

UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY: ADOPTION OF THE MICROSOFT TEAMS MOBILE APPLICATION AMONG ECONOMIC AND BUSINESS STUDENTS

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Abstract The use of mobile applications is rising every year and becoming increasingly important throughout the world. During the COVID-19 pandemic, the whole educational process in almost every university in the world was carried out through the internet. Some of the universities used the Microsoft Teams Platform (hereinafter: MS Teams). The aim of this study is to test a model of the acceptance and use of the mobile version of the MS Teams application among students from the University of Maribor, Faculty of Economic and Business (FEB). One of newer acceptance models, named the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, was used. The UTAUT is a technology acceptance model, which aims to explain user intentions to use an information system. This study explored the behavioural intention to use the MS Teams mobile application from the perspective of students. The UTAUT model was used to evaluate the influences of technology-related factors on its adoption. For this research, a questionnaire was created and given to students who used mobile devices and MS Teams for their study materials and communication. The findings provide a practical reference for educational institutions and decision-makers involved in designing and using this application.

Keywords:

Microsoft Teams,
UTAUT
framework,
mobile application,
technology
acceptance model,
mobile devices

1 Introduction

The continuous development of today's information society includes the use of the internet and online services in almost all business processes. It increasingly also includes the use of mobile applications. The prevalence and use of smartphones open up new opportunities for companies and users and allow them to integrate modern technologies into their businesses. Mobile business is based on the internet and electronic business, however, it is necessary to consider the fact that through mobile devices, users only want to access the key information they need at a particular moment (Camponovo in Pigneur, 2003). In addition, the use of mobile devices and applications is also increasing in the educational process due to online teaching and learning, which started in almost every university in the world due to the coronavirus pandemic (COVID-19). Online education is defined as a type of distance learning, without attending a physical institution, in which students and teachers interact over the internet (Farmer, 2018). Online education has many names and terms, including computer-based training, web-based training, internet-based training, online training, e-learning (electronic learning), m-learning (mobile learning), computer-aided distance education, etc. (Saranya, 2020). E-learning is defined as an information and communications technology (ICT) to enhance and support the teaching-learning process (Yusuf, 2005).

Effective implementation of any information technology (IT) and information system (IS) depends on user acceptance (Davis, 1989). Therefore, the aim of this study is to test a model of the adoption of the mobile version of the MS Teams application among the students from the University of Maribor, Faculty of Economic and Business (FEB). During the COVID-19 pandemic, the whole educational process in the faculty was carried out through the internet, more specifically through the MS Teams Platform. According to the results from STATISTA (2022), the number of daily active users of MS Teams have almost doubled in the past year, increasing from 75 million users in April 2020 to 145 million as of April 2021 (worldwide). This has also been influenced by the COVID-19 pandemic and the