Impact of Covid-19 Pandemic on Primary Education in Saudi Arabia: TAM Implementation on MADRASATI System

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Abstract: The routineness of human activities of multiple sectors has been compromised since Coronavirus (COVID-19) appears. Many governments have applied mobility restrictions due to this pandemic to maintain the confinement social distancing, closing borders between countries. COVID-19 pandemic changed the whole world. The increase of COVID-19 diagnoses incidents pushes countries to use the technologies to tackle the adverse effect of COVID-19, which were swift on all education aspects. Worldwide, the regular classroom setting changed to online virtual classes. In Saudi Arabia, during the pandemic, a new system for teaching was created and implemented by the Ministry of Education called MADRASATI. Such a platform can introduce that distance learning can be conducted in an organized, effective, and pedagogically sound manner, as it can be adopted in future teaching activities. Also, it will be a perfect alternative solution to overcome school interruption problems on any day after the pandemic ends. The acceptance level of these platforms of education can lead to having an alternative approach to education in the future. To study how students, teachers, and parents are acting toward this MADRASATI platform, a Technology Acceptance Model (TAM) will be applied. Technology Acceptance Model is one of the most famous theories that is used widely to explain the usage of information systems. TAM is majorly describing, estimating, and understanding the acceptance of the use of the system to predict its acceptability and help to identify the changes that need to be made or users' approval [1]. In this research, we will cover the impact of COVID-19 in the primary education sector in Saudi Arabia and how the technology has been utilized during the social distance. The research will be conducted through questionnaires and observations and later opinions from teachers and parents which will be acquired for studying the Challenges and opportunities towards in MADRASATI platform. The main focus of this study is to apply the technology acceptance model (TAM) on Madrasiti application to identify the use and acceptance of computer technology using empirical data collected from Madrasiti users.

Keywords: Technology Acceptance Model, E-learning, Covid-19 pandemic, Online education, primary school, Saudi Arabia Education.

I. INTRODUCTION

The routineness of human activities of multiple sectors has been compromised since Coronavirus (COVID-19) appears. Many governments have applied mobility restrictions due to this pandemic to maintain the confinement social distancing, closing borders between countries. COVID-19 pandemic changed the whole world. It does not affect just the economy and society's health but education too, which faced various challenges to the education system. The increase of COVID-19 diagnoses incidents pushes countries to use the technologies to tackle the adverse effect of COVID-19, which were swift on all education aspects. Worldwide, the regular classroom setting changed to online virtual classes. Surely, the development of some new systems during the pandemic has led technology to significantly change and to be used in new ways. Furthermore, it is encouraging to create and implement a new system for teaching such as the MADRASATI platform that was established during the pandemic in Saudi Arabia by the Ministry of Education. Such a platform can introduce that distance learning can be conducted in an organized, effective, and pedagogically sound manner, as it can be adopted in future teaching activities. Moreover, the MADRASATI platform is not a solution for a limited time. It is supposed to be a longer-term solution to enhance education all time.

A. Problem Statement: In this research, we will cover the impact of COVID-19 in the primary education sector in Saudi Arabia and how the technology has been utilized during the social distance. As primary school students are mostly unfamiliar with studying online approach via platforms and regularly guided to be studying in regular classrooms, the pandemic of Covid-19 forced the education sector toward online learning during the curfew "The main problem undertaken in this research is to identify the acceptance level of Madrasiti platform using TAM model. This research will identify the use and acceptance of computer technology from primary school students and parents using empirical data collected from MADRASATI users".

B. Research Questions:

- How to measure the use and acceptance of MADRASTI after COVID-19 in the primary education sector?
- How are parents accepting the E-learning trend for the primary stage of their children's education?
- What is the level of familiarity of the students in primary schools with the technology to be educated via MADRASTI?

C. Objectives:

- To measure the acceptance level of e-learning during COVID-19 from the parents' perspective via TAM.
- To analyze the students' perspective about learning online using MADRASATI via TAM.
- To propose a framework that can measure the use and acceptance of MADRASTI after COVID-19 in the primary education sector.

II. LITERATURE REVIEW

In this section, the Technology acceptance model will be discussed. Many related works about applying TAM on E-learning in general and during the Covid-19 pandemic will be addressed. Then the situation of MADRASATI which is a Saudi educational Platform that was established during the early stage of the Covid-19 pandemic will be discussed briefly by addressing its proprieties from a various perspective in order to study its acceptance level from Primary students' parents and the students themselves.

A. Related Work -TAM Implementation on E-Learning

A study of Undergraduate accounting students from the Faculty of Business and Finance, UTAR, Kampar Campus had been selected for a study in Malaysia 2020 about "Application of Technology Acceptance Model (Tam) Towards Online Learning During Covid-19 Pandemic: Accounting Students Perspective". A total of 333 students had selected to dedicate their perspective about the approach of online learning during the Covid-19 pandemic with a survey questionnaire that had two sections that collect the demographic data (gender, location, total hours per day spent on the Internet), while the second section mainly focused on psychometric data that got two independent variables (PEOU & PU), and they used the attitude towards online learning as arbitrating variable and the acceptance of online learning behavior as the dependent variable. Statements of the survey collected responses of a 5-point Likert-type scale of between strongly disagree (1) to strongly agree (5) for each question. They used the Google form link which gave them the collected data within a short period and reach their targeted students. They build five hypotheses about how the elements of TAM are connected and influenced by each other and Structural Equation Modeling (SEM) with the use of Partial Least Square approach (PLS) has been employed in this study [2]. The limitations were about their focus on undergraduate accounting students in a private university (UTAR) which most of their students are financially capable to have laptops and having Internet accessibility. Also, they could expand their study among other facilities, not the accounting students only as well expand their study among both private and public universities to consider larger populations for better perspective towards online learning and to cover different environmental structuring and system characteristics.

In China 2020, A Research about "Exploring the Critical Factors, the Online Learning Continuance Usage during COVID-19 Pandemic" had done to collect the acceptance level of e-learning of higher education institution students and their willingness to continue using online learning. 552 students were participating in this study from different universities and with different majors. The TAM in this study was extended by adding three variables besides the original TAM ones, which are family support (FS), task–technology fit (TTF), and instructor attitude (IAT) towards online learning. With these variables, the researchers had created eight hypotheses that studied the affected and influenced level among these variables. An online questionnaire survey was established via the WJX platform and administered in 18 universities in China that applied full online teaching during the pandemic period. They used SPSS for measurement and SEM-PLS as structural model analysis of the collected data [3]. As result, both PEU, PU, and attitude were significantly attached to each other since the Ministry of Education in China provided largely learning platforms for higher education where each platform was provided by the state. They found that when the platform's interface was simple and easy to use and interact with, the acceptance of that platform raised which covered both usefulness and ease of use all along with the attitude. Also, the Task-Technology fit was found to have a major effect on the two variables PEOU and PU, while IAT and FS influenced the PEOU but not on PU. Although the FS had no direct influence on the PU, this study found that it might affect the PU indirectly as the main influence was the situation of the pandemic and the necessity of online teaching during the pandemic to complete the learning process [3]. In this study, the survey and its questions weren't provided and since there is no focusing on one university, the sample for me was distracted as no knowledge about the participant age, background, and majors to reflect their level of acceptance.

