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Demographic Factors of Teachers' Behavioral Intention on Madrasati Utilization in Riyadh Public Schools

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	Abstract
<p>Article History</p> <p>Article Submission 25 September 2022</p> <p>Revised Submission 16 November 2022</p> <p>Article Accepted 26 November 2022</p>	<p>Poor Madrasati (M) usage among teachers in Riyadh is likely due to the teachers' demographic background. The goals of teachers towards the adoption and use of M technology are not well understood as a result of this demographic knowledge gap. It is still a mystery how Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) may affect teachers' usage of Madrasati (M) in Riyadh public schools. The key purpose of this study is to evaluate the levels and differences in demographic factors of teachers' behavioral intention on M utilization in Riyadh public schools. Using a 5-point Likert Scale questionnaire, a quantitative survey approach was used to gather information from 413 participants. The results revealed the level of SI and EE had a significant impact on both male and female participants, whereas PE, FC, and behavioral intention (BI) had a moderate impact, with an overall moderate influence. SI, FC, and BI had a low influence on all age groups, whereas PE and EE had no effect across all age groups. PE, SI, and BI had a significant influence on all educational levels, although EE and FC had a more moderate influence. Overall, the demographic factors based on teachers' behavioral intention had influence on M utilization in Riyadh. These findings contribute to the theoretical understanding of M use in Saudi education and support educational policymakers during the planning and development phases of successfully implementing learning using M.</p> <p>Keywords: Behavioral Intention; Effort Expectancy; Facilitating Conditions; Madrasati Utilization; Performance Expectancy</p>

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Introduction

E-learning technology has advanced school teaching and learning in a variety of ways (Alasmari, 2022). Modern enhanced educational technology, such as Madrasati (M), supports teacher training to improve their attitudes or behavior towards its adaption and optimal usage in delivering the required instructional content in Saudi Arabia (Aldossry, 2021). M technology integrates into the teaching and learning process in Riyadh (Aldubayan, 2020). It helps students to actively participate in the learning process rather than just witness it (Roy, 2019). Learning activities must be done by students in the created workspace. It is difficult to plan learning activities without teacher guidance due to students' inconsistent learning behaviors on the M platform (Agarwal, R. 2020; Ospina et al., 2021). However, teachers adopt the M platform because M modules are deemed concentrated, adaptable, and designed to be completed through synchronization (Shishah, 2021). The level of acceptance and behavioral intention toward M utilization among public schools is believed to be associated with demographic factors of the teachers in Riyadh.

Demographic factors such as age, gender, education level, etc., have a significant impact on how teachers use technology. Several research found significant relationship between age, gender, and experience and the usage of technology among technology among English as a Foreign Language (EFL) teacher (Mahdi & Al-Dera, 2013; Wiseman et al., 2018; Binyamin et al., 2020). The impact of M technology on teachers' perceptions of its applicability in Saudi Arabia affects its adoption and effective instructional material delivery among experienced teachers in unimixed schools (Shishah, 2021). It is a well-established fact that male and female students are segregated in classes and schools in Saudi Arabia under the country's gender-segregated educational system. Both male and female educators work separately to educate these students. In order to make M technology accepted and used in schools in Riyadh, it is considered that the demographic variables operate in concert with the unified theory of acceptance and use of technology (UTAUT). The UTAUT factors include PE, EE, SI, and FC; (Venkatesh et al., 2003; Almutairi et al., 2020), in addition to the influence of teachers' behavioral intention (Alshehri, Rutter, & Smith, 2019).

Poor M usage among instructors in Riyadh is likely due to the teachers' demographic background, which includes their level of education (i.e., technological expertise), training, gender, and teaching experience. The goals of teachers towards the adoption and use of M technology are not well understood as a result of this demographic knowledge gap. In addition to the fact that there is little information available to demonstrate how do PE, EE, SI, and FC probably affect teachers' utilization of M in Riyadh public schools. The goals and use of M technology by the teachers in Riyadh may be impacted by these issues, although there is no conclusive data to support this. An investigation of the variables impacting teachers' behavioral intentions towards the use of M in Riyadh public schools is thus necessary.

Research Objectives

Therefore, this research aims to:

- (i) Identify the levels of performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioral intention on M utilization among teachers in Riyadh public schools.
- (ii) Examine the differences in performance expectancy, effort expectancy, social influence, facilitating conditions and behavioral intention on M utilization according to the demographic background of the teachers.

Literature Review

UTAUT factors

Utilizing a technology or procedure will benefit the individual or improve their performance. Performance expectancy is the level of user confidence in a system's ability to support their

performance, particularly teacher activities in the classroom (Radovan & Kristl, 2017). This aspect is crucial because teachers need to be certain that using the system will improve their performance in the delivery of instructional materials (Alshehri et al., 2020). According to expectancy theory, people are more motivated to work hard if they believe their efforts will be noticed and rewarded (Behling & Starke, 1973). Performance expectations have been identified as having the greatest impact on eLearning usage and classroom tasks (Al-Anezi & Alajmi, 2021).

The concept that there is a connection between the labor effort made, the results obtained as a result of that effort, and the benefits received as a result of that effort, is vital for teachers' classroom delivery. EE measures how easily prospective individuals anticipate using technology to make their lives easier. Teachers' expectations of effort are seen to decline as they grow more used to new technologies (Hu, Laxman, & Lee, 2020). According to Ling et al. (2020), instructors adopt new technology if it is simple to use and involves little effort. Any unclear system will cause people to become dispassionate. The expected effort depends on how simple it is to use the system (e.g., Madrasati) as a whole.

