to be satisfied in an acceptable lawful manner (Utz, n.d.)

Westerners have defined motivational theories based upon the relationships between the individual and society, but Islām identifies the major motivating factor in an individual is the relationship between a man and his Creator, Allāh The Almighty. Hayat (2019) has outlined salient features of the theory of Islamic Motivation, which are as follows:

- **Guidance (*Hidāyah*) from Allāh**

Allāh The Almighty has instilled a guiding force to those people whom He wishes and this guiding force i.e., motives trigger an individual to elicit a response towards completion of the task or action. Allāh does not just place this guidance in everyone, but it has been placed according to your striving to do the best. Allāh says in the Surah *Al-Layl* 92: 5-10,

Indeed, your efforts are diverse.
As for he who gives and fears Allāh.
And believes in the best (reward),
We will ease him toward ease.
But as for he who withholds and considers himself free of need,
And denies the best (reward),
We will ease him toward difficulty.

Allāh eases the task according to the willingness of the individual to complete the task. Islām is the way of life and Allāh has placed *fiṭrah* (innate instincts) in every human being.

- **Realization of Reward and Punishment in The Hereafter is Eternal**

The sole purpose of the creation of man is to worship Allāh The Almighty. The relationship with Allāh can be maintained only through worshipping Him, and this is not limited to ritual actions, all the daily activities of life can also be turned into a form of worship merely by having *Ikhlāṣ* (Sincerity in actions done for seeking the pleasure of Allāh) and according to the guidance and instructions of Prophet Muḥammad (ﷺ). Motivation in the form of reward and punishment in the Hereafter is the means to test our life. (Utz, n.d.) Absolute submission to Allāh is expected for the reward, seeking knowledge is an obligation upon all Muslims and it is understood from the Ḥadīth of Ṣaḥīḥ

Al-Bukhārī that if you are upon the path of seeking knowledge, then you are upon the path of Jannah.

- **Seeking the Pleasure of Allāh**

Setting the goal for achievement is the key element in motivation of humans. The inner motive must be seeking the pleasure of Allāh, which will influence the process of seeking knowledge. The higher the goal, the stronger will be the willingness of an individual to attain that goal. When there is an inner urge to attain that goal, an individual aims at it until he or she gains it. Therefore, seeking the pleasure of Allāh is a strong motivator and the individual goes beyond his capabilities and overcomes other desires. This was the motivator which inspired the companions of Prophet Muḥammad (ﷺ) to prefer religion over life in the field of war. They reached the peak of human needs i.e., self-actualization (in Maslow's Hierarchy of Needs theory) and were able to offer great sacrifices for the attainment of the pleasure of Allāh (Hayat, 2019).

- **Fear and Hope of Allāh**

Al-Ghazali (2007) explained the concept of motivation in terms of fear and hope in Allāh. The feeling of fear and hope would motivate an individual to initiate responses or behaviors in order to work harder to be close to Allāh in a commendable way. Zaheer (2000) mentioned the statement of Ibn Qayyim al-Jawziyyah that Fear and Hope are like the two wings of a bird. The fear of Allāh will restrain an individual from disobeying Allāh and Hope in Allāh would encourage an individual to do an action expecting the reward, but both the states have to be in a moderate well-balanced state.

3. RESEARCH METHODOLOGY

A preliminary qualitative study was conducted for this study using both primary (Qur'ān and Sunnah) and secondary sources of data. In this study, the

motivating principles derived from Prophetic Ḥadīth were analyzed to study and implement the strategies on online studies to outline the basis of motivational theories which recognised the spiritual, physiological, and psychological needs of students.

4. DISCUSSION AND ANALYSIS

Prophet Muḥammad (ﷺ) is a role model for the entire mankind until the Day of Judgment. As discussed earlier, seeking the pleasure of Allāh The Almighty and expecting rewards in the Hereafter are the strongest motives of an individual to drive a response for a particular action. In order to attain these motives, Allāh The Almighty has sent His Messenger (ﷺ) to guide the people with the best conduct and to follow his footsteps to achieve excellence (*Iḥsān*). Allāh has described Prophet Muḥammad (ﷺ)'s role as a motivator in Qur'ān. (Hayat, 2019).

4.1 Suggested Islamic Model for Implementation of Prophetic Motivational Strategy

This study mainly focuses on the techniques of motivation employed by Prophet Muhammad (ﷺ) on his companions, who were striving hard not only to achieve the desired goal in this world but also hereafter. Tahir (2019) mentions the statement of Nursi, “the Prophet (ﷺ) transformed his hard-hearted people into teachers of humanity and masters of civilized people by conquering hearts and minds. He subjugated spirits and egos, and became the beloved of hearts, the teacher of reason...” Muslim philosophers and psychologists have proposed several theories for Islamic motivation in the past 30 years such as Taqwa model, Khawf wa Raja' model, Islamic model motivation and divine motivation.

An alternative comprehensive theory for motivational learning must be considered which is in compliance with the Islamic principles of learning

encompassing the internal and external factors of physiological, spiritual and psychological aspects of the students.

1. Physiological drive: Setting goals by the instructor at the beginning of the course during the orientation program would help students identify the standard which they need to attain at the end of the course. This would help students prepare mentally for the challenges ahead and review the purpose of doing the course for steadfastness, in accordance with the instinct theory. Allāh The Almighty guides learners or motivates them from within to complete the task. Hence, Prophet Muḥammad (ﷺ) taught the supplication of seeking to increase knowledge and to give the best understanding of the Dīn.

2. Observational and Social Cognitive theory: Students are allowed to do the task in groups to reason out and observe how the instructor is going to respond to the completed task which will influence the motivational level of students. This is how Prophet Muḥammad (ﷺ) influenced his companions at the beginning by creating brotherhood amongst themselves to work harder in the future.

3. Classical/Operant Learning (Behaviorism): Knowing the result of assigned tasks would motivate students to complete the tasks. It can be in the form of a reward, punishment, or incentives of bonus marks. (Alias, 2015).

4.2 Motivational Strategies of Prophet Muḥammad (ﷺ)

Before we get to those rules, we must know what the general definition of wealth (māl) is, and then in terms of the Islamic view.

In Arabic (*al-Māl*) is defined in the "*Lisān al-‘Arab*" dictionary: Wealth is everything that is acquired and owned by people, whether it is a material or a benefit (Ibn Manẓūr, 1956). Thus, it includes everything that a person can benefit from, such as cash, real estate, or animals...etc.

Among *Sharī'ah* scholars there are two definitions for wealth (*māl*), one is the *Hanafī* scholars' definition, the second is from the scholars of the other three schools of Islamic jurisprudence i.e., "*Jamhūr*" definition (*Jamhūr* is used to mention the opinion of the three Islamic scholars Mālik, al-Shafī'ī, and Ibn Hanbal).

Jamhūr definition: Wealth is "everything that has a value, and if it is damaged, it must be compensated" (Az-Zuhaili, 1985).

The *Hanafīs*: Wealth is "all that can be possessed, and usually benefited from it" (Ibn `Abidin, 2000).

The *Jamhūr* added the word "benefited" in the definition of wealth, so everything that does not benefit humans will not be defined as wealth, like unlawful (*Harām*) things.

The *Jamhūr* says that the rights of using something or the benefits are a form of wealth, such as the right to use public water resources, or the benefits we can get from living in a house, or using a car or wearing clothes etc. However, all this is not wealth (*māl*) in the opinion of the *Hanafīs*.

On the other hand, regarding the ownership of wealth, the Qur'ān indicates that wealth (*māl*) does not belong to humans, but rather belongs to Allāh ﷻ. Humans can only benefit from it and they will be asked how they used it. As Allāh ﷻ said: ﴿Believe in Allāh and His Messenger and spend from what He has entrusted you with. Those among you who believe and spend will have a great reward﴾ (Qur'ān 07:57).

If we come to ethical values in financial transactions, we will find that the Qur'ān gives it great importance. Whenever the Qur'ān mentions money or financial transactions it urges the believers to adhere to these morals in their financial dealings, whether with a Muslim or a non-Muslim. Allāh ﷻ

commanded Muslims to be transparent in their financial transactions; one of the most important of these financial transactions is debt, which is mentioned in the Qur'ān in great detail. Allāh ﷻ also urged commitment, honesty, integrity, and fraud prevention. Since money is a blessing and life cannot go ahead without it, it must be preserved and one must strive to invest in our various daily transactions. This is what the Qur'ān clarified through the order to write down the debt, bring witnesses and the mortgage which are tools to prevent abuse of wealth.

Adherence to these moral values can protect the wealth which is considered the lifeblood of the economy and the main element of many transactions because these values protect capital and encourage its investment and use in a sound manner (Hank, 2018). These values are not only found in the Qur'ān or in the Islamic economy, but were also adopted in Western economies, with different names or they remained with the same name.

We will see in the following chapters through Sūrah Yūsuf that all these values mentioned above are among the basic rules that protect the economy from crises.

4.3 The Future Outlook and Planning to Avoid Crises Through Sūrah Yūsuf

The Qur'ān mentions economic management and financial operations several times; one of them in Sūrah Yūsuf. The Sūrah explains economic management tools, the ideal financial market, and how to deal with the crisis occurrence.

The Sūrah is also considered a unique economic lesson because it contains three important points in economic management which are: economic ethics, crisis management, and crisis prediction.

The classic definition of economic crisis is: "The barren year, or the severe drought years" (Ibn Manẓūr, 1956), also it was defined as "Every hardship that a person faces" (Ibn Fāris, 1979), These definitions are considered

traditional, because they are based on agriculture as the main source of the economy.

If we look at the modern concept of economics, the definition of crises will be different:

“Crisis is sudden changes that occur in the internal or external environment of the organization without prior expectation of its occurrence, or opportunities to avoid it, and the successful organization is the one ready to face economic crises and has the ability to manage and direct the crisis in line with its capabilities” (Abou Kahf, 2003).

In the Qur’ān, the meaning of the crisis is mentioned in several terms, including:

- **Affliction:** Allāh ﷻ said: ﴿ And We saved him and his family from the great affliction ﴾ (Qur'ān 37:76).
- **Distress:** As Allāh ﷻ said: ﴿ Say, "It is Allāh who saves you from it and from every distress; then you [still] associate others with Him ﴾ (Qur'ān16:64).
- **Test:** Muslims believe that difficult times are a test from Allāh ﷻ to see a believer’s patience, as Allāh said: ﴿ And We tried them, (and tested them) with times of ease, difficulty, eagerness, fear, well-being and affliction, in order that they might turn (to Allāh) ﴾ (Qur'ān 7:168).

The meaning of distress is confirmed when fear and anxiety afflict a person or institutions if they are hit by a financial crisis, especially when it comes to food security. The meaning of affliction is also confirmed when bankruptcy and the

collapse of financial institutions or banks occur or a large number of workers are laid off, in addition to the loss that occurs to the national economy in general. In all of this, the true believer believes that it is a trial from Allāh in order to distinguish true believers.

By looking at this concept of crisis, we can say that every economy or financial transaction is exposed to crises. From that, we start by looking to the Qur'ān and how it dealt with the crisis through Sūrah Yūsuf.

Sūrah Yūsuf is considered a unique economic theory in order to face economic crises, before or after they happen. We will see that Yūsuf dealt with the crisis and managed it as an economic expert, who was aware of the mysteries of economics and its sciences. Therefore, he developed a solid plan to manage the crisis, as he began to prepare for it before it occurred, which is called anticipating the risks in modern economic parlance.

The following is a summary of the steps taken by Yūsuf, to overcome the expected economic crisis:

First: Predicting the crisis

Predicting means: "Planning and making assumptions about future events using special techniques across different time periods, thus, it is the process that the manager or the decision-maker relies on to develop assumptions about the future situation" (Nadira, 1997). We cannot say that there is an effective forecasting technique unless it fulfills a set of conditions which are:

- Cost
- Accuracy
- Providing the necessary data
- Specified time for collecting information
- Providing the necessary material and moral capabilities

In the Sūrah, the news about the occurrence of a crisis came in a special way, which was unlike today when economists expect a crisis to occur based on certain economic data and experiences. In this Sūrah, the warning that a crisis will appear soon, came from the country's supreme leadership, represented by the King of Egypt. *{And the king (of Egypt) said: "Verily, I saw (in a dream) seven fat cows, whom seven lean ones were devouring, and seven green ears of corn, and (seven) others dry. O notables! Explain to me my dream, if it be that you can interpret dreams}* (Qur'an 12: 43)

It may be said that relying on a vision is like relying on an illusion, and the percentage of certainty of its occurrence is small. To this, we can answer that the prevailing customs in the country at that time gave credence to visions, because the prophets always addressed people in the language they understand. Sūrah Yūsuf mentions three visions: Yūsuf's vision, the dream of the companions of Yūsuf in prison and the king's dream (Sayyid, 2003). The phenomenon of visions was something they were interested in, during that time the priests used to count it as one of their sciences, and they had rules for deciphering what the vision said. Some sheets of papyrus have been recovered from Coptic monuments, containing rules for interpreting visions. (And this was good news for them, and perhaps he knew that by revelation or that the end of drought with a good year, or that it is usual that God eases people after life has been difficult for them). (al-Baydawi, 2000).

In the Sūrah two companions of Yūsuf in prison questioned him about their visions which indicates that this was a common practice among them. Thus, the first signs of the emergence of the crisis were through the king's vision, and this was nothing but inspiration from Allāh to the king and then it was made easy to understand by Yūsuf where he put forward an economic plan to solve the impending financial crisis.

Second: Planning to avoid and deal with the crisis to avoid potential losses

The occurrence of a crisis is considered a critical situation for any institution or economic community. At the same time, the crisis needs firm decisions within a short time frame in order to address the emergency situation. Otherwise, the crisis side effects will grow, and any decision taken will be useless, or at least its positive results will be limited. The crisis also threatens the general interest of the country's economy and will have other consequences on the national and political security side. Yūsuf ʿ succeeded in taking an urgent decision when the king's vision was explained to him, and he interpreted the King's vision as an impending economic crisis that would affect Egypt and its environs.

On this basis, Yūsuf ʿ indicated that the king should formulate some necessary plans to avoid the expected danger by saying: "You shall sow for seven years continuously, then what you reap leave it in its ear except a little of which you eat each year with enough to meet the need. He understood from the king's vision that seven years were the interpretation of the seven cows, the green wheat spikes were the seven years in which the harvest would be good, then there would come seven drought years with a little harvest" (Suan, 2004). So, the kings' people would eat what he had saved in the last seven years, more than that he advised the king: do not eat everything, leave a little to plant it for future. He warned the king thus, because in the past they would not plan ahead and they would say during a famine: This year has taken everything from us, we have nothing left to sow, so he warned them about that in advance.

We can see that the Prophet Yūsuf ʿ followed the procedures for the success of his economic plan and the achievement of its objectives. We can highlight some of these steps as follows:

A. Increasing production:

The first step that Yūsuf ؑ took was to encourage an increase in production, in order to achieve food security in the fruitful years and to keep the surplus for the lean years. The word “you” in these verses came in the plural form, evidence that the discourse is directed to society as a whole to bear this responsibility, because its purpose was to achieve public benefit. Therefore, all components of society must cooperate in order to achieve this. The Almighty said: *{You shall sow for seven years continuously}* (Qur'ān 12: 47).

After all, look at how Yūsuf ؑ increased the rate of employment and efficiency when he called for everyone who was able to make an effort, then see how the total production increased and this is the way to economic development. It is well known in economic theories that the increase in production takes place in two ways:

- The first method: Increasing the volume of production of the commodity produced by the project by increasing the number of employees and leaving the rest of the project elements the same size, and this is in the short term.
- The second method: To increase production by increasing the size of the entire project, where all production factors are increased, and this is in the long run.

The second method is the one that Yūsuf ؑ adopted in his plan to increase production, and this is confirmed by the plural word he used in his call: "You (i.e., all of you) shall sow".

B. Rationalization of consumption:

Rationalizing consumption is to direct the consumer not to waste economic resources, by giving him plans for the optimal use of resources. Allāh said: *{and*

that (the harvest) which you reap you shall leave it in the ears, (all) except a little of it which you may eat (Qur'ān 12: 47).

In the interpretation of this verse:

"At that time the main source of the economy and financial wealth was agriculture, so he urged them to increase planting to increase the harvest. (Then after that) after the seven years of harvest (will come seven hard years) seven years of drought (which will devour all that you have prepared for them) all that you have saved during the seven years of harvest, (save a little of that which you have stored) kept aside" (Tanwīr al-Miqbās min Tafsīr Ibn 'Abbās, 1992).

Take what you need without extravagance, it is also noticeable that Yūsuf ؑ, did not specify a specific value that must be saved, and this is evidence of his intelligence and good management. Rather, he related it to what they ate, even if he expressed the words "a little", but he left it relative, that is, it increases and decreases with the increase in consumption and the population. So, rationalization of consumption means "the optimal use of wealth, meeting needs, balance, moderation in spending, integrity in achieving the interests, and not being extravagant in spending.

The Qur'ān instructed us on how to properly utilize resources. The Shari'ah permitted consumption without wasting, but also set controls and limits for that, although in moderate cases it is a necessity, it is even more necessary in exceptional cases like in economic crises.

C. Saving:

After Yūsuf ؑ, warned the king of the seven years of drought, he advised them to start saving in the years in which the harvest was abundant, for the years in which there would be little or no production *and that (the harvest) which you reap you shall leave it in the ears*. (Qur'ān 12: 47).

Saving is an ancient phenomenon, and it means keeping something in good times for bad times. Islamic economics defined it as the difference in what an individual receives of income and what he needs to spend on his own consumption, and Western economics defines it as the non-consuming part of the income. The two definitions agree that saving is keeping a part of the income or product for times of need.

This is what Yūsuf ؑ wanted to achieve through this plan, after he explained the seven spikes of drought, he ordered them to save for that time and prepare for it from now on, and from here we derive the distinguished future outlook of the Islamic economy. (He '(i.e., Yūsuf ؑ') expressed the vision with all that was indicated, the cows for the years of cultivation because the cow is taken to bear fruit, and "fat cows" is a symbol of fertility, and lean cows are a symbol of drought; the spikes are a symbol of strength, the green spikes are a symbol of abundant food, the number seven is the symbol of the seven years, each spike is a symbol of the food of the year [i.e., what they would eat in those years) (Ibn Ashur, 1984).

From these three points, it is clear that Yūsuf ؑ was prepared for the expected crisis, he developed an astute plan for that, and he followed some economic steps that became the foundations of modern economic systems in dealing with crises, which are: increasing production, saving, and rationalizing consumption. Once again, this highlights the validity and suitability of the Islamic economic theory for solving many of the economic crises afflicting the global economic system today.

4.4 Efficiency in Finance Management

After Yūsuf ؑ, set the plan to manage the expected crisis and how to deal with it, it was necessary to have qualified employees to achieve this plan and reach that goal. Efficiency in management is considered one of the most important foundations in order to achieve what the institution or the economy wants.

"The coming crisis needed the ability to manage matters accurately to control and maintain agricultural resources. It also needed experience, good behavior, and knowledge in management, here, Yūsuf ﷺ specifically mentioned his qualifications for this mission" (Sayyid, 2003).

After the end of the ordeal that Yūsuf ﷺ went through in prison, everyone around him was assured that he was honest and trustworthy and he did not betray the king.

Yūsuf ﷺ thought that he should carry out this project himself and not leave it to corrupt hands which could tamper with the economy's fate and could mean the failure of the plan he had prepared to face the economic crisis. (Yūsuf) said: ﴿"Set me over the storehouses of the land; I will indeed guard them with full knowledge"﴾ (Qur'ān 12:55). Yūsuf ﷺ asked to be appointed storekeeper to serve the community, and this is the goal that the Muslim economist with the obligation to have honesty and knowledge must strive for – increasing wealth is not the goal, but rather a means to achieve the interest of society.

The storekeeper here is the Finance Ministry in the modern economic system, one of the most important institutions in the state's economy, He became its manager (Minister) after he proved his competence and integrity. Yūsuf ﷺ described himself as an honest employee, and this is the most important feature that the person in charge of administrative and financial affairs needs, especially in sensitive centers in the state, including the Ministry of Finance. Yūsuf ﷺ suggested this to serve the nation; he did not ask for anything for himself, but he asked them to entrust him to the kingdom treasuries to save it and to be fair in distributing it among the nation. In Islam, this verse is the basis for the obligation of a person to propose himself to do a government job if he knows that other people cannot do that job appropriately.

In summary, one of the most serious and biggest problems at the state administrative apparatus is the selection of the right employees, especially in

higher positions, which is usually done through private relations and mediation, or party affiliations in many systems.

4.5 The impact of the Muslim belief in solving crises

After Yūsuf ؑ interpreted the king's vision, he explained to them that there would be good days that would come after the difficult time they would suffer from. ﴿Then will come after that (period) a year in which the people will have abundant water, and in which they will press (wine and oil)﴾ (Qur'ān 12: 48) He says: After that these hard years which will take from you what you have stored will pass, a year of prosperity will come after it.

However, this "good year" was not mentioned in the king's vision, so it is from the divine knowledge that Allāh taught Yūsuf ؑ. Then he told the bartender to send these glad tidings to the king and his people, which is salvation from hunger in a prosperous year. "This news about the future is from the Unseen, it is from revelation by Allāh ﷻ, not just the interpretation of visions, it is good news in the fifteenth year. It is a revelation from the Divine Revelation, and this is only for a prophet or messenger of Allāh, so the prophecy and message will be a great good for mankind" (Az-Zuhaili: 2001). He told them that deliverance will come (a year in which people will be helped), meaning: the rain will come, the fruits will be abundant, and they will prepare olive oil as they used to do. The hard time was a test, or a means to enable Prophet Yūsuf ؑ to occupy this position to spread the correct belief. When this interpretation reached the king, he liked it and he wanted Yūsuf ؑ to be brought to him to make him his minister. Here Allāh's empowerment of his Prophet is confirmed: ﴿Thus did we give established power to Joseph in the land, to take possession therein as, when, or where he pleased. We bestow of our Mercy on whom We please, and We suffer not, to be lost, the reward of those who do good﴾ (Qur'ān 12:56). This is the good reward of Allāh ﷻ for

his faithful servant because he is doing his work as dictated by the Islamic faith and morals.

In the Islamic faith, hardship is followed by relief and prosperity. The believer should think well of Allāh ﷻ in every place and situation because we live by the grace of Allāh ﷻ and there is no power or strength for us except through Him, the wretched one is the one left by Allāh ﷻ to himself without any help. Good faith in Allāh ﷻ is confirmed in several situations, including hardships of living and economic crises. 'Abdullāh bin Mas'ūd narrated that the Messenger of Allāh ﷺ said: Whoever suffers from destitution and he beseeches the people for it, his destitution shall not end. And whoever suffers from destitution and he beseeches Allāh for it, Allāh will send provisions to him, sooner or later). (At-Tirmithī, 1998). If a crisis hits the believer, he must believe that Allāh ﷻ will relieve it and remove it.

The modern economic crises faced by many Muslim countries should be met with this belief, it is a high level of faith to which the believer ascends after he is certain that Allāh ﷻ will send relief even after a while. At the same time, the believer does not leave taking measures that would be a reason for solving these economic, financial or other problems.

5. CONCLUSION

The Qur'ān is concerned about every detail of daily life. Sometimes its verses came with general regulations and sometimes with detailed injunctions; it was not confined only to worship, but also included financial transactions, because the mismanagement of wealth will surely result in crises.

The Qur'ān explained how to deal with economic and financial crises before and after their occurrence. Sūrah Yūsuf, which we discussed in this paper, is a unique model in economics which contains economic theories that are still applied until today even with the advancement of economic theories and the

use of technology to predict economic and financial crises such as meteorological technology, which can estimate the extent of precipitation and whether this area is prone to drought, and so on.

Without all these modern tools, the Qur'ān explained to us how Yūsuf ﷺ, faced this crisis and succeeded in managing it as an economic expert by following what is called in modern economic terminology 'the ethics of economics', thousands of years ago.

Although Yūsuf ﷺ, was supported by revelation, Muslim economists must apply these ethics in their management and financial transactions, and keep learning from this Divine book, which is comprehensive in all areas of life. Just as lessons can be derived from Sūrah Yūsuf in the field of economics, other chapters of the Qur'ān can be the subject for further research and studies.

Some of the results that we can reach through this study:

Islam gave wealth great value, just as it did not ignore the smallest details in financial transactions between people, it also clarified how to preserve it and how to face crises that may arise in an economic system because of poor wealth management or natural conditions.

The Qur'ān highlighted the ethics of economic dealings to ensure that wealth is not lost or damaged.

Through Sūrah Yūsuf the Qur'ān clarified the best ways to preserve wealth and economic wealth, as it highlighted the plans that must be followed in facing expected crises, and how to confront them when they occur.

The Qur'ān did not ignore human resources and their paramount importance in facing the economic and financial crisis, as it indicated that reliance on competence is an important element in the economic equation and that planning and rational leadership are the basis of every success.

Muslim economists should not ignore the ideological aspect in their material dealings, and they must consider that the crisis is a test from Allāh ﷻ; having good faith in Allāh ﷻ. will guarantee success in getting out of any crises.

