IslamTAM: Revising Technology Acceptance Model from the Islamic Perspective

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Abstract
The Islamic religion is not just a sentimental doctrine isolated from reality, but an integrated way of human life and a method that explains all aspects of life as social behaviors. Around 700 years ago, Muslim's Imams and scholars as Ibn al-Qayyim and Ibn Taymiyyah have established their visions and perceptions of behaviors as Action Occurrence in their books and writings, from their deep understanding of Islam. Based on that, this conceptual paper aims to revise the Technology Acceptance Model (TAM) from the Islamic perspective and develop a framework called “Islamic Technology Acceptance Model” (IslamTAM). The framework focuses on "Thoughts and Ideas" as the origin of all the optional doings according to Ibn al-Qayyim's view. In addition, the model also focuses on the importance of the “Ability”, as Ibn Taymiyyah’s view, to moderate the relationship between “Intention to Use” and “Actual Usage”.

Keywords: Technology Acceptance Model, TAM, Islamization, Information Technology, Islamic Indigenization, Islamic Thought and Heritage.

1. Introduction
The Islamic Technology Acceptance Model (IslamTAM) is a contemporary framework which aims to explore the Technology Acceptance Model (TAM) from an Islamic perspective. This work is an extension of Sa’eed Al-Qahtani, 2010 study titled: “Technology Acceptance Model: Toward a Theoretical Indigenized Study from an Islamic Perspective”. The author in his study states that although the TAM has been widely used and tested in several research areas from Western knowledge, there is no existed study attempts to underline the theoretical basis from Islamic perspective. His study assumes that there are similarity and congruency between Islamic thought and TAM. In addition, he highlights the Islamic uniqueness by connecting the intention with user’s behaviour to be responsible for behavioural outcome. Furthermore, the author shows how Islamic thought and heritage are rich with the knowledge that could be in accordance with the rapid changing of Information Technology (IT) required to build an IslamTAM. In deep, the author has indigenized TAM in line with Muslim Imams and Scholars’ views on action occurrence such as Ibn al-Qayyim and Ibn Taymiyyah. The proposed model of this paper is based on their views.

The purpose of this paper is to discuss an alternative view of TAM from the Islamic perspective through continuing the study of Sa’eed Al-Qahtani, to attempt building an integrated theoretical
framework in order to crystallize and formulate the integrated conceptual framework. Also, combining the wahi (Allah's revelation) and the Western science with adapting a set of measurable hypotheses and to verify its validity in the future. The sections of this paper are going to be as follows: first, we summarize the relevant literature works on TAM, its origin, and its extensions (i.e., the second & third versions). Second, we clarify the corresponding TAM with Islamic thought and heritage. Third, we propose the conceptual framework of IslamTAM and discuss its variables.

2. Literature Review on Technology Acceptance Model (TAM)

2.1 Technology Acceptance Model and its Origin

In 1986, Fred Davis advanced the work on the Theory of Reasoned Action (TRA) which was produced by Martin Fishbein and Icek Ajzen in 1975. Davis’s doctoral dissertation idea was to integrate the social psychology theory into the Information System (IS) and IT fields. TRA has many supporters, researches and studies that forecast the user’s behavior in social psychology (Shokohyar, Tavallaee, & Shobeiri, 2017). TAM, in its inception, examine the mediating role of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) (Lai, 2017). Davis, 1989, defined PU as "the degree to which a person believes that using a particular system would enhance his or her job performance”. He defined PEOU as "the degree to which a person believes that using a particular system would be free of effort." (ibid).

Later, Davis and others have built upon the original model and published two articles (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989), which has become the base papers for a plethora of articles in different fields. According to the search engine "Google Scholar", there are over 126,745 studies referred to these two articles or other Davis’s publications.

TAM and its versions are known as a strong theoretical model for explaining the usage of IS which is additionally useful for experts to predict the adoption of the new system in Information fields (Tarhini, Arachchilage, & Abbasi, 2015). There are various studies measured the usage of IS by TAM. While other studies evaluate the original TAM, the rest have extended it with new factors. Those new factors influence the two main variables, PEOU and PU, based on different research context which reach over 70 different variables since it was proposed in 1986 (Ahmad & Basden, 2008).