Social influence is the deliberate or inadvertent attempt to alter the views, attitudes, or conduct of another individual. Teachers are more likely to adopt new technology when others persuade them, which shows social influence (Buabeng-Andoh & Baah, 2020). Our culture affects how we live, work, and play, as well as how we see ourselves and other people. Our moral standards impact what we deem acceptable and wrong. In this way, our decisions are influenced by the culture in which we live. Teachers have a significant impact on how students view the use of technology in the classroom, which in turn affects how other students, family members, and other social actors feel about it (Chao, 2019; Shah et al., 2021).

When a teacher assumes that a school system and technological foundations in the school are in place for effective teaching and learning, the students and teachers' performance can improve significantly (Rahmaningtyas et al., 2020). The absence of good technical assistance in this is a significant problem. In addition, teachers are aware that someone is available to assist them in adopting new technologies when they run into problems (Salloum & Shaalan, 2018), but it has been demonstrated that facilitating conditions affect the intention to use e-learning (Kim & Lee, 2020).

Behavioral Intention

The conscious or deliberate aim of an individual to participate in either positive or negative conduct is known as behavioral intention (Chao, 2019). The behavioral intention in terms of technology use is the users' intention to utilize technology (Pangaribuan & Wulandari, 2018). The teaching philosophy of teachers has an impact on their behavioral intentions toward technology. Teachers' intention ingrained in teaching contributes to a resistance to implementing new technology (Agarwal, 2020). The settings under which technology is employed must coincide with the instructors' beliefs and behavioral intentions for any technology adoption to be effective. Pangaribuan and Wulandari (2018) found a correlation between behavioral intention and performance expectancy, whereby it improved with an increase in positive behavior toward new technology

Level of M Utilization

The extent to which instructors' attitudes regarding utilizing technology to complete tasks and their level of multiplication in the context of educational societies have been found to have an impact on eLearning use in public schools (Lam et al., 2021). Although the amount of M use among instructors in Saudi Arabia is still a very complex issue, it is possible to relate it to the expectation of technological performance.

Teacher intention toward adoption has a significant impact on M utilization. The degree of M acceptability and usage among Saudi teachers seems to be related to expectations for technological achievement (Alhejaili, Alghamdi, & Al-Dubai, 2020). Although Saudi Arabian teachers still struggle with a low degree of M usage, their behavioral intentions may affect the new technology utilization

(Alroqi, 2021). Even though e-learning systems have been increasingly utilized in Kingdom Saudi Arabia (KSA) higher education in the last five years, this is not the case in K-12 education. Classera is considered the first e-learning system that has been adopted by K-12 teachers to deliver educational content and resources to students. The M initiative is the most recent educational technology implemented in 2020 during the COVID-19 pandemic (Alshehri et al., 2020; Almaiah et al., 2022).

Demographic Factors

Demographic information like gender, age, experience, etc. is listed as a factor that may affect how people use technology. It is considered that demographic data plays a significant role in determining how widely M technology is used in Saudi Arabian schools. Since the Saudi Arabian educational system offers separate programs for male and female students, it is critical to examine how male and female educators utilize technology in their various settings. In Saudi Arabian classrooms, Wiseman et al. (2018) research revealed a substantial relationship between gender and computer use, with male instructors using technology for instruction more frequently than their female colleagues. According to Chawla and Joshi (2020), age and gender both have an impact on the link between attitude and intention, with the influence being more noticeable in male and younger users. Al-Hunaiyyan et al. (2017) found that just 29.5% of female instructors at the University of Saudi Arabia were ready to take part in the Web-Based Directive (WBI), compared to 70.5% of male instructors. It is also reported that gender-related factors do not substantially influence the frequency of usage (Almuqayteeb et al., 2019).

Age plays a vital role in the adoption of eLearning, such as M, in the classroom. Age was found to influence teacher performance in a classroom, in which younger teachers were more focused on their performance and older teachers were more concerned with the supporting conditions. Yu (2012) discovered that the influence of perceived self-efficacy and enabling settings on actual adoption behavior was significantly influenced by age. Al-Henaki & Al-Arfaj (2021) uncovered an effect between age and gender that was shown to be more significant. Age, gender, and experience all strongly affected how little technology EFL teachers used (Binyamin et al., 2020). Several studies, however, have found that age and gender have little influence on how people use technology (Mahdi & Al-Dera, 2013; Wiseman et al., 2018).

Experience with technology seemed to be the first phase of adoption when teachers struggle to get familiar with it and would fade away and lose significance with continued use (Kim, 2021). Taghizadeh & Ejtehadi (2021) observed that pre-service teacher education is extremely different in terms of their attitude toward computers, and that attitude and degree of confidence are substantially connected with user experience. Due to Madrasati's recent development, teachers at Riyadh's public schools have very poor M LMS experience. Even though, teachers have sufficient experience using wide range technologies, when it comes to implementation (Al-Henaki & Al-Arfaj, 2021). Alharbi (2020) showed that technology may be evaluated for usability and effectiveness after being used for at least six months.