The fifteen-year period in which Yūsuf ﷺ dealt with the crisis and was able to overcome it included the most important economic principles and principles of the financial industry that the Western world claims to have developed with its economic revolution.

All these points and others are also strong evidence that adherence to the Islamic economic rules is enough to emerge successfully from the global economic and financial crisis.

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UNDERGRADUATES' READINESS AND SELF-EFFICACY FOR ONLINE LEARNING

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ABSTRACT

Today, the teaching-learning process has shifted from the traditional physical classroom to the new norm of virtual learning. Nevertheless, students' low level of readiness and self-efficacy for online learning may jeopardize any effort to optimize online learning. This study aims to examine the undergraduates' readiness and determine their self-efficacy for online learning. An online questionnaire is used as the research instrument, consisting of items adopted from Vicki Williams' Online Readiness Assessment, and the Online Learning Self-Efficacy Scale (OLSES) developed by Zimmerman and Kulikowich. The quantitative method is employed and responses from 150 undergraduate students from the University of Technology Sarawak (UTS), Malaysia have been obtained through random sampling. The data collected is analyzed using Statistical Package Social Science (SPSS 25) software. This study reveals that (1) the undergraduates are ready for online learning in terms of goal setting, computer literacy, learning styles, preferences and requirements; and (2) students indicate moderate to high self-efficacy for learning in the online environment, technology use and time management. These findings have valuable implications on e-learning as the students' preferred mode of learning. Further studies can be done to identify the relationship between students' readiness and self-efficacy with academic performance to evaluate the effectiveness of online learning.

Keywords: Undergraduates, Readiness, Self-Efficacy, Online learning.

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1. INTRODUCTION

Education is no longer an option but a necessity for a better life in this evolving world in which technology is one of its prerequisites. The education system has moved beyond chalk and talk whereby the teaching and learning process is enhanced through the use of technology, more so when the recent COVID-19 pandemic has exacerbated the need for virtual learning since schools all around the globe were forced by the governments to close down at its worst. Furthermore, educating generations Z and alpha (born 1997 – present) who were born in the age of technology is challenging if technology is not integrated into the process. Luthra & Mackenzie (2020) asserted that the pandemic has changed the way of educating future generations and redefined the role of educators. It has changed the education system related to curriculum, educator functions, student positions and assessments (Daniel, 2020).

Online learning is an indispensable mode of learning for future education or Education 4.0 to produce highly creative graduates (Haseeb, 2018). Prior research has found that younger students with technology skills tended to accept and adopt online learning more easily (Teo et al., 2011). They also need basic computer skills to use modern ICT and computers. In line with the emerging use of online learning, it is pivotal to determine whether the students are ready and have adequate self-efficacy for online learning. Therefore, this study attempted to answer two research questions:

- i) What is the level of students' readiness for online learning in terms of goal setting, learning styles, learning preferences, computer literacy and learning requirements?
- ii) What is the level of students' self-efficacy for learning in the online environment, technology use and time management?

2. REVIEW OF LITERATURE

2.1 Online Learning

The term online learning has been used interchangeably to refer to e-learning, virtual learning, or web-based learning in contrast to a physical classroom, traditional setting, or face-to-face learning. Some may even confuse it with hybrid or blended learning. Kharve and Gogia (2016) defined online learning as a process of learning by electronic means which involves the use of computer, mobile phone or other electronic devices and accessing the internet. E-learning is described as supported and made possible by the use of modern ICT and computers (Hoppe & Breitner, 2003) to deliver learning and training programs (Newman, 2008).

2.2 Readiness for Online Learning

Readiness is defined by Smart & Cappel (2006) as the preparedness of students to respond to changes and adapt to online learning as a new way of delivering lectures or classes. A study by Adams, Sumintono, Mohamed and Noor (2018) reported a satisfactory level of readiness for online learning in higher education institutes. A majority of the students claimed to have a high level of readiness, ICT skills and competencies needed for online learning. (Olayemi, Adamu & Olayemi, 2021). However, online learning readiness varies from one learning institution to the other, and not all the students and lecturers have been trained for online learning and most students do not have any device or allocation to buy internet bundles (Nganga, Waruru & Nakweya, 2020).

2.3 Self-Efficacy

The concept of self-efficacy was originally proposed by Albert Bandura in his social cognitive theory. It was first introduced as the belief in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1977). It was later defined as an individual's

belief in his or her ability to accomplish or succeed in a specific task, activity, challenge, or situation (Bandura, 1997, 2012). It is how individuals feel, think and perceive motivation, thereby determining their actions and behaviors. It is important to note that it is not synonymous with self-esteem which involves an individual's emotional evaluation of their own value. On the contrary, self-efficacy is one's evaluation of one's own ability to achieve a goal or belief to do so. It is often associated with confidence, motivation, resilience, and persistence. Due to the Covid-19 outbreak, the unprecedented shift to online learning and the integration of educational technology may have affected students' self-efficacy and the effects may differ among individuals. It is integral to academic learning and performance (Hodges, 2008).

2.4 Challenges to Effective Online Learning

There are numerous challenges in promoting online education in developing countries. A survey in three Nigerian universities revealed that the low acceptance of e-learning was due to the low awareness and computer literacy level, unreliable platform and Internet services, and the high cost of implementation (Folorunso, Ogunseye & Sharma, 2006). Similar obstacles faced included infrastructure, limited access to computers and untrained instructors. Kamaruzaman, Sulaiman and Shaid (2021) listed the high cost of data, poor internet services, erratic power supply, inaccessibility to online library resources and limited access to computers as the challenges to effective learning. According to some researchers, online learners' readiness and self-efficacy might be influenced by technophobia or anxiety (Bates & Khasawneh, 2007). Students' ability to succeed with online learning, handle technology and apply time management skills may influence their self-efficacy. Rosenberg (2009) listed ten strategies for a successful e-learning experience, among which are proper time management, web experience, appropriate technology requirements, and an effective learning environment. Students need to arrange a time within their schedules dedicated to online

learning. Teachers' support and motivation might reshape and sculpt their learning self-efficacy (Mitchell & DellaMattera, 2010; Kim et al., 2018).

3. RESEARCH METHODOLOGY

3.1 Participants

This study employed a quantitative method using a descriptive survey research design. The sample of this study encompasses undergraduate students from the University of Technology Sarawak (UTS), Malaysia. 150 students participated in this study by filling out the given online questionnaire adapted from Online Readiness Assessment by Vicki Williams from the Pennsylvania State University, and the Online Learning Self-Efficacy Scale (OLSES) developed and validated by Zimmerman and Kulikowich (2016).

3.2 Instrument

The questionnaire consists of three parts (Part A, Part B and Part C). Part A comprises background information of participants: In the first part of the survey, demographic information of the respondents was obtained. Their age, gender, race, internet accessibility, technology devices owned, and preferred mode of learning were asked. As for the second part of the survey (Part B), the five domains adapted from the Online Readiness Assessment consisting of 30 items are as follows:

- i. Goal setting (five items)
- ii. Learning styles (seven items)
- iii. Learning preferences (seven items)
- iv. Computer literacy (five items)
- v. Learning requirements (six items)

For the third part of the survey (Part C), the study adopted the Online Learning Self-Efficacy Scale (OLSES). The OLSES has 22 items on the three dimensions of self-efficacy as stated below:

- i. Learning in the online environment (10 items)
- ii. Technology use (seven items)
- iii. Time management (five items)

The questionnaire was administered to the respondents online via Google form. The link was shared with the undergraduate students. Data were collected from March to May 2022. The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 25. For Parts B and C, the respondents answered a set of questionnaires based on a five-point Likert-type scale (5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = Strongly Disagree). The findings were presented in the form of percentages, means and standard deviation in figures and tables. In the analysis of students' readiness and self-efficacy for online learning, the interpretation by Aydin and Tasci (2005) was referred to. As a five-point Likert-type scale was utilized, it is suggested that the mean score of 3.40 be identified as the expected level of readiness for online learning. Since a five-point scale contains four intervals and five points with the ratio of 4 over 5 being 0.8, the mean scores will be interpreted as suggested by Pallant (2010), as illustrated in Figure 1.

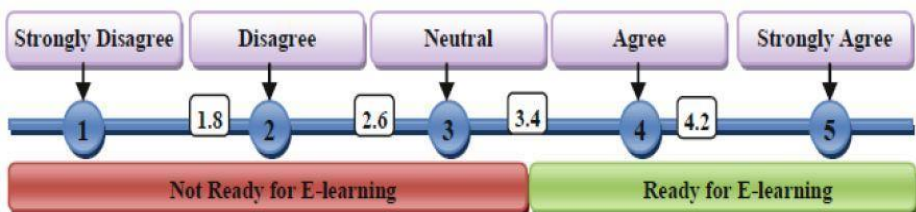


Figure 1. Mean Scores Based on Five-Point Likert Scale

The interpretation for each mean score range in accordance with students' readiness for online learning is presented in Table 1. Meanwhile, the mean score interpretation of their online learning self-efficacy is reflected in Table 2.

Table 1. Mean Score Interpretation of Students' Readiness for Online Learning

Mean Score Range	Interpretation of Readiness
1.00 – 1.79	Strongly not ready
1.80 – 2.59	Not ready
2.60 – 3.39	Moderate
3.40 – 4.19	Ready
4.20 – 5.00	Strongly ready

Table 2. Mean Score Interpretation of Students' Self-Efficacy for Online Learning

Mean Score Range	Interpretation
1.00 – 2.33	Low
2.34 – 3.67	Moderate
3.68 – 5.00	High

4. ANALYSIS

4.1 Demography

A total of 150 respondents participated in this study. Among the participants, 75 (50%) are males and the remaining 75 (50%) are females, aged from 17 to 21 with the majority aged 18. Equivalent numbers of both male and female students should be encouraged since both genders might respond to the questionnaire differently (Bidjerano, 2005). Most of the respondents are

Chinese students (84.7%), followed by Malay (10.7%) and other races (4.7%). A majority of them are studying at the foundation level (96.7%) while 3.3 per cent are from different degree programs, as illustrated in Table 3.

Table 3. Demography Analysis of Participants

Characteristics	Categories	Frequency	Percentage (%)
Gender	Male	75	50.0
	Female	75	50.0
Race	Malay	16	10.7
	Chinese	127	84.7
	Others	7	4.7
Programs	Foundation in Arts	145	96.7
	Others	5	3.3

Out of 150 participants, a total of 95.3 per cent of the participants responded to having good to average Internet accessibility, with 46 per cent of the participants responded that their Internet accessibility was good, with 49.3 per cent average. Only 7 participants had poor Internet connection (4.7%) and none with no Internet access. Among the technology devices owned by the participants are laptop (90.7%), smart phone (76%), printer (35.3%), tablet or pad (17.3%), desktop (15.3%) and others (3.3%).

Internet accessibility

150 responses

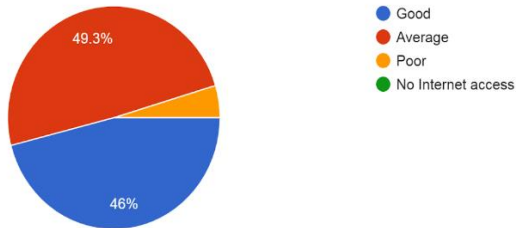


Figure 2. Internet Accessibility

Technology devices owned

150 responses

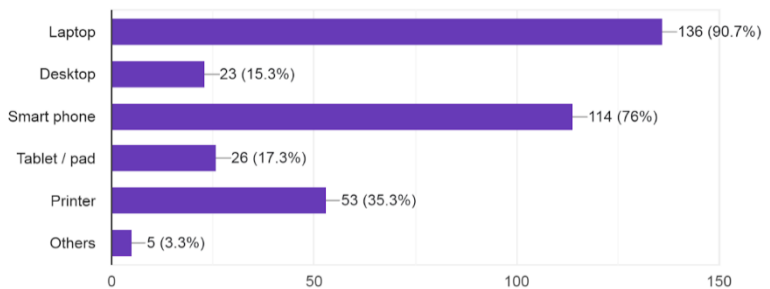


Figure 3. Technology Devices Owned

When the participants were asked about the mode of learning, 38.7 per cent responded that they preferred hybrid or blended learning whereby online learning is integrated with the traditional mode. Coming close is online

learning, also used interchangeably with distance or e-learning, which is at 34.7 per cent. Only about a quarter of the participants (26.7%) indicated their preference for the traditional mode which includes physical classroom and face-to-face teaching and learning.

Preferred mode of learning

150 responses

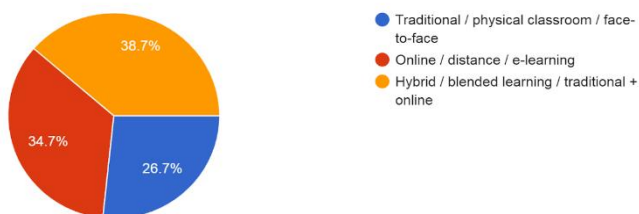


Figure 4. Preferred Mode of Learning

4.2 Reliability

In terms of the reliability of the instrument, Cronbach's alpha coefficient was determined to verify the reliability of the instrument. Based on the study conducted on 150 undergraduate students, the value of Cronbach Alpha obtained for the domains are as follows: goal (G) 0.776, learning style (S) 0.767, learning preference (P) 0.784, computer literacy (C) 0.808, learning requirement (R) 0.799, learning environment (E) 0.880, technology use (T) 0.893 and time management (M) 0.857. The overall Cronbach Alpha coefficient for all the eight domains is 0.821, which is considered a strong reliability level. This means that the instrument is reliable. Table 4 shows the Cronbach Alpha values of each domain, the number of items and the overall coefficient value of the instrument.

Table 4. Cronbach Alpha Coefficient

Domains	Number of Items	Cronbach Alpha
Goal Setting (G)	5	0.776
Learning Style (S)	7	0.767
Learning Preference (P)	7	0.784
Computer Literacy (C)	5	0.808
Learning Requirement (R)	6	0.799
Learning Environment (E)	10	0.880
Technology Use (T)	7	0.893
Time Management (M)	5	0.857
Overall	52	0.821

5. RESULTS AND DISCUSSION

5.1 Students' Readiness for Online Learning

Referring to Table 5, all the five domains of students' readiness for online learning show a mean of above 3.50 which indicated that the students were ready for online learning. The highest mean score was computer literacy (mean = 3.66, SD = 0.652) which revealed that the students were able to do searches, set bookmarks, download files, install software, change configuration settings and can turn to someone for help if there is any problem. Learning requirement domain ranked second (mean = 3.64, SD = 0.688) where the students' computers run reliably on Windows or Mac OS installed with virus protection and connected to fairly fast and yet reliable Internet as well as a stable web browser, with accessibility to a printer, headphones or speakers for online classes. Overall, the participants are ready for online learning in goal setting, learning style and preference too with an average mean of 3.58 for their overall readiness for online learning.

Table 5. Mean and Standard Deviation of Students' Readiness for Online Learning (n = 150)

Domains	Mean	Interpretation	SD
Goal setting	3.57	Ready	.578
Learning Style	3.52	Ready	.538
Learning Preference	3.50	Ready	.587
Computer Literacy	3.66	Ready	.652
Learning Requirement	3.64	Ready	.688
Overall	3.58	Ready	.609

In terms of goal setting, one item shows a high mean score. The participants claimed that they finish the projects that they start ($m = 3.78$). Meanwhile, four items show moderate mean scores. The participants responded that they are good at setting goals and deadlines for themselves ($m = 3.43$), have a good reason for taking an online course ($m = 3.39$), do not quit just because things get difficult ($m = 3.65$) and can keep themselves on track and on time ($m = 3.61$). Students with high self-efficacy set challenging goals for themselves and are committed to achieving their desired outcomes successfully. They do not avoid difficult tasks or see them as obstacles or threats but take them as a challenge to develop their skills. If they fail in a task, they do not dwell on their personal deficiencies and quickly recover their sense of efficacy. Overall, the mean score obtained is 3.57 which indicated a moderate level of readiness.

Table 6. Goal setting

Items	Mean	Interpretation	SD
I am good at setting goals and deadlines for myself.	3.43	Moderate	.578
I have a really good reason for taking an online course.	3.39	Moderate	.538
I finish the projects I start.	3.78	High	.587
I do not quit just because things get difficult.	3.65	Moderate	.652
I can keep myself on track and on time.	3.61	Moderate	.688
Overall	3.57	Ready	.578

Out of seven items on learning styles, the participants revealed a moderate level of mean scores. They can learn easily ($m = 3.18$) from things they hear such as lectures, audio recordings and podcasts ($m = 3.65$), have to read something to learn it best ($m = 3.61$), have developed a good way to solve problems they encounter ($m = 3.43$), learn best by figuring things out for themselves ($m = 3.60$), and are willing to e-mail or have discussions with strangers ($m = 3.34$). The mean score for one particular item is high, which reveals that the participants like to learn in a group as well as on their own. Adams et al. (2018) proposed that online learning curricula include group work in order to be more effective. The overall mean score of 3.52 indicates a moderate level of readiness whereby they are ready for online learning.

Table 7. Learning styles

Items	Mean	Interpretation	SD
I learn pretty easily.	3.18	Moderate	.786
I can learn from things I hear, like lectures, audio recordings and podcasts.	3.65	Moderate	.752
I have to read something to learn it best.	3.61	Moderate	.834
I have developed a good way to solve problems I run into.	3.43	Moderate	.798
I learn best by figuring things out for myself.	3.60	Moderate	.786
I like to learn in a group, but I can learn on my own, too.	3.85	High	.880
I am willing to e-mail or have discussions with people I might never see.	3.34	Moderate	.975
Overall	3.52	Ready	.538

For the third domain which is learning preferences, the participants indicated a moderate level of readiness in the following aspects. They usually work, read and work on assignments in a place without distractions ($m = 3.53$), can ignore distractions around them when they study ($m = 2.78$), are willing to spend 10 to 20 hours each week on an online course ($m = 3.34$), and will get help from the people around them and not be distracted by them ($m = 3.45$). Three other items indicated a high level of readiness as in they keep a record of what their assignments are and when they are due ($m = 3.81$), plan their work in advance so that they can submit them on time ($m = 3.84$) and are willing to use e-mail and other online tools to ask their classmates and instructors questions ($m = 3.77$). The overall mean score is 3.50 which implies that the participants are ready for online learning.

Table 8. Learning Preferences

Items	Mean	Interpretation	SD
I usually work in a place where I can read and work on assignments without distractions.	3.53	Moderate	1.02
I can ignore distractions around me when I study.	2.78	Moderate	.881
I am willing to spend 10-20 hours each week on this online course.	3.34	Moderate	.842
I keep a record of what my assignments are and when they are due.	3.81	High	.903
I plan my work in advance so that I can turn in my assignments on time.	3.84	High	.852
People around me will help me study and not try to distract me.	3.45	Moderate	.856
I am willing to use e-mail and other online tools to ask my classmates and instructors questions.	3.77	High	.860
Overall	3.50	Ready	.587

With regard to computer literacy, the participants claimed to have a moderate level of readiness. They are good at using the computer ($m = 3.43$), comfortable with things like installing software and changing configuration settings on their computers ($m = 3.57$) and know someone who can help them if they have any problems ($m = 3.59$). A high level of readiness is observed as the participants are comfortable surfing the Internet ($m = 3.88$) and with things like doing searches, setting bookmarks, and downloading files ($m = 3.82$). E-learning is expected to improve students' computer literacy, the skill needed in the current workforce (Addah, 2012). They have to be comfortable with various internet tasks which include navigating the web, emailing, downloading and uploading files, and posting messages to discussion boards.

Overall, the mean score for computer literacy is 3.66 which implies that the participants are ready.

Table 9. Computer literacy

Items	Mean	Interpretation	SD
I am pretty good at using the computer.	3.43	Moderate	.806
I am comfortable surfing the Internet.	3.88	High	.802
I am comfortable with things like doing searches, setting bookmarks, and downloading files.	3.82	High	.860
I am comfortable with things like installing software and changing configuration settings on my computer.	3.57	Moderate	.877
I know someone who can help me if I have computer problems.	3.59	Moderate	.978
Overall	3.66	Ready	.652

When asked about the requirements for online learning, the participants indicated a high level of readiness in having their computers run reliably on Windows or on Mac operating system ($m = 3.92$). They also have headphones or speakers and a microphone to use if a class has a videoconference ($m = 3.77$) and their browser can play several common multimedia formats like video and audio ($m = 3.74$). A moderate level of readiness is shown in their responses to having access to a printer ($m = 3.63$), a fairly fast, reliable internet connection such as DSL or cable modem ($m = 3.51$) and access to a computer with virus protection software on it ($m = 3.77$). Newman (2008) emphasized the importance of technology whereby students must have a computer with internet access and other adherent equipment such as printer and speakers. They also need to have the appropriate technology by installing software, internet browser, and multimedia plug-ins. Overall, a moderate

level of online learning requirements is achieved ($m = 3.64$) and the participants are ready for it.

Table 10. Learning requirements

Items	Mean	Interpretation	SD
My computer runs reliably on Windows or on Mac OS.	3.92	High	.879
I have access to a printer.	3.63	Moderate	1.179
I am connected to the Internet with a fairly fast, reliable connection such as DSL or cable modem.	3.26	Moderate	.972
I have access to a computer with virus protection software on it.	3.51	Moderate	.925
I have headphones or speakers and a microphone to use if a class has a videoconference.	3.77	High	1.019
My browser will play several common multimedia (video and audio) formats.	3.74	High	.831
Overall	3.64	Ready	.688

5.2 Students' self-efficacy for online learning

Referring to Table 11, all the three domains of students' self-efficacy for online learning show an average mean of above 3.69 which indicated the students have moderate to high self-efficacy for online learning. The highest mean score was from the domain of time management (mean = 3.78, SD = 0.685) which revealed that the students were able to manage their time effectively, complete all their assignments on time, meet deadlines with very few reminders, focus on schoolwork when faced with distractions as well as develop and follow a plan for completing all required works on time. The second highest mean score was from the domain of technology use (mean =

3.70, SD = 0.645) where the students were able to navigate the online course materials efficiently, find the course syllabus online, communicate effectively with the lecturers via e-mails, and submit the assignments online. The mean score for students' self-efficacy for learning in the online environment is 3.58, a moderate level of self-efficacy.

Table 11. Mean and Standard Deviation of Students' Self-efficacy (n = 150)

Domains	Mean	Interpretation	SD
Learning Environment	3.58	Moderate	.586
Technology Use	3.70	High	.645
Time Management	3.78	High	.685
Overall	3.69	High	.639

There are ten items under the domain of learning in the online environment. The learning environment has to be conducive to maximise learning. Four of them indicated a high level of self-efficacy. The participants responded that they are able to communicate effectively with technical support via e-mail, telephone, or live online chat ($m = 3.69$), learn to use a new type of technology efficiently ($m = 3.71$), complete a group project entirely online ($m = 3.71$), and use synchronous technology such as Zoom, Google Meet, Microsoft Team, Skype and such to communicate with others ($m = 3.89$). Their responses were recorded to be moderate in overcoming technical difficulties on their own ($m = 3.46$), learning without being in the same room as the instructor ($m = 3.49$) or as other students ($m = 3.42$), communicating using asynchronous technologies such as discussion boards, forum, e-mail and so forth ($m = 3.53$), using the library's online resources (e-library) efficiently ($m = 3.27$) and asking questions promptly in the appropriate forum when a problem arises ($m = 3.57$). Overall, it was recorded that the participants showed a moderate level of self-efficacy with an average mean score of 3.58.

Table 12. Learning in the Online Environment

Items	Mean	Interpretation	SD
Communicate effectively with technical support via e-mail, telephone, or live online chat.	3.69	High	.876
Overcome technical difficulties on my own.	3.46	Moderate	.880
Learn to use a new type of technology efficiently.	3.71	High	.832
Learn without being in the same room as the instructor.	3.49	Moderate	.775
Learn without being in the same room as other students.	3.42	Moderate	.846
Communicate using asynchronous technologies (discussion boards, forum, e-mail, etc.)	3.53	Moderate	.808
Complete a group project entirely online.	3.71	High	.885
Use synchronous technology to communicate with others (such as Zoom, Google Meet, Microsoft Team, Skype).	3.89	High	.804
Use the library's online resources (e-library) efficiently.	3.27	Moderate	.962
When a problem arises, promptly ask questions in the appropriate forum (e-mail, discussion board, etc.)	3.57	Moderate	.772
Overall	3.58	Moderate	.586

In technology use, the participants indicated a moderate level of self-efficacy in navigating online course materials efficiently ($m = 3.62$), finding the course syllabus online ($m = 3.67$), communicating effectively with their instructors via e-mail ($m = 3.59$), and navigating the online grade book ($m = 3.53$). A high

level of self-efficacy is observed in submitting assignments to an online dropbox ($m = 3.73$) searching the internet to find the answer to a course-related question ($m = 3.82$) and searching the online course materials ($m = 3.91$). Most common technologies utilized for online learning include word processing, spreadsheet, e-mail, search engines, Google drive, discussion forum, text, voice or video chat, websites, blogs or vlogs, games and social media. An average mean score of 3.70 is achieved, which indicates a high level of self-efficacy in technology use. Wang et al. (2013) reported no difference in technology self-efficacy between males and females. Some reported that students who had higher technology self-efficacy were more satisfied with the online learning experience (Lim, 2001; Artino, 2008). Self-efficacy for the use of technology influenced students' adoption of technology (Chen et al., 2013; Coskun & Mardikyan, 2016; Bakhsh et al., 2017).