2.2 Technology Acceptance Model Extensions, TAM1, TAM2 and TAM3

After Davis (1989) studied computer usage behavior to introduce the first TAM, Venkatesh and Davis (1996) introduced the final version of TAM1. This version indicates that PU and PEOU have a direct relationship with Behavior Intention as shown in Figure. 1 as a blue box. In 2000, Venkatesh & Davis improved TAM1 by adding more variables affected on perceived usefulness, that to examine the relationship between the career goals and results of job performance. In addition, they examined the effects of the relationship on system acceptance in both voluntary and mandatory working environment. They considered it as the TAM2 model, which is shown in Figure. 1 as in red color.

Once again, in 2008, Venkatesh and Bala developed a more comprehensive TAM. While TAM2 is focused on the precedents that affect PU, TAM3 examined the precedents that influence PEOU as well. Those determinants of PEOU are: self-efficacy, external control, computer anxiety, computer playfulness, perceived enjoyment, and objective usability. The last four determents are influenced by the overall experience of the used technology (see Figure. 1). The Figure.1 is an illustration of the combined 3 versions of TAM. Additionally it is
mentioned “Disappeared TAM2 Arrow” which refers to the direct relationship between output quality and perceived usefulness in TAM2. This relationship later omitted in TAM3 and replaced with the mediating effect of output quality on the relationship between job relevance and perceived usefulness. In general, TAM is a well-known and widely used model in IT and IS fields. Despite its simplicity, TAM proved to be a flexible model that has successfully accommodated a wide range of research interests, experiments, and projects (Ahmed, Ahmad, Ahmad, & Zakaria, 2018).

Figure 1. TAM3 (Venkatesh and Bala, 2008) with Highlighted TAM1 and TAM2 Relevant Variables and Relationships.

3. Corresponding the Technology Acceptance Model with Islamic Thought and Heritage.

3.1 Religion as a Part of Actions
There is a significant role for the religion in human life. Religion could direct and guide the attitude of people. According to Alam, Janor, Zanariah, Wel, & Ahsan (2012), the religion is a portion of a person’s culture, as well as behaviour, and all the prohibited actions are guided by religion. In general, there is a lot of studies which assume that a person’s action is influenced by the religion. His/her variations of action may depend on the variations of religions such as Islam, Christianity, Buddhism, etc. (Alam, Janor, Zanariah, Wel, & Ahsan, 2012).

This paper would focus on the Islamic religion perspectives on accepting new technology as Islamic religion is not just a sentimental doctrine isolated from reality, but an integrated way of human life. It is a method that explains the nature of existence, identifies the place of the human in this universe, and gives a realistic picture of natural phenomena and social
behaviours. Islam is *shamel* (perfect) and *kamil* (comprehensive). Islam teaches people how to eat and what to sell, and teaches them planning, management, and good attitude, etc. (Alam et al., 2012).

### 3.2 Models and Modelling in Islamic Thought and Heritage

The concept of “Model” has been mentioned in Islamic thought and heritage under the name of "Sunnah" and the "Followed Method" (Sa’eed Al-Qahtani, 2010). The followings are two literal definitions of *Sunnah* that are stated in the Islamic heritage; first: Imam Arrazi mentioned in his book: "The Sunnah: The straight method and the example followed". Second definition by Shaikh al-Islam Ibn Taymiyyah who said, "The Sunnah is the habit of guaranteeing that the second should do the same as his first peer did before him.” (ibid).

Modelling, on the other hand, was used in the Islamic thought and heritage to describe the phenomena and the sequence of events by mentioning their reasons, causes, and results as descriptive models; whether the description is a figurative form or a textual expression, as it will be discussed in the following sections.

#### 3.2.1 First: The Descriptive Model as A Figurative Form

The descriptive model as a figurative form is initially based on a textual expression and has been used in prophetic narratives. For example, there are two *hadiths* (the prophet’s sayings) on the use of figurative expressions by the prophet Muhammad peace be upon him (PBUH). The first *hadith* explains how death will separate a man from his many wide hopes. Death, accidents or calamities and troubles, which would fall upon a person, one by one until his/her death which would result on stopping the person from reaching his hopes. The prophet (PBUH) used a figurative form to explain his idea, he drew a square and then drew several lines as shown in Figure. 2 (left).