Experience and expertise come with continued usage and training (Cardoso et al., 2021). In keeping with the usage of modern technology in the education sector, the KSA introduced M as e-learning to improve its use in teaching and learning through the Learning Management System in public schools. The schools and education ministry conduct workshops, training sessions, and programs to introduce ICT to facilitate teaching and assure its successful application in education (Alkinani & Alzahrani, 2021). The Saudi Ministry of Education introduced both short-run and long-run schemes focusing on e-learning training. This scheme has greatly improved the government's attempts to eliminate obstacles that adversely affect education, commonly gender and religion-related issues (Binyamin et al., 2020). Additional training is necessary for the instructors' skill development and also helps them evaluate technology before it is used in classrooms. Teachers must thus be trained with a variety of computer skills in order to be proficient in implementing technology in the classroom and to play a more effective role as facilitators (Frerejean et al., 2021; Saleem, Gul, & Dogar, 2021). Moreover, this section has elucidated the fundamental theories underlying this study:

UTAUT. The UTAUT model has been critically evaluated to identify its advantages and utilization in this study.

Based on these knowledge gaps in the literature, examining the teachers' demographic backgrounds that affect M utilization in Riyadh public schools is crucial for the success of M in Saudi Arabia. In the next section provides an overview of the methodology applied in this study. It also presents the research design, location of the study, and research instrumentation. It also describes the processes of the survey, the sampling and data collection procedures, the preliminary study, and data management.

Methodology

This descriptive and quantitative study was conducted in Riyadh public schools. The Riyadh public schools were selected because the first Madrasati (M) technology was piloted and implemented in this region in 2020. The teachers in Riyadh public schools are selected because the schools in this area employ teachers that are trained, experienced with technology, and have an educational background. The quantitative approach is used to describe the nature of the problem in terms of nested demographics on factors influencing M and teachers' behavioral intention. The quantitative approach measures the relationships between independent and dependent variables with justification. It is important to understand the factors influencing M utilization among teachers in public schools in Saudi. These factors are performance expectancy, effort expectancy, social influence, and facilitating conditions, which are selected to determine the teachers' behavioral intention on M utilization. The quantitative approach is an appropriate and reliable way to understand the nature of relationships among variables as well as to provide a rich contextual basis for interpreting and validating the results (Savela, 2018).

The data was gathered via a survey questionnaire. The questionnaire was divided into sections. Five questions on the respondents' demographics that were adapted from Asiri (2012) made up Section (A). This portion is essential because it provides the data and information that are used in the data analysis process. Section (B) was created to learn what the respondents thought about factors influencing M utilization, which include performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). Section (C) identifies the behavioral intention (BI). The last section (D) assesses the frequency of Learning Management System (LMS) usage and consists of 19 items that were taken from Asiri et al. (2012). This study used a 5-point Likert scale for the survey questionnaires as they are the most widely used instrument in quantitative research on technology adoption and e-learning (Nilsson, 2018; Zhu et al., 2019). All the questionnaire items are rated using the five-point Likert scale from 5 = "strongly agree" to 1 = "strongly disagree," with higher scores representing higher utilization. The respondents are asked to express their agreement or disagreement with these 5 points. The questionnaire used in this study had a reliability of $\alpha = 0.842$, which is considered reliable (Almanasreh et al., 2019).

Through collaboration with the general administration of e-learning and distance education at the ministry of education in Saudi Arabia, the researcher randomly selected the target teachers' accounts with details obtained from the management of the M database. A pre-notification was sent to the selected teacher accounts informing them that they had been chosen to participate in this study through the database of M, Riyadh, KSA. A questionnaire was sent to all targeted teachers in public schools that adopted Madrasati. The sent emails contained a direct link to the survey with a consent letter that was attached within the questionnaire itself. The survey was shared during the school hours during a convenient time (less busy hour) for the teachers because they usually have less time to access their e-mail. The information provided in the consent letter has eight key components: (1) the aim, expected duration, and procedures of the research; and (2) the participants' right to decline and withdraw from partaking after the study has started. (3) any potential withdrawal penalties; (4) any potential threats or adverse actions that may influence the decision to participate; and (5) any anticipated benefits. (6) threats to confidentiality, (7) incentives for partaking,

and (8) investigator contact information and a chance for the respondents to ask any questions concerning the study (Smith, 2020; Williams et al., 2020).

Based upon a survey based approach, data was collected from a 413 Saudi male and female middle and secondary school teachers in public schools in Riyadh. Since the sample group in this study was large, self-administered questionnaires were used because they are less expensive, less time-consuming, and offer greater privacy and confidentiality to the participants. The questionnaire method is designed in an online Google form format to collect data by e-mailing it to the respondents (i.e., the teachers). 425 responses were returned, stored, and directly transferred to SPSS from the 500 questionnaires distributed. In addition to data analysis, the questionnaires were screened for missing data. A total of 12 responses were found to contain errors and incomplete values. Therefore, only 413 responses were found valid and used. The return rate of the valid data totaled about 85%. According to Pallant (2013), a 60% rate of return was considered adequate for analysis and reporting. This survey sample was designed through Google Form and approved by the research committee, Riyadh educational district, KSA. Then, approval from Universiti Putra Malaysia was obtained to commence the sampling in Saudi Arabia.

Statistical Analysis

The mean scores were divided into three categories: low, moderate, and high, in order to assess the levels of M utilization based on PE, EE, SI, and FC. Figure 1 shows how this process was carried out using IBM SPSS Statistics according to quartiles (Meyers, Gamst & Guarino, 2013; Aljandali, 2016).