B. MADRASATI – Saudi educational Platform:

MADRASATI platform aimed to assure the progress of the education process continued during this pandemic plus to diminish parents' concerns about their kids' health in the first place. It tends to deliver stability of the educational process for both students and teachers at all academic levels. It provides electronically content for students with all their homework, quizzes to final tests, and electronic grading [10].

In the MADRASATI platform, establishing Virtual classes are made by teachers through Microsoft Teams offer interaction and discussion processes during classes between teachers and their students. The tools of the MADRASATI platform include solving assignments and engaging students in discussions with teachers using e-mail. Video explanations and Microsoft Office 365 provided by the Ministry of Education for all students at all academic levels have helped students as an educational resource. Furthermore, channels have been created in the MADRASATI platform to simplify communication between parents, teachers, and school leaders. The evaluation methods of the MADRASATI platform in the remote e-learning system of students are available for parents to empower them to see their kid's performance via reporting and statistics services to follow up with their academic achievements.

TABLE 1: TAM RELATED WORK STUDIES

Research name	Model	Research field	Constructs	Reference
Network Path Analysis for developing an enhanced TAM model: A user centric e-learning perspective	TAM	E-learning	Perceived Ease of Use, Perceived Usefulness, Perceived Trust, Perceived Security, Perceived Privacy, Information Quality	[4]
Acceptance and use of e-learning systems: The case of teachers in technology institutes of Ethiopian Universities.	TAM	E-learning	Training, top management support, incentive	[5]
All the same or different? Revisiting measures of teachers' technology acceptance	TAM	E-learning	Facilitating conditions, subjective norms, technology self-efficacy	[6]
A multi-analytical approach to modeling of customer satisfaction and intention to use in Massive Open Online Courses (MOOC).	TAM	Massive open online course (MOOCs)	Intensity of content, interactivity, controlled motivation, autonomous motivation, entertainment, course quality, emotions, satisfaction	[7]
Choosing between the theory of planned behavior (TPB) and the technology acceptance model (TAM)	TAM with TPB	E-learning	Subjective norm, behavior control, self-esteem	[8]
Exploring how student motivation relates to acceptance and participation in MOOCs	TAM with self-determination theory	Massive open online course (MOOCs)	external regulation, intrinsic motivation	[9]

III. RESEARCH METHODOLOGY

This research relied on a quantitative approach that rely on collecting sample information. Google form tool will be used to collect the data in order to reach as many participants who are parents of primary school students as possible from different channels to reach the largest number of participants in Saudi society. Publishing the survey through social media networks such as Twitter, WhatsApp, and Telegram will be approached to take the advantage of the accessibility of these online platforms. In this research, the TAM will be extended to cover more variables that needed to be addressed. The TAM originally got variables as Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Behavioral Intention to Use (BI), and Attitude towards using (AT) [1]. The Family Support (FS), Task–Technology Fit (TTF), and Instructor Attitude (IAT) variables will be adopted from the research about "Exploring the Critical Factors, the Online Learning Continuance Usage during COVID-19 Pandemic "which had done in China 2020 that discussed in related work section [3].

A. Research Model and Hypotheses
To build our TAM and discuss our Hypotheses, the Family Support (FS), Task–Technology Fit (TTF), and Instructor Attitude (IAT) variables firstly discussed below:

- Family Support (FS)

Since we are focusing on the primary school student, parents took over the control here in managing the accessing ability for these students regards their younger age. Primary school students' age ranged start usually from 7 years to 12 years, for the first 3 years of primary school, it is hard to rely on the student as he/she is a child with no knowledge about how to access the system by himself/herself [9].

Family support at this level is mandatory in a way to allow students to know how to deal with the Madrasiti. Moreover, family supports may reflect on the academic progress of the student which may not only be by helping in using the system but by observing, guide and motivating the student through the academic process which can increase the student's persistence. Thus, family support can lead to overcoming obstacles to persistence and motivate the student to succeed in an online course.

- Task–Technology Fit (TTF)

In task–technology fit (TTF), technology indicates computer systems with support and services that assist users in their task performing to meet their needs [11]. In TTF, the influence of task characteristics is important while in TAM the technology acceptance and adoption are the focus. Many researchers integrated both TAM and TTF to examine the technology acceptance in online learning while studying the effect of the characteristics of the tasks in accepting the system [12][13]. Additionally, integrating TAM and TTF may support and predict the change in technology adoption and acceptance level in a more reliable way than applying TAM or TTF separately [14][15]. Consequently, TTF can be considered as an external variable that affects technology acceptance which is associated with both PEOU and PU.

- Instructor Attitude (IAT)

Since the learning process is counted on instructors in the first place as the main core of this process, the attitude of that instructor reflects the ability to accept the learning material in general among students. The instructor's attitude that recognized by students with the instructor's response and how the teaching style and attitude of the instructor can help students through online learning platforms, all these are what IAT is concerned about [16]. Moreover, to eliminate the gaps in e-learning and create a more comprehensive learning mechanism, IAT covers the instructor's real-time feedback on student questions [17]. During the pandemic of Covid-19, online learning had become the only way to continue the educational process, applying IAT is a crucial factor that motivates students to accept online learning indirectly.

B. Research Model

All the variables that are going to be engaged in our version of TAM, that discussed above are shown in figure 2 of the TAM of this research:
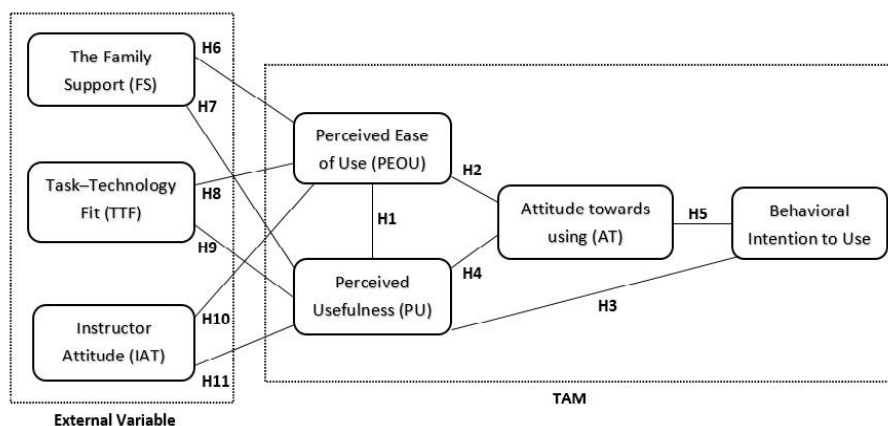

Fig 1: Research TAM Model

C. Hypotheses

As TAM proposed by Davis [1] about how in terms of attitude toward use, both PEOU and PU affect the user. The attitude toward using technology with the intention of use and the effectiveness between the PU and PEOU are all determining whether the user will adopt the technology. Below are all eleven Hypotheses are set according to the TAM theoretical basis with all external variables included:

H1: Perceived ease of use has a positive effect on the perceived usefulness of using Madrasiti.
H2: Perceived ease of use has a positive effect on attitude towards using Madrasiti.
H3: Perceived usefulness has a positive effect on Behavioral Intention to use Madrasiti.
H4: Perceived usefulness has a positive effect on attitude towards using Madrasiti.
H5: Attitude has a positive effect on Behavioral Intention to use Madrasiti.
H6: Family support has a positive effect on the perceived ease of use of Madrasiti.
H7: Family support has a positive effect on the perceived usefulness of Madrasiti.
H8. Task–technology fit has a positive effect on the perceived ease of use of Madrasiti.
H9. Task–technology fit has a positive effect on the perceived usefulness of Madrasiti.
H10: Instructor attitude has a positive effect on the perceived ease of use of Madrasiti.
H11: Instructor attitude has a positive effect on the perceived usefulness of Madrasiti.