Table 13. Technology Use

Items	Mean	Interpretation	SD
Navigate online course materials efficiently.	3.62	Moderate	.849
Find the course syllabus online.	3.67	Moderate	.839
Communicate effectively with my instructor via e-mail.	3.59	Moderate	.779
Submit assignments to an online dropbox.	3.73	High	.833
Navigate the online grade book.	3.53	Moderate	.800
Search the internet to find the answer to a course-related question.	3.82	High	.828
Search the online course materials.	3.91	High	.859
Overall	3.70	High	.645

The results obtained from the items in the domain of time management indicated a moderate level of self-efficacy in managing time effectively ($m = 3.62$) and focusing on schoolwork when faced with distractions ($m = 3.50$). A

high level of self-efficacy is recorded in completing all assignments on time ($m = 4.15$), meeting deadlines with very few reminders ($m = 3.77$) as well as developing and following a plan for completing all required work on time ($m = 3.84$). Bidjerano (2005) reported that undergraduate female students had better time management skills than their male classmates which could be attributed to gender differences in terms of behaviors and the use of learning strategies. Previous research suggests that learners must be able to motivate themselves, manage their time wisely, and take responsibility for their own learning (Collett, 2000; Rovai, 2003; Smith, Murphy & Mahoney, 2003). Overall, the average mean score is 3.78 which implies a high level of self-efficacy in time management.

Table 14. Time Management

Items	Mean	Interpretation	SD
Manage time effectively.	3.62	Moderate	.849
Complete all assignments on time.	4.15	High	.885
Meet deadlines with very few reminders.	3.77	High	.868
Focus on schoolwork when faced with distractions.	3.50	Moderate	.857
Develop and follow a plan for completing all required work on time.	3.84	High	.836
Overall	3.78	High	.685

6. CONCLUSION

This study revealed that the undergraduate students were ready for online learning in terms of goal setting, learning styles, learning preferences, computer literacy and learning requirements. The students also have moderate to high self-efficacy for online learning. The study's findings outline the salience of students' readiness and self-efficacy, emphasizing its importance in the online learning environment, student satisfaction and

intention to partake online learning. Students' readiness and self-efficacy levels will affect their choice of behavior, degree of initiative, emotional response and enthusiasm. A high level of readiness and self-efficacy will produce autonomous and independent learners who take ownership of learning.

Online learning solves the problems of large classrooms, increasing enrolment, and limited staff (Ikpe, 2011). Bhuasiri et al. (2012) claimed that the critical success factors of online learning were computer training, perceived usefulness, attitude toward online learning, computer self-efficacy, program flexibility and clear direction. The learning institute should provide technical support to troubleshoot technical problems encountered in online learning through help lines or other means. Time management workshops can be organized to enhance their experience of online learning platforms. The government has supported the use of digital technologies and provided funding for infrastructure projects. The schools or learning institutions need to invest in proper technological training and support, especially for online collaborative tools unfamiliar to students, equip the computer labs with sufficient technological devices and reliable internet access. Professional development for instructors to effectively use online learning tools should be provided. Instructors should be able to adapt their teaching methods or strategies to take full advantage of the technology. The current education system should flexibly respond and continually address the needs and opportunities associated with online learning. Since most students own mobile devices, it is suggested that e-learning platforms used should be mobile-friendly.

Nonetheless, there are several limitations to this study. First, the research design was cross-sectional which limits its ability to show the relationships between the variables. Second, the participants were predominantly Chinese from the foundation level, thus the findings cannot represent or be generalized to other samples with varying demographic backgrounds. Third,

the facilities and infrastructures of learning institutions might differ, which might create unequal online learning environments for students. Future studies can be directed to the relationship between students' readiness and self-efficacy with academic performance as well as the roles of existing and emerging educational technologies as well as efficient support strategies in learning institutions so that the best practices can be shared.

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EFFECTS OF INTEREST RATE (*RIBĀ*) ON ISLAMIC BANKS & ECONOMY

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ABSTRACT

The structure of almost all economies today is based on interest rates, which is the essential determinant of savings and investment according to classical, neo-classical, and contemporary economists. Therefore, the purpose of this paper is to examine the effect of interest rates on savings and investment, and its influence on the performance of Islamic banks. The study adopts library research and conceptual approach as the method of analysis. Furthermore, the authors have reviewed a significant body of relevant studies written on various aspects of profit and interest, to assess the effects of interest rates on Islamic banks and economy. The results imply that Islamic banks are exposed to interest rate risks while conventional banks are not affected by this, which negatively affects their performance. Meanwhile, the results reveal that there is a negative impact of interest rates on savings and investment which, to some extent, brings economic destabilization. The results of this study may have some substantial implications for economic growth in Muslim and non-Muslim countries. It also provides a platform which facilitates the understanding of saving and investment from the Islamic perspective, and solutions for the existing obstacles in Islamic economics.

Keywords: Interest rate, *Ribā*, Islamic banks, Economic growth.

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1. INTRODUCTION

Economics as a discipline may date back to the writings of Ibn Khaldūn when he provided some preliminary but seminal formulations of modern economic theories. Islamic economics, however, is a relatively new branch of economics. It started in the seventies with the pioneering writings of young professional economists. Although the contributions continued, sometimes with new ideas and other times with further sharpening of existing ideas, this field is still in the infant stage. This provides a great potential to provide more building blocks as time goes by.

The economic structure of almost all economies today is based on interest. Interest plays an important role in the modern and capitalistic economy, and it also plays a major role in our life as it affects all the aspects of life. The web of interest engaged in most economic sectors including financial services, agriculture, business and industry. Islamic economics is therefore directly influenced by the mother discipline of economics. As the latter studies human behavior under scarcity, the former studies the same thing under an additional assumption; namely, the rules of Sharī'ah are enforced.

Shahar et al. (2016) states that interest has progressively and covertly crept into all aspects of human life, according to Prophet's (ﷺ) saying, "A time will come over people when not a single person will remain who does not devour Ribā, and if there be any who refrain from it still its vapor will overtake him" (Abū Dāwūd, Sunan Kitāb al-Buyū', Bāb fī ijtināb-al-Shubuhāt). The reason why Allāh The Almighty forbade Ribā is because of its harmful and bad consequences on the economic system.

The elimination of Ribā is the most popular topic and probably the most discussed issue of Islamic economics. As a result, for the last three decades Islamic institutions and universities have taken serious efforts towards research and studies to meet this challenge. In addition, research has been developed by governments like Sudan to revise different sectors of their

economy especially banking, finance and insurance on how to abolish interest to Islamize the economy but still this remains a major topic for further research.

Savings and investment are the most important tools for economic growth and the interest rate is the most important determinant of savings and investment according to classical, neo-classical, and contemporary economists. Nevertheless, dealing in interest is considered forbidden in Islam as mentioned earlier. Different studies document different results about the impact of interest on savings and investment.

On the other hand, changes of interest rates have an undeniable impact on the performance of Islamic banks (Rosly, 1999), this is because Islamic banks and financial institutions use interest rates as a benchmark; thus we can say that Islamic banks are exposed to interest rate risks. Sh. Muhammad Taqi Usmani advocates that Islamic banks and financial institutions should get rid of this practice as soon as possible. He argues that using interest rates as a benchmark for Ḥalāl business is not desirable, and secondly it does not advance the basic philosophy of Islamic economy thereby making no impact on the system of distribution.

The present paper takes a close look how interest rate affects economic development more specifically, Islamic banks, saving and investment. The paper is spread into five sections including the introduction. Section two (literature review) assesses what is Ribā in Islam, why it is prohibited and what are the types of Ribā. Section three focuses on the Methodology used in this paper. Section four highlights the impact of interest rate on Islamic banks, and how interest affects savings and investment. Finally, section five provides a summary of the study.

2. REVIEW OF LITERATURE

Ribā is an Arabic word, derived from the verb *Raba* that literally means ‘to grow’ or ‘expand’ or ‘increase’ or ‘inflate’ or ‘excess’, which is generally translated into English as “usury” or “interest” (Ayub, 2021). The derivative of this word is used in the Qur’ān several times but not every increment has been prohibited by the Islām, but in fact it has a much broader sense in the Sharī’ah.

Ribā in the Sharī’ah, technically refers to the ‘premium’ that must be paid by the borrower to the lender along with the principal amount as a condition for the loan or for an extension in its maturity (Ahmad & Hassan, 2007). On another words *Ribā* is any excess of profit on a loan for a deferred payment when the borrower is unable to repay it after the fixed period and similarly any excess or profit on a loan at the time of contract (Hanefah, 2012).

According to Ayub (2021) *Ribā* is extremely condemned in the Qur’ān and Sunnah, Islām prohibits the receipt or payment of interest in any form of lending or borrowing that includes but is not restricted to: bank accounts, loans taken for property purchases among others. This is because the conventional theory of transaction considers *Ribā* the backbone of the economy, while the Islamic theory of transaction declares *Ribā* destructive to the economy (Ahmad, Amjad & Aslam, 2018).

2.1 Prohibition of Interest (*Ribā*)

Ribā was prohibited in Islām with a view to encourage Muslims in making rightful investments and protect the wealth of one another from unjust exploitation as well as to avoid hatred, evils and envy among them (Gani, 2020). The prohibition of *Ribā* is also to encourage the spirit of mercy and charity among Muslims by willingly lending to each other without any expectation of getting more than the borrowed amount.

Furthermore, Yunus et al. (2018) contended that prohibition of *Ribā* is a kind of ritual obedience and the reason for its prohibition by Islām is mainly to develop equality, harmony and pleasure in all human beings. Al-Rāzī (2005) stated that Allāh The Almighty forbids usury because it prevents individuals from engaging in lawful business, since a person can earn excess of his wealth without any effort. It also eliminates sympathy, charity, and kindness among the people.

2.1.1 In the Holy Qur'ān

The prohibition of *Ribā* began in the revelation early in the Makkan period confirming that *Ribā* is not welcomed in Sūrah (30:39) Allāh The Almighty said "And whatever you give for interest to increase within the wealth of people will not increase with Allāh. But what you give in Zakāt, desiring the countenance of Allāh - those are the multipliers." In the early Madīnan period Allāh severely condemned the Jews for consuming *Ribā* in Sūrah (4:161) saying: "And for their taking of usury while they had been forbidden from it, and their consuming of the people's wealth unjustly. And we have prepared for the disbelievers among them a painful punishment" the third revelation was after Uḥud around the third year of Hijrah.

Allāh The Almighty said in Sūrah (3:130):

"O you, who have believed, do not consume usury, doubled and multiplied, but fear Allāh that you may be successful" and finally during the late life of the Prophet the revelation prohibited the interest, in this verse of Surah (3:257-81) Allāh The Almighty vows war against those who take *Ribā*: "O You who believe! Fear Allāh and give up what remains of your demand for usury, if you are indeed believers If you do not do so, then take notice of war from Allāh and His Messenger" (2:278-279).

The ḥadīth of Allāh's Messenger (ﷺ) from Jābir – may Allāh be pleased with him: “The Prophet (ﷺ) cursed the receiver and the payer of interest, the one who records it and the witnesses to the transaction and said: ‘They are all alike in guilt’ (Ayub, 2013).

Some other verses of Qur’ān that prohibited *Ribā*:

- “If the debtor is in difficulty, grant him time till it is easy for him to repay. But if ye remit it by way of charity, that is best for you, if ye only knew” (2:280). “And fear the Day when ye shall be brought back to Allāh. Then shall every soul be paid what it earned, and none shall be dealt with unjustly” (2:281)

- “That they took *Ribā*, though they were forbidden; and that they devoured men's substance wrongfully. We have prepared for those among them who reject faith, a grievous punishment” (4:161).

- “O ye who believe! Devour not *Ribā*, doubled and multiplied; but fear Allāh; that ye may (really) prosper”. “Fear the fire, which is prepared for those who reject faith”. And obey Allāh and the Messenger; that ye may obtain mercy” (3:130-2).

2.1.2 In the Sunnah (Ḥadīth)

The Prophet (ﷺ) gave us a complete code of life that covers all aspects of human life (that is, religious, social, and economic activities). Islām as a religion of peace, brotherhood and cooperation has its prime concern of being totally submissive to Allāh. Islām ensures complete success in this life and the Hereafter by following the instructions of the Qur’ān and Sunnah (practices of the Prophet Muhammad (ﷺ)). The Qur’ān has clearly declared interest as Ḥarām and people are prohibited to practice it. Similarly, the Prophet Muhammad (ﷺ) discouraged interest-based activities and strictly

prohibited practicing it. The prohibition of *Ribā* is depicted from following Aḥādīth:

- Abu Saʿīd al-Khudrī – may Allāh be pleased with him – narrated that the Prophet (ﷺ) said: “Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates and salt for salt, like for like, payment being made hand by hand. If anyone gives more or asks for more, he has dealt in *Ribā*. The receiver and giver are equally guilty” (Muslim). This ḥadīth specifies the six commodities to be exchanged at equal and alike amounts. Two of them are represented as monetary commodities while others are staple food items.

- Abu Hurayrah – may Allāh be pleased with him – narrated that the Prophet (ﷺ), said: “There will certainly come a time for mankind when everyone will take *Ribā* and if he does not do so, its dust will reach him” (Abū Dāwūd). This ḥadīth indicates the frequency and excess of *Ribā* in the economy. It was estimated that there will be a time when every transaction would involve the interest (*Ribā*) directly or indirectly.

- Jābir – may Allāh be pleased with him – narrated that the Prophet (ﷺ), cursed the receiver and the payer of *Ribā*, the one who records it and who witnesses to the transaction and said: “They are all alike (in guilt)” (At-Tirmidhī). This ḥadīth reflects the badness of *Ribā* and involvement of different parties in *Ribā* based transactions. The Prophet Muhammad (ﷺ) cursed the four parties – that is, receiver, payer, witness, and the person who documents it. It shows that all the parties equally participated in sin.

- Anas bin Malik – may Allāh be pleased with him – narrated that the Prophet (ﷺ), said: “When one of you grants a loan and the borrower offers him a dish, he should not accept it; and if the borrower offers a ride on an animal, he should not ride, unless the two of them have been previously accustomed to exchanging such favors mutually” (*Kitāb al-Buyūʾ*). It reflects the careful treatment of monetary transactions to control *Ribā* in the

economy. It indicates that any excessive amount or even additional benefit and facility than the principal amount could be the part of *Ribā*.

- Abu Hurayrah – may Allāh be pleased with him – narrated that the Prophet (ﷺ), said: “On the night of Ascension I came upon people whose stomachs were like houses with snakes visible from the outside. I asked Gabriel who they were. He replied that they were people who had received *Ribā*” (Musnad Ahmed). It indicates the terrible results of *Ribā* based activities. The Prophet Muhammad (ﷺ) explained the punishments for the people that were engaged in *Ribā* oriented transactions.

- Abu Hurayrah – may Allāh be pleased with him – narrated that the Prophet (ﷺ), said: “Allāh would be justified in not allowing four persons to enter Paradise or to taste its blessings: he who drinks habitually, he who takes *Ribā*, he who usurps an orphan's property without right, and he who is undutiful to his parents” (Kitāb al-Buyū’). Similarly, this ḥadīth shows the punishments for the bad deeds in this world including *Ribā*. It reveals that receipt and payment of *Ribā* is an activity that may lead to receiving severe punishment.

There are many factors leading to the prohibition of *Ribā*: it is based on unfairness where the borrower pays more than what he borrowed; it is also opposed to risk and return sharing as the lender waits for certain profit without incurring any risks. *Ribā* is forbidden as it is believed to be responsible for leading to inflation and unemployment in society and nations. Thus, its prohibition realizes justice and fairness in the community (Shanmugam & Zahari, 2009).

2.2 Types of *Ribā*

There are two types of *Ribā* in the Islamic Fiqh which is “*Ribā An-Nasiyah*” and “*Ribā Al-Faql*”. *Ribā An-Nasiyah* is defined as excess, which results from

predetermined interest which a lender receives over and above the principle (*Ra's Al-Māl*). While *Ribā Al-Faḍl* is defined as excess compensation without any consideration resulting from the sale of goods.

2.2.1 *Ribā An-Nasiyah*

This kind of *Ribā* is directly mentioned and prohibited in the Qur'ān so it is known as *Ribā Al-Qur'ān*. It is the only type of interest that was considered *Ribā* in the time of Ignorance and thus it is also known as *Ribā An-Nasiyah Al-Jāhiliyyah*. This type of *Ribā* is practiced today in the modern economic system around the world. *Ribā An-Nasiyah* is the amount charged on the principal amount of money lent; basically, it is the principle of time value of money. The modern economy justifies this kind of interest that if the money was not lent out it could generate profit, so the amount charged is the opportunity cost. This is Ḥarām from the Islamic viewpoint because there is no risk taken by the lender and taking risk to gain profit is a major principle in Islamic finance (Ayub, 2013).

2.2.2 *Ribā Al-Faḍl*

The second classification of *Ribā* is *Ribā Al-Faḍl*. Since the prohibition of this *Ribā* has been established in Sunnah, it is also called *Ribā Al-Ḥadīth*. *Ribā Al-Faḍl* means that an excess is taken in exchange of specific homogenous commodities and encountered in their hand-to-hand purchase and sale; heterogeneous commodities can be exchanged in unequal proportion provided the sale is on the spot. The same rule applies to the exchange of currencies i.e. '*Bay' sarf*'. (Ayub, 2013). This is explained in the famous ḥadīth: The Prophet (ﷺ) said, "Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates and salt for salt, the like for the like, hand to hand (i.e., immediate sale), (but) if the kinds differ, then sell as you may like it from hand to hand."

Ahmed and Hassan (2007) emphasize that Muslim jurists have debated the question of whether *Ribā Al-Faḍl* is confined only to these six items or if it can be generalized to include other commodities. Given the wide use of gold and silver as commodity money, the general conclusion is that all commodities used as a medium of exchange enter the field of *Ribā Al-Faḍl*.

3. RESEARCH METHODOLOGY

This study provides a critical discussion on the effects of interest rate (*Ribā*) on Islamic banks and economy. For this purpose, the authors adopted library research and conceptual approach as the method of analysis. Furthermore, the study reviewed a significant body of relevant studies written on various aspects of profit and interest, to provide readers and researchers with lessons about the effects of the interest rate on Islamic banks and economy.

4. RESULTS AND DISCUSSION

4.1 Impact of Interest Rates on Islamic Banks

In the past thirty years, Islamic Banking and Finance Institutions (IBFIs) have speedily found themselves in the universal or global market as an alternative method of investment. The current statistics for the growth of IBFIs highlights a very promising future for Islamic Finance. With the recent international economic and financial crisis, Islamic financial system has been presented as a viable solution. Nevertheless, Islamic finance uses conventional finance benchmarks, such as Base Lending Rate (BLR), Kuala Lumpur Interbank Offer Rate (KLIBOR), London Interbank Offered Rate (LIBOR), etc., to set its own cost of funds and to fix the rate of return to investment.

Asutay (2012) emphasizes that there is a relationship between IBF and the conventional monetary system and that IBFIs go with the standing or existing economic and monetary system; they are inevitably affected not only by the

process of the monetary system but also by the business cycles of economy in which they are functioning. There are several studies which show the correlation between the returns of Islamic banks and the change of interest rates and monetary operations, and therefore support this statement.

Rosly (1999) offers the theoretical enlightenment of the impact of interest rate changes on Islamic bank performance. He highlights those Islamic banks are exposed to interest rate risks and the root cause of this phenomenon is the overdependence of Islamic banks on BBA financing where the profit rate (financing rate) is fixed. Rosly mentioned that when the interest rates are increasing, the BLR and rates of return on deposits of the conventional bank would change accordingly to changes in the market interest rate.

As a result, the profit margin of the conventional bank will not be affected. However, the Islamic bank cannot increase the rate of returns on its deposits because the BBA profit margin is fixed. As consequence, Islamic deposits give lower returns. The switch effect comes into play where depositors prefer the conventional banks. For the most recent case in Malaysia, where Bank Negara Malaysia lower the Overnight Policy Rate (OPR) to 3% in July 2016, it led to a trend of reduction in BR (Base Rate) charged by members banks for conventional floating rate loan.

Though, since existing BBA contracts must follow a fixed selling price, it incurs a high cost of financing upon the buyer who has entered BBA contract with Islamic Bank before the cut of BR. If the investor expectation forecast a further falling of interest rate, it will hinder the performance of Islamic Banks in Malaysia based on Rosly (1999) assumption that investors are profit motivated who will switch to conventional floating loan.

The main objective for introducing a new benchmark as a substitute to interest-based borrowing and lending benchmark is the prohibition of *Ribā*. Muhammad Taqi Usmani advocates that Islamic banks and financial institutions should get rid of this practice as soon as possible. He argues that

using interest rate as benchmark for ḥalāl business is not desirable, and secondly it does not advance the basic philosophy of Islamic economy thereby making no impact on the system of distribution (Ahmed, Islam, Alabdullah & bin Amran, 2018).

Kuran (2005) claims that almost all banking services in most heavily Muslim countries are interest-based. He argues that even though interest is prohibited there is no real mechanism to punish offenders, and the ban on interest has raised the cost of credit and blocked financial modernization. He concludes that no Muslim polity has had a genuinely interest-free economy. El-Gamal (2006) claims that Islamic financial institutions disguise interest bearing loans by substituting them with a mark-up sale or lease financing on the asset side and using Islamic securitization on the liability side.

Khan (2010) corroborates that there remain substantial divergences by not having an Islamic Pricing benchmark will be an important shortcoming, which brings a convergence between IBF and conventional finance and banking. It's true in the case of unavailability of better benchmarking in IBFIs, there will be some certain limitations. For instance, the fixed rate nature of the BBA can inevitably affect the profit of IBs and can load the customer with higher instalment obligations.

There are two major opinions regarding the pricing in Islam, First, it is not allowed to fix the price whether to be lower or higher than the market. Imam as-Syaukani holds that it is prohibited to fix the price because of the possible element of tyranny (*zulm*) involved. Second opinion implies that determining the price is allowed to preserve the basis of justice between people and to avoid the element of injustice (*zulm*) to the public interest (Meera, Kameel, Azmi & Azman, 2010).

In the ISRA Research paper, it proposed the use of CAPM in deriving the pricing benchmark rate for equity-based Islamic Banks, which link the market risk of a project to its required rate of return. However empirical test

displayed inconsistent result of the CAPM calculated required return with the real ROE or ROA of the sector. The calculated CAPMs were very volatile and fail to reflect a true business situation. Giving the unstable and impractical of CAPM, the paper extends the research to Arbitrage Pricing Model (APT) which is designed to overcome the weakness of CAPM.

The APT model includes multiple factors in determining the required return which is more reflective of real business conditions than a pure risk and return model. For APT calculation, this study recognized four macroeconomic variables, which is industry production growth to capture the overall economic growth, the changes of money supply (M2) to capture the monetary liquidity, the Ringgit exchange rate to reflect the relative global competitiveness, and the Kuala Lumpur Composite Index returns to reflect the overall market condition, in the APT model, as having good returns for all the sectors.

The returns thereby determined is suggested here as a practicable Islamic pricing benchmark rate. The estimated required return for APT synchronized with the actual return very closely. Then, subsequently, the individual institution must incorporate its own specific risk characteristic, for example the probability of default of the customer to determine a more precise cost of financing or benchmark rate for each institution. With such Islamic benchmarking, it is hoped the IBFIs can free from the dependence on conventional benchmark rate.

Using interest rate as benchmark to measure the time cost of money in IBFIs in their project evaluation and mark-up value will affect the profit of Islamic banks and can bring the customers to pay higher installment commitments, thus Islamic finance has to come up with an alternative pricing benchmark based on Shariah principles to determine its cost of capital. The initiative by ISRA proves the viability of alternative Shariah-compliant benchmarking for

IBFIS. We further suggest that IBFIs establish an independent institution with authority to set and update the Islamic Pricing Benchmark (IPB).

4.2 Impact of Interest Rate on Saving and Investment

Interest rate affects all sectors of the economy. It has a major impact on the banking sector because they directly deal with money. Bank deposits are considered as a major part of any country's saving and have a main impact on any country's economic growth. There are number of studies in the literature that discusses the impact of interest rate on saving and investment in non-Muslim countries, but only a small number of studies have been done for the Islamic countries. These studies highlighted different findings of how interest rate affects savings in Islamic banks.

Some studies found that there is negative impact of interest rates on saving. The study done by Haron and Ahmad (2000) found that 1% increase of interest rate of conventional banks will reduce the level of investment deposit of Islamic banks by 65 million Malaysian Ringgit. Deposits under Mudarabah account which are proxy of investment or saving level in Islamic banks was positively linked with the rate of return on Islamic deposits and negatively influenced with the real interest rate on conventional deposits. Same result has been documented by Sukmana and Yusof (2005) in Malaysia.