The second *hadith*, the Prophet (PBUH) drew a centre line and said: "This is the path of Allah”. Then he drew other side lines as shown in Figure. 2 (right). Those side lines, as the prophet explained, are the wrong paths, in which Satan tries to attract the believers to sins, debauchery, and dreadful desires. The slightest inclination in those lines is a metaphor for the slightest tendency, which a human can easily be misled by his/her ignorance, carelessness, and misgivings.

![Figure 2. Hadith No.1 (Left): The Drawn Model by the Prophet (PBUH) about Human Beings, Life and Hope. Hadith No.2 (Right): The Drawn Model by the Prophet (PBUH) about the Path of Allah.](image_url)

#### 3.2.2 Second: The Descriptive Model as A Textual Expression

The Islamic nation is known for its prominent scientists who shined in the sciences of religion and distinguished and jurisprudence in *Sharia* (Islamic law). Muslim Imams and scholars have
worked hard to establish their visions and perceptions of some behaviours from their deep understanding of Islam; for instances, their perceptions and views on “Action Occurrence”. This concept is explored by Ibn Qayyim Al-Jawziyya and Shaikh al-Islam Ibn Taymiyyah and mentioned in their books and writings about 700 years ago. Both Imams have excelled in many sciences, most in sciences of Tafseer (Qur’anic interpretation), Hadeeth (Prophet Muhammad’s record of the traditions or sayings), Seerah (Prophet's biography) and Fiqh (Islamic jurisprudence). Furthermore, they understood the origins of the Arabic language and its art from Sebwayh's book (The first systematic book that coordinates and codifies Arabic grammar) as it was a door to a wide understanding of the science of Sharia through understanding the words of Allah and the Prophet (PBUH). They are considered masters in the subjects of social and Sharia sciences. The following is a further investigation of their views on “Action, its Causes, and Occurrence” and how descriptive model as a textual expression is clarified by them.

3.2.2.1 Ibn al-Qayyim and The Action Occurrence Model
Ibn al-Qayyim Al-Jawziyya is one of the great Muslim scholars. The descriptive model as a textual expression is clarified by him, in which he stated what he named “Great Rule: The Origin of Science and Action”. In his famously known book Alfwayd (The Benefits); he presents his rule about the action occurrence as shown in Figure. 3. The author said:

![Diagram of Action Occurrence Model]

**Figure. 3 Ibn al-Qayyim's Action Occurrence View**

“The origin of every theoretical science and chosen action lies in thoughts and Ideas. They lead to perceptions (imaginations). Perceptions, in turn, lead to desires (intention) which necessitate the occurrence of the action. The abundant repetition of this action, then, leads to the formation of a habit. Thus, the rectification of all these subsequent steps lies in the rectification of the notions and thoughts, and the corruption [in these subsequent steps] lies in the corruption of these [thoughts and Ideas]”(Al-Jawziyya, 1350, p. 212).

Ibn al-Qayyim continues stating that ideas, notions and whisperings are leading to a thought. Then it leads to tadhakkur (remembrance) then to iraadah (intention). As a result, the intention is transformed to the body limbs and, thus, to actions, so it becomes deeply rooted and becomes a habit. Therefore, it is easier to rectify notions and whisperings from the beginning than to stop them after they become stronger and not an easy-fix as it is in a form of a habit. Ibn al-Qayyim also mentioned that if the person did not use his limbs, the thought will return back to the heart with wishes and lusts. Healthymuslim.com, 2018 have explained that as the thoughts and ideas will lead to beneficial actions if it is beneficial in their self. Furthermore, a person may take great care of his/her passed thoughts and ideas by making sure they are not the result of the waswas (whispers) that comes from the Shaytan (devil). As a result of Ibn al-Qayyim’s view, thoughts and ideas are paid with thorough attention in this study.
3.2.2.2 Shaikh al-Islam Ibn Taymiyyah’s View on Action and Intention