IV. DATA COLLECTION

Through Google Form, an online questionnaire survey had been administered via social media such as Twitter, WhatsApp, and Telegram to all parents of primary school's students who get full online learning experience during the pandemic period. The questionnaire of this survey was developed from previous studies in field of studying the technology acceptance via TAM in the online education field. The questionnaire survey indicates parents' level of agreement or disagreement with a 5-point Likert-type scale with a range from strongly disagree (1) to strongly agree (5) for each question. Moreover, demographic data as gender, age, education level, parent's employment information and the number of primary school children they had during the Covid-19 Pandemic are gathered for the stage of data analysis for control purposes. The survey has two sections, the mentioned demographic section as the first section and the second one with a psychometric date. Psychometric is concerned about studying the technique of measurement, testing, or assessment that is devoted to testing latent constructs as an educational achievement that cannot be directly observed to be measured [18]. The section of psychometric data mainly focuses on Mediating variables which are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and attitude towards Madrasiti using (AT).

For the dependent variable, the variable of Behavioral Intention regarding use of Madrasiti during the COVID-19 (BI) will be the dependent one in our model while the independent variables or external variables which are The Family Support (FS), Instructor Attitude (IAT), and Task–Technology Fit (TTF) will be the external variables that could affect the mediating ones.

For each variable or attribute of these, many questions had been asked as a measurement item to indicate the whole idea that justify the attribute from different aspects of human understanding. All perceived usefulness, perceived ease of use and behavioral Intention items were adopted from Davis [1], while the Attitude towards using was adopted from Charles Buabeng-Andoh [19]. For the Task-Technology fit items were adopted from Ishfaq and Mengxing [20].The items for instructor attitude were adopted from Yuan Law [21] and the items of the family support factor were adopted from Villalba, Cebrián, and Redondo [22] (see Appendix)..For each one of the constructs, many items modified to the context of this study to get the most accurate level of accepting the Madrasiti as shown in Table (2).

TABLE 1:VARIABLES' MEASURED ITEMS

Variables/ attribute	Operational definitions	Measured items
Perceived Usefulness (PU)	It is defined the degree to which parents of primary school students believes that education industry will be improving by using Madrasiti in teaching online classes.	**PU1:** Using Madrasiti during the COVID-19 made our lives easier and healthier. **PU2:** Using Madrasiti during the COVID-19 improve our education experiences. **PU3:** Using Madrasiti during the COVID-19 help me to communicate, interact and work quicker with my child Instructor/school. **PU4:** Using Madrasiti during the COVID-19 helps me to increase the efficiency and effectiveness of my tasks toward my child's education. **PU5:** Using Madrasiti during the COVID-19 is useful for my child. **PU6:** Using Madrasiti during the COVID-19 enables my child to accomplish tasks more quickly. **PU7:** Using Madrasiti during the COVID-19 increased my child productivity.
Perceived Ease of Use (PEOU)	It refers to the degree to which believes that using Madrasiti platform improves the quality of students' education and understanding level.	**PEOU1:** Using Madrasiti during the COVID-19 is easy and does not require much effort. **PEOU2:** Using Madrasiti during the COVID-19 does not require much mental effort and training. **PEOU3:** Madrasiti during the COVID-19 is easy to use to. **PEOU4:** Madrasiti during the COVID-19 is flexible to interact. **PEOU5:** Using Madrasiti during the COVID-19 is clear and understandable.

		PEOU6: It is easy to become skillful at using Madrasiti during the COVID-19. **PEOU7:** I have the knowledge necessary to use Madrasiti during the COVID-19
Attitude towards using Madrasiti during the COVID-19 (AT)	It implies the degree of accepting and the Valuability of using Madrasiti during Covid-19.	**AT1:** Using Madrasiti during the COVID-19 is a good idea. **AT2:** I am happy to adopt and use Madrasiti during the COVID-19. **AT3:** Using Madrasiti during the COVID-19 is valuable. **AT4:** I like working with Madrasiti during the COVID-19. **AT5:** I have positive feelings towards the use of Madrasiti during the COVID-19.
Behavioral Intention regarding use of Madrasiti during the COVID-19 (BI)	It is specified the degree of intention toward using Madrasiti in the future with all the aspects that required that.	**BI1:** I intend to continue to use Madrasiti in the future. **BI2:** I expect that I would use Madrasiti in the future. **BI3:** Using Madrasiti in the future is one of the things that I'm looking for. **BI4:** I look forward to those aspects that require me to use Madrasiti n the future.
Family Support (FS)	It describes the needs and the challenging level of family support to be present while using Madrasiti by the students.	**FS1:** most of the time I need to be attended with my child during his/her classes via Madrasiti. **FS2:** my child couldn't learn how to use Madrasiti without my help. **FS3:** using Madrasiti was challenging most of the time to finish the homework and the required task by my child alone. **FS4:** In general, Madrasiti require certain level of education to be able to work with easily by my child himself/herself.
Instructor Attitude (IAT)	It represents the degree of Instructor's attitude, efforts and availability toward accepting Madrasiti by students.	**IAT1:** I feel more comfortable communicating online with the instructor via Madrasiti. **IAT2:** the instructor was always available and easy to contact with during class and after via Madrasiti. **IAT3:** the instructor made the online class more interactive and encourage participating for the students. **IAT4:** I like the flexibility of online communication with my child's instructors via Madrasiti. **IAT5:** I was satisfied with the respond and feedback I got from the instructor directly via Madrasiti about my child educational progress. **IAT6:** The instructor has an acceptable attitude and professionally mange the class via Madrasiti. **IAT7:** The studying online material was well prepared and effectively presented.
Task-Technology Fit (TTF)	It refers to the degree of impact of the Madrasiti system services toward Assisting students in their tasks performing that's meet their needs.	**TTF1:** During the COVID-19, Madrasiti was suitable for my child educational requirements. **TTF2:** Using Madrasiti during the COVID-19 fits with my child education and practice. **TTF3:** It is easy to understand which tools to use in Madrasiti for the certain work. **TTF4:** Using Madrasiti during the COVID-19 is suitable for helping my child to complete his/her educational tasks.