Similarly, a study done by Asutay and Izhar (2007) which was related to Bank Muamalat Indonesia shows that the level of the deposit and its yield is positively correlated from January 1996 until December 2004, where there is negative relationship between conventional interest rate and the deposit yield. Also, Haron and Ahmad (2000) did a study of Islamic banks in Malaysia, and found a positive relationship between Islamic bank's deposit and the rate of profit. On the other hand, they highlighted that there is negative correlation between interest rate and Islamic Bank deposit in Malaysia.

Etem Hakan and Bengül Gülümser (2011) did research on “impact of interest rate on Islamic and conventional Banks in Turkey” and they document that any change in the interest rate it will not only influence the loans and deposits of conventional banks, but it will also influence on Instruments of Islamic banks. Another study by Sukmana and Kassim (2010) focusing on Malaysian economy for the period from January 1994 to May 2007, find that any shock in interest rate will negatively affect Islamic deposits.

While some studies concluded that interest rates have no effect on saving. According to Gerrard and Cunningham (1997) even in non-Muslim Country such as Singapore, Muslims keep their money in Islamic banks because of their beliefs, even if the banks do not pay a profit for one year. Furthermore, Metawa and Almossawi (1998) conducted research in Bahrain and discovered that depositors select the bank where they keep their money based primarily on religious considerations, followed by the rate of profit. Moreover, they emphasized that the rate of profit in Islamic banks is not the only variable that influences deposit volume in Islamic banks.

Hassan (2016) conducted research in Nigeria (a Muslim-majority country) and concluded that interest rates have no significant impact on commercial bank deposits. This result is similar to that of Mushtaq and Siddiqui (2017), who used panel ARDL (Autoregressive Distributed Lag) method, and data from 23 non-Islamic and 23 Islamic countries data for the period between 1999 and 2014. The finding revealed that interest rates in Islamic countries have no effect on bank deposits both the long and short run. However, in the case of non-Islamic countries interest rates have a significant positive impact on bank deposits.

The basic reason which makes Islamic banks more stable than conventional banks is that Islamic banks are not affected by the change of interest rates and as result of this, money demand will become more stable within the economy and the moments that there is stability in money that is held as saving will

have positive influence on monetary policy and financial stability of the economy (Kasri & Kassim, 2009).

The nexus between investment and interest rates has been discussed by innumerable research work. Mostly studies concluded significant negative impact of interest rates on investment; Salahuddin et al. (2009) did study on the behaviour of investment in Muslim developing countries by taking data of 21 countries from 1970 to 2002, used fixed effect model and they found that Debt servicing has negative impact on investment while all other variables that are lagged investment, growth rate of real GDP per Capita, trade openness and institutional development has positive impact.

Mehrara and Karsalari (2011) concluded that there is negative correlation between private investment and real rate beyond the threshold level of 5 to 6 percent, but within the threshold level there is positive impact of real rates on private investment. Muhammad et al. (2013) did a study on how the interest rate affects investment in Pakistan by using the data from 1964 to 2012 and concluded that the interest rate has a negative relationship with investment whereas income has positive impact on investment.

Mushtaq and Siddiqui (2016) used data from 17 non-Islamic and 17 Islamic countries span from 2005 to 2013 to investigate the effect of interest rates on economic performance. The finding shows that in the case of investment, interest rates and inflation have a negative impact on investment, whereas trade has a positive impact on investment in both Islamic and non-Islamic countries. Awad et al. (2021) supplement the neoclassical approach, which holds that the Interest Rates are negatively related to domestic private investment. There is no long-run relationship, according to the empirical findings.

While limited research has found that interest rates have a positive effect on investment saving. Lanyi et al. (1983) concluded that there was a positive correlation between interest rates and investment. They collected data

between 1971 to 1980 from 21 developing countries. Beccarini (2007) used the discount factor to represent the investment, and the Generalized Movement Method was employed to inspect the connotation between the interest rates and investment in an ambiguous environment; the result shows that the correlation between the interest rates and investment is positive.

Wuhan et al. (2015) examined the relationship between investment and interest rate in the Jiangsu Province of China. This province is the largest according to investment. Johansen Cointegration test employed for long run nexus. Whereas, for the short-run association, VECM (vector error correction model) is applied over the span from 2003 to 2012. The empirical outcomes indicated that investment and interest rate have a long-term association. The relationship is positive in the short run; however, the association is negative in the long run. It can be concluded from the study that reducing the rate promoted investment.

5. CONCLUSION

In this paper we looked at how interest rate affects the performance of Islamic banks. We highlighted that Islamic bank use interest rate as benchmark to measure their financing rate. Any changes in the rate of interest, conventional banks can adjust to the new rate, but in the case of Islamic banks it's either the bank will win, and the customer will end up paying higher installment commitments, or the vice versa. Thus, Islamic finance must come up with an alternative pricing benchmark based on Shariah principles to determine its cost of capital. The initiative by ISRA proves the viability of alternative Shariah-compliant benchmarking for IBFIS. For recommendation, IBFIs should establish an independent institution with authority to set and update the Islamic Pricing Benchmark (IPB).

On the other hand, this paper also discussed the impact of interest rates on saving and investment. There are many studies in the literature that discusses the impact of interest rate on saving and investment in non-Muslim countries,

fewer studies has been done in Muslim countries. These studies document different results but in the case of Muslim countries mostly there is negative impact of interest rate on saving and investment. Additionally, Muslims are expected to have knowledge of what constitute *Ribā* and its consequences to avoid it for the betterment of the economy. So, adapting to Islamic ethics at all levels is the only solution to the destructive impact of *Ribā* to the economy. This paper recommends the Islamic heritage of cash Waqf as alternative to *Ribā* based financing.

Consequently, this study recommends a shifting away from abusive high-interest businesses, interest-based savings accounts and adopting what can boost the global economy. Additionally, this study recommends that there is a need for more empirical investigation on the effect of interest rates on the global economy.

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IMPLEMENTATION OF THE FATWÁ OF INDONESIAN ULEMA COUNCIL ON SHARĪ'AH-COMPLIANT FINANCIAL TECHNOLOGY SERVICE PRODUCTS IN INDONESIA

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ABSTRACT

As the largest Muslim population in the world, Indonesia has the potential to become a leading Sharī'ah-compliant financial country. With the technological development in Information Technology, more IT financial service products are introduced to the Muslim market. One of them is peer-to-peer lending financial technology (fintech) service. Sharī'ah-compliant fintech company has been developed due to some factors, namely: the rise of middle-class Muslims, increasing Muslim awareness of Sharī'ah-compliant financial products, and increasing number of smartphone users in Indonesia. DSN-MUI fatwá no. 117/DSN-MUI/II/2018 provides guidance on the implementation of information technology-based financing services based on Sharī'ah principles in Indonesia. This research aims to study the concept of fatwá and its implementation in Sharī'ah-compliant fintech product. In addition, this research also determines the problems and challenges of the fatwá implementation. Dana Syariah as one of the Sharī'ah-compliant fintech that has obtained an operational license by OJK, Dana Syariah uses wakkālah bil ujah contracts and murābahah sale and purchase contract. According to the results of this study, the two contracts are in accordance and comply with the DSN-MUI fatwá no. 117/DSN-MUI/II/2018. However, this fatwá is not legally binding and cannot be enforced by law enforcement. While the operational and legality of fintech uses regulations from OJK. The challenge in implementing the fatwá is the differences of opinion among scholars regarding the

concepts of qabḍu haqīqī (actual possession) and qabḍu ḥukmī (constructive possession) in murābahah contract.

Keywords: DSN-MUI fatwá, financial service, fintech, implementation.

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1. INTRODUCTION

Indonesia is a country with the largest Muslim population in the world. As a developing country, Indonesia's economy is still supported by the existence of Small and Medium Enterprises (SME). The current development of advanced information technology has facilitated funding for SME businesses to access funding quickly, easily and efficiently. In the past two years, there have been many alternative non-bank financing services based on crowdfunding or peer to peer lending, better known as financial technology (fintech) start-up companies.

Indonesia is arguably the most stable country compared to other Muslim majority nations from the economic, social, and political viewpoint. Despite inter religious as well as intra religious conflicts reported in the region, most of them can be resolved in peaceful ways to prevent prolonged conflicts. The middle class drive economic growth with their increased purchasing power, while Muslims encourage the formation of social values based on religious beliefs and norms (Ali & Purwandi, 2017).

According to the Indonesian Shari'ah Economic Society (MES), Indonesia has the potential to become the leading Shari'ah finance country in the world. It is expected that stakeholders can work together to make Islamic finance the first choice. The government's encouragement is also in line with the Shari'ah financial conditions in Indonesia which includes banks, the nonbank financial industry, and the capital market. As of February 2020, total Shari'ah financial assets (not including Shari'ah shares) reached Rp 1.4 trillion or USD 104.45 billion (Republika, 2020).

It is expected that economic actors, individuals and institutions related to Islamic economics can build synergies and partnerships. This is to encourage the development of Islamic economic activities so that Islamic economy and finance become the main choice for the community in business activities including investment and financing.

Although financial services can be the backbone of the national economy, Indonesian residents do not yet have full direct access to financial services. According to a recent survey conducted by the Financial Services Authority (Otoritas Jasa Keuangan - OJK), only 60 percent of Indonesia's population has direct access to financial services and is trying to increase to 75 percent of the population this year.

From 230 million Muslims in Indonesia, there are only 8.11 percent experienced in Shari'ah economics in 2016. The Vice-President of the Republic of Indonesia, Ma'ruf Amin, believes that the existence of a Shari'ah-compliant fintech company will help provide easier access to financial services and can also introduce innovative products in the Islamic economy in Indonesia.

Islamic finance in Indonesia is still struggling to penetrate the market. OJK data also shows that the market share of Islamic financial services stood at 8.47 percent of the total financial services market in June 2018, marking a slight increase from 8.24 percent in December 2017 (The Jakarta Post, 2019).

In 1998, several middle-class Indonesian Muslims decided to enter politics and democracy because of the national reform movement. In other groups, numerous Muslim businessmen built up their business from scratch. They managed to come to the fore by exploiting the growing urban middle-class Muslim who have a modern lifestyle and are adaptive with the development of information technology (Rozaki, A., et al, 2019).

The increasing number of wealthy Muslims in Indonesia followed by growing Shari'ah compliance awareness has resulted in the rapid development of Shari'ah investment. Currently, there are many alternatives to Shari'ah investment in Indonesia, either banking or non-banking based products, such as: deposits, mutual funds, stocks and precious metals. However, people tend to choose investment products which have bigger advantage and greater value for humanity.

The Shari'ah Division of the Indonesian Ulema Council (MUI) and the Financial Services Authority (OJK) prepared a fatwá to function as a legal basis for the operation of Islamic financial technology lending institutions (fintech). MUI's Shari'ah division reviewed a number of contractual agreements to serve as a reference for Shari'ah-based fintech transactions before the fatwá was issued. Following the advent of conventional fintech lenders, people have begun to target the potential of the Shari'ah-based fintech industry (The Jakarta Post, 2018).

The Indonesian Ulema Council (Majelis 'ulamā Indonesia – MUI), as an independent institution consisting of Islamic scholars in Indonesia, has issued a fatwá on information technology-based financing services based on Shari'ah principles (Number 117 / DSN-MUI / II / 2018). This fatwá is expected to be used as a guideline by Shari'ah-based fintech creators and can assure the Shari'ah compliance of a fintech product. The fatwá explains the legal provisions and limitations related to information technology-based financing services based on Shari'ah principles. Shari'ah compliance or Halāl certification makes Indonesian Muslims feel safe and protected in using it. Therefore, the author considers that there is a need for studies or research related to the implementation of the fatwá.

The objectives of this research are to determine the DSN-MUI fatwá concept No: 117 / DSN-MUI / II / 2018 concerning Information Technology-based financing services based on Shari'ah principles, and the implementation of peer to peer (P2P) lending products. This research aims to find problems and challenges of the implementation DSN-MUI fatwá No. 117 / DSN-MUI / II / 2018 concerning Shari'ah financial technology services product.

The significance of this research is expected to contribute to many parties related to the use of Shari'ah investment in fintech products. For Shari'ah financial institutions, this research provides an overview of the DSN-MUI fatwá concept and provides solutions to problems and challenges that may

arise. For consumers of fintech products, this research is expected to simplify understanding the concepts and workings of Islamic fintech, so that more Muslims move to invest in Islamic financial institutions. For researchers and academics, this research will add academic references and provide input on the development of Islamic economics in Indonesia.

The subsequent sections are organized as follows: section two consists of a literature review of existing research regarding financial technology which was implemented in various countries, the definition of Shari'ah financial technology, and history of the Indonesian Ulema Council (MUI). Section three discusses the methodology utilized for this research, which includes research design, sources of data, analysis and interpretation, and research instruments. Section four presents the results of this research and is followed by a discussion comparing the result with related literature. Finally, section five concludes the main points of this research in the form of conclusion.

2. REVIEW OF LITERATURE

The rapid development of financial technology has had significant impacts, both on technological and regulatory factors, on the financial sector. Legal issues and challenges posed by fintech are identified and discussed to provide insight into the legal and regulatory aspects of fintech applications. Miskam, Shahwahid, and Sholehuddin (2018) examined the regulatory approach taken by Bank Negara Malaysia by using qualitative methods and analyzing relevant literature on the subject and data to respond to the rapid progress introduced by fintech. Saad and Fisol (2019) found that the level of consumer awareness in Malaysia is still low with respect to fintech because the fintech market in Malaysia is only dominated by fintech applications for payments and virtual wallets, while there are many other fintech service applications on the market.

Finocracy and Mirakhor (2017) provide views on how fintech can accelerate the adoption of Islamic financial risk sharing. In their research, the Islamic

view of finance supports real sector transactions and suggests a way forward to model a more global Islamic financial system.

In case study research in Malaysia and Brunei Darussalam, Ali and Zaini (2019) showed that fintech has a large potential impact on the conventional and Islamic financial industry in both positive and negative terms. The response and reaction of the Islamic financial industry to the emergence of fintech and its potential impact seems to be very slow compared to their conventional partners. Another study from Azman et al. (2020), crowdfunding, mobile money and peer-to-peer lending play an important role in ensuring income sustainability for micro-entrepreneurs. This study also discusses both theory and managerial implications in understanding the determinants of sustainable income growth in Malaysia.

Hui, Abdulmanaf and Shakri (2019) studied the phenomenon of Islamic fintech globally with an emphasis on Malaysia through analytical research methods by utilizing existing facts and findings in fintech to make proposals for possible problems identified. Existing legal frameworks are studied and researched to determine if they can accommodate the fast-growing fintech.

With a literature study, Hasan, Hassan and Aliyu (2020) contributed by providing insights into the challenges faced by the Islamic finance industry towards integrating Fintech-based solutions with references to past studies and showing areas for future studies that can reduce gaps in the Islamic fintech literature. Islamic fintech can pose challenges for Islamic Financial Institutions in terms of operational efficiency, customer retention, transparency, and accountability.

According to Biancone, Secinaro and Kamal (2019), combining the principles of Islamic finance, crowdfunding, technological progress, and fintech is an opportunity to significantly contribute to the improvement of entrepreneurial ecosystems in the Islamic world and the promotion of social and economic development.

Hasnan Baber (2020) compares the performance of countries that follow the Islamic and conventional financial systems in terms of financial inclusion and fintech using data from the World Bank and the Global Islamic Financial Report. According to his study, Islamic finance countries are more inclined in terms of financial inclusion. In contrast, countries with conventional finance have a higher number of fintech users.

In Egypt, crowdfunding or P2P lending has grown in recent years. According to research by Al-Ajlouni (2018) general societal trends are generally positive for financial cooperative societies participants. They clearly agree that such societies are an extremely successful way to help themselves and others solve financial problems. The majority of the participants worked by organizing the Society and expanding the premise for more people. The survey also shows that the public can become a substitute for banks in providing personal credit.

In Turkey, Ahmad and Al-Mamun (2020) showed two or three of the leading participating banks place more importance on Islamic financial technology, while other Turkish participating banks established in recent years have not taken serious steps. Turkey's position can also enable it to become practically a hub of Islamic technological and financial capacity in recent years considering its operational activities.

According to research in Jordan, the principle of mutual *qarḍ al-ḥasan*, which is called Personal Cooperatives (PC), represents a substitute for the traditional banking system. The Jordanian attitude was very positive towards the PC model. They clearly agreed that PCs were a successful way to help themselves and others in solving financial problems. The majority of participants were in favor of regulating PC societies and expanding their reach and services so that they are accessible to more people (Al-Ajlouni, 2015).

According to research in Oman, fintech is still operating below potential. This may be due to the general lack of interest in this area by Omani start-ups. This situation may also be due to the lack of financing opportunities by local

financial institutions, including Islamic and conventional financial institutions (Echchabi et al., 2020). Andaleeb and Mishra (2016) studied the scope of Equity Crowdfunding as an alternative source of financing for small and newly established businesses that have limited access to institutionalized financial sources in Middle Eastern countries.

2.1 Shari'ah Financial Technology

The term “financial technology” (or fintech) refers to the application of technology for the provision of financial services. Fintech companies are attracting the interest of both financial services users and investment firms, which see them as the future of the financial sector (Anyfantaki, 2016). Fintech brings a new paradigm where information technology drives innovation in the financial industry. Fintech is touted as a game that transforms disruptive innovations that can shake the traditional financial markets.

In the book “Blockchain, Fintech and Islamic Finance”, Mohammed and Ali (2019) said “Fintech in the etymological and general perspective is the portmanteau of financial technology, refers to an emerging financial services sector that is fast becoming indispensable to financial institutions, and is constantly impacting the way technologies support or enable banking and financial services”.

Fintech's innovations have largely emerged outside the traditional financial and banking system and are driven by non-bank entities. The fintech start-up is supported by venture capital and emerging companies, as well as non-traditional providers. These non-bank entities can experiment in environments that are not regulated by the government and often focus their operations narrowly on providing a new set of financial and banking services (Lee & Shin, 2018).

Islamic fintech is defined as “the amalgamation of technology and Islamic finance, which means that any product or service that spawns from fintech must abide by the rules extracted from the Qur’an and Sunnah known as the Shari’ah” (Mohamed & Ali, 2019). While according to the National Shari’ah Board – Indonesian Ulema Council (2018), Information Technology Based Financing Services Based on Shari’ah Principles is “the provision of financial services based on Shari’ah principles that bring together or connect a Funder with a Beneficiary in the framework of conducting a financing contract through an electronic system using the internet network”.

Islamic fintech provides the opportunity for the adoption and application of a risk sharing model in Islamic financial institutions through small innovative start-ups who want to contribute to the Islamic finance industry. The modus operandi of the Islamic fintech should be highly congruent with the asset-backed, interest-free, risk sharing, under-leveraged real sector model of the ideal Islamic economy (Mohamed & Ali, 2019).

2.2 History of Indonesian Ulema Council (MUI) and National Shari’ah Board (DSN)

Indonesian Ulema Council (Majelis ‘ulamā Indonesia – MUI) is a non-governmental organization that houses Islamic scholars (‘ulamā) in Indonesia to guide, foster and protect Muslims throughout Indonesia. The Indonesian Ulema Council was established on the 7th, Rajab 1395 Hijri, to coincide with the 26th July 1975 in Jakarta, Indonesia.

MUI was established as a result of a deliberation of ‘ulamā who came from various parts of the country, including twenty-six scholars representing 26 provinces in Indonesia at that time. From the deliberations, an agreement was reached to form a forum for the Muslim scholars, which is contained in a "Charter of the Establishment of the Indonesian Ulema Council". The Charter was signed by all the participants of the deliberations which came to be called

the 'ulamā National Conference I. The momentum of the establishment of the MUI coincided when the Indonesian nation was in a phase of revival, after 30 years of independence, during which the nation was embroiled in the political struggle of the group and less concerned with the issue of the spiritual welfare of the people.

In its journey, the Indonesian Ulema Council as a forum for deliberation of Muslim scholars has objectives to:

- Provide guidance to Indonesian Muslims in religious and social life blessed by Allāh The Almighty.
- Providing advice and edicts on religious and community issues to the Government and the community, increasing activities for the realization of the Islamic Brotherhood and inter-religious harmony in strengthening the unity and integrity of the nation.
- Liaising between the scholars ('ulamā) and government ('umarā) and the reciprocal translator between the Ummah and the government in order to promote national development.
- Improve relations and cooperation between organizations, Islamic institutions and Muslim scholars in providing guidance to the community, especially Muslims, by holding mutual consultation and information. (Majelis Ulama Indonesia, 2019).

2.3 Fatwá on Information Technology-Based Financing Services Based on Shari'ah Principles

Fatwá on Information Technology-Based Financing Services Based on Shari'ah Principles (Fatwá No: 117 / DSN-MUI / II / 2018) regulates the general provisions of Shari'ah principles in fintech activities and a variety of

products that can be run, among others, Information Technology-based Financing Services may not be contrary to the principles of Shari'ah, namely avoiding Ribā, Gharar, Maysir, Tadrīs, Ḍarar, Ḍulm, and Ḥarām.

The contracts used by the parties in providing information technology-based Financing Services can be in the form of contracts that are in line with the characteristics of financing services, including the contract of al-bay', ijārah, muḍārabah, mushārah, wakkālah bi al-ujrah, and qarḍ.

Various products that can be implemented by technology-based financing service providers include Factoring financing; Financing for the Procurement of Goods ordered by Third Parties (Purchase Order); Procurement Financing of goods for business actors who sell online (online seller); Financing the procurement of goods for business actors selling online with payment through payment gateway operators; Funding for Employees, and Community-based Financing (Majelis Ulama Indonesia, 2018).

3. RESEARCH METHODOLOGY

3.1 Research Design

The design of this research is qualitative research which is a procedure that produces descriptive data in the form of written or oral words from people and observed behaviour. This research method tends to look for a meaning from the data obtained from the results of a study. The objective of this methodology is to reveal events or facts, circumstances, phenomena, and variables that occur during the research by presenting what actually happened.

One of the approaches from qualitative research is the case study approach. This approach is used to investigate and understand an event or problem that has occurred by collecting various kinds of information which are then processed to get a solution so that the problems revealed can be resolved.

3.2 Sources of Data

There will be 2 (two) data sources: primary and secondary data sources. Primary data sources include direct information and interview to related parties, such as from representatives of Shari'ah-based fintech start-up companies. Secondary data sources include field research, literature review, reputable national news or websites, or other Indonesian governmental regulations.

3.3 Analysis and Interpretation

Analyzing the problems and data interpretation is required to gain the solution and objectives of this research. In the case study approach, data analysis can be conducted as follows:

- Organizing information/data.
- Read the entire information/data and give the code.
- Make a detailed description of the case and its context.
- Establish the patterns and look for relationships between several categories.
- Interpret and develop a natural generalization of the case.
- Presenting narratively in the report.

3.4 Research Instruments

Research instruments are the tools needed or used to collect data. In principle, the research instrument has dependence on the required data. Therefore, each study chooses a research instrument that is different from one another. Various forms of research instruments in general can be questionnaires, interviews, observations and documentation.

In this research, the data collection used was interviews which were usually conducted in qualitative research. The structured or unstructured interview has its own level of convenience compared to the questionnaire because even if the interview does not calculate statistically, even so the weaknesses in the interview require a relatively long research time compared to research using a questionnaire.

4. RESULTS AND DISCUSSION

4.1 Result of Research

4.1.1 Regarding DSN-MUI Fatwá no. 117/DSN-MUI/II/2018

DSN-MUI Fatwá no. 117 / DSN-MUI / II / 2018 is a fatwá that provides guidance on the implementation of information technology-based financing services based on Shari'ah principles. This fatwá was issued by considering the increasing number of Islamic financial institutions based on information technology (fintech). The existence of this fintech is expected to be able to assist small and medium enterprises in obtaining access to funding quickly and efficiently in accordance with Shari'ah principles.

Based on positive law in Indonesia, this DSN-MUI fatwá is not binding on citizens and cannot be enforced through law enforcement. The fatwá can be binding if it has been given a certain legal form by a competent institution, for example, it is made into law or regional regulation so that it becomes positive law. Muslims who want to carry out the fatwá do so as a personal religious awareness, not as a legal obligation.

In its development, several fatwás issued by the National Shari'ah Board of the Indonesian Ulema Council (DSN-MUI) constitute binding positive laws. This is because its existence is often legitimized through statutory regulations by government agencies, so that Shari'ah economic actors must comply with it (Hasanah, 2016).

In the case of fintech, the operational and legal basis is the regulation of the financial services authority (OJK) regarding information technology-based lending and borrowing services, no. 77/POJK.01/2016. This OJK regulation states that operators are required to apply for registration and licensing to OJK. This OJK regulation regulates the status of fintech legal entities, risk mitigation, data confidentiality, periodic reports, and sanctions for violating obligations and prohibitions (OJK, 2016).

The subjects of this fatwá are operators (fintech companies), which provide and manage fintech, and users, namely funders and beneficiaries. The business contracts stipulated in this fatwá include: sale and purchase agreement (*al-ba'y*), *ijārah*, *mushārah*, *muḍārah*, *qarḍ*, and *wakkālah bil ujrah*.