Shaikh al-Islam Ibn Taymiyyah is a scholar in terms of qualification for teaching and fatwa. He was interested in hadeeth, learning Arabic font, arithmetic, and he memorized the Qur’an before he reached twenty years. The people of Damascus (currently the capital of Syria) were impressed by his intelligence, his mind, the strength of his portfolio, and the speed of his perception. Ibn Taymiyyah has many books that are difficult to enumerate, and many of them are broadcast among the countries and did not exist in a particular country. Ibn Taymiyyah mentioned his view on action and intention in his book Majmoo` al-Fatawa (Collection of Fatwas), his statement is mentioned below:

“The decisive intention is that the action must occur with it. If the intention is met with the ultimate completed ability, the existence of the action must take place; because it was free of objections. When there is an intention and ultimate completed ability, and the action does not occur, then because the intention was not decisive. That is in the principle of the intention of creation for what they can do but did not. Although these intentions are widely varied in strength and weakness but where the action does not occur with ultimate completed capacity, then it means that what the will did was not decisive” (Taymiyyah, 1328, p.404).

Ibn Taymiyyah explained that the decisive intention with the ability produces the action. In addition, He clarified in his book that this intention is placed in the heart, and if the heart wants something, it orders all the body and the limbs to work, and this is considered an integration with the Ibn al-Qayyim’s view. If the heart is good, all the body has been repaired. Those views are based on the Prophet (PBUH) hadith which states “there is a piece of flesh in the body if it becomes good (reformed) the whole body becomes good but if it gets spoilt the whole body gets spoilt and that is the heart” [Sahih Bukhari, Volume:1 Book :2 Number :49].

4.0 Proposed IslamTAM Model

Muslim scholars and Imams’ perceptions in action occurrence were the main engines for developing a conceptual framework in this research. This framework is suggested to be called the "Islamic Technology Acceptance Model" (IslamTAM). The framework, in the beginning, stated that the "Thoughts and Ideas" are the source of all the optional works according to Ibn al-Qayyim's vision. Moreover, according to Ibn Taymiyyah, the framework ends with the importance of the ability -as a moderator variable- which affects the relationship between "Intention to Use" and "Actual Usage". Between the beginning and the end, there are several factors, such as perceptions of "Perceived Ease of Use", " Perceived Usefulness" and the effect of the moderator variable: "Social Environment" on the relationship between "Perceptions" and "Intention to Use". Figure. 4 shows the framework and each variable is detailed below.
4.1 Variables: Independent Variables

4.1.1 Thoughts and Ideas (T&I)
This study is started by Thoughts and Ideas (T&I) as a new concept to be tested in action occurrence. The definition of these two words “Thoughts” and “Ideas” as mentioned separately in one of the most famously known Arabic dictionaries; "Mu’jam Allughat Alearabiat Almueasira" (Dictionary of the Contemporary Arabic Language) (Omar, 2008). The word “Thoughts” is the plural of khatir which means: “What comes to mind as a form of an opinion or a meaning or a notion or what comes to mind as an arrangement or a matter”. Whereas the word “Ideas” is the plural of fikra which means: “A mental image of thought; that a person draws after the intellect realization”.

Although Ibn al-Qayyim confirms in his studies that the origin of every optional work is thoughts and Ideas, it is a new variable that would be added in context of TAM. Thoughts and ideas have been used in the science of self-development by mentioning the importance of thoughts and ideas to achieve personal goals. Likewise, from the point of view of Neuro-Linguistic Programming (NLP), thoughts and ideas were used in positive and negative programming as one of the scientific principles (Afif, Ulfatin, Kusmintardjo, & Imron, 2017).

On the other hand, in behaviour science, thoughts and ideas are the beginning of behaviour and occupy a central position in connecting the heart and behaviour to Allah.