A. Data collecting Sample.

Sampling can be defined as the process of selecting a statistically representative sample of individuals from the population of interest. Sampling is an important instrument for research studies because the population in question usually consists of too many individuals to include in any research project as participants. A good sample is a statistical representation of the population concerned and is large enough to answer the research question, and given the large size of the study population, the researcher has used the method of determining the sample for an unknown population, using the Z-score to determine the reliable sample size by looking at the normal derivation set at a confidence level. 95% (1.96). Then an option or response (50% = 0.5) and confidence interval (0.05 = + 5) is chosen using the formula below:

$n = Z^2 (P) (1-P)/C^2$ Where: Z= standard normal deviation set at 95% confidence level, P = percentage picking a choice or response, C= confidence interval

$n = (1.96)^2 (0.5) (1-0.5) / (0.05)^2 = (3.8416) (0.5) (0.5) / 0.0025 = 0.9604/0.0025 = 384.16 = 384$

According to the previous issue, the study sample was identified as 384 parents of students in the primary stage of social media users. The data was collected through Google Form, and for the large sample size, 250 forms were obtained, 65% of the sample size that was determined through the equation and 35% of the total sample was excluded, and therefore it turned into a deliberate sample, due to the difficulty of determining the actual population.

B. The Structural validity of the study Instruments:

Structural validity is one of the instrument's viability measures, which measures the extent to which the instrument wants to reach and checks whether the instrument is able to measure its content for which it was designed. Accordingly, a correlation coefficient (Pearson Correlation) has been extracted, showing the degree of correlation of each paragraph with the total degree of its axis, in order to determine the possibility of distinguishing each paragraph of the scale. constructivist result.

TABLE 2:CORRELATION COEFFICIENTS BETWEEN THE ITEMS OF THE SCALE AND THE TOTAL SCORE
FOR EACH OF THE DIMENSIONS OF THE STUDY

Independent						Mediating						Dependent	
FS		TTF		IAT		PEOU		PU		AT		BI	
Items	Co.	Items	Co.	Items	Co.	Items	Co.	Items	Co.	Items	Co.	Items	Co.
FS1	0.792**	TTF1	0.936**	IAT1	0.832**	PEOU1	0.898**	PU1	0.817**	AT1	0.873**	BI1	0.966**
FS2	0.846**	TTF2	0.945**	IAT2	0.821**	PEOU2	0.822**	PU2	0.843**	AT2	0.927**	BI2	0.962**
FS3	0.808**	TTF3	0.915**	IAT3	0.831**	PEOU3	0.931**	PU3	0.827**	AT3	0.940**	BI3	0.973**
FS4	0.809**	TTF4	0.936**	IAT4	0.898**	PEOU4	0.917**	PU4	0.848**	AT4	0.925**	BI4	0.948**
				IAT5	0.889**	PEOU5	0.910**	PU5	0.900**	AT5	0.930**		
				IAT6	0.867**	PEOU6	0.867**	PU6	0.850**				
				IAT7	0.826**	PEOU7	0.840**	PU7	0.882**				
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													

According to the previous Table (3), it is clear that all items in the scale were statistically significant at a significance level of 0.05, where the value of the correlation coefficient in the (FS) dimension ranged between (0.792-0.846) and the value of the correlation coefficient in the (TTF) dimension ranged between (0.915-0.945), as The value of the correlation coefficient in the (IAT) dimension ranged between (0.821-0.898), and the value of the correlation coefficient in the (PEOU) dimension ranged between (0.822-0.931), and the value of the correlation coefficient in the (PU) dimension ranged between (0.817-0.900), The value of the correlation coefficient in the (AT) dimension ranged between (0.873-0.940), and the value of the correlation coefficient in the (BI) dimension ranged between (0.948-0.973), and based on those rates, it was found that all of them are greater than 0.25, which indicates the validity and suitability of the scale what it was designed for.

TABLE 3:CORRELATION COEFFICIENTS BETWEEN STUDY DIMENSIONS AND THE TOTAL SCORE OF
THE SCALE

Dimensions	Co.
Family Support (FS)	0.707**
Task-Technology Fit (TTF)	0.892**
Instructor Attitude (IAT)	0.859**
Total of External Variable (EV)	0.889**
Perceived Ease of Use (PEOU)	0.866**
Perceived Usefulness (PU)	0.900**

Attitude towards using Madrasiti during the COVID-19 (AT)	0.915**
Behavioral Intention regarding use of Madrasiti during the COVID-19 (BI)	0.832**
Total of TAM	0.973**
**. Correlation is significant at the 0.01 level (2-tailed).	

According to the previous Table (4) confirms the results reached in Table (3), which shows the level of statistical significance in all dimensions of the study in terms of the total score for each of them, as it was found that (FS), (TTF) and (IAT) are all statistically significant. Where the value of the correlation coefficient for each of them reached the following: (0.707, 0.892, and 0.859) respectively, as it was found that the total score for them represented in the independent variable (EV), which amounted to (0.889), which is a statistically significant value at the significance level of 0.05, as shown The (PEOU), (PU), (AT), (BI) are all statistically significant, as the value of the correlation coefficient for each of them is (0.866, 0.900, 0.915, and 0.832) respectively, as it was found that the total score for them represented in the median and dependent variables Which is (TAM), which reached (0.973), which is a statistically significant value at the significance level of 0.05, as it turned out that all of them are greater than 0.25, which proves that the scale is valid for what it was designed for

V. DATA ANALYSIS & EVALUATION

This section describes the procedure for analyzing the data and the results of the results. Also, discusses the analysis of survey data, the statistical methods used to analyze the acquired data, and the results of research hypotheses. In addition, analyzes were performed to ensure the validity and reliability of the results. All statistical calculations were performed using SPSS v. 25. & Amos v.23 the most important results are detailed below:

A. Survey results for demographic information and descriptive statistics:
Descriptive statistics were defined as the primary metrics used to describe survey data. The next section discusses the results of the analysis of general demographics. In addition to these results, the frequency and percentages of each variable are arranged by different survey categories.The study tested 250 correct answers to the questionnaire. Table (5) summarizes the main characteristics of these respondents, including gender, age, educational level, career, and the number of children enrolled in school on Madrasiti platform during the pandemic at the primary level. Furthermore, pie charts are included to illustrate the results of each demographic construct.

TABLE 4:DESCRIPTIVE STATISTICS OF RESPONDENTS' GENERAL INFORMATION

Code	Variable	categories	Frequency	Percent
DI1	**Gender**	Male	60	23.9
		Female	191	76.1
DI2	**Age**	Less than 18 years	7	2.8
		From 18 years to 28 years	16	6.4
		From 29 years to 39 years	121	48.2
		Over 40 years old	107	42.6
DI3	**Educational level**	Primary school	13	5.2
		Middle school	4	1.6
		Secondary school	38	15.1
		University	157	62.5
		Master's	38	15.1
		Ph.D.	1	0.4
DI4	**career**	No	103	41.0
		Yes	148	59.0
DI5	**The number of children enrolled in school on my school platform during the Corona pandemic at the primary level**	1	102	40.6
		2	73	29.1
		3	45	17.9
		4	17	6.8
		5	14	5.6
Total			251	100.0

According to Table (5), it is clear that the percentage of females is the largest of the males, where the percentage of females is 76.1% and the percentage of males is 23.9%. It also became clear that most of the respondents' ages are from

29 years to 39 years, where the percentage reached 48.2% and that the least age of the respondents was less than 18 years with a percentage of 2.8 %, as it turned out that most of the respondents hold a university degree with a percentage of 62.5% and that the lowest respondents have a Ph.D., and that most of the respondents have jobs with a percentage of 59.0% and that the least of them are unemployed at a percentage of 41.0%, and that most of the respondents' responses about the number of children enrolled in school on the Madrasiti platform during the Corona pandemic in the primary stage was 1, with a percentage of 40.6%, and the least of them were 5, with a percentage of 5.6%.
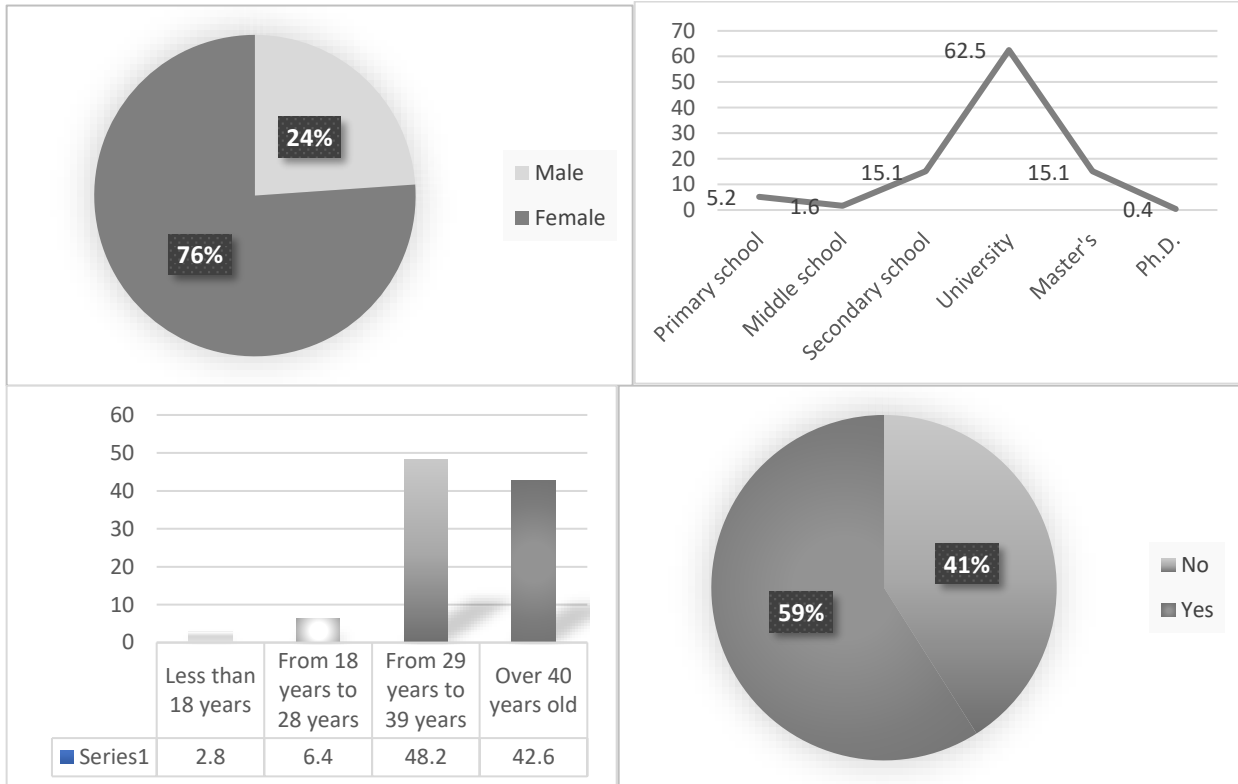

Fig 2: Demographic Information and Descriptive Statistics Graphs

B. Description of the study variables:
This part of the study is concerned with describing the study variables in order to determine the degree of relative agreement of the study sample members, the arithmetic mean and standard deviation of the responses of the study sample and the relative importance towards the study variables. Dimensions were relied upon, and the most important results are the following:

The Independent Variable: External Variable (EV):
The following are the most important results of the dimensions of these variables:

Family Support (FS):

TABLE 5:FAMILY SUPPORT (FS)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
FS1	4.01	1.29	1	80.2%	High
FS2	3.54	1.47	4	70.8%	Intermediate
FS3	3.76	1.33	2	75.3%	High
FS4	3.59	1.36	3	71.8%	Intermediate
FS	3.73	1.11		74.5%	High

It should be noted that this dimension achieved an arithmetic mean of (3.73) and a percentage of (74.5%) of the total area of the scale, and a standard deviation of (1.11), which indicates that the level of (Family Support) was within the high level. From the point of view of the sample members. It was found from the results contained in Table (6) that item (FS1) which states that "Most of the time i need to be attended with my child during his/her classes via Madrasiti" it ranked first with an arithmetic mean (4.01). And with a standard deviation of (1.29), on the other hand, clause (FS2) which states

that "My child couldn't learn how to use Madrasiti without my help" got the lowest arithmetic mean, which was (3.54) with a standard deviation of (1.47).

Task-Technology Fit (TTF):

TABLE 6:TASK-TECHNOLOGY FIT (TTF)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
TTF1	3.51	1.43	2	70.2%	Intermediate
TTF2	3.33	1.44	4	66.5%	Intermediate
TTF3	3.43	1.39	3	68.7%	Intermediate
TTF4	3.59	1.43	1	71.7%	Intermediate
TTF	3.46	1.33	■	69.3%	Intermediate

It should be noted that this dimension achieved an arithmetic mean (3.46) and a percentage (69.3%) of the total area of the scale, and a standard deviation of (1.33), which indicates that the level of (Task-Technology Fit) was within the average level. From the respondent's point of view. It was found from the results contained in Table (7) that item (TTF4) which states that "Using Madrasiti during the COVID-19 is suitable for helping my child to complete his/her educational tasks" occupied the first place with an arithmetic average of (3.59). And with a standard deviation of (1.43), on the other hand, item (TTF2) which states that "Using Madrasiti during the COVID-19 fits with my child education and practice" got the lowest arithmetic mean, which was (3.33) with a standard deviation its amount is (1.44).

Instructor Attitude (IAT):

TABLE 7:INSTRUCTOR ATTITUDE (IAT)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
IAT1	3.65	1.47	5	73.1%	Intermediate
IAT2	3.69	1.36	2	73.9%	High
IAT3	3.51	1.42	7	70.3%	Intermediate
IAT4	3.63	1.40	6	72.6%	Intermediate
IAT5	3.77	1.38	1	75.4%	High
IAT6	3.66	1.43	4	73.1%	Intermediate
IAT7	3.67	1.33	3	73.4%	High
IAT	3.66	1.19	■	73.1%	Intermediate
EV	3.62	0.93	■	72.5%	Intermediate

It should be noted that this dimension achieved an arithmetic mean (3.62) and a percentage (72.5%) of the total area of the scale, and a standard deviation of (0.93), which indicates that the level of (Instructor Attitude) was within the average level. From the respondent's point of view. It was found from the results contained in Table (8) that item (IAT5) which states that "I was satisfied with the instructor respond and feedback i got from the directly via Madrasiti about my child educational progress" occupied the first place with an arithmetic average of (3.77). With a standard deviation of (1.38), on the other hand, item (IAT3) which states that "The instructor made the online class more interactive and encourage participating for the students" was the lowest arithmetic mean, which reached (3.51) with a standard deviation Its amount is (1.42).

It should be noted that external variables as total have achieved an arithmetic mean (3.62) and a percentage (72.5%) of the total area of the scale, which is an average value according to Likert scale.

Second: The mediating and dependent variable: (TAM):
The following are the most important results of the dimensions of these variables:

Perceived Ease of Use (PEOU):

TABLE 8:PERCEIVED EASE OF USE (PEOU)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
PEOU1	3.70	1.40	3	74.0%	High
PEOU2	3.35	1.52	7	67.1%	Intermediate
PEOU3	3.72	1.39	2	74.4%	High
PEOU4	3.54	1.39	6	70.8%	Intermediate
PEOU5	3.68	1.41	4	73.6%	High
PEOU6	3.57	1.46	5	71.3%	Intermediate

| PEOU7 | 3.80 | 1.39 | 1 | 76.0% | High |
| PEOU | 3.62 | 1.26 | ■ | 72.5% | Intermediate |

It should be noted that this dimension achieved an arithmetic mean (3.62) and a percentage (72.5%) of the total area of the scale, and a standard deviation of (1.26), which indicates that the level of (Perceived Ease of Use) was within the average level. From the respondent's point of view. It was found from the results contained in Table (9) that item (PEOU7) which states that "I have the knowledge necessary to use Madrasiti during the COVID-19" occupied the first place with an average of 3.80. And with a standard deviation of (1.39), on the other hand, item (PEOU2) which states that "Using Madrasiti during the COVID-19 does not require much mental effort and training" got the lowest arithmetic mean, which reached (3.35) With a standard deviation of (1.52).

Perceived Usefulness (PU):

TABLE 9:PERCEIVED (PU)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
PU1	3.58	1.48	3	71.6%	Intermediate
PU2	3.61	1.46	2	72.1%	Intermediate
PU3	3.70	1.48	1	74.0%	High
PU4	3.33	1.50	4	66.5%	Intermediate
PU5	3.33	1.60	5	66.5%	Intermediate
PU6	3.13	1.62	6	62.5%	Intermediate
PU7	3.01	1.61	7	60.2%	Intermediate
PU	3.38	1.31	■	67.7%	Intermediate

It should be noted that this dimension achieved an arithmetic mean (3.38) and (67.7%) of the total area of the scale, and a standard deviation of (1.31), which indicates that the level of (Perceived Usefulness) was within the average level. From the respondent's point of view. It was found from the results contained in Table (10) that item (PU3) which states that "Using Madrasiti during the COVID-19 help me to communicate, interact and work quicker with my child Instructor/school" occupied the first place with an arithmetic average (3.70). And with a standard deviation of (1.48), on the other hand, item (PU7) which states that "Using Madrasiti during the COVID-19 increased my child's productivity" got the lowest mean, which was (3.01), with a standard deviation of (1.31).

Attitude towards using Madrasiti during the COVID-19 (AT):

TABLE 10:ATTITUDE TOWARDS USING MADRASITI DURING THE COVID-19 (AT)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
AT1	4.13	1.26	1	82.5%	High
AT2	3.74	1.46	3	74.7%	High
AT3	3.76	1.40	2	75.1%	High
AT4	3.61	1.55	5	72.1%	Intermediate
AT5	3.65	1.50	4	73.1%	Intermediate
AT	3.78	1.32	■	75.5%	High

It should be noted that this dimension achieved an arithmetic mean (3.78) and a percentage (75.5%) of the total area of the scale, and a standard deviation of (1.32), which indicates that the level of (Attitude towards using Madrasiti during the COVID-19) was within the average level. From the respondent's point of view. It was found from the results contained in Table (11) that item (AT1) which states that "Using Madrasiti during the COVID-19 is a good idea" occupied the first place with an arithmetic average of (4.13). And with a standard deviation of (1.26), on the other hand, item (AT4) which states that "I like working with Madrasiti during the COVID-19" got the lowest arithmetic mean, which was (3.61) with a standard deviation of (1.55).

Behavioral Intention regarding use of Madrasiti during the COVID-19 (BI):

TABLE 11:BEHAVIORAL INTENTION REGARDING USE OF MADRASITI DURING THE COVID-19 (BI)

Code	Mean	Std. Deviation	Rank	Relative importance	Degree
BI1	2.94	1.66	3	58.7%	Intermediate
BI2	3.07	1.67	1	61.4%	Intermediate
BI3	2.93	1.69	4	58.6%	Intermediate

BI4	3.05	1.60	2	61.0%	Intermediate
BI	3.00	1.59		59.9%	Intermediate
TAM	3.47	1.21		69.5%	Intermediate

It should be noted that this dimension achieved an arithmetic mean (3.47), a percentage (69.5%) of the total area of the scale, and a standard deviation of (1.21), which indicates that the level of (Behavioral Intention regarding use of Madrasiti during the COVID-19) came within the level average. From the respondent's point of view. It was found from the results contained in Table (12) that item (BI2) which states that "I expect that I would use Madrasiti in the future" occupied the first place with an arithmetic average of (3.07). And with a standard deviation of (1.67), on the other hand, item (BI3) which states that "Using Madrasiti in the future is one of the things that I'm looking for" got the lowest arithmetic mean, which was (2.93) with a standard deviation of (1.69).

It should be noted that TAM variables have achieved an arithmetic mean (3.47) and a percentage (69.5%) of the total area of the scale, which is an average value according to Likert scale.

C. Test hypotheses and structural models:

After making sure that the measurement model has acceptable psychometric properties, the structural model is next to the test. The goal of the test is to identify important relationships between the variables. The structural model can be evaluated by comparing the results of three different tests: 1) Collinearity between the constructs, 2) Path coefficients beta weight (β), and 3) R-square (R^2). The strength of the relationships between the dependent and independent variables is indicated by the standard path coefficient. The R value (R^2) represents the proportion of the variance explained by the independent variables. The path coefficient and R^2 both indicate how well the model is performing.

D. Goodness of Fit

This analysis is used to determine the effect of external structures on internal structures that are complex and difficult to solve by other analyses. Structural equation modeling is performed by means of two types of tests as well as in confirmation factor analysis: The quality of the model fit test results can be seen in Table (13) below:

TABLE 12:QUALITY OF GENERAL MODEL FIT TEST RESULTS AND CUT-OFF VALUE

Goodness of Fit Indices	Cut Off Value	Results	Description
GFI	>0.90	0.903	Good
CFI	>0.90	0.987	Good
AGFI	>0.80	0.947	Good
RMSEA	<0.08	0.041	Good
NFI	>0.90	0.983	Good

The results of the comprehensive data model processing show that the variables used reflect the latent variables that were analyzed. A smoothing procedure was used to determine the significance of the hypothesis. To test the significance of the path coefficient and T-values, normalization was performed using 250 subsamples without changing the sign which are applied in this study as shown in the Table (14).

TABLE 13:ASSESSMENT OF THE STRUCTURAL MODEL IN AMOS

No.	Hypothesis path	R^2	Evaluate R^2	Path coefficient (β)	S.E.	T. Value	P
H_1	PEOU →PU	0.753	High	0.38	0.059	6.444***	0.000
H_2	PEOU → AT	0.797	High	0.464	0.052	8.909***	0.000
H_3	PU → BI	0.765	High	0.538	0.08	6.7***	0.000
H_4	PU → AT	0.805	High	0.476	0.052	9.224***	0.000
H_5	AT → BI	0.756	High	0.482	0.077	6.266***	0.000
H_6	FS →PEOU	-0.065	Low	-0.096	0.046	-2.106*	0.035
H_7	FS →PU	-0.064	-	-0.072	0.043	-1.669	0.095
H_8	TTF →PEOU	0.756	High	0.558	0.038	14.632***	0.000
H_9	TTF →PU	0.763	High	0.309	0.049	6.369***	0.000
H_{10}	IAT →PEOU	0.666	High	0.22	0.043	5.172***	0.000
** Correlation is significant at the 0.01 level (2-tailed).							

Table (14) answers the hypotheses of the study and the most important results that have been reached in this regard as follows:

H₁: Perceived ease of use has a positive effect on the perceived usefulness of using Madrasiti.

This hypothesis states that "PEOU has no positive effect at α≤0.05 on PU" and based on Table (14) it is clear that there is an effect of PEOU on PU, which amounted to T. Value (6.444) and it is statistically significant at α≤0.01 where P.Value amounted to (0.000) The effect was positive as the value of (β) was positive (0.38).

H₂: Perceived ease of use has a positive effect on attitude towards using Madrasiti.

This hypothesis states that "PEOU has no positive effect at α≤0.05 on AT" and based on Table (14) it is clear that there is an effect of PEOU on AT, which amounted to T. Value (8.909), which is statistically significant at α≤0.01 where it reached P.Value (0.000) The effect was positive as the value of (β) was positive (0.464).

H₃: Perceived usefulness has a positive effect on Behavioral Intention to use Madrasiti.

This hypothesis states that "PU has no positive effect at α≤0.05 on BI." Based on Table (14), it becomes clear that there is an effect of PU on BI, which amounted to T. Value (6.7), which is statistically significant at α≤0.01 where it reached P.Value (0.000) The effect was positive as the value of (β) was positive (0.538).

H₄: Perceived usefulness has a positive effect on attitude towards using Madrasiti.

This hypothesis states that "PU has no positive effect at α≤0.05 on AT" and based on Table (14) it is clear that there is an effect of PU on AT where it reached T. Value (9.224), which is statistically significant at α≤0.01 where it reached P.Value (0.000) and the effect was positive as the value of (β) was positive (0.476).

H₅: Attitude has a positive effect on Behavioral Intention to use Madrasiti.

This hypothesis states that "AT does not have a positive effect at α≤0.05 on BI" and based on Table (14) it is clear that there is an effect of AT on BI, which amounted to T. Value of (6.266) and it is statistically significant at α≤0.01 where it reached P.Value (0.000) and the effect was positive as the value of (β) was positive (0.482).

H₆: Family support has a positive effect on the perceived ease of use of Madrasiti.

This hypothesis states that "FS has no positive effect at α≤0.05 on PEOU" and based on Table (14) it is clear that there is an effect of TTF on PEOU, which amounted to T. Value (-2.106), which is statistically significant at α≤0.05, where P.Value reached (0.035), but the effect was negative as the value of (β) was negative (-0.096).

H₇: Family support has a positive effect on the perceived usefulness of Madrasiti.

This hypothesis states that "FS has no positive effect at α≤0.05 on PU" and based on Table (14) it is clear that there is no effect of FS on PU, which amounted to T. Value (-1.669) and it is not statistically significant at α≤0.05, where P.Value (0.095).

H₈: Task–technology fit has a positive effect on the perceived ease of use of Madrasiti.

This hypothesis states that "TTF has no positive effect at α≤0.05 on PEOU" " and based on Table (14) it is clear that there is an effect of IAT on PEOU, which amounted to T. Value (14.632). It is statistically significant at α≤0.01 where it reached P.Value (0.000) The effect was positive as the value of (β) was positive (0.558).

H₉: Task–technology fit has a positive effect on the perceived usefulness of Madrasiti.

This hypothesis states that "TTF has no positive effect at α≤0.05 on PU" and based on Table (14) it is clear that there is an effect of TTF on PU, which amounted to T. Value (6,369), which is statistically significant at α≤0.01 where P.Value amounted to (0.000) The effect was positive as the value of (β) was positive (0.309).

H₁₀: Instructor attitude has a positive effect on the perceived ease of use of Madrasiti.

This hypothesis states that "IAT has no positive effect at α≤0.05 on PEOU" and based on Table (14) it is clear that there is an effect of FS on PEOU, which amounted to T. Value (5.172), which is statistically significant at α≤0.01 where it reached P.Value (0.000) The effect was positive as the value of (β) was positive (0.22).

H₁₁: Instructor attitude has a positive effect on the perceived usefulness of Madrasiti.

This hypothesis states that "IAT has no positive effect at α≤0.05 on PU" and based on Table (14) it is clear that there is an effect of IAT on PU, which amounted to T. Value (5.808) and it is statistically significant at α≤0.01 where it reached P.Value (0.000) and the effect was positive as the value of (β) was positive (0.243).

VI. DECISION

According to what was stated in this study about the MADRASATI platform via TAM to highlight its acceptance level and question whether its aim of bringing information to and interacting with the students via Internet and web technology among computer interface was succeeding in the adoption process. The objectives of the study were built, as the study aimed to measure the level of e-learning acceptance during Covid-19 from the perspective of parents via TAM, and to propose a framework that can measure the use and acceptance of MADRASTI after COVID-19 in the primary education

sector while analyzing the students' perspective about learning online using MADRASATI via TAM.

A. First objective- Major wise:

The study steps were carried out through systematic procedures, where hypotheses were developed based on the model to prove the hypothesis, where the SEM method was used to test the hypotheses in the proposed model. The study concluded as a major finding that there is a negative effect of TTF on PEOU, and it turns out that there is an effect of IAT on PEOU, and it turns out that there is an effect of FS on PEOU, and that there is an effect of TTF on PU, and it turns out that there is an effect of IAT on PU, as it turned out There is an effect of PEOU on PU, and there is also an effect of PEOU on AT, and there is also an effect of PU on AT, and there is an effect of AT on BI, and it turns out that there is an effect of PU on BI, on the contrary, there is a variable that had no effect Which is FS on PU. And the following figure illustrates those results.
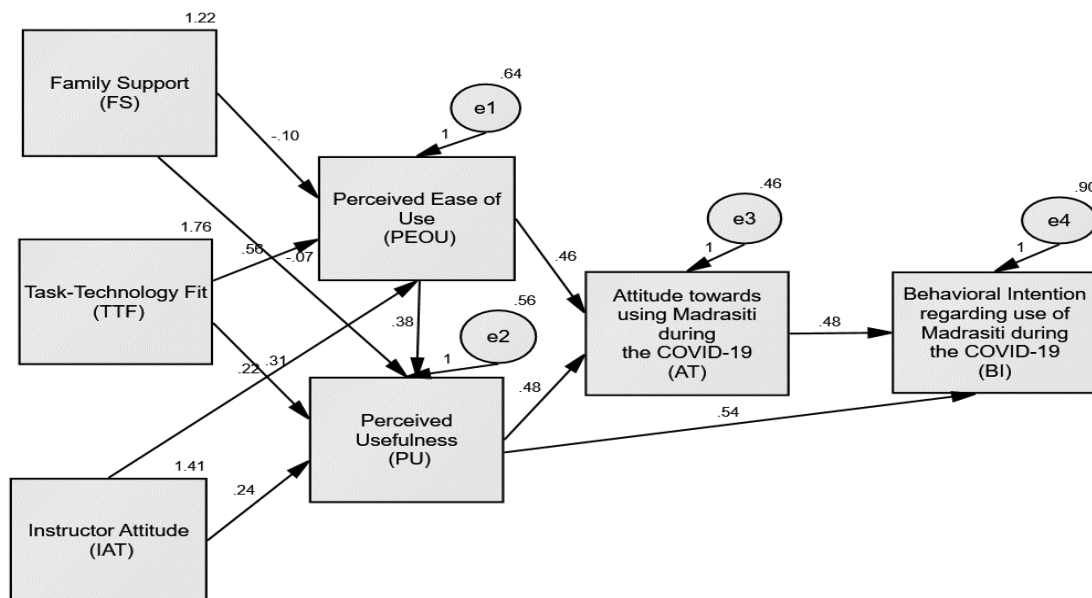

Fig 3: Research TAM Hypotheses Conclusions

Thus, family support can lead to overcoming obstacles to persistence and motivate the student to succeed in an online course. As our questionnaire which consists of parts that indicate the educated level of the parents themselves within their ability to be free to present with their children during their session via Madrasiti as this clearly hits our first two questions about how parents accepting of the e-learning trend for the primary stage of their children's education. Moreover, measuring the use and acceptance of MADRASTI after COVID-19 in the primary education sector by knowing the weight of the family support variable for this platform to be accepted which measure the acceptance level of e-learning during COVID-19 from the parents' perspective too as covering the first two research's questions about: How to measure the use and acceptance of MADRASTI after COVID-19 in the primary education sector, and How are parents accepting the E-learning trend for the primary stage of their children's education. It also covers the research's first objective about measure the acceptance level of e-learning during COVID-19 from the parents' perspective via TAM.

B. Second objective- Major wise:

According to the Task-Technology Fit variable, it found that the item that refer to "Using Madrasiti during the COVID-19 fits with my child education and practice" got the lowest arithmetic mean. Moreover, the item of Perceived Ease of Use that states that "Using Madrasiti during the COVID-19 does not require much mental effort and training" got the lowest arithmetic mean, besides the variable Perceived Usefulness has an item which states that "Using Madrasiti during the COVID-19 increased my child's productivity" got the lowest mean as the item of the variable about Attitude towards using Madrasiti during the COVID-19 which states that "I like working with Madrasiti during the COVID-19" got the lowest arithmetic mean too. Thus, we can refer to enhancing the interface's items with how the tasks are reached and develop and look on Madrasiti platform to gain more acceptance and satisfaction level among parents and students which cover the research question about what the level of familiarity of the students in primary schools with the technology to be educated via MADRASATI. Furthermore, this covers the research's second objective about analyzing the students' perspective about learning online using MADRASATI via TAM and the research's third question about What is the level of familiarity of the students in primary schools with the technology to be educated via MADRASTI.

C. Third objective- Major wise:

After all these aspects, a framework must be proposed in order to enhance the current platform of MADRASATI to be more effectively acceptable and get the satisfaction of parents and student to keep up with the education process in the competent way. Ben Lutkevich defines the framework, he refers to the concept of framework in information system field as "a framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful" [23]. Framework always serve as instructions or a set of functions that layered together to indicate the type of programs, websites, interfaces, tools, or systems that should be build or improved and how these layers would interdepend. Since one of this research's last objective is to a propose a framework that can measure the use and acceptance of MADRASTI after COVID-19 in the primary education sector, a framework of instructions and suggested of functions will be presented based on the last results of analyzing the collected data.

Here is the Proposed framework that suggested related to all aspect this study noticed from Applying the TAM, to improve the acceptance of MADRASTI platform via the observation of the collected data of this study:
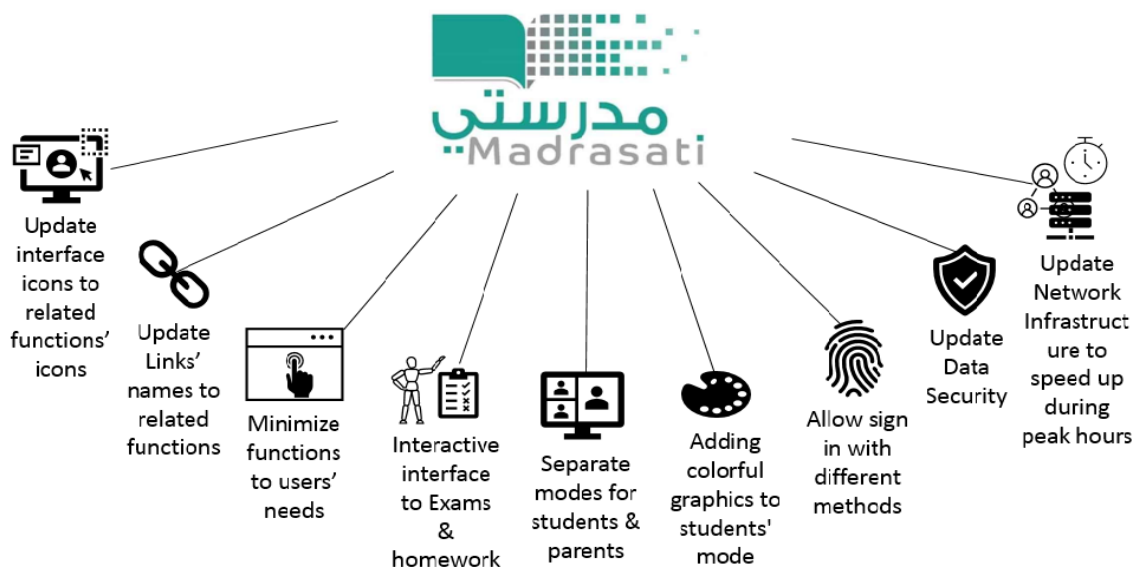

Fig 4: Suggested Madrasiti Framework

1.   MADRASTI's interface must be updated with functions related icons to be clear.
2.   MADRASTI's interface links should have related names to their functions.
3.   MADRASTI's number of functions should be minimized to the related and needed one for each year of elementary school.
4.   The types of homework and exams should be more interactive for the students to get their attentions with different interactions for these tests to be solved.
5.   A special interface should be generated for the student's mode only, instead of having one for both students and parents with lots of complicated functions and icons that students cannot understand and work with.
6.   Adding more colorful graphics to MADRASTI's interface.
7.   Allow sign in with different methods such as biometric one for the students especially instead of the old fashion way of email and password.
8.   Data Security (To secure data).
9.   Network Infrastructure (To improve Speed during peak hours).

VII. LIMITATIONS AND FUTURE WORK

Despite the contributions in this work, it is necessary to cover many of the constraints that faced the work in the future, and according to the results of the study, there is a need for further study of the subject of the study and to verify the implications of this study by taking this study and previous studies as a reference for them with more samples and different perspective such as the teacher ones. Moreover, to investigate the factors that have been measured and do not know the different effects of these factors, with the study of other factors that this study did not consider.

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