In fatwá no. 117 / DSN-MUI / II / 2018, general guidelines that must be obeyed by the parties are:

1. The operational of information technology-based Financing Services must not conflict with Shari'ah principles, namely, avoidance of *Ribā*, *Gharar*, *Maysir*, *Tadlīs*, *Ḍarar*, *Ẓulm*, and *Ḥarām*.
2. The Standard Contract made by the Operator must comply with the principles of balance, justice and fairness in accordance with Shari'ah and prevailing laws and regulations.
3. Contracts used by the parties in the provision of information technology-based Financing Services can be in the form of contracts that are in line with the characteristics of financing services, including contracts of *al-ba'y*, *ijārah*, *muḍārah*, *mushārah*, *wakkālah bi al ujrah*, and *qarḍ*.
4. The use of electronic signatures in electronic certificates carried out by the Operator must be carried out on the condition that its validity and

authenticity are guaranteed in accordance with the prevailing laws and regulations.

5. Providers may charge fees (*ujrah*) based on the principle of *ijārah* for the provision of systems and infrastructure for Information Technology-Based Financing Services.

6. If the financing information or services offered through electronic media or disclosed in electronic documents are different from the reality, then the aggrieved party has the right not to continue the transaction.

4.1.2 Regarding Fatwā Implementation in Shari'ah Fintech Company (Dana Syariah)

Dana Syariah is a Shari'ah-based Peer to Peer Financing Fintech in Indonesia that has been licensed and supervised by the Financial Services Authority (*Otoritas Jasa Keuangan* or *OJK*). Apart from being supervised by the *OJK*, *Dana Syariah* also has a Shari'ah Supervisory Board (*Dewan Pengawas Syariah* or *DPS*) which is recommended directly by the National Shari'ah Board - Indonesian Ulema Council. *Dana Syariah* provides services for lenders to produce their assets and funds with Shari'ah and secure principles.

The products offered on this P2P Shari'ah platform are Shari'ah Funding and Shari'ah Financing. Funders choose the businesses that are being carried out by raising funds by the *Dana Syariah* and place the funds in the businesses according to the preferences of the funders. On each predetermined date, Funders will receive the profit and principal loan repayment according to the agreed upon principal loan repayment schedule and the project and the accounts payable are completed.

The cooperation between *Dana Syariah*, as fintech company and platform Operator, and funder is using *wakkālah bil ujrah* contract. *Dana Syariah* acts as *wakīl*, and funder acts as *muwakkil*. Both parties agree to take certain legal

actions related to the provision of Shari'ah-based financing to the beneficiary, in return for a fee (*ujrah*) which is paid according to the agreed time period. It aims to help individuals or groups to provide financing to other people or companies who need a profitable form of financing in accordance with Shari'ah principles within an agreed period of time.

According to Dana Syariah Supervisory board, the principles used in the *wakkālah bil ujrah* contract are:

1. The funder acts as *muwakkil* and the operator of Shari'ah P2P financing as *wakīl*, and performs certain legal actions related to the provision of Shari'ah financing to beneficiary, in return for a fee (*ujrah*) which is paid according to the agreed upon period.
2. The contract must be stated explicitly, clearly and understood by all parties and stated in writing and electronically according to Shari'ah and applicable regulations.
3. The parties must be legally competent in accordance with the Shari'ah and applicable regulations.
4. The *muwakkil* must have the authority to give the power of attorney to other parties and have the ability to pay *ujrah*.
5. The *wakīl* must have the ability to carry out legal actions that are authorized to him.
6. The object of *wakkālah* must not conflict with Shari'ah principles, in the form of work that is clearly known by the parties.
7. *Wakkālah* objects can have a period of time.
8. The *wakīl* is not obliged to bear the risk of losses arising from his actions, except because of *al-ta'ādi*, *al-taqṣīr*, or *mukhālafat al-shurūt*.

9. The amount of the fee must be clear, either in the form of a nominal number or a certain percentage.
10. The method of payment of *ujrah* must be agreed upon by the parties.
11. The agreed *ujrah* may be reviewed for the benefits that have not been received by the *muwakkil* according to the agreement.

The cooperation between *Dana Syariah* and funding recipient or beneficiary is a *murābaḥah* contract. This *murābaḥah* contract is in the form of providing funds for buying and selling goods at the cost plus a profit margin based on an agreement between *Dana Syariah* as *wakīl* funder and beneficiary. Beneficiaries are required to pay off their obligations in instalments according to the agreed upon period.

This contract aims to help the community to obtain financing in the context of property procurement with payments in instalments according to the agreed time period. *Murābaḥah* objects are property goods, including building materials that are the beneficiary's needs and do not conflict with Shari'ah principles.

According to the *Dana Syariah* Supervisory board, the principles used in the *murābaḥah* contract are:

1. As a funder *wakīl*, *Dana Syariah* acts as a provider of funds in order to purchase goods and the recipient of financing as a buyer.
2. If *Dana Syariah* represents the purchase of goods to the prospective financing recipient based on the *wakkālah* principle, the *murābaḥah* contract must be executed after the goods in principle become the property of *Dana Syariah*.
3. Goods that are the object of financing do not conflict with Shari'ah principles and must be clearly identified in terms of quantity, quality, cost and

specifications. The goods must be in existence, available or ready stock at the time of the contract.

4. *Dana Syariah* may finance the partial or complete amount of the purchase price of goods.

5. The acquisition price of the *murābahah* object must be notified by *Dana Syariah* to the beneficiary.

6. After becoming the owner of the goods ordered by the beneficiary, *Dana Syariah* sells the goods to the beneficiary at the agreed upon selling price.

7. The profit margin agreement must be determined once at the beginning of the contract and does not change during the contract period.

8. *Dana Syariah* may ask the beneficiary to pay a down payment or *urbūn* at the time of ordering goods.

9. The term of the agreement and the payment method of the beneficiary's obligations are determined based on the agreement.

10. *Dana Syariah* and the beneficiary shall state the agreement in a written agreement electronically or in other mutually agreed forms in accordance with applicable regulations.

11. *Dana Syariah* may ask the beneficiary to provide additional collateral other than the goods financed by *Dana Syariah*.

In Shari'ah financing, business owners are required to make a proposal to find financing on the *Dana Syariah* portal. The business owner submits a fundraising proposal to *Dana Syariah* according to the Template. *Dana Syariah* team conducts a location survey (project location, office and / or place of business). If deemed appropriate, the Project Owner and *Dana Syariah* shall bind themselves to the initial agreement.

According to interview session with *Dana Syariah* representatives, the challenge for implementation of *Fatwá* No. 117/DSN-MUI/II/2018 is regarding the definition of *Qabḍ* or possession in *murābaḥah* contract. *Dana Syariah* was criticized by some 'ulamā about its *murābaḥah* contract, which focuses on buying and selling building goods. The 'ulamā have a difference of opinion about the building material (goods) must be in the possession of *Dana Syariah* first by moving it to *Dana Syariah* premises (such as warehouse, etc), before sending to buyers. According to DPS, this is an *ikhtilāf* (scholarly difference of opinion) of *qabḍu haqīqī* (actual possession) and *qabḍu ḥukmī* (constructive possession). Contract taken by *Dana Syariah* is *qabḍu ḥukmī*, before the transfer of possession is completed by documentation while goods do not have to be moved to its premises before other contracts are being made.

4.2 Discussion

4.2.1 *Murābaḥah* Contract

Dana Syariah financing scheme between Operator and Beneficiary uses *murābaḥah* contract. *Murābaḥah* is a contract of financing to which the Operator can act as a mediator between interested parties, namely beneficiary and goods owner. If the Beneficiary wants to own or buy something and does not have sufficient funds, the Operator helps in the form of financing by buying goods in advance. Then, the Operator resells the item to the beneficiary at a price and agrees upon profit margin using the instalment method.

The advantage of *murābaḥah* contract is that the Beneficiary can buy something according to his need and economic capacity. Financing in instalments does not burden the Beneficiary. The Operator and Beneficiary agree upon a sale-purchase transaction and stipulated price based on mutual

agreement, so in this case there is no element of *Ribā* and wrongdoing one another.

The *murābahah* contract should fulfil the conditions of trade transactions related to the seller and buyer, such as: mutual consent; free legal status, above the age of puberty, legally accountable, and sane; being the owner or representative of the commodity. While conditions related to the commodity should also be fulfilled, such as: lawful to use; price and commodity must be available and known to both parties, with no hidden fraud (Al-Fauzan, 2009).

Due to the importance of the guidelines for the sale-purchase *murābahah* contract, the Indonesian Ulema Council (MUI) has issued a *fatwá* regarding the *murābahah* sale-purchase contract, no. 111/DSN-MUI/IX/2017. In this *fatwá*, it is stated that *al-bay' al-murābahah* contract is a sale and purchase contract of an item by confirming the purchase price to the buyer and the buyer pays it at a higher price as profit.

Sellers and buyers must be legally competent in accordance with the Shari'ah and applicable regulations. This *murābahah* sale-purchase contract must be stated clearly, and understood by the seller and the buyer. If the sale and purchase agreement is made in writing, there must be information regarding the acquisition price, profit and selling price (Majelis Ulama Indonesia, 2017).

4.2.2 Wakkālah bil Ujrah Contract

Dana Syariah financing scheme between Operator and funder uses *wakkālah bil ujrah* contract. A *wakkālah bil ujrah* contract in Shari'ah financing is where one party authorizes another party to take the necessary actions on behalf of *muwakkil*. And for *wakkālah*, the Operator (representative) will receive an *ujrah* or fee.

In the book "Al-Wajiz fi Fiqh as-Sunnah", the meaning of *wakkālah* is to submit or represent, meaning that someone represents another in matters that can

be represented. *Wakkālah* is regulated in Islamic Sharī'ah because there is a need for it and not everyone can handle their own affairs. Under certain conditions, a person needs the help of others to represent himself.

Wakkālah is a valid transaction if it fulfils the pillars of *ijāb qabūl*. It is not required to edit certain words, but it is valid if there are signs that indicate it, both in words and actions. The condition for *wakkālah* is a person who is represented (*muwakkil*), a person who represents (*wakīl*) and the object of *wakkālah* (*muwakkal fīhī*). *Wakīl* can be trusted in the matter represented to him, does not bear any loss except due to fraud or neglect (Al-Faify, 2009).

The Indonesian Ulema Council (MUI) has issued a fatwā regarding *wakkālah bil ujah* contract, namely the MUI fatwā no. 113/DSN-MUI/IX/2017. This contract is mostly carried out in Islamic financial institutions, such as Islamic banks, for various transaction purposes. According to the MUI fatwā, the *wakkālah bil ujah* contract must be stated explicitly, clearly and understood by the *wakīl* and *muwakkil*.

According to Ibn Qudāmah, quoted by the MUI fatwā, *wakkālah* contracts may be carried out, either with or without a fee. Prophet Muḥammad (ﷺ) ordered Unays ibn Zuhāq al-Aslamī to carry out punishment (stoning to death) to a woman who committed adultery. This statement is mentioned in Ṣaḥīḥ Muslim, Book 17, Number 4209.

Prophet Muḥammad (ﷺ) asked Urwah al-Bāriqī to buy a goat/sheep with a Dīnār. He (Urwah) bought two sheep with it, sold one of them for a Dīnār and came back to him (the Prophet ﷺ) with a goat and a Dīnār. This statement is mentioned in *Bulūgh al-Marām*, Book 7, Ḥadīth 48. The Prophet (ﷺ) once sent his employees to collect zakāt and gave them a fee (Majelis Ulama Indonesia, 2017).

4.2.3 *Qabḍ* or Possession

According to Islamic Finance, “*Qabḍ* or possession means taking possession of an object of sale or exchange, an amount of money, a financial instrument, etc” (Fincyclopedia, 2013). Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) defines possession as “the gathering of a thing or what takes its rule, according to the requirement of customary practice” (AAOIFI, 2015).

Qabḍ depends on Islamic directions as to a specific category of transaction, ‘urf, or the common business practices prevalent in a specific market. The possession of goods is recognized as having taken place either through actual or constructive delivery of those goods.

Qabḍ can be classified into 2 (two) categories, namely as *qabḍ ḥaqīqī* and *qabḍu ḥukmī*. *Qabḍ ḥaqīqī* or physical possession refers to a state where a person has actual possession and the rights to control. *Qabḍ ḥukmī* or constructive possession refers to a state where a person does not have actual possession but has the legal rights to control an asset (Islamic Markets, 2021).

AAOIFI recognizes both categories, actual possession and constructive possession. According to AAOIFI Shari’ah Standard No. 18 about Possession (*Qabḍ*), “Actual possession takes place in movables through physical corporeal delivery. Constructive possession takes place by relinquishing (releasing) the thing for the person entitled to it enabling him to deliver it without any obstacle even when no transportation or transmission has taken place”. Mode of possession in things is based on custom (‘Urf). Possession of things differs in accordance with the nature of things and differences among people with respect to things (AAOIFI, 2015).

5. CONCLUSION

DSN-MUI Fatwá no. 117 / DSN-MUI / II / 2018 is a fatwá that provides guidelines for Shari'ah fintech implementation in Indonesia. This fatwá emphasizes transactions that are not permitted by Shari'ah principles, standard contracts, the use of electronic signatures and collection of fees by fintech operators. This fatwá is not legally binding and cannot be enforced by law enforcement. While the operational and legality of fintech uses regulations from OJK.

Dana Syariah as one of the Shari'ah-based fintech that has obtained an operational license by OJK, under guidance from the DSN-MUI fatwá no 117 / DSN-MUI / II / 2018. Dana Syariah offer Shari'ah-based financing for property businesses. *Dana Syariah* uses *wakkālah bil ujah* contracts to collect funds from investors. Meanwhile, in financing the beneficiary, Dana Syariah uses a *murābahah* sale and purchase contract. According to the results of this study, the two contracts are in accordance and comply with the DSN-MUI fatwá no. 117 / DSN-MUI / II / 2018 and two others specific fatwás which giving guidance on *wakkālah bil ujah* and *murābahah* contracts. To guarantee Shari'ah compliance in fintech operations, the role of the Shari'ah Supervisory Board is extremely crucial.

The challenge in implementing the fatwá is the differences of opinion among scholars regarding the concepts of *qabḍu ḥaqīqī* (actual possession) and *qabḍu ḥukmī* (constructive possession) in *murābahah* contracts. These two categories of possession are recognized by Islamic fatwá institutions, such as MUI in Indonesia and AAOIFI.

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ASSESSMENT OF AGRICULTURAL LAND-USE INTENSIFICATION PRACTICE AND ITS DETERMINANTS AMONG FOOD CROP FARMERS IN SOUTH-WESTERN NIGERIA

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ABSTRACT

The agricultural land-use intensification process is the continual cultivation of a farmland area that is characterized with low fallow period and improved methods of farming system. Such practices were considered as a means to enhance food crop production in order to keep pace with food demand. In view of this, there is a need to assess the extent and determining factors of agricultural land-use intensification among food crop farmers in south-western part of Nigeria. A sum of 346 respondents were sampled through multi-stage sampling technique. Data was collected using a structured questionnaire and analyzed with descriptive statistics, Ruthenberg (R) index and Fractional Logit Regression Model. The findings showed that the percentages of farmers with low ($R < 33\%$), medium ($R \leq 66\%$) and high $R > 66\%$ land-use intensities were 3.18%, 19.65% and 77.17% respectively while the mean value of intensity of land-use is approximately 80% based on Ruthenberg index. This study further identified that agricultural land-use

intensification in south-west, Nigeria hinges on the gender of the farmer, credit access, inorganic fertilizer use, farm size and extension services. It has to be concluded that the agricultural land system is associated with high land-use intensity in the study area. Policy efforts on agricultural land-use intensification strategy should be ready at all courses to support the farmers by providing inorganic fertilizers, unconditional credit, and also facilitate easy access to farmland parcels as well as extension trainings in order to ensure a sustainable agricultural intensification.

Keywords: Agricultural land-use intensification, food crop farmers, Ruthenberg (R) index, fractional logit regression model, south-west, Nigeria.

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1. INTRODUCTION

Agriculture is a land-based production system and its intensification – especially under food crop production – requires that farmlands should be ideally managed in order to raise farm productivity. This automatically calls for sustainable agriculture in all developing countries including Nigeria. In line with the framework of Boserup (1965) and Ruthenberg (1980) on the intensification of the farming system, agricultural intensification takes any one of these forms in smallholder farming practices, that is: an increased proportion of cropped land at the rate of a reduced fallow length and fallow area (Becker and Johnson, 2001; Garnett and Godfray (2012); cropping for longer periods during the year including the off-season cropping (FAO, 1997); more crops per unit land area by intercropping and multiple cropping (Andrews and Kassam, 1976; Dawson, et al., 2019); increased input use per unit area (Tiffen et al., 1994; Yusuf et al., 2011); and increased factor productivity (Cassman and Pingali, 2005).

The most economic indices of agricultural land performance are outputs or yields per hectare among others, and so by interpretation, land-use intensification refers to any practice (system of land-use) that increases output per unit area of land. Also, according to Cook et al., (2015) agricultural intensification, as a sustainable concept refers to a rise in the outputs without adverse environmental impacts and without the cultivation of more land. Literatures had made it known to farmers that the potential of this practice relies on the availability and effective management of farm production inputs. For instance, it has been reported that agricultural intensification depends on efficient land-use and proper reallocation of farm resources (Awoyinka et al., 2009; Raufu, 2010; Saka et al., 2011).

In respect to the gradual reduction in cropland due to urban development among others, agricultural intensification practice, as cherished by smallholder farmers serves as an effort to boost farm production and survival.

Consistently, in many of the rural communities the assessment of agricultural land-use intensification is necessary for planning agricultural development, because of the role of agricultural land system in supporting food security and Sustainable Development Goals (Shrestha et al., 2021). In other words, the intensification of agricultural production has been, and continues to be one of the most common policy strategies for promoting human development and improving food security. It is worthwhile to note that sustainable intensification can be a great advantage to guide agriculture in the period of increasing food demand and limiting resources (Cook et al., 2015).

Moreover, agricultural intensification geared up towards the promotion of modern farm inputs such as seeds or fertilizers, commonly subsidized to promote production of different crops, often with reduced fallow periods, and in effects supported national markets and international export (Dawson et al., 2019). Sanctus (2011) believed that by growing a certain number of crops, farmers can benefit from an optimum land-use in terms of improving farm output and increasing on-farm income offered to landless households. In view of all these, this article is motivated and assessed the extent and determining factors of agricultural land-use intensification among food crop farmers in south-western part of Nigeria.

Meyfroidt et al., (2018) pointed out that agricultural intensification is often seen as a key tool for sustainability, to lessen competition for productive land and mitigate associated trades-offs, but the dynamics and spill-over effects of intensification remain insufficiently understood. However, agricultural intensification of the peasant farmers especially in Nigeria has some challenges which cannot be overlooked. The major problems are inadequate land-use methods, land ownership and poor farm resources distribution among the farmers in Nigeria. For instance, prior studies observed that fallow areas have disappeared, but cropping intensities remain very low. The use of organic and chemical fertilizers is too low to maintain soil fertility while investments in irrigation are inadequate (Binswanger-Mkhize and Savastano

2017). These in consequences, shows bad implication on the threshold of food production because our domestic turnout has never been enough to meet demand. As evidence based on the research work by Shrestha et al., (2021), the current demand for food has continued to rise due to the world's rapidly increasing population.

Thus, the need to execute this study is inevitable firstly because of the need for food production as the human population grows or reduction in cropland, and secondly because the sustainable agricultural intensification strategy is one of the important policy concerns to ensure food supply and security in the year 2030. As a result, the study aimed at analyzing the following specific objectives: describe socio-economic characteristics of food crop farmers in south-western part of Nigeria; measure the extent of agricultural land-use intensification among food crop farmers and determine the factors that influence agricultural land-use intensification practice among food crop farmers. Conjunctively, this study is hypothesized that agricultural land-use intensification practice among food crop farmers has no significant economic-drivers that determine it. This paper has magnificently contributed to literature by filling the gap in research because studies on assessment of the extent and determining factors of agricultural land-use intensification among food crop farmers in south-western part of Nigeria is dearth in the study area. Also, it strengthens the ability of food crop farmers to organize their farm resources for agricultural intensification just to enhance farm returns.

2. REVIEW OF LITERATURE

2.1 Concept of Agricultural Land Intensification

Agricultural intensification, as proposed by some theorists, is a way to reduce forest clearing for increasing the outputs in farmed plots or increasing efficiency instead of cutting more forest (Boserup 1965). It involves permanent cropping on a fixed plot with the aims of getting optimum output while good soil conditions and environment are sustainably maintained. In

such cases, the term agricultural land-use intensification will go hand in hand with sustainable concept to meet the goal of surplus production in order to feed the burgeoning population. In many regions across the world, agricultural land-use intensification may be usual farming practice because the purpose of agricultural land is primarily changing in response to population growth rate and urban development. Sequel to these, the available farmland needs to conserve for food production and subject to intensification system. Lerner and Lopez-Carr (2010) stipulated that land-use intensification is often measured by actual agricultural methods, such as using fertilizer or number of years successively cropped on a given hectare of land. This approach of agricultural practices has been in existence for centuries and probably pronounced in several areas where cropland is scarce due to several reasons. The evidence of agricultural land intensification as identified by Carswell, (1997) cited in the work of Yusuf et al., (2011) were increased use of organic or inorganic fertilizer, labor, improved seeds, animal traction, mechanization, multi-cropping, or series/relay-cropping and changes to the land reclamation such as irrigation, or soil conservation measures.

The perception about whether land-use intensification strategy causes depletion of economic and environmental resources may not be completely reckoned with, as long as the land cultivators incorporate the use of soil amendments into farming especially the modern conservation practices, in addition to agronomic measures. The resulting intensification in land-use has occurred mostly in the absence of conservation measures and has been identified as the main cause of land degradation and nutrient depletion According to Tsue (2015), land use, coupled with management practices is the key instrument for achieving increased crop yield and productivity as well as agricultural produce sustainability.

Land-use intensification is one of the most significant forms of land resource utilization targeting increased agricultural production outputs from farms. The processes associated with agricultural intensification include an

increased (per fixed unit of land) frequency of cultivation, an increase in labor inputs, or a change in technologies. Agricultural intensification is beneficial to farm growers apart from raising agricultural yields, it can as well support the regional sustainable development and national food security strategies (Xie et al., 2012).

According to Yusuf et al., (2011), the traditional practice of being unable to meet the increasing demand for food as induced by demographic pressures and rising demand for agricultural produce led to agricultural land intensification – a new practice in agriculture, involving change in land use. In other words, intensification of agricultural land productivity is mandatory in more densely populated areas because of the rapidly growing population as well as food demand. Therefore, increased agricultural production in sub-Saharan Africa may be attributed to cropland intensification and area expansion (Vanlauwe et al., 2014).

2.2 Theoretical Framework

Both theories of Boserup (1965) and Ruthenberg (1980) conjunctively agreed that agricultural intensification as a farming system began since the period when farmland was said to be under human pressure. Prior evidence in Africa is consistent with the framework. Over the past two decades, rapid population growth has put farming systems under stress, while rapid urbanization and economic growth have provided new market opportunities (Binswanger-Mkhize and Savastano, 2017).

Since independence in the 1960s, Sub-Saharan African countries (SSA) have undergone exceptionally fast population growth. They also have faced rapid urbanization and some economic growth, which has tended to increase the demand for agricultural products. In more densely populated areas, the rising population has resulted in farm sizes now close to East and Southeast Asian levels (Headey and Jayne, 2014; Otsuka and Place, 2014). This means that farmers now have to fend for their livelihood in a much-reduced area, which

requires rapid intensification and productivity growth. At the same time, the rising demand for agricultural commodities should be beneficial for them in terms of better market opportunities and higher prices for non-traded commodities. Both forces are leading to higher farming intensities, and possibly to higher investments and input use. Under the theory of intensification of farming systems of Ester Boserup (1965) and Hans Ruthenberg (1980a, b), the BR model of intensification, both population growth and market access can lead to a virtuous cycle of intensification of agriculture: These forces lead to a reduction in fallow, higher use of organic manure and fertilizers to offset declining soil fertility, and investments in mechanization, land and irrigation. All of these have the potential to offset the negative impact of population growth on farm sizes, maintaining or increasing per capita food production, and even increase a farmer's income, which we call the BR predictions. Thus, in most case studies across locations intensification has progressed along the lines predicted by Boserup and Ruthenberg.

In addition, agricultural land-use intensification practice is also based on Von Thunen (1850) model of land-use which is prior to the BR predictions. It predetermined that the farming system steadily became intensified as the agrarian sites and cities converged, which in turn resulted in an increase in the price of land. These two theories (Ricardian and Von Thünen) are the basis for most economic models of land-use change. Combining the two theories by integrating the inherent features of plots (Ricardo) with distance measures (von Thünen) and relaxing some additional assumptions provides a consistent economic theory to explain land-use changes in a spatially explicit manner. Previous studies on land use made references to the Ricardian notion of land rent and demonstrated how land use varies across a landscape at a given location and depends on the cost-of-access to market, road, and population centers (Deininger and Minten, 2002).