4.1.2 Perceptions
The word “Perceptions” is tasawarat in Arabic which means, based on "Mu’jam Allughat Alearabiat Almueasira", "forming an image and a shape to an idea; perceiving something means imagining it by bringing up its form and image to the mind" (Omar, 2008). Although the literal meaning of perception imagining the thing in mind, however, Islamic perception of things carries broader meaning which have been explained by Ibn al-Qayyim who stated in his book "I’lâm Al-Mouwaqqi’in ‘an Rabb al ‘Alamin" : "to issue a judgement, the Islamic leader or Mufti needs to have an understanding of the reality, learning the truth of what is happening through its clues, sings, and evidence in order to make a perception about it". In Islamic jurisprudence, there is rule states that: “alhukm ala alshay’ farae ean tasawurih” which means that the ruling on something is based on the way in which it is perceived. Therefore, it is prohibited for a person to rule on something or make a judgement about it without fully knowing its details and perceiving the reality surrounding this matter. A verse in the Quran warned about saying something, following it, or doing it without having knowledge about it, which includes perceiving it, as Allah (Subḥānahu wa ta’alā) says in Surat Al-Israa:

وَلَا تَقْفُ مَا لَيْسَ لَكَ بِهِ عِلْمَ [سورت الاسراء:36]
"And do not pursue (O man i.e., say not, or do not or witness not) that of which you have no knowledge". [Surat Al-Israa: 36]

The user’s perceptions have been studied since 1986 by the two well-studied and widespread variables: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). “Intention to Use (IU)” is determined by these two variables which have already been defined earlier in section 2.1. PU and PEOU are assessed and behavioral theories are tested by many researchers as Ismail M. Romi, 2014 . The author demonstrated the ability of the TAM to understand the intention to use and furthermore explained a set of studies that proved that PU and PEOU are influential in the intention to use.
4.1.3 Intention to Use (IU)
The word “Intention” in Arabic has various synonyms for a specific word such as alniya, 'alahum, aleazm and al'iirada. The intention is a fundamental principle of the action in the Islamic religion, which entails the judgment of either punishment or reward. It is narrated on the authority of Umar ibn al-Khattab who said: I heard the prophet Muhammad (PBUH) says: “All actions are judged by motives, and each person will be rewarded according to their intentions” (Saheeh Al-Bukhari, Saheeh Muslim). The intention placed in the heart and if the pronunciation of the tongue is different than what is present in the heart, the judgment (of Allah) will be for the intention in the heart not for the tongue. The goodness of intentions is the concern of Islamic religion from the early stages because it is to turn the daily normal activities into rewarded action as long as the intention are right and that action is not prohibited by the religion (IslamHouse.com, 2013). The concept of intentions has been clarified by Ibn al-Qayyim and Ibn Taymiyyah. Ibn al-Qayyim stated that the intention is an introduction to the action occurrence, and a result of it, in addition, while Ibn Taymiyyah stated that the intention must be accomplished with ultimate completed ability to occur in the form the action, as mentioned earlier in section 3.2.2.2.

4.2 Variables: Moderator variable

4.2.1 Social Environment (SE)
The Social Environment plays a very crucial role in effecting the occurrence of an action in a person's life. Family and community are paid special attention and concern in Islam. The prophet Muhammad (PBUH) has made it clear in many Ahadith that a person must build a healthy and pure environment for him/herself and consequently for their children. From an early stage of building the family, Islam has encouraged that a person would only marry the righteous person to build a healthy life for themselves. He also stated the same about a man choosing a pious woman to be his wife. In addition, choosing righteous companions is another example of proving that social environment would affect a person's behaviour and actions, and we have a good example from Prophet (PBUH) hadith about the example of a good pious companion and an evil one and how they have an impact on a persons' life and attitude.

Additionally, Islam's teachings demonstrated the importance of a person leading a healthy life and taking his own responsibilities seriously as the Prophet (PBUH) stated that everyone is a guardian and responsible of his/her family, work and community. All Ahadiths shows the extent of Islam's concerns about little details that would affect a person's actions and life. Social Environment is consistent with the findings of the TAM2 and Unified Theory of Acceptance and Use of Technology (UTAUT), which appeared under the name of Subjective Norms. The subjective norms mean the individual's perception of social pressures towards the do or not to do of a certain behaviour. Furthermore, its importance has been shown on influencing the intention in the TPB and UTAUT (Ismail M. Romi, 2014).