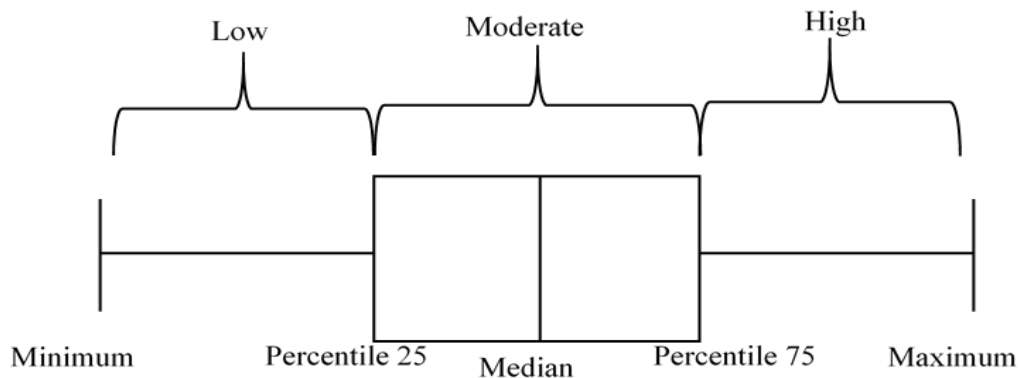


Figure 1. Quartiles of the mean scores

Mean scores greater than or equal to percentile 75 were regarded as high. The quartiles of the mean scores between percentile 25 and below 75 (between percentile 25 and below 75) were categorized as moderate, while mean scores below percentile 25 (below percentile 25) were considered low. Table 1 was used to interpret the variables' levels.

Table 1. Interpretation of Mean Scores

Mean Scores						Level
Performance expectancy	Effort expectancy	Social influence	Facilitating conditions	Behavioral Intention	Level of M Utilization	
≤ 3.56	≤ 3.80	≤ 3.69	≤ 3.63	≤ 3.63	≤ 3.12	Low
3.78	3.84 - 3.96	4.00	3.76	3.75	3.60 - 3.86	Moderate

≥ 3.80	≥ 4.05	≤ 4.24	≥3.82	≥3.81	≥4.22	High
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Descriptive statistics are used to describe the demographic variables. These characteristics include gender, age, education level, experience, and the number of Madrasati workshops attended. Using the Independent Samples t-test and One-way Analysis of Variance (ANOVA), the differences in the demographic variables for PE, EE, SI, FC, and behavioral intention in this study were examined. The t-test was performed to determine if the means of the two independent groups differed statistically significantly. One-way ANOVA was employed to determine if there were any statistically significant differences between the means of two or more independent groups. For gender and education level in this study, a t-test was utilized, and for age, experience, and the number of Madrasati workshops attended, a one-way ANOVA was used. The significance of the mean differences was indicated by a p-value of less than 0.05 ($p < 0.05$).

Results

Demography of the Participants

Frequency and percentage were used to evaluate the demographic data for the participants (Table 2). In the survey, questions on gender, age, education level, experience, and the number of M workshops were asked about five different demographic categories. As shown in Table 2, the demographic factors of the teachers differ. The demographic information of the respondents is displayed, with the highest percentage of respondents being female (51.33%; $n = 212$) and the lowest percentage being male (48.67%; $n = 201$). In addition, participants are divided into four categories based on their ages: those under 30, those between 31 and 40, those between 41 and 50, and those above 51. Around 27.36 percent ($n = 113$) of respondents are 30 or younger, 21.79 percent ($n = 90$) are 31-40 years old, 29.54 percent ($n = 122$), or a height in representation, are 41-50 years old, and 21.31 percent ($n = 88$) are 51 or older.

Table 2 also displays the individuals' degrees of academic achievement. The majority of participants (84.50 percent) are at the undergraduate level, followed by those at the master's level (15.50 percent). The participants' experiences Based on experience, the majority of participants (40.92%) had 8–14 years of experience, followed by those with 15–21 years of experience (19.85 percent). Experience ranging from 22 to 28 years accounts for 17.19 percent, experience spanning 7 years or fewer accounts for 15.25 percent, and experience spanning 29 years or more accounts for 6.78 percent. Those who attend three or more workshops account for the highest percentage of workshop participants (37.05 percent). This was followed by those who attended one workshop (27.12 percent), two workshops (18.89 percent), and those who attended three workshops (16.95 percent) in a year.

Table 2. Demographic Profile of the Teachers

Profile Characteristics	Category	Frequency	Percent
Gender	Male	201	48.67
	Female	212	51.33
Age	30 years old and less	113	27.36
	31-40 years old	90	21.79
	41-50 years old	122	29.54
	51 years old and above	88	21.31
Education Level	Undergraduate	349	84.50
	Postgraduate	64	15.50
Experience (years)	7 years and less	63	15.25

Profile Characteristics	Category	Frequency	Percent
	8-14 years	169	40.92
	15-21 years	82	19.85
	22-28 years	71	17.19
	29 years and above	28	6.78
Number of Madrasati workshops attended	One workshop	112	27.12
	Two workshops	78	18.89
	Three workshops	70	16.95
	More than three workshops	153	37.05

Overall Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, and Behavioral Intention

The findings of PE, EE, SI, FC, and BI are summarized in Table 3. The influence of overall PE was moderate ($M = 3.65$, $SD = 0.07$), which indicates that the participants acknowledged the impact of PE on Madrasati acceptance in Riyadh. The influence of EE was high ($M = 3.91$, $SD = 0.94$), and the participants believed that the adoption of Madrasati on its ease of use and friendliness had a satisfying e-learning experience in Riyadh. The level of SI was high ($M = 3.96$, $SD = 0.88$), which suggests that participants frequently utilized Madrasati technology with the help of their social networks (friends, family, school administration, etc.), in turn raising the Madrasati's popularity. The influence of FC was moderate ($M = 3.63$, $SD = 0.68$), which implies the participants have all the necessary school resources, workshops, and training to use Madrasati in Riyadh. Finally, the influence of BI was moderate ($M = 3.74$, $SD=0.70$) and the influence of BI was moderate ($M=3.74$, $SD=0.70$), suggesting that instructors are becoming more comfortable with the Madrasati by anticipating continued usage, looking forward to attending workshops, and fully appreciating its use. To put it all together, it can be claimed that the intensity of the impact flow, depending on the effect of Madrasati, is as follows: $SI > EE > BI > PE > FC$, indicating the priority of the factors' influence on Madrasati usage.