2.3 Empirical Literature Reviews

In this paper, the relevant past studies reviewed include the following:

Okike *et al.*, (2001) worked on agricultural intensification and efficiency in the West African savannahs: Evidence from northern Nigeria. Frontier production function to measure farm-specific efficiency, parameter estimates for factors of production and inefficiency effects were obtained and the farms were characterized according to their economic efficiency ratings. The results show that a positive relationship exists between agricultural intensification and economic efficiency and that food production in West Africa could be significantly boosted through improving the economic efficiency of farms by utilizing existing resources as well as introducing improved technology.

Lerner and Carr (2010) based their discussion on the fact that tropical deforestation is one of the world's most pressing environmental issues. Some theorists, building on agricultural economist Esther Boserup's work, proposed that agricultural intensification through population growth curbs deforestation through limiting extensive forest cutting for agricultural purposes. Although various scholars have studied the drivers of tropical deforestation, few have examined the determinants of agricultural intensification, which plays a key role in forest conservation. This paper uses household data collected in the Maya Biosphere reserve, Guatemala, to uncover predictor variables associated with intensification in farmed plots. Maize productivity is statistically and positively related with several key variables including smaller farms, and a small percentage of overall land area in crops; the latter households dedicate more of their output to market sales instead of subsistence.

Udoh *et al.*, (2011) in their study investigated the agricultural land allocation pattern and the level of land-use intensification among farming household heads in urban local government area of Akwa Ibom state in the southern

Nigeria. A two-stage random sampling technique was used to select 240 farming household heads. A structured questionnaire was used to collect primary data from sample farming household heads in the study area. Combination of analytical tools including descriptive Statistics, Herfindahl index, Crop Diversification index, and Ordinary Least Squares technique were used to analyze the specific objectives. From the results an average Herfindahl index of 0.641 and land intensification index of 0.8654 were obtained among respondents. Also, a negative relationship was discovered between land intensification index and farm size in the study area. The study therefore suggests provisions of improved seed varieties and other inputs to farming household heads by the Akwa Ibom state government. Also, state government should intensify effort to reclaimed less productive land and developed Fadama projects in the state to reduce the menace of land use intensification among farming household heads in the area.

Saka *et al.*, (2011), in their study, examined the structure of land-use intensification in food crop production in southwestern Nigeria towards determining its drivers and concordance with condition for sustainable intensification. The results showed that land-use intensification is characterized by high frequency of cultivation (79%) and high cropping intensity estimated as 1.24years/ha. Cropping intensity was however higher in the derived and southern guinea savannah than forest agro-ecology. However, about 48%, 32% and 12% made use of inorganic fertilizer, tractor, and herbicide respectively. Farm and farmer specific attributes significantly influenced the level of land-use intensity of food crop farmers. The structure of land-use intensity portrays challenges for sustainable growth through intensification thus underscoring the need for adequate focus on sustainable land management messages by the extension system.

Garnett and Godfray (2012), predetermined if sustainable intensification is to be a useful aid to thinking about how food production should develop in coming years, the assumptions that underpin these different interpretations

of, and attitudes to, sustainable intensification need to be exposed and explored, so that analysis as to the way forward is founded on a shared understanding of what is actually being discussed. Put simply, differing interpretations of sustainable intensification hinge upon three linked assumptions. The first is that sustainable intensification denotes a particular type of agriculture; the second that it is inherently bound up with arguments about the 'need' to produce more food; and lastly, that the 'intensification' side of the term should be preferred over 'sustainable.' These three criticisms are addressed in turns in this work for perfect understanding of the concept.

Kodiwo (2012) examined the complex nexus between agricultural land-use intensity and the socio-economic milieu in which the farming households operate. The study is based largely on field interviews conducted on 257 homesteads chosen randomly using multistage sampling. Data are analyzed using both simple mathematical calculations and computerized multivariate techniques including stepwise Regression and Factor Analysis. The study reveals that socio-economic factors studied accounted for about 92 per cent of the spatial variations in land use intensity between the farmsteads. The regression of the 17-predictor variables on land use intensity using the stepwise method reveals that dependency ratio, sex ratio. Family size, farm size, crop index, distance to the furthest plot, farmers' income and the number of visits by extension agents accounted for about 91 percent of the total variations in the dependent variable. These are the most significant factors influencing variations in land use intensity levels between the farmsteads. His study suggested that land consolidation should encourage land-use intensification in the district. The study also viewed that farmers should be encouraged to commercialize their farms by cultivating high value crops, such as coffee and farmers with surplus land can be induced to lease out for intensive agricultural production. Also, the findings recognized the need for scholars to determine the "Optimum Farm Size" necessary for intensive land-use.

Oladeebo and Adekilekun (2013) empirically experimented with the relationship between land-use intensity and food crops production efficiency in Osun State of Nigeria. Primary data was collected with the aid of structured questionnaires. The data was subjected to various methods of analysis such as descriptive statistics, indices of land use intensity and stochastic frontier production function. Results showed that the majority of the food crop farmers were in their active age, educated and highly experienced in food crop production. Maximum likelihood estimation (MLE) showed that farm size had the highest production coefficient and was statistically significant at 5 percent level of significance. Results of the inefficiency analysis showed that while crop diversification, labor use intensity and age of the food crop farmers contributed positively and significantly to inefficiency, land use intensity contributed negatively to inefficiency of food crops production. Major land management methods used by the farmers were mulching, crop rotation and fertilizer use.

Nuhu and Ahmed (2013) in their paper aimed to highlight the current land-use for agriculture in the area and their specific objectives were to identify different categories of land-uses. GPS (Germin 76csx model) was used for data collection in the field and copies of questionnaires were administered to the respondents in the area. The GIS analysis shows that the total area (sub-urban Lafia) covers 234.43 km² within the 15Km radius. The analysis for the categories of land-use shows:

- Uncultivated area (14.98km²)
- Built-up area (14.12km²)
- Natural Vegetation (64.64km²)
- Agricultural/Cultivated area (140.69km². 95)

The result revealed the following distribution for land use:

- 40% for agriculture
- 32.63% for commercial use
- 13.68% for manufacturing
- 10.53% for artisanal activities
- 3.16% for mining

The distribution of different land-uses along the selected roads shows that Jos road's main activity is mining due to the availability of raw material and quarry sites located in the area. Makurdi road's main activities include agriculture (26.7%) and commerce (33%). Doma road also partakes in manufacturing and artisanal activities with 7.1% and 50% of respondents engaged respectively. The respondents' age by their land-use activities shows the following distribution:

- agricultural 66.7%
- commercial 0%
- mining 26.7%
- manufacturing 6.7%
- artisanal services 0%

The respondents aged between 18 and 35 years have more agricultural lands than those aged between 51 and 65. Males have more lands for agriculture than females (42% and 36% respectively); while a larger number of females engaged in commercial activities (45.5 and 25.8% respectively). It also shows the income earned based on land-use activities, agriculture (50%) while mining being the least paid. The paper concludes that agriculture occupies more land followed by undisturbed land/vegetation and there is need for a proper database collection of the lands for feature planning.

Haiguang *et al.*, (2015) employed rural households survey data from Taibus Banner, in the Inner Mongolia Autonomous Region, China, this study

separately categorizes agricultural land use intensity into labor intensity, capital intensity, the intensity of labor-saving inputs, and the intensity of yield-increasing inputs, and then analyzes their determinants at the household level. The findings reveal that within the study area:

- (1) Labor intensity is higher and capital intensity is lower than in the major grain-producing and economically developed areas of eastern and central China
- (2) The most widely planted crops are those with the lowest labor intensity (oats) and capital intensity (benne)
- (3) There are marked differences in agricultural land use intensity among households

A major factor affecting land use decision-making is the reduced need for labor intensity for those households with high opportunity costs, such as those with income earned from non-farming activities which alleviates financial constraints and allows for increased capital intensity. As a result, these households invest more in labor-saving inputs.

(4) Households with a larger number of workers will allocate adequate time to manage their land and thus they will not necessarily invest more in labor-saving inputs. Those households with more land to manage tend to adopt an extensive cultivation strategy. Total income has a positive impact on capital intensity and a negative impact on labor intensity. Households that derive a higher proportion of their total income through farming are more reliant upon agriculture, which necessitates significant labor and yield-increasing inputs. Finally, the authors contend that policy makers should clearly recognize the impacts of non-farming employment on agricultural land use intensity. In order to ensure long-term food security and sustainable agricultural development in China, income streams from both farming and non-farming employment should be balanced.

Alawode *et al.*, (2020) researched on Land Use Intensity, Crop Diversification and Productivity of Farmers in Akinyele Local Government Area of Oyo State, Nigeria. Data were analyzed using Descriptive Statistics, Ruthenberg index, Herfindahl index, Total Factor productivity and Tobit regression analysis. The results of land-use intensity by farmers, calculated using Ruthenberg index, show that majority (70.0%) of the farmers had an index of 1 which means complete land intensification (continuous cropping on the same piece of land every year). The mean index of $0.9 (\pm 0.2)$ showed that land is intensively used in the area. This may be as a result of farmers trying to increase their output with the only asset (land) they have as their family size increases. Also, Okoruwa *et al.*, (2011) also found that 79.0% of farmers used land intensively.

Shrestha *et al.*, (2021) observed that sustainable intensification of agriculture is a good approach for reducing the yield gap without exacerbating the current condition of the environmental components, which is a big challenge for agriculture in the modern world. This review provides a summary of the role and approaches of sustainable intensification in agriculture which offer ways to increase crop production and create long-term sustainability in agriculture production. The current demand for food has continued to rise as a result of the world's rapidly increasing population. In order to increase crop/food production, agricultural systems should be intensified by more sustainable practices, as well as by reforming existing production systems/techniques and diversifying them into newer and more profitable enterprises. Despite the heavy use of inputs, farmers have recently been unable to achieve optimal crop yields. The judicious use of agricultural inputs, combined with improved management techniques, is important for advancing sustainable intensification. New scientific techniques in agronomic practices, as well as improved farm mechanization, are helping to boost resource use efficiency in sustainable crop production. Sustainable agricultural intensification is necessary to increase the agricultural productivity under the

changing and adverse climatic conditions while maintaining healthy production practices.

3. RESEARCH METHODOLOGY

3.1 Study Area

The study was conducted in south-western parts of Nigeria. The south-western zone covers an area spreading between Latitudes 6oN and 4oS and Longitudes 4oW and 6oE (Balogun and Akinyemi, 2017). It has a total land area of 114,271km² representing 12% of the country's land mass and comprises six states which include Oyo, Osun, Ogun, Lagos, Ondo and Ekiti states (Balogun and Akinyemi, 2017). This region is bounded in the east by Edo and Delta states, in the west by the Republic of Benin, in the north by Kwara and Kogi states, and in the south by the Gulf of Guinea.

The peculiar climatic condition of south-western regions is mainly tropical and it is characterized by wet and dry seasons. The wet season is associated with the southwestern monsoon wind from the Atlantic Ocean while the dry season is associated with the northeast trade wind from the Sahara Desert. Average rainfall is 1480mm with a mean monthly temperature range of 18o-24oC during the raining season and 30o-35oC during the dry season. The vegetation type in south-west comprises freshwater swamp and mangrove forest at the belt, the lowland in forest stretches inland to Ogun and part of Ondo state, while secondary forest is towards the northern boundary where derived and southern savannah exist (Faleyimu et al., 2010).

The south-western part of Nigeria is dominated by the Yoruba ethnic groups although some people have local dialects which they speak such as Ijesha, Egba, Sagamu and so on. Economic activities commonly in the area include trading, handicraft or artisanal activities, public and private service employment, and agricultural production (Balogun and Akinyemi, 2017). The land cover endowed in this zone is conducive for agricultural and non-

agricultural practices. This area serves as a food basket/major center of food crops production in Nigeria especially Oyo and Osun states. The predominant arable crops cultivated are cassava, maize, yam, guinea corn, rice, sweet potato, vegetables (such as okra, garden-egg, cucumber, tomatoes, pepper; tree/cash crops like oil palm, mango, orange, cashew, cocoa, and kola-nut among others. Its agro-ecological condition also supports grazing land and raising livestock such as sheep, goat, cattle and poultry. In addition, the south-west region is highly populous, with a mixed farming population comprising adults, youth and children. The farming households, though smallholders, substantially feed the millions of inhabitants in Nigeria at large. Small-scale farmers make up to 80% of farmers in Nigeria and produce a substantial percentage of the food consumed by Nigerians (Mgbenka, Mbah and Ezeano 2016).

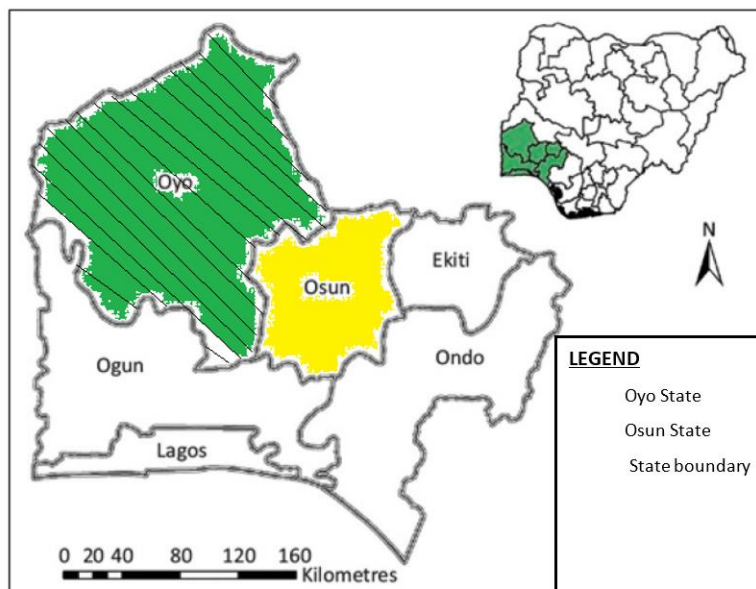


Figure 1. Map Showing the Study Area in the Context of South-Western Nigeria.
Source: Adapted from Nigeria Map.

Population, Sampling Technique and Data Collection

The population for this study comprises all food crop farmers in south western parts of Nigeria. The south-western zone of Nigeria has six states (Oyo, Osun, Ogun, Lagos, Ondo and Ekiti). The first stage involved a purposive selection of two states (Oyo and Osun) representing one-third of the states in the south-western region. Meanwhile, the choice of these two states was prompted by the dominance of arable crops production in the areas. For illustration, a growing body of evidence reports that Oyo and Osun states are agriculture-based economies, wherein production of food crops provides employment and income for more than 75% of the population (Adepoju and Salman 2013). Precisely there are four Agricultural Development Project (ADP) zones with thirty-three (33) Local Government Areas (LGAs) in Oyo state and, three ADP zones with thirty (30) LGAs in Osun state. At the second stage, random sampling was used to select two-third of the zones in each of the selected states that is, Ibadan/Ibarapa, Ogbomosho and Saki zones from Oyo state while Iwo and Ife/Ijesha zones from Osun state were selected. The third stage also involved a simple random selection of one-third of the Local Government Areas (LGAs) out of the LGAs found in each zone. Thereafter, with the known population of the food crop farmers in all Local Government Areas selected for the study as in Table 3.1, the required sample size was determined using the population proportionate factor stated as:

$$S = \frac{X^2 NP (1 - P)}{d^2 (N - 1) + X^2 P (1 - P)}$$

Where S = required sample size, N = the population size, X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (95%), normally $(1.96 \times 1.96 = 3.841)$, P = the population proportion (assumed to be 0.50), d = the degree of accuracy expressed as a proportion (0.05). As we have in Table 3.1 below, the study drawn population size (N) equal to 60348 and assumed a population proportion (P) of 0.50, chi-square (X^2) for 1 degree of

freedom at 95% confidence level, normally ($1.96 \times 1.96 = 3.841$) and degree of accuracy (d) of 5%. This method of obtaining sample size is based on probability assumption which permits every individual farmer to be a good representative of the entire population in the study area. Therefore, following this procedure the sample size is as given below:

$$S = \frac{3.841 \times 60348 \times 0.5 (1 - 0.5)}{0.5^2(60348 - 1) + 3.841 \times 0.5 (1 - 0.5)} = 382 \text{ farmers}$$

Hence, a total of 382 questionnaire copies were administered to farmers during the field exercise. However, the study confidently made use of 346 questionnaires for analysis at the end. The left-over questionnaires were not found useful due to inconsistent information and poor responses from the target farmers.

Table 1. Population of Respondents in Southwestern Nigeria

State s	ADP Zones	Selected-ADP Zones	LGAs in Zone	Selected LGAs	Registered Farmers consisted in LGAS
Oyo	5	Ibadan/Ibarapa	14	Ido	3104
				Egbeda	4319
				Akinyele	4403
				Ibarapa central	4906
	Ogbomosho	5	5	Surulere	5829
				Oriire	7541
				Kajola	3054
	Saki	9	9	Iseyin	3513
				Iwajowa	4022

Osun	3	Iwo	7	Iwo	4685
				Irewole	3880
		Ife/Ijesa	10	Atakumosa	4302
				Oriade	2976
				Ife-east	3914
Total	8	5	45	14	60348

Source: ADP Office, Oyo and Osun States

3.2 Data Analytical Tools

We employed both descriptive and inferential statistics for data analysis. Descriptive analysis (frequency tables, percentage, mean, and standard deviation), Ruthenberg index, and Fractional logit regression model were estimated according to each of the specific objectives.

3.2.1 Ruthenberg index

Ruthenberg index was computed by dividing the number of years for which cropland is consecutively cultivated before being allowed to fallow (T_i) with the length of cropping cycle C_i , (addition of years of consecutive cultivation and period of fallow) (Ruthenberg 1980), thus, Land-use intensity, (L_i) of each farmer measured by the R value, ($0 < R \leq 1$) is specified as:

$$\text{Land-use intensity, } (L_i) = T_i / C_i \times 100 \dots\dots\dots 1$$

3.2.2 Fractional logit regression model

The fractional logit model initially proposed by Papke and Wooldridge (1996, 2011) is chosen for observing the determinants of agricultural land-use intensity within farming households. It is capable of taking into account the fractional nature of the explained variable, works for discrete and continuous

variables (Papke and Wooldridge, 1996), and is capable of handling the extreme values of 0 and 1 without having to manipulate the data (Baum, 2008; Mullahy, 2010).

In the fractional logit model applied in the present paper, the dependent variable (agricultural land-use intensity) is operationalized as a fraction bound between zero and one, $0 \leq Y_i \leq 1$, and specified as follows:

$$P\left(y = \frac{j}{x}\right) = \frac{\exp(x\beta_j)}{[1 + \sum_{h=1}^j \exp(x\beta_h), j = 1, 2, \dots, j]} \dots\dots\dots 2$$

The equation (2) here changes to a linear model of the form

$$Y_i = \beta_0 + \beta_i X_i + \mu_i \dots\dots\dots 3$$

Where, Y_i = dependent variable for i th farmer, β_0 = constant term, β_i = vector of parameter estimates, X_i = vector of independent variables and μ_i = disturbance term.

As regards this analysis, variables entered into fractional logit as Y_i = Agricultural land-use intensity for each farmer, X_1 = sex of farmer, X_2 = year of education, X_3 = credit access, X_4 = inorganic fertilizer use, X_5 = manure use, X_6 = farm size, X_7 = cropping intensity, X_8 = farm distance and X_9 = extension services.

4 RESULTS AND DISCUSSION

4.1 Result of Socio-economic Characteristics of the Food Crop Farmers

Table 2 showed that 89.88% of the respondents were males while the rest (10.12%) of them were females. This indicated that male respondents are more relative to their female counterparts, which is possibly due to the tedious nature of farm works. Similarly, Alawode et al., (2020) observed that 93.0% were male farmers. The age distribution indicated that 41.62% of the

farmers were within the age of 41-50 years, 26.59% of them fell between the age of 51-60 years, 17.92% were within the age of 31-40 years, 12.43% reached 60 years and more, while the remaining (1.45%) of them were between the age of 30 years or less. The mean age of farmers was 49.38 years, which implied that the farmers are still within the middle age group. According to Alawode et al., (2020) youths should be encouraged to actively participate in farming rather than only ageing farmers.

The result revealed that 86.13% of the respondents were married while the rest (13.87%) were single. It means that the number of married farmers was higher relative to single ones. In the work of Alawode et al., (2020) 88.0% were married among the sample farming households. The study also found that 50.87% of the respondents have a household size of between 6 and 10 members, 43.64% of them had household size of 5 members or less while the rest (5.49%) of them had household size of 10 or more members. The average household size is about 6 persons which implies a relatively large family size. It was viewed that these family members will supply additional farm labor. It agreed with the study of Alawode et al., (2020) who observed that the farmers have an average of 6 persons per household. In addition, about 44% of the sampled farmers spent 6 years or less in school, 32.66% of them spent between 7 and 12 years in school and 23.12% of the farmers spent more than twelve years (>12). However, the average duration of education was 9.02 years, this finding signified that the farmers are able to read and write since most of them have acquired post primary education. This finding is consistent with Ehirim et al., (2013) who observed that the mean formal education attainment is 9.5 years.

The experience level distribution in Table 2 showed that 46.53% had between 6 to 15 years of farming experience, 34.11% of them had 16 to 25 years of experience, 8.38% had 5 or less years of experience and 7.80% had 26 to 35 years of farming experience while the remaining 3.18% had above 35 years of farming experience. The mean farming experience was 17.39 years which

suggests that farmers have spent several years in the course of producing food crops. This is comparable to the findings by Lawal et al, (2013) wherein the mean Fadama farming experience was about 17.5 years and Idumah et al., (2015). Result in Table 2 showed that 45.95% had 5 hectares or less as their farm size, 31.50% had between 6 and 10 hectares while 22.54% had 10 hectares or more as farm size. The average farm size is 7.67 hectares.

The majority (91.62%) of the respondents solely engaged in farming activities, it is supported by Alawode et al., (2020) who reported that majority (86.5%) of the respondents were primarily involved in farming activities. Therefore, the study suggested that most of the rural dwellers still relied on farming activities in order to live and it is further evident that agriculture remains the backbone for livelihood security (Yamba et al., 2017). Furthermore, the majority (91.04%) of the farmers were members of farmers' association. This indicated that most farmers have a sense of belonging and social relationship amongst other people in the villages which may strengthen their collective participatory roles especially during farming activities. The study further exhibited that over half (54.34%) of the farmers used both hired and family labor, 38.73% of them used only hired labor, 3.67% used only family labor while 3.08% sourced farm labor from other means like casual or exchange labor. This implied that the majority of farmers employed both family and hired labor for their farming activities contrarily, evidence revealed that majority (79.5%) used hired labor on their farms (Alawode et al., 2020). About 78% of the farmers have access to extension services while 21.68% did not have access to extension services.

Table 2. Distribution of Socio-economic Factors of the Food Crop Farmers

Socio-economic	Frequency	Percentage	Mean
Sex			
Male	311	89.88	
Female	35	10.12	

Age Group			49.38
≤30	5	1.45	
31-40	62	17.92	
41-50	144	41.62	
51-60	92	26.59	
> 60	43	12.43	
Marital Status			
Single	48	13.87	
Married	298	86.13	
Household Size			6
≤5	151	43.64	
6-10	176	50.87	
>10	19	5.49	
Years of education			9.02
≤6	153	44.22	
7-12	118	32.66	
>12	80	23.12	
Years of Experience			17.39
≤5	29	8.38	
6-15	161	46.53	
16-25	118	34.11	
26-35	27	7.80	
Above 35	11	3.18	
Farm Size			7.67
≤5	159	45.95	

6-10	109	31.50
>10	78	22.54
Primary Occupation		
Non-full-time farmers	29	8.38
Full- time farmers	317	91.62
Farmers' Association		
No	31	8.96
Yes	315	91.04
Labor Source		
Family Labor	13	3.76
Hired Labor	134	38.73
Both hired &family	188	54.34
Others	11	3.08
Extension Services		
No	75	21.68
Yes	271	78.32
Total	346	100

Source: Field Survey, 2020

4.2 Variable Inputs Used by Food Crop Farmers

Table 3 showed the distribution of variable inputs within food crop farmers in order to know their rate of application. It was found that all (100%) of the farmers made use of fertilizers, pesticides and herbicides for food crops production respectively, 88.15% used improved planting materials, while 6.65% used organic manure in their farms. This finding asserts that inorganic fertilizers are being widely used and also many of them used improved

planting materials. It suggests that proper management of these farm resources is needed to promote agricultural land-use intensification practices in the study area.

Table 3. Distribution of the Food Crop Farmers by Variable Inputs used

Variable inputs used	Frequency *	Percentage
Improved planting materials	305	88.15
Chemical fertilizers	346	100
Pesticides	346	100
Herbicides	346	100
Organic manure	23	6.65

Source: Field Survey, 2020

Reported in multiple responses*

4.3 Measurement of Land-Use Intensity based on Ruthenberg Index

Ruthenberg index was estimated to measure the land-use intensity of individual farm plots as developed by Ruthenberg (1980). It was revealed that the farmers practiced agricultural land-use intensification with an average value of intensity of land-use approximately $R = 80\%$. Also, the percentages of crop farmers with low ($R < 33\%$), medium ($33 \leq R \leq 66\%$) and high ($R > 66\%$) land-use intensities were 3.18%, 19.65% and 77.17% respectively (Table 4). This result is just an indication to show that most food crop farmers intensively cultivated their farmland in the study area. The result is line with the finding by Alawode, et al., (2020) who found that majority (70.0%) of the farmers had index of 1 which means complete land intensification (continuous cropping on the same piece of land every year). According to Lawal, et al. (2013) the land-use intensity for the sampled households was estimated as 0.983 during the survey. This implies that land cultivation is nearly on a continuous basis in the Fadama regions in Niger State of Nigerian Southern Guinea Savanna. Based on the finding of Yusuf et al., (2011), the mean land-use intensity was 0.83,

and similarly Saka et al., (2011) arrived at 0.79 as land-use intensity on the average. These reports generally provide evidence that land-use is characterized by high frequency of cultivation in Nigeria.

Table 4. Distribution of Respondents according to Land-Use Intensity

Land-use intensity	Frequency	Percentage
Low land-use intensity	11	3.18
Moderate land-use intensity	68	19.65
High land-use intensity	267	77.17
Total	346	100

Source: Data Analysis, 2020

Mean value = 79.57% Ruthenberg index **: $R < 33\%$ = low land-use intensity, $33 \leq R \leq 66\%$ = moderate land-use intensity, and $R > 66\%$ = high land-use intensity.

4.4 Fractional Logit Estimation of Factors Determining Agricultural Land-Use Intensification Practice among Food Crop Farmers

Factors that influenced the agricultural land-use intensification of the food crop farmers are presented in Table 4.4. Using fractional logit analysis, the value of pseudo R^2 was found to be 0.056 with a p-value of 0.000 which means that the model as a whole is statistically significant. The result of fractional logit showed that sex of farmers, credit access, quantity of fertilizer used, farm size cultivated and access to extension are statistically significant variables.

Sex of crop farmers is significant at 10% and positively affected land-use intensification which implied that with the increase in population of male

farmers, there is likelihood of increasing agricultural land-use intensification among the respondents. This is because farming activities is energy demanding and men are more powerful to perform farm operations than their female counterparts. Yusuf et al., (2011) had also found that sex/gender influenced agricultural intensification, but the direction of effect differed. Credit access also determined the agricultural land-use intensification since it is statistically significant at 1% level, although inversely related with agricultural land-use intensification practice. This result suggested that more access to credit by the farmers will probably limit the extent of agricultural land-use intensification in the study area.

According to the result, the agricultural land-use intensification seems to improve with the application of inorganic fertilizers on food crops land. It indicates that fertilizer use is positively related to agricultural land-use intensification and also significant at 1% level. It shows further that increased use of fertilizer would increase the probability of agricultural land-use intensification system. This finding is in line with the a priori expectation. The coefficient of size of farm was found to be significant at 10% and indirectly associated with agricultural land-use intensification. This finding means that a unit increase in hectare of farm size is likely to cause a reduction in intensity of land-use in the study area. It is suggesting that abundant farmland areas will enable farmers to put land on fallow in order to improve its natural fertility, thereby preventing over cultivation. Yusuf et al., (2011) reported that hectare of farm size determined agricultural intensification. Lastly, the extension services have a positive relationship with the agricultural land-use intensification and significant at 1%. This result indicated that as the farmers have more access to extension training, they are more likely to engage in agricultural land-use intensification strategy. So, this finding argued that access to extension services also determined the agricultural land-use intensification practices in the study area. Therefore, the overall findings from this analysis provide partial evidence that access to input/output

markets, population pressure, the socio-economic characteristics of the households, biophysical features and government policy and institutions are the main drivers of agricultural intensification in the small holder farming systems according to des Grades et al., (2007).

Table 5. Factors Determining Agricultural Land-Use Intensification Practice among Food Crop Farmers based on Fractional Logistic Regression

Explanatory Variables	Coefficients	Robust Std. Errors	Z-values	P>/Z/-values
Constant	0.8089388	0.2674761	3.02	0.002
Sex of farmer	0.2808749	0.1675085	1.68*	0.094
Years of education	-0.0035388	0.0118181	-0.30	0.765
Access to credit	-0.5689989	0.1559328	-3.65***	0.000
Inorganic fertilizer	0.8427547	0.1553885	5.42***	0.000
Manure use	0.1039631	0.1194141	0.87	0.384
Farm size	-0.0316142	0.0165552	-1.91*	0.056
Cropping intensity	0.0100061	0.0143047	0.70	0.484
Distance to farm	0.0135147	0.0102625	1.32	0.188
Extension services	0.4458558	0.1304433	3.42***	0.001

Source: Data Analysis, 2020

5 CONCLUSION

This study assessed the extent and determining factors of agricultural land-use intensification among food crop farmers in south-western part of Nigeria. The index of land-use intensity computed signifies that agricultural land-use

intensification substantially dominates the farming systems with the average land-use intensification approximately 80% in south-western, Nigeria. Thus, this study uncovered that agricultural land-use intensification is being practiced by most of the food crop farmers in the study area. It is therefore advisable for farmers to take note of depleting soil and plan sustainable land-use measures. Also, in determining the factors affecting agricultural land-use intensification, the finding shows that sex of farmer, credit access, quantity of fertilizers, hectare of farmland and access to extension are statistically significant variables and followed a priori expectations.

Policies that will make youth among men to be actively participated in agriculture will go a long way in promoting agricultural land-use intensification and food production, while the cropland is easily accessible. Supporting agricultural land-use intensification practices will also involve the provision of farm credit sources, chemical fertilizers, and extension trainings in the study area.

5.1 Contributions to Knowledge and Policy Implication

As part of useful contributions, the study has empirically showed that access to credit, application of inorganic fertilizers, shrinking farm size and access to extension facilities were driven agricultural land-use intensification practices in southwestern Nigeria. Assessment of extent of agricultural land-use intensification becomes a relevant study nowadays since agricultural intensification strategy is one of the important mechanisms to achieve Sustainable Development Goal (SDG) by year 2030 in Nigeria. The study has also contributed its own quota based on the view that agricultural land-use intensification management may be an alternative in the process of food production, if well planned.

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ACCEPTANCE OF ONLINE LEARNING AMONG AFRICAN GRADUATES

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ABSTRACT

In the current globalized world, the pursuit of knowledge has progressed beyond the physical boundaries of educational institutions. The acquisition of education and the learning process take many different forms in the modern world which has granted members of the public easy access to educational opportunities. Among the numerous convenient forms available, online learning is the most acceptable and widely used method of advancing education utilized by reputed educational institutions across the globe. This research focuses on investigating factors that influence student utilization and adapting of online learning in some selected countries of Africa. The research is based on the Technology Acceptance Model (TAM) which is widely used as a theoretical paradigm for explaining students' acceptance of online learning. The factors under investigation include Perceived Usefulness (PU), Perceived Ease of Use (PEU), Perceived Cost (PC), Compatibility (COMP), Perceived Online Service Quality (POSQ), Infrastructure Enablers (IE) and Online Learning Acceptance and Satisfaction (OLAS). Data was collected through structured questionnaires from a sample of 310 students from different countries in Africa and analyzed using partial least squares - structural equation modelling (PLS-SEM) software to test the relationship between the factors. The results of this research show that PU, PEU, COMP, and POSQ have a positive and significant relationship with OLAS. In other words, these factors contribute positively and efficiently towards the acceptance and spread of online learning in selected African countries. However, PC and IE have an insignificant relationship with OLAS. In other

words, African students perceive online learning as a high-cost option. Comparing the education costs in different African universities, this study has found that the International Open University (IOU), the Gambia, provides quality education with the lowest customized costs. The findings of this research are of great importance for educational institutions and policy makers in Africa and worldwide and may help them promulgate effective solutions for the challenges impeding the spread of online learning in Africa, in the hope of serving developing societies.

Keywords: Online learning, graduate students in Africa, Perceived Usefulness (PU), Perceived Ease of Use (PEU), Perceived Cost (PC), Compatibility (COMP), Perceived Online Service Quality (POSQ), Infrastructure Enablers (IE), Online Learning Acceptance and Satisfaction (OLAS), Technology Acceptance Model (TAM).

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1. INTRODUCTION

The advent of the twenty-first century has brought numerous significant changes in the world, out of which the information revolution is considered the most important breakthrough as it has changed the global socioeconomic and sociocultural milieu. Advancements in the fields of information and technology have not only brought global citizens on a common platform but have also opened several new ways of human interaction – including the mode of acquisition of education. With the advancement of technology, education can be obtained beyond the physical boundaries of educational institutions. This has enhanced educational choices for students and revolutionized the classroom experience, as through online education they can attend classes from the comfort of their homes. Online learning is a widely accepted method of promoting education utilized successfully by many institutions across the world (Ullah et al., 2017). It is a platform that allows for the use of technology to support and deliver learning among a group of people bound by the same identity features, values, beliefs, interests, and goals (Hramiak, 2010). Online learning has become more feasible technologically, economically, logistically as well as operationally. Incentives for universities for moving towards offering online programs are related to their financial constraints and rewards, e.g., reduced infrastructure for classrooms, offices, cafeterias, dorms, and libraries. It also includes an increase in non-traditional students who are working full time; and the modern advancement in technology facilitates the online acquisition of education for them (Palvia et al., 2018).

It is noteworthy that in underdeveloped countries of Africa, millions of students now complete their tertiary education without quitting their employment and this has only become possible because of the provision of online courses. Sub-Saharan Africa (SSA) is one of the world's largest geographical regions, with 48 nations and more than one billion people. In

2020, the gross tertiary education enrolment ratio was just 9.4%, far below the 38% average for the world. Naturally, there are significant regional variations in the rate. Gross tertiary enrolment, for instance, is 40% in Mauritius, 23.6% in Cabo Verde, 15% in Ghana and Togo, 10% in Lesotho, and 4.4% in Niger. The region spends around 21% of the whole government education budget on postsecondary education, 27% on secondary education, and 43% on elementary education (Gangwar & Bassett, 2020).

As a continent, Africa has emerged as the world's fastest-growing e-learning market owing to large numbers of aspiring students who seek higher education but encounter obstacles due to lack of access to infrastructure and resources, or the inability to take time off from their jobs. In recent years, Africa's development has been facilitated by fiber-optic connectivity, and more students, particularly those residing in urban areas, are now able to join online classes due to the expansion of internet access. This study focuses on comprehending factors that influence student utilization of online learning platforms in selected countries across Africa. The factors under investigation include a) Perceived Usefulness (PU), b) Perceived Ease of Use (PEU), c) Perceived Cost (PC), d) Compatibility, e) Perceived Online Service Quality (POSQ), f) Infrastructure Enablers (all independent variables); and, g) Online Learning Acceptance and Satisfaction (OLAS) (as a dependent variable).

The rationale for this study is based on three main factors. First, the available empirical information reflects that an e-learning system's effectiveness depends on its comprehensive implementation (Chinyamurindi & Shava, 2015; Chinyamurindi & Louw, 2010). Therefore, the present study is focused on ascertaining full utilization of an online learning opportunity by identifying the factors that influence student usage. This has the potential to benefit not only the student but also the lecturer designing the content on platforms such as online learning communities. Second, as online learning is expanding largely to become an alternative source of acquiring knowledge and

education globally, statistical evidence on African graduates is still scarce. Therefore, the study is more focused on exploring African students' attitudes and intentions towards acquiring knowledge and uplifting their skills through online learning. Third, discussions on the potential of online learning industry in the African continent presents a promising picture. However, although the African continent has abundant natural resources, it is still far behind in the process of development when compared with other continents. Therefore, this study intends to explore the nature of the dimensions of various challenges faced in the development of online education in Africa. Thus, in the following pages, at first the concept of online learning in the context of innovation in technology is briefly discussed and then its theoretical dimensions are presented. This leads to the research hypotheses and aims of the study. Thereafter, the empirical research is contextualized to include a presentation of the background, research sample, research paradigm, data collection instrument, process and the analytical framework used in this work. Finally, the results and discussion conclude this paper.

2. REVIEW OF LITERATURE

In this section, the researchers briefly reviewed the literature related to online learning, technology acceptance model, online learning acceptance and satisfaction, factors affecting online learning acceptance and satisfaction, perceived usefulness, perceived ease of use, perceived cost, compatibility, perceived online service quality and infrastructure enablers.

2.1 Online learning

Online learning is a mode of education that provides education through the internet (Al-Syyed, 2015). For many students who cannot attend on-site classes, it is an easily manageable and affordable substitute. Online learning has been utilized in a variety of contexts (including industry and museums, etc.), as well as in higher education. The use of this mode increased

tremendously during the recent Covid pandemic (Aguilera-Hermida, 2020; Ennes & Lee, 2021). Participants only require a device such as a computer, tablet or smartphone and internet connectivity. In synchronous classes, instructors and students meet at a set time electronically and then students are free to complete their assignments whenever and wherever it suits their schedules. In the case of mixed or hybrid formats, the majority of the course material is supplied online (Allen & Seaman, 2015; Gonzalez et al., 2020).

Online learning may enhance access to higher education for groups that would otherwise be excluded and can offer efficient learning processes where students achieve the desired learning goals when it is correctly structured (Ayodele et al., 2018). Higher education institutions began providing lessons in various and novel modalities throughout the pandemic (e.g., some students remotely and some students in the classroom in real-time). Each institution must adapt to its specific requirements and conditions (Affouneh et al., 2020; Maphalala et al., 2021). This new teaching method is called “emergency remote teaching” (Hodges et al., 2020).

Online education demands greater self-discipline from students than traditional classroom instruction (Jung et al., 2017). Additionally, educators must exert more effort than they would in a typical classroom setting to sustain student engagement, which is crucial for learning results (Panigrahi et al., 2018). Furthermore, online learning provides particular online pedagogical techniques and resources created to draw learners into a distinctive online learning culture that improves students' performance (Bower, 2019; Jung, 2014). The potential for effective online higher education is more dependent on faculty and institutional practices and efforts than on technology (Bower, 2019; Jung & Lee, 2020). There are now various cutting-edge methods available to improve students' participation in online environments. These materials can be located and accessed as “open educational resources” (OERs).

In the case of underdeveloped continents such as Africa, studies revealed a high potential for online learning expansion due to several reasons. To name but a few: a large youth population; abundant untapped wealth and natural resources; the need for self-development to meet evolving opportunities; high rates of poverty; the need to work and study simultaneously; and so on. Exploring the reasons hindering African students from using online learning as an alternative means of gaining knowledge is a motivational factor behind undertaking this study.

Technology usage, behavior adoption, and acceptability factors have recently attracted a lot of attention. Technology acceptance models have evolved into a theoretical framework for the use and acceptance of online technologies as a result of the rise in usage (Jung et al., 2017). The TAM model (Davis, 1989), the AIUTA-2 model (Venkatesh et al., 2012), and the GETAMEL model are the most popular models (Abdullah & Ward, 2016) in this regard. These models' elements are based on a variety of theories, including those that address information adoption, PC usage, cognitive theory, unified theory of acceptance, and use of technology (Aldholay et al., 2018; Chen & Hwang, 2019; Kemp et al., 2019; Venkatesh et al., 2016). Many researchers have used these models to analyze the use and acceptance of specific educational technologies such as OER (Jung & Lee, 2020), e-learning systems (Pham & Tran, 2020; Yakubu & Dasuki, 2019), online learning blogs (Ifinedo, 2018), and other technological educational tools.

Nevertheless, numerous researchers have also built their own learning models and created their instruments by customizing to the particular technology they were studying. They frequently suggest new models or add new constructions to the existing models (Aldholay et al., 2018; Martinho et al., 2021). Furthermore, the variables that the researcher uses to study variability are crucial to structural equation modeling. The structures used to gauge the use and acceptability of technology as a consequence have a wide

range. According to Kemp et al. (2019), the fact that measuring methods and conceptions differ greatly results in inconsistent findings. They built a modular taxonomy with metrics tailored expressly for educational technologies.

2.2 Technology Acceptance Model (TAM)

The factors influencing technology acceptance among user populations are explained by Technology Acceptance Models (TAM) (Abdullah & Ward, 2016; Kemp et al., 2019). Cognitive theories that describe the process of behavior adoption served as the foundation for the first technology acceptance model (TAM). The willingness and ongoing usage of technology by the user is implied by technology adoption. Researchers utilize TAM to analyze the adoption and usage of mobile learning; however, the initial model had flaws and underwent several modifications (García Botero et al., 2018). Kemp et al. (2019). For instance, introduction of a taxonomy of characteristics that influence attitudes regarding the usage of educational technologies by students or instructors in higher education institutions based on several technology acceptance models. This taxonomy was divided into seven major groups: a) attitude, affecting factors, and motivation; b) social factors; c) usefulness and visibility; d) instructional attributes; e) perceived behavioral control; f) cognitive engagement; and g) system attributes. Even though all the factors are influential for adopting technology, this research will focus on the factors which are mainly related to students' behavior or attitude. The factors that will be considered in this study are perceived usefulness (PU), perceived ease of use (PEU), perceived cost (PC), compatibility (CO), perceived online service quality (POSQ), infrastructure enablers (IE), and online learning acceptance and satisfaction (OLAS). Most of the factors considered for this study focus on the personal and behavioral aspects of the learner, taking into account the enabling factors and some external circumstances that affect the learner's intention to enroll in online learning or not, particularly in Africa.

2.2.1 Online learning acceptance and satisfaction (OLAS)

Previous studies on technology adoption revealed many factors as important for acceptance behavior in the online learning industry (Aguilera-Hermida, 2020; Aguilera-Hermida et al., 2021; Aldholay et al., 2018; Azhar et al., 2021; Md Yunus et al., 2021; Peñarroja et al., 2019). Bhattacharjee and Sanford (2009) proved that attitude will result in a positive intention to accept new conditions and environments. Attitude is assumed to influence acceptance behavior (Khan et al., 2017). According to another study by Aguilera-Hermida (2020), students prefer face-to-face learning over online learning. Furthermore, students who favored face-to-face learning found it difficult to adjust to online learning. In the same vein, Ullah et al. (2017) investigated undergraduate students' attitudes toward online learning at the University of Peshawar. They found a lack of positive attitude as a result of the high difficulty level in comprehending and using an online learning tool without proper assistance.

On the other hand, previous studies indicated that students' familiarity with technology usage and their perceptions of how they benefit from online learning systems influence student satisfaction (Hammoud et al., 2008; Liu et al., 2009; Changchit & Klaus, 2012). According to Mitchell et al. (2005), users with more computer knowledge are more likely to enjoy web-based learning. Students perceive online education positively, according to Liu et al. (2009), because of the Internet-enabled and tactile user interface. WebCT, chat rooms, and message boards according to Changchit and Klaus (2012), were among the most useful technologies that contributed to better satisfaction of online learning. According to Hammoud et al. (2008), students often have a positive perception of WebCT usage. The study revealed a significant impact of WebCT on students' achievements and learning outcomes. As a result, learning technologies and communication tools are posited to play deterministic roles in determining students' acceptance behavior and satisfaction towards online learning.

2.2.2 Factors affecting online learning acceptance and satisfaction

This study focuses on six main factors affecting online learning acceptance and satisfaction, i.e., perceived usefulness, perceived ease of use, perceived ease of cost, compatibility, perceived online service quality, and infrastructure enablers. A brief overview of these factors along with their respective hypotheses is given hereunder.

a) Perceived usefulness (PU)

Perceived usefulness has been defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989, p. 320). Perceived usefulness is the primary precursor that determines the behavioral aim to use a computer system (Venkatesh et al., 2003). Recent research has shown that perceived usefulness directly influences behavior intention and acceptance of online learning (Azhar et al., 2021; Lazim et al., 2021; Lee, 2010). Once students and knowledge seekers realize the importance of technology based alternative method of learning, the intention to utilize such service would increase. Nguyen et al. (2020) researched the elements that affected learners’ use of networked pedagogical systems. Twenty universities in Vietnam contributed a total of 246 students to the research. The findings of this research showed that factors such as computer self-efficacy, computer experience, perceived ease of use, perceived usefulness, enjoyment, and subjective norm positively influenced students’ approval of networked pedagogical systems, whereas factors such as system characteristics did not. Based upon this study, we posited the following hypothesis:

H1: Perceived usefulness significantly and positively affects online learning acceptance and satisfaction of African students.

b) Perceived ease of use (PEU)

Widespread research has provided support that perceived ease of use had a significant effect on usage intention. It is an important forecaster of online learning acceptance. This study seeks to revalidate such relationships in the perspective of online learning industry in Africa. Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of some sort of effort (Davis, 1989). In recent research conducted by Ayodele et al. (2018) regarding factors hindering the adoption of online learning in Nigeria, perceived ease of use had significant effect on users' acceptance of online learning. In another research by Farahat (2012), perceived ease of use was found positively related with the intention to adopt online learning in the Egyptian universities. Al-Gahtani (2016) investigated the factors which contribute towards the acceptance of e-learning in Saudi Arabia. A survey was distributed among 286 university students in which among other determinants, perceived ease of use was one of the significant factors in usage intention. Based upon this study posited the following hypothesis:

H2: Perceived ease of use significantly and positively affects online learning acceptance and satisfaction of African students.

c) Perceived cost (PC)

Perceived cost is defined as the extent to which a person believes that using technology will cost money (Luarn & Lin, 2005). The cost may include the transactional cost in the form of course subscribing charges, mobile network charges for accessing online lessons and mobile device, tablets, computers and laptops device costs. According to Wu and Wang's (2005) study on the adoption of mobile commerce, perceived cost was not as important as other factors including perceived risk, compatibility, and perceived usefulness. A further qualitative investigation on the same study was conducted, which revealed that perceived cost is normally a major concern when a technology

is first introduced. However, in times of crisis or unexpected necessity, as the COVID-19 outbreak, the utility advantages exceed the financial concerns. This was evidenced by Sarosa (2022), who found perceived costs to have no influence over online learning in Indonesia. The researcher attributed the reason to government support in providing internet coverage to support students in shifting towards distance learning at the time of the pandemic, as well as the availability of the internet in the country and low subscription prices. Based upon this, this study posited the following hypothesis:

H3: Perceived cost significantly and positively affects online learning acceptance and satisfaction of African students.

d) Compatibility (CO)

Compatibility is viewed as the degree to which an innovation is perceived as being consistent with the existing values, past experiences and the needs of potential adopters. Hence, it is a measure of the values and beliefs of the customers, the ideas they have adopted in the past as well as the ability of an innovation to meet their needs (Ifinedo, 2018; Rogers et al., 2014). It is suggested that compatibility has a positive influence on the behavioral intention of students towards online learning. In this regard, Aldholay et al. (2018) suggested in their model that compatibility would have a positive and significant influence on the actual use of online learning for students in Yemen. This was supported by the findings of Changchit and Klaus (2010), who confirmed that students with employment status prefer online courses as they perceive greater flexibility in terms of accessing class materials and studying at their own pace. Therefore, the following hypothesis is posited:

H4: Compatibility significantly and positively affects online learning acceptance and satisfaction of African students.

e) Perceived online service quality (POSQ)

Service quality in online education refers to the quality of personal support services provided through the online learning system, such as assistance with online registration, course selection, and financial aid by institutions, online technical support services, timely feedback by faculty and so on. This suggests that the student support services supplied by online education service providers (i.e., institutions), online student service coordinators, and instructors are used to assess the service quality of online education (Larmuseau et al., 2019; Thongsri et al., 2019). There is a considerable body of evidence demonstrating that service quality is a crucial driver of customer satisfaction in the educational context (Lee, 2010). According to Helgesen and Nasset (2007), service quality is a reliable predictor of student satisfaction. According to Al Mulhem (2020), website technical quality, website content quality, website design quality, and website access are crucial for boosting the utilization of e-learning systems. Eze et al. (2020) explored factors influencing students' usage of e-learning in private HEIs in Nigeria using a qualitative approach. They researched Landmark University students and discovered that ease of use, speed, accessibility, and service delivery were among other factors that influenced the students' adoption of online learning. As a result, the quality of technical support services is quite likely to play an essential part in online learning acceptance and student satisfaction. Based upon this, we posited the following hypothesis:

H5: Perceived online service quality significantly and positively affects online learning acceptance and satisfaction of African students.

f) Infrastructure enablers (IE)

Infrastructure enablers (facilitating conditions) can be characterized in the context of technology utilization studies as organizational support for technology users can impact the system use (Qiao et al., 2021; Venkatesh et al., 2016). According to Venkatesh et al. (2003), it is the degree to which users

perceive that an organizational and technological infrastructure exists to enable the use of information technology. Infrastructure enablers (IE) are environmental elements that impact a person's motivation to complete a task. According to Groves and Zemel (2000), facilitating supports (e.g., skills training, available information or resources, and administrative assistance) are extremely important elements influencing the usage of instructional technology in teaching. Earlier research on students' adoption of various technologies (Ullah et al., 2017) shown that IE is an important component in promoting user acceptance of technology. According to Al Mulhem (2020), students at Saudi Arabia's King Saud University evaluated system functioning, system dependability, top management support elements, and enabling conditions as key variables influencing perceived utility, ease of use, and actual usage of online learning. Adarkwah (2021) identified discrepancies in access to digital infrastructure as a key hindrance to online learning in Sub-Saharan Africa. In Ghana, Asampana et al. (2017) attributed the low level of online learning acceptance at the tertiary level to poor IT infrastructure, inadequate training, and the relevance of the system to quality lecture delivery. Although students' perception of the system's usefulness was high, particularly among higher levels, because of low internet availability, Ngalomba (2020) saw online learning as a barrier in Africa. He said that just around one-third of the population has access to broadband internet. In terms of South Africa, which is regarded as an advanced African country, Clement (2020) indicated that the country had 36.54 million internet users, of whom 34.93 million were mobile internet users as of January 2020. According to StatsSA's statistics, only 9.5% of the SA population has home internet connection (StatsSA, 2016). Based on it, it is worth posing the following hypothesis:

H6: Infrastructure enablers significantly and positively affects online learning acceptance and satisfaction of African students.

2.3 Conceptual Framework

Various factors have been taken into consideration as potential variables in building a conceptual framework for the present research model. As shown in Figure 1, the dependent variable for this study is online learning acceptance and satisfaction (OLAS). Six independent variables were identified as factors impacting the OLAS namely perceived usefulness (PU), perceived ease of use (PEU), perceived cost (PC), compatibility (CO), perceived online service quality (POSQ) and infrastructure enablers (IE). Two variables (PU, PEU) are described as factors provided by TAM theory in terms of measuring the acceptance of services and products acceptance by clients.

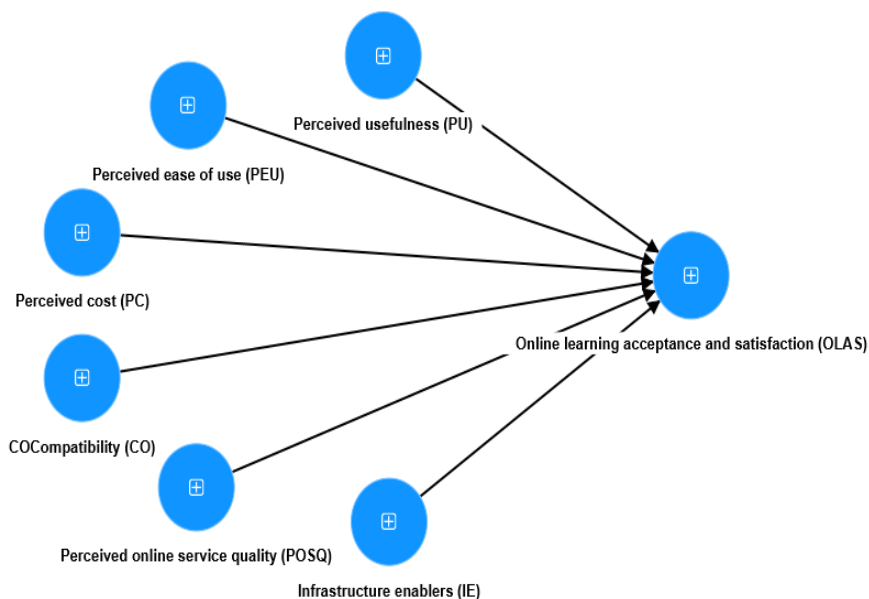


Figure 1. Research Framework

3. Methodology

This research consists of two parts. The first part deals with student's perception and acceptance of online learning. A primary survey was carried out for this purpose. The second part deals with the comparative education costs among the sample African universities and data was obtained from the respective universities' websites.

3.1 Data collection and sampling procedures of first phase of the research

The purpose of the research is to investigate factors that influence student utilization of online learning platforms in selected countries across Africa. In this study, questionnaires were distributed to students from seven countries in Africa, i.e., Nigeria, Gambia, Zimbabwe, Mozambique, Rwanda, Ivory Coast and Uganda. Students were selected randomly through a random sampling technique. A total 310 questionnaires were distributed to the targeted respondents through online distribution technique. Out of the total, 272 questionnaires were considered for further analysis with a response rate of 88%. The remaining 38 questionnaires were excluded due to incomplete answers and detection of potential outliers which can affect and distort the accuracy of the analysis (Hair et al., 2010). The questionnaire for this study was divided into three sections (i.e., A, B and C). Section A contains respondents' demographic data, including gender, age, nationality, level of education, income and experience in online learning. Section B contains 37 items pertaining to six factors which supposedly influence the acceptance of online learning among students in Africa. In Section C, eight questions were posed to gather data on acceptability and satisfaction with online learning.

3.2 Measurement of variables

In this study, the factors that are supposed to influence student utilization of an online learning platforms (PU, PEU, PC, CO, POSQ, IE) were tested as independent variables of OLAS. This study is quantitative in nature, based on

cross-sectional research design, whereby the data for the whole study was collected at one point in time. The measurements used in this study were originally developed and adapted from past literature (see Table 1). Prior to data collection, the study's measurements were screened and validated by academics having expertise in online education and learning. The five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was the choice for answering most questions.

Table 1. Measurement Scales (Items, Reliability and Sources)

Scale	Total items	Source
Perceived usefulness (PU)	8	Adapted from Davis (1989); Lee (2010)
Perceived Ease of Use (PEOU)	7	Adapted from Davis (1989); Lee (2010)
Perceived cost (PC)	4	Adapted from Luarn and Lin, (2005); Wu and Wang (2005)
Compatibility (CO)	6	Adapted from Wu and Wang (2005)
Perceived online service quality (POSQ)	7	Adapted from Farahmandian et al. (2013); Lee (2010)
Infrastructure enablers (IE)	5	Adapted from Park et al. (2011); Venkatesh et al. (2016)
Online learning acceptance and satisfaction (OLAS)	8	Adapted from Lee (2010)

3.3 Analytical method

In the first part of the study, IBM SPSS Statistics version 22.0 and Smart PLS version 4 were used to analyze the data. The choice of PLS was based on its capacity to assess causal relationships across all latent constructs while

coping with measurement errors in the structural model (Hair et al., 2017). As this study is analytical and explanatory in nature, PLS appears to be the best fit for the current investigation (Hair et al., 2017). According to Hair et al. (2017), measurement models were tested individually before the structural model was evaluated. All aspects of data and research must guarantee that there is no Common Method Bias before conducting measurement models. Common Method Bias suggests that the variance in the questionnaire is represented in the measuring method rather than the concept itself. In the second part of the research, a comparative analysis of tuition fees of reputed African universities was carried out. Here, the eight leading African universities from seven different countries were taken as sample organizations and their tuition fees (2022-23) were obtained from their websites.

4. RESULTS

In this section, analysis is made with regard to countries' demographic profiles, assessment of measurement model and assessment of structural model.

4.1 Demographic profiles

The demographic profiles considered in this study are nationality, gender, age, education and income. As presented in Table 2, 88.5% of the sample respondents were from Nigeria, 9% from the Gambia, 2.2% from Zimbabwe, 1.6% from Mozambique, 7.1% from Rwanda, 2.2% from Ivory coast and 2.5% were from Uganda. Most respondents of the study sample (57%) were female, while 47% were male. In terms of age distribution, the largest group of students was between 20 and 24 years old, followed by students aged between 25 and 29 years, students aged between 30 and 34, students aged between 35 and 39, students over 45 years, and lastly students aged between 40 and 44 years. In terms of education level, the majority of the students held a certificate (48.5%) and a diploma (35.2%), whereas 0.4% of the students

held PhDs, 3.6% held masters, and 12.1% of the students held bachelor's degrees. With regard to the level of income, the majority of students (82.7%) earn less than \$250 per month. The second largest group (6.6%) earns between \$251 and \$500 per month. In contrast, 1.8% of students earn more than \$2,000 per month.

Table 2. Demographic profiles

Variables	N	(%)
<i>Nationality</i>		
Nigeria	223	88.5
Gambia	8	9
Zimbabwe	6	2.2
Mozambique	4	1.6
Rwanda	18	7.1
Ivory coast	6	2.2
Uganda	7	2.5
<i>Gender</i>		
Male	117	43
Female	155	57
<i>Age</i>		
20-24 years	90	33.1
25-29 years	66	24.2
30-34 years	49	18.1
35-39 years	41	15.1
40-44 years	10	3.7
>45 years	16	5.8
<i>Education</i>		
Certificate	132	48.5
Diploma	96	35.2
Bachelor	33	12.1
Master	10	3.6

PhD	1	.4
<i>Income</i>		
0-250\$	225	82.7
251-500\$	18	6.6
501-750\$	7	2.6
751-1000\$	7	2.6
1001-1500\$	4	1.5
1501-2000\$	6	2.2
>2001\$	5	1.8

4.2 Assessment of Measurement Model

In the beginning of this process, the convergent validity was tested. During the convergent validity test, the indicator or item loadings, average variance extracted (AVE), and composite reliability (CR) were all taken into account. According to the results in Table 3, item loading surpassed 0.8 for items that met the recommended value provided by Hair et al. (2019). Hair et al. (2019) proposed an AVE threshold or requirement of more than 0.5. AVEs in the current research ranged from 0.713 to 0.873. The CR value varied from 0.882 to 0.932, which corresponded to Hair et al. (2019) recommended value of 0.7. The findings of the measuring model are shown in Table 1.

Table 3. Results of Measurement Model

Construct	Items	Loadings	VIF	CR	AVE
Perceived usefulness (PU)	PU4	0.901	2.513	0.928	0.811
	PU6	0.903	2.566		
	PU8	0.898	2.396		
Perceived ease of use (PEU)	PEU3	0.916	1.749	0.905	0.827
	PEU5	0.903	1.749		

Perceived cost (PC)	PC1	0.871	2.083	0.919	0.791
	PC3	0.917	2.743		
	PC4	0.880	2.262		
Compatibility (CO)	COMP1	0.869	2.560	0.920	0.742
	COMP2	0.857	2.315		
	COMP3	0.862	2.601		
	COMP5	0.857	2.433		
Perceived online service quality (POSQ)	POSQ5	0.933	2.255	0.932	0.873
	POSQ7	0.935	2.255		
Infrastructure enablers (IE)	IE2	0.858	1.840	0.882	0.713
	IE4	0.849	1.883		
	IE5	0.825	1.531		
Online learning acceptance and satisfaction (OLAS)	OLAS2	0.870	2.054	0.917	0.787
	OLAS5	0.881	2.241		
	OLAS6	0.910	2.521		

Following the preceding test of convergent validity, the discriminant validity must be assessed. To assess discriminant validity, Fornell and Larcker (1981) criteria was previously utilized. However, the Fornell and Larcker (1981) criteria has been criticized for not reliably detecting the lack of discriminant validity in frequent study contexts (Henseler et al., 2015). Thus, Henseler et al. (2015) proposed an alternate method for determining discriminant validity based on the Heterotrait-Monotrait correlation ratio. Henseler et al. (2015) used Monte Carlo simulation research to illustrate the higher performance of this technique. As a consequence, we examined the discriminant validity using this new proposed approach, and the results are displayed in Table 5. If the HTMT value is more than 0.85 HTMT0.85 (Kline, 2015) or HTMT0.90 (Gold et al., 2001), then discriminant validity is a concern. As demonstrated in Table 5, all of the values passed the HTMT0.90 (Gold et al., 2001) and

HTMT0.85 (Kline, 2015) tests, suggesting that discriminant validity has been established. Based on these findings, the measurement model has appropriate convergent and discriminant validity.

Table 4. Discriminant validity using Fornell and Lacker criterion

	CO	IE	OLAS	PC	PEU	POSQ	PU
CO	0.861						
IE	0.744	0.844					
OLAS	0.843	0.713	0.887				
PC	0.353	0.352	0.262	0.889			
PEU	0.842	0.728	0.851	0.262	0.909		
POSQ	0.799	0.700	0.824	0.270	0.799	0.934	
PU	0.841	0.690	0.854	0.288	0.840	0.868	0.900

Table 5. HTMT criterion

	CO	IE	OLAS	PC	PEU	POSQ	PU
CO							
IE	0.844						
OLAS	0.782	0.854					
PC	0.403	0.422	0.302				
PEU	0.689	0.712	0.826	0.316			
POSQ	0.719	0.843	0.759	0.314	0.773		
PU	0.651	0.819	0.856	0.329	0.804	0.573	

4.3 Assessment of Structural Model

According to Hair et al. (2019), the following stage in reviewing the output of PLS-SEM is to examine the structural model after analyzing the measurement model requirement. This might be accomplished using the normal assessment

criteria of the path coefficients' significance level, as determined by the measurement of R². In this study, the generated R² was 0.813, suggesting that 81.3% of the variance of online learning acceptance and satisfaction (OLAS) could be explained by perceived usefulness (PU), perceived ease of use (PEU), perceived cost (PC), compatibility (CO), perceived online service quality (POSQ), and infrastructure enablers (IE). Prior to the assessment of the structural relationships, collinearity should be examined to ensure that the regression results are not distorted (Hair et al., 2019). This could be done through the determination of VIF values. The rule of thumb of the VIF test is that, if the VIF value is above the value of 5, then there might be an indication of probable collinearity issues among the predictor constructs (Becker et al., 2015).

As depicted in Table 3, the VIF values of the study's items ranged between 1.749 to 2.743, indicating that all items of this study possess acceptable values with regards to collinearity. In addition, the statistical significance and relevance of the path coefficients should be performed through the bootstrap analysis with 5000 cases, as suggested by Hair et al. (2011). According to the output shown in Table 6, perceived usefulness (PU → OLAS, $\beta = 0.242$, $t = 3.342$, $p < 0.05$), perceived ease of use (PEU → OLAS, $\beta = 0.276$, $t = 3.831$, $p < 0.00$), compatibility (CO → OLAS, $\beta = 0.239$, $t = 3.497$, $p < 0.00$), and perceived online service quality (POSQ → OLAS, $\beta = 0.170$, $t = 2.304$, $p < 0.05$) were found to have a positive and significant relationship with the online learning acceptance and satisfaction of students in selected African nations. However, two variables were found to have an insignificant relationship with the online learning acceptance and satisfaction, which were perceived cost (PC → OLAS, $\beta = -0.031$, $t = 1.191$, $p > 0.05$), and infrastructure enablers (IE → OLAS, $\beta = 0.059$, $t = 1.209$, $p > 0.05$). Therefore, H1, H2, H4 and H5 are supported. The validated model is shown in Figure 1 below.

Table 6. Results of structural model

Hypothesis	Relationship	Std. Beta	Std. error	t-value	p-value	Decision
<i>H1</i>	PU -> OLAS	0.242	0.072	3.342**	0.001	Supported
<i>H2</i>	PEU -> OLAS	0.276	0.072	3.831**	0.000	Supported
<i>H3</i>	PC -> OLAS	-0.031	0.026	1.191	0.234	Not supported
<i>H4</i>	CO -> OLAS	0.239	0.068	3.497**	0.000	Supported
<i>H5</i>	POSQ -> OLAS	0.170	0.074	2.304*	0.021	Supported
<i>H6</i>	IE -> OLAS	0.059	0.048	1.209	0.227	Not supported

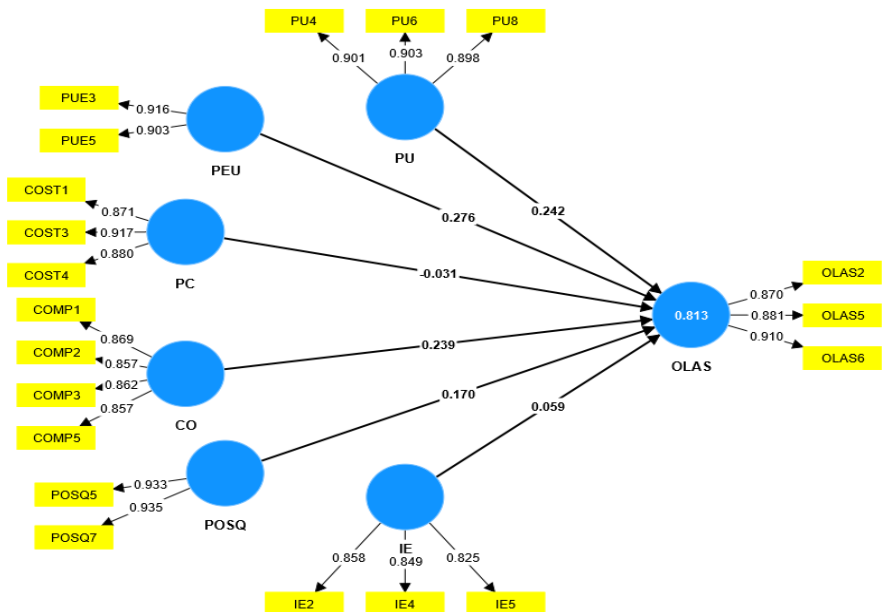


Figure 2. Validated model

5. DISCUSSION

The main objective of this study was to investigate factors that influence student utilization of online learning platforms in selected countries across Africa. African countries considered in this study are Nigeria, The Gambia, Zimbabwe, Mozambique, Rwanda, Ivory coast and Uganda. This study is based on the theoretical argument of Technology Acceptance Model (TAM). TAM has been shown to be a theoretical paradigm for explaining students' acceptance of online learning. Overall, the empirical results showed that some factors have been contributing positively towards the acceptance and utilization of online learning platforms among African students, while others have not. The findings revealed that perceived usefulness (PU), perceived ease of use (PEU), compatibility (COMP), and perceived online service quality

(POSQ) had a positive and significant relationship with online learning acceptance and satisfaction (OLAS), while perceived cost (PC) and infrastructure enablers (IE) were found to have no significant role.

The results showed that students' online learning acceptance and satisfaction were directly influenced by perceived usefulness (PU) and perceived ease of use (PEU) of learning platforms. The results suggest that students in selected African countries perceive online learning as useful, beneficial, and easy to use. These results are in line with past literature (Amadu et al., 2018; Ayodele et al., 2018; Eze et al., 2020; Farahat, 2012; Guzman et al., 2021; Lazim et al., 2021; Lee, 2010; Nguyen et al., 2020).

Compatibility (CO) was found to be an important factor in this study and had a significant relationship with online learning acceptance and satisfaction (OLAS), and this is also in line with the past literature (Chang & Tung, 2008; Changchit & Klaus, 2010; Ifinedo, 2018; Kotoua et al., 2015). This result is also proven, particularly when students are obliged to work or fulfil other duties while studying, as is the case in most African countries. This result also validates proposed extended DMISM model by Aldholay et al. (2018). The result is also in line with Guzman et al. (2021), who found that students with a preference for online learning are likely to be older, work more, be married, and have children.

In addition, perceived online service quality (POSQ) had a significant effect on online learning acceptance and satisfaction (OLAS) among students in Africa. This study perceives online learning and distance education as a solution to the problem of school dropouts in Africa and as an effective means of spreading knowledge and virtue as well. The finding of this study is also supported by Ghazal et al. (2017) in the case of Yemen, who found system quality to be the most significant positive factor affecting students' acceptance and satisfaction. It is also consistent with the findings of Buabeng-Andoh (2022) in the context of Ghana and Lee (2010) in a comparative study

between South Korea and the USA, who revealed that students from both countries perceived the quality of online support services as a significant predictor of online learning acceptance and satisfaction.

On the other hand, perceived cost (PC) was not significantly associated with online learning acceptance and satisfaction (OLAS) among students in Africa, posing cost as a major impediment to the spread of online learning in the continent. In spite of the huge efforts provided by online learning platforms in Africa, low-income levels strongly affect students' acceptance levels, as is the case with this study, which showed that 82.7 % of respondents receive an income of below 250 dollars. These findings are in support of Changchit and Klaus (2010) who claimed that online courses can be costly to develop and to implement, and incorrectly categorizing courses for online participation might result in lesser student retention rates. Unlike the situation in Indonesia, where the cost of internet connectivity and online learning subscriptions seems affordable (Sarosa, 2022), the cost of online learning seems not to be affordable for many African students.

In the same vein, infrastructure enablers (IE) did not support online learning acceptance and satisfaction (OLAS) among students in Africa. In other words, all infrastructure-related means, such as ICT infrastructure, internet access, speed, and other facilitating conditions, are perceived as obstacles to the spread of online learning. These results confirm the challenges confronting online learning in Africa provided by Adarkwah (2021) and other researchers (Asampana et al., 2017; Maphalala et al., 2021; Palvia et al., 2018). This result is also compatible with the findings of Maheshwari (2021) in the context of Vietnam. Similarly, it also validates the acceptance model of online learning proposed by Azhar et al. (2021) for urban poor students in Malaysia.

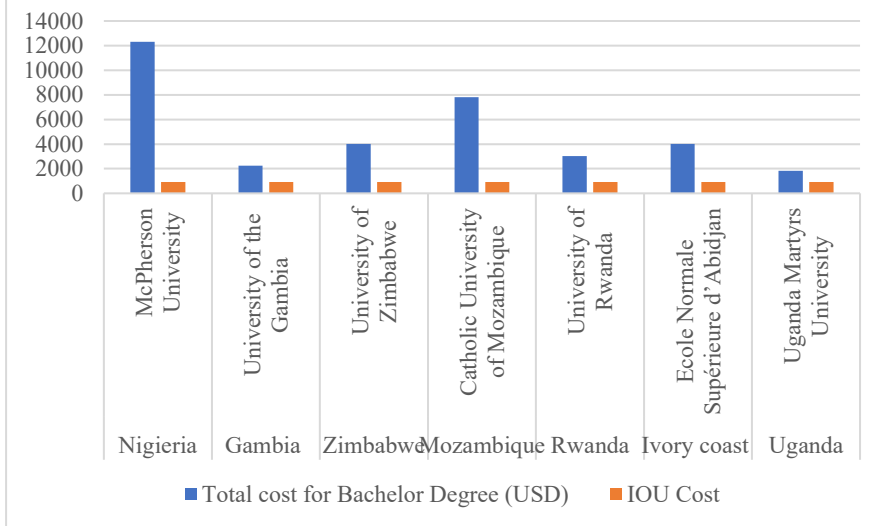
6. COMPARISON OF THE COST EDUCATION IN DIFFERENT UNIVERSITIES IN AFRICA

It is important to mention here that due to extreme poverty and lack of basic facilities in many African countries, acquisition of education whether through on the ground universities or by online mode is a big challenge. This was also reflected during the survey carried out for this study. However, when researchers compared the tuition fees of seven on-the-ground universities in the sample countries with the tuition fee charged by the IOU, they saw a big difference (table 7). For instance, as compared to McPherson University Nigeria, the cost of acquisition of a bachelor degree in IOU is only its 7.5 percent. A similar situation can also be seen in the case of Catholic University of Mozambique and University of Zimbabwe where the respective figures are 11.8 and 22.9 percent. Even in the case of Uganda Martyrs University, acquisition of undergraduate education at IOU is much cheaper. For postgraduate programs, the scenario is almost the same which means the tuition fees at the IOU is the lowest. In addition, IOU charges customized tuition fees based on different slabs formulated on the basis of per capita GDP of those countries, which means the students from poorest countries pay the least. As reflected from the survey results that it is not only the less cost, when considering the online learning acceptance and satisfaction, its perceived usefulness, perceived ease of use, compatibility, perceived online service quality and infrastructure enablers, students are advantageous. On a different note, it is also worth mentioning here that a large number of IOU's needy students are on scholarship. By covering their full fees, IOU's One Million African Scholarships (1MAS) program covers the full fees of disadvantaged students who have no opportunity to acquire higher education elsewhere.

Table 7. A comparative overview of various universities' fees in relation to IOU

Country	University	Cost of Bachelor Degree (US\$)	IOU's Cost of Bachelor Degree (US\$)	Difference (US\$ & %)
Nigeria	McPherson University	12,320	920	11,400 (7.5%)
The Gambia	University of the Gambia	2,252	920	1,332 (40.8%)
Zimbabwe	University of Zimbabwe	4,024	920	3,104 (22.9%)
Mozambique	Catholic University of Mozambique	7,820	920	6,900 (11.8%)
Rwanda	University of Rwanda	3,024	920	2,104 (30.4%)
Ivory coast	Ecole Normale Supérieure d'Abidjan	4,007	1,240	2,767 (30.9%)
Uganda	Uganda Martyrs University	1,836	1,240	596 (67.6%)

Figure 3. A comparative overview of various universities' cost of graduation in relation to IOU



7. CONCLUSION, IMPLICATIONS AND LIMITATIONS

Online learning has huge potential in Africa. Many African students perceive online learning as useful, beneficial, and easy to use. Others also perceive it as compatible with the way they like to learn as it fits well with their lifestyle. The study also shows that IOU offers better quality education with the lowest and most customized education costs among African universities. However, there are many students who cannot join online learning due to economic conditions and lack of infrastructure support such as internet connectivity and IT support. Therefore, based on the results of this study which reflects the potential of online learning in Africa, it is recommended that decision-makers

and governments in Africa must work to improve the economic conditions of people in Africa by rationalizing and optimizing the use of resources, as well as fighting corruption, especially as it is the richest continent in the world in terms of natural resources. In view of the great development challenges facing governments in Africa, it is advisable to take advantage of online learning to raise the educational level of individuals and qualify them for various tasks, and this can only be done by providing supportive infrastructure, such as providing Internet networks in remote cities and villages. The limitation of this study was that not all factors which might affect students' acceptance and preference towards online learning were considered. Future studies might investigate other factors such as social influence, perceived enjoyment, effort expectancy, and so on. Also, the sample of this study did not cover a large number of African countries, which are perceived to be rich and well-grounded in terms of infrastructure. Therefore, for the sake of generalizing the results, a larger sample size would be recommended for future studies.

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