4.2.2 Ability (A)
Alqudruh (Ability), the source of qadar which means according to Mu’jam Allughat Alearabiat Almueasira is the ability, capability and having power over something (Omar, 2008). As it is explained earlier from the Islamic perspective, the Ability (A) plays an important role in influencing the action occurrence. The disparity of the A from nothingness to ultimate completed ability makes a difference in the action occurrence, which may occur or not. Based on that, the A is involved in IslamTAM as moderator. The Actual Usage (AU) will not exist unless there is an influence from the ultimate completed ability. Thus, depending on the value of the A will be the value and meaning of AU. This factor has already proved its importance in
UTAUT (Sa’eed Al-Qahtani, 2010), where UTAUT referred to the term as Perceived Facilitation.

4.3 Variables: Dependent variables

4.3.1 Actual Usage (AU)
Actual Usage (AU) is classified as one of the actions that occur because of all previous dependent factors (T&I, PU, PEOU and IU) and moderator factors (A and SE). The actual usage is the result of moving the limbs to do something, and this is the result of the order by the heart, which is tied to the intention. This direct relationship between AU and IU has been proven by several theories and researches such as first and modified version of TAM, TAM2, TAM3, UTAUT (Ismail M. Romi, 2014).

4.4 Hypotheses
H1: There is a positive relationship between Thoughts and Ideas (T&I) and Perceived Usefulness (PU).
H2: There is a positive relationship between Thoughts and Ideas (T&I) and Perceived Ease of Use (PEOU).
H3: There is a positive relationship between Perceptions and Intention to Use (IU).
   H3a: There is a positive relationship between Perceived Usefulness (PU) and Intention to use (IU).
   H3b: There is a positive relationship between Perceived Ease of Use (PEOU) and Intention to use (IU).
H4: There is a positive relationship between Intention to use (IU) and Actual Usage (AU).
H5: There is a positive relationship between Perceived Ease of Use (PEOU) Perceived Usefulness (PU).
H6: Social Environment (SE) will moderate the relationship between perceptions and Intention to use (IU).
   H6a: Social Environment (SE) will moderate the relationship between Perceived Usefulness (PU) and Intention to use (IU).
   H6b: Social Environment (SE) will moderate the relationship between Perceived Ease of Use (PEOU) and Intention to use (IU).
H7: Ability (A) will moderate the relationship between Intention to use (IU) and Actual Usage (AU).

5. Conclusion
Muslim Imams and scholars’ perceptions on the action occurrence were the main engine for developing a conceptual framework for this paper. This framework is called the Islamic Technology Acceptance Model (IslamTAM). IslamTAM essentially is a new perspective of TAM, based on the Islamic thought and heritage. It combines the insights of wahi and the true fact of human experience. This combination extracts hypotheses and variables which can be confirmed in reality. Since the proposed framework has not been validated yet, it will be validated in future work as part of a soon-to-be-completed Ph.D. thesis.

The paper concluded that there is a great similarity between the Islamic model and the Western model. The Islamic model is superior to others because it is associated with wahi, Quran and Sunnah. This is because the emergence of views and perceptions are derived from the Islamic doctrine of divine origin, which urges the right action and not just any action. To the best of authors' knowledge, this presented integrated model has not been proposed, however, Al-
Qahtani recommended to build a comprehensive conceptual framework of Islamic Technology Acceptance (Sa’eed Al-Qahtani, 2010).

The main contribution of this paper is to transfer the textual expressions of Muslims Imams and scholars into a comprehensive figurative descriptive model for action occurrence towards the acceptance of any new technology. The paper furthermore sheds lights on the importance of a new independent variable and two moderator variables as in the following sequence; A): "Thoughts and Ideas" which are the origin of any optional work. B): “Ability” which affects the relationship between "Intention to Use" and "Actual Usage". C): "Social Environment" which affects the relationship between "Perceptions" and "Intention to Use". By doing so, we aim to take the Islamic thought and heritage among the technology field into new levels of considerations.

References


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