Table 3. The Results of PE, EE, SI, FC, and BI on M utilization in Riyadh Public Schools.

No	Item	Mean (M)	Standard Deviation (SD)	Interpretation
	Performance Expectancy (PE)	3.65	0.07	Moderate
1	Madrasati helps me to teach.	3.80	0.07	Moderate
2	Madrasati enables me to accomplish tasks (e.g., provide assignments, reports etc.) more quickly.	3.83	0.01	Moderate
3	Madrasati improves the quality of my work (e.g., assignments, reports etc).	3.78	0.03	Moderate
4	Madrasati increases my knowledge of the subject matter	3.57	0.12	Moderate
5	Madrasati is well integrated with all other aspects of my teaching assignment	3.26	0.10	Low
	Effort Expectancy (EE)	3.91	0.94	High
6	Madrasati is user-friendly	4.09	0.80	High
7	Madrasati is easy to use	4.05	0.88	High

No	Item	Mean (M)	Standard Deviation (SD)	Interpretation
8	The features in Madrasati are clear and easy to understand hence operating the system becomes much easier	3.96	0.96	Moderate
9	Madrasati's features are straight-forward	3.84	0.94	Moderate
10	Using the Madrasati requires appropriate time and effort, and it rewards normal duties	3.62	1.11	Moderate
	Social influence (SI)	3.96	0.88	High
11	Being amongst the first to use the Madrasati within my circle of friends and family makes me special	3.69	1.03	Moderate
12	In general, the management of the school has supported the use of the Madrasati.	4.00	0.86	High
13	People who are important to me think that I should use the Madrasati	3.76	0.92	Moderate
14	Current technology trends in social life have increased the popularity of Madrasati	4.24	0.78	High
15	Nowadays, society expects that learning includes the use of LMS like Madrasati	4.11	0.79	High
	Facilitating Conditions (FC)	3.63	0.68	Moderate
16	I have the resources necessary to use the Madrasati	3.82	1.03	Moderate
17	A specific person (or group) is available in school for assistance with Madrasati	3.76	1.03	Moderate
18	The facilities (e.g. Internet accessibility, WiFi) provided by management to use the Madrasati fully, meets users' needs	3.65	0.12	Moderate
19	The workshops and training to familiarize teachers with the Madrasati are helpful and sufficient	3.31	0.15	Low
20	Management support services and infrastructure gives teachers confidence.	3.63	1.07	Moderate
	Behavioral Intention (BI)	3.74	0.70	Moderate
21	I predict that I will continue to use Madrasati.	3.75	1.05	Moderate
22	I believe that teachers will increasingly familiarize themselves with the Madrasati in the next 6 months	3.81	1.07	Moderate
23	I am looking forward to attending workshops about the effective use of Madrasati	3.68	1.09	Moderate
24	I expect to fully enjoy the use of Madrasati	3.75	0.11	Moderate
25	I intend to make the Madrasati central to my learning in school.	3.73	0.17	Moderate

Performance Expectancy, Effort Expectancy, Social Influence, Facilitating, Conditions, and Behavioral Intention

According to Gender

Table 4 shows that the influences of SI and EE were high, while PE, FC, and BI were moderate for both male and female participants, with overall influence being moderate. There were 201 male and 212 female participants. Despite both being moderate, there was no significant difference in PE between females [$M = 3.69$; $t(244) = 1.83$; $p = .09$] and males [$M = 3.52$; $t(244) = 1.83$; $p = .09$]. The females had significantly higher influence EE [$M = 3.81$; $t(232) = 1.70$; $p = .04$] compared to males [$M = 3.56$; $t(232) = 1.70$; $p = .04$]. Further, the females had significantly higher SI [$M = 3.75$; $t(250) =$

2.00; $p = .04$] compared to males [$M = 3.56$; $t(232) = 1.70$; $p = .04$]. Despite both being moderate in the score, there was no significant difference in the effects of female FC [$M = 3.50$; $t(250) = 2.00$; $p = .65$] and male FC [$M = 3.44$; $t(250) = 2.00$; $p = .65$]. Lastly, there was no significant difference between the impacts of female BI [$M = 3.53$; $t(232) = 1.70$; $p = .65$] and male FC [$M = 3.40$; $t(232) = 1.70$; $p = .65$], although both had moderate scores.

According to Age

Table 4 shows that the influences of PE and EE were low, while SI, FC, and BI were moderate across all age groups (30 years old and less; 31-40 years old; 41-50 years old; and 51 years old and above). PE had a low [$M = 3.24$; $t(232) = 1.70$; $p = .67$] but insignificant influence across all age groups. Similarly, the influence of EE was low [$M = 3.24$; $t(232) = 1.70$; $p = .75$], but insignificant across all age groups. The SI influence, on the other hand, was significantly moderate [$M = 3.67$; $t(245) = 1.75$; $p = .05$] across all age groups. 50 years old had the highest influence on Madrasati utilization [$M = 3.77$; $t(245) = 1.75$; $p = .05$], while the age group 51 years old and above had the lowest influence [$M = 3.52$; $t(245) = 1.75$; $p = .05$]. Furthermore, FC had a moderate influence across all age groups [$M = 3.45$; $t(245) = 1.70$; $p = .92$]. Finally, BI had a moderate but not statistically significant effect across all age groups [$M = 3.45$; $t(232) = 1.70$; $p = .68$]. Table 4 summarizes the influence and differences between PE, EE, SI, FC, and BI according to demographic groups in this study.

Table 4. Influence and Differences Between PE, EE, SI, FC, and BI According to Demographic Groups

Variable	Demographic factors	Mean	t, df / F, df	p-value	
Performance Expectancy	Gender	Male	3.52M	1.83, 244	.09
		Female	3.69M		
	Age	30 years old and less	3.27L	1.70, 232	.67
		31-40 years old	3.19L		
		41-50 years old	3.18L		
		51 years old and above	3.20L		
	Education Level	Undergraduate	3.93H	3.52, 278	.03*
		Postgraduate	3.85H		
	Experience	7 years and less	3.67M	2.50, 265	.05*
		8-14 years	3.80H		
		15-21 years	3.74M		
		22-28 years	3.61M		
		29 years and above	3.85H		
	Number of Madrasati workshops	One workshop	3.74M	2.50, 265	.61
Two workshops		3.66M			
Three workshops		3.58M			
More than three workshops		3.65M			
Effort Expectancy	Gender	Male	3.56M	1.70, 232	.04*
		Female	3.81M		
	Age	30 years old and less	3.25L	1.70, 232	.75
		31-40 years old	3.34L		
		41-50 years old	3.50M		
		51 years old and above	3.38L		
	Education Level	Undergraduate	3.75M	2.50, 264	.04*
		Postgraduate	3.79M		
	Experience	7 years and less	3.97H	2.50, 265	.05*
		8-14 years	3.80H		

Variable	Demographic factors	Mean	t, df / F, df	p-value	
		15-21 years	3.59M	3.52, 278	.02*
		22-28 years	3.60M		
		29 years and	3.85H		
	Number of Madrasati workshops	One workshop	4.05H		
		Two workshops	4.01H		
		Three workshops	3.84H		
		More than three workshops	3.82M		
Social Influence	Gender	Male	3.59M	1.70, 232	.05*
		Female	3.75M		
	Age	30 years old and	3.74M	1.75, 245	.05*
		31-40 years old	3.64M		
		41-50 years old	3.77M		
		51 years old and above	3.52M		
	Education Level	Undergraduate	3.96H	3.52, 276	.01*
		Postgraduate	4.17H		
	Experience	7 years and less	3.47M	2.00, 250	.06
		8-14 years	3.78M		
		15-21 years	3.70M		
		22-28 years	3.61M		
		29 years and	3.85H		
	Number of Madrasati workshops	One workshop	4.04H	3.52, 276	.01*
		Two workshops	3.88H		
		Three workshops	4.17M		
More than three workshops		3.65M			
Facilitating Conditions	Gender	Male	3.44M	1.83, 244	.65
		Female	3.50M		
	Age	30 years old and	3.33L	1.70, 245	.92
		31-40 years old	3.54M		
		41-50 years old	3.41M		
		51 years old and above	3.40M		
	Education Level	Undergraduate	3.90H	3.50, 273	.04*
		Postgraduate	3.94H		
	Experience	7 years and less	3.68M	2.50, 265	.55
		8-14 years	3.63M		
		15-21 years	3.74M		
		22-28 years	3.82H		
		29 years and	3.55M		
	Number of Madrasati workshops	One workshop	3.87M	3.52, 268	.05*
		Two workshops	3.78M		
		Three workshops	3.58M		
More than three workshops		3.64M			
Behavioral Intention	Gender	Male	3.40M	1.70, 232	.81
		Female	3.53M		
	Age	30 years old and	3.45M	1.70, 232	.68
		31-40 years old	3.40M		

Variable	Demographic factors	Mean	t, df / F, df	p-value	
		41-50 years old	3.17L		
		51 years old and above	3.50M		
	Education Level	Undergraduate	3.88H	3.50, 273	.03*
		Postgraduate	3.92H		
	Experience	7 years and less	3.73M	3.50, 273	.04*
		8-14 years	3.80M		
		15-21 years	3.69M		
		22-28 years	3.82H		
	Number of Madrasati workshops	29 years and above	3.81H	2.50, 265	.05*
		One workshop	3.67M		
		Two workshops	3.60M		
		Three workshops	3.85H		
		More than three workshops	3.91H		

Indicator: Highest mean in bold; Levels = L (Low), M (Moderate), H (High); *Significant level ($p < 0.05$)

According to Education Level

Table 4 also reveals that the influence of PE, SI, and BI was high, while EE and FC were moderate for both educational levels (undergraduate and postgraduate). Participants with undergraduate degrees had a significantly greater [$M = 3.93$; $t(232) = 3.52$; $p = .03$] influence PE on Madrasati utilization than those with postgraduate degrees [$M = 3.85$; $t(232) = 3.52$; $p = .03$]. However, participants with postgraduate degrees had a higher [$M = 3.79$; $t(264) = 2.50$; $p = .04$] effect of EE on the use of Madrasati than participants with undergraduate degrees [$M = 3.75$; $t(264) = 2.50$; $p = .04$]. Postgraduate degree holders also had a significantly higher [$M = 4.17$; $t(276) = 3.52$; $p = .01$] effect SI on Madrasati utilization than undergraduate degree holders [$M = 3.96$; $t(276) = 3.52$; $p = .01$]. Similarly, postgraduate participants were significantly more influenced by FC [$M = 3.94$; $t(273) = 3.50$; $p = .04$] than undergraduate participants [$M = 3.90$; $t(273) = 3.50$; $p = .04$]. Finally, the impact of BI on the use of Madrasati was stronger for postgraduate participants [$M = 3.92$; $t(273) = 3.50$; $p = .03$] than for undergraduate participants [$M = 3.88$; $t(273) = 3.50$; $p = .03$].

According to Experience

Table 4 presents that the influence of EE and BI were higher, while PE, SI, and FC were moderate for all experience categories (7 years and less; 8-14 years; 15-21 years; 22-28 years; 29 years and above). The participants with 8-14 years [$M=3.80$; $t(265) = 2.50$; $p = .05$] and 29 years and above [$M=3.85$; $t(265) = 3.50$; $p = .05$] experience had greater PE influence on Madrasati utilization compared to 7 years and less [$M=3.67$; $t(265) = 3.50$; $p = .05$], 15-21 years [$M=3.74$; $t(265) = 3.50$; $p = .05$], and 22-28 years [$M=3.61$; $t(265) = 3.50$; $p = .05$] experiences. Also, those participants with 7 years and less [$M=3.97$; $t(265) = 2.50$; $p = .05$], 8-14 years [$M=3.80$; $t(265) = 2.50$; $p = .05$], and 29 years and above [$M=3.85$; $t(265) = 2.50$; $p = .05$] experience had higher EE influence on Madrasati utilization compared to 15-21 years [$M=3.59$; $t(265) = 2.50$; $p = .05$] and 22-28 years [$M=3.60$; $t(265) = 2.50$; $p = .05$] experiences.

However, although not statistically significant, participants with experience levels of 29 years or more had a greater SI effect on Madrasati use in Riyadh than participants with experience levels of 7 years or less, 8-14 years, 15-21 years, and 22-28 years (Table 4). Similarly, despite being insignificant, participants with experience levels of 22–28 years had a higher FC influence on Madrasati utilization in Riyadh than participants with experience levels of 7 years and less, 8–14 years, 15–21 years, and 29 years and above (Table 4). Nevertheless, participants with experience ranging from 22-28 years [$M = 3.82$; $t(273) = 3.50$; $p = .04$] and 29 years and above [$M = 3.81$; $t(273) = 3.50$; $p = .04$] had a

significantly greater influence of BI on Madrasati use than participants with experience ranging from 7 years and less [$M = 3.73$; $t(273) = 3.50$; $p = .04$], 8-14 years [$M = 3.80$; $t(273) = 3.50$; $p = .04$], and 15-21 years [$M = 3.69$; $t(273) = 3.50$; $p = .04$].

According to the Number of Madrasati Workshops Attended

Table 4 presents that the influence of EE, SI, FC, and BI on Madrasati utilizations was higher, while PE was moderate for the number of Madrasati workshops attended by the teachers (one workshop, two workshops, three workshops, and more than three workshops). PE had a low [$M = 3.66$; $t(265) = 2.50$; $p = .61$] but insignificant influence across all workshop groups. However, the influence of EE was significantly higher for those participants that attended one workshop [$M = 4.05$; $t(278) = 3.52$; $p = .02$], two workshops [$M = 4.01$; $t(278) = 3.52$; $p = .02$], and three workshops [$M = 3.84$; $t(278) = 3.52$; $p = .02$] compared to more than three workshops [$M = 3.82$; $t(278) = 3.52$; $p = .02$]. Also, the influence of SI was significantly higher for those participants that attended one workshop [$M = 4.04$; $t(276) = 3.52$; $p = .01$], two workshops [$M = 4.17$; $t(276) = 3.52$; $p = .01$], and three workshops [$M = 3.88$; $t(276) = 3.52$; $p = .01$] compared to more than three workshops [$M = 3.65$; $t(276) = 3.52$; $p = .01$]. Furthermore, the impact of SI was significantly greater for participants who attended one workshop [$M = 3.87$; $t(268) = 3.52$; $p = .05$], two workshops [$M = 3.78$; $t(268) = 3.52$; $p = .05$], and more than three workshops [$M = 3.64$; $t(268) = 3.52$; $p = .05$] as opposed to three workshops [$M = 3.58$; $t(268) = 3.52$; $p = .05$]. Finally, participants who attended one [$M = 3.67$; $t(265) = 2.50$; $p = .05$] or two workshops had a significantly lower effect from BI than those who attended two workshops. This was in contrast to participants who attended three [$M = 3.85$; $t(265) = 2.50$; $p = .05$] or more than three [$M = 3.91$; $t(265) = 2.50$; $p = .05$] workshops.

Discussion

In general, the findings showed that demographic factors had a significant impact on technology acceptance and utilization in Riyadh. Variables such as gender, age, education level, experience, and number of Madrasati (M) workshops were identified as key demographic factors. The usages of BI and SI were found to be generally at high levels, while PE, EE, and FC were at moderate levels. The high levels suggest that the teachers have higher BI and SI on M utilizations. The intermediate levels demonstrate that the teachers may not be teaching at the optimal level required to foster students and school development. The results revealed a captivating difference in terms of gender. In terms of effort expectancy, and social influence, female teachers using M e-learning technology outperformed their male counterparts. This study's high proportion of female participants relative to male participants is consistent with prior research that indicated that females make up the majority of teachers in public schools in Riyadh (Al-Hunaiyyan, Alhajri, & Al-Sharhan, 2020). Males appeared to be attached to PE, EE, and FC compared to their female counterparts. The findings also showed that teachers fall within 41-50 years old had the highest influence on Madrasati utilization, while those in their 51 years old and above had the lowest influence.

The age of the instructor had a significant impact on how they used M; younger teachers were more concerned with their PE, whilst older pupils were more concerned with FC. This may not have the same impact on teachers who are already fully developed adults. Teachers with higher qualifications (postgraduate degrees) and with experience of 8-14 years used M platform more frequently and at greater rates than those with less experience, while those teachers with 15-21 of experience had the greatest levels of FC in comparison to less experienced teachers (i.e., that those within 7 years or fewer). When new teachers started working in Riyadh's public schools, they typically stayed for a while and eventually assimilated into the classroom by attending at least one M workshop. Compared to instructors who had attended more than three workshops, teachers who attended a workshop had higher levels of PE, EE, SI, FC, and BI on M.

SI and EE factors distinguished males and females considerably from each other, although males scored better overall than females. This result could have been influenced by the different teaching cultures and instructional material delivery needs of the students in separate environments.

Acceptance and adoption of M platform and its use in terms of SI and EE did not differ significantly. This result stands in contrast to studies on the gender gap in e-learning, which found that female teachers were more likely to use e-learning than male teachers were because they are motivated by the system's PE, EE, and FC, which more concerned with the system's usability (Hu, Laxman, & Lee, 2020; Shah et al., 2021). Moreover, Binyamin et al. (2020) showed that gender has effects on the acceptance of LMS in Saudi Arabia. Even while older teachers rated higher than younger teachers in PE and EE, there was no significant difference between the age groups. Younger teachers are allegedly more technologically competent and so more prone to adopt M technology. The results, however, supported by studies, which indicated that teachers' age alone is not the only factor in M technology (Al-Henaki & Al-Arfaj, 2021). Instead, it depends on how well the public school in Saudi Arabia delivers technical assistance and efficient online learning (Alsaqr et al., 2018; Alkinani & Alzahrani, 2021).

The only significant difference between the EE and BI with regards to experience groups concerned with the facilities availability and usage of M technology in their schools in Riyadh. The results indicate that EE-concerned teachers thought the M system was more likely to help them complete their tasks. On the other side, BI need more hands-on and practical instruction, and the existing M system might not completely accommodate their intended desire. This condition confirms earlier studies' findings that e-learning utilization and teaching are significantly correlated (Ospina et al., 2021; Alasmari, 2022).

Regarding the quantity of M workshops attended and the effects of EE, SI, FC, and BI on the use of Madrasati, more workshops seemed to improve teachers' experiences in the classroom, the delivery of lesson plans, and the use of M for instruction. This was consistent with findings indicating older instructors are more skilled at using the M e-learning platform than younger teachers (Aldossry, 2021; Shishah, 2021). The sole difference across all workshop groups was PE, which was not statistically significant. This supports the instructors' likely purpose or belief that M is acceptable in their classes.

Limitation, Recommendation, and Implication

Based on the findings of this study, decision-makers can take the necessary steps to remove the obstacles, encourage positive factors, and design training programs to improve M use among teachers. It will also enrich the theoretical knowledge of M utilization in Saudi education and help educational policymakers in the development and improvement stages to achieve successful implementation of learning with M.

This study focuses on Madrasati solely. Although Madrasati is deemed reliable in terms of tools and features, it is considered low in terms of usability. Future studies should consider testing other functionalities targeting parents and school levels on the platform end-to-end, also involving participants to assess the platform using surveys.

Additionally, this study does not consider the relationships between the demographic factors, PE, EE, SI, FC, and BI. Future research may examine the interactions between these factors or develop a model that can be used in a classroom environment. In addition, only the people of Riyadh and Saudi Arabia can benefit from the conclusions of the current study. It is thus advised to do additional research that compile information from many sources, such as those belonging to various public schools in Riyadh to further observe the influence SI and BI on M adoption and utilization.

This study offers all school stakeholders with bottom-up knowledge when implementing M technology at the schools by looking at teaching and learning at the individual level. The results imply that the secret to successful e-learning implementation in education is a good BI toward its utilization.

Conclusion

The findings revealed a substantial difference in UTAUT factors for EE and SI, as well as for gender, experience, and workshops attended. As a result, teachers' BI on the M technology in their classrooms are influenced by their gender, experience, and the number of workshops attended. They showed that the influences of SI and EE were significant and high on M utilization than PE, FC, and BI, which were moderate. The direction of these factors' impact flow was $SI > EE > BI > PE > FC$, indicating the priority of the factors' influence on M utilization. The study also found a significant variance in the BI toward M usage between SI and EE, as well as between FC and BI. According to this study, teachers' perceptions of the M system in Riyadh were impacted by their educational backgrounds, teaching experience, and the number of workshops they attended. The true variance in M utilization was exposed by the FC and BI effect. According to this finding, BI instructors were more likely to employ M technology than teachers whose major aims were FC. Finally, this study discovered that experience and age had no significant influence on PE or EE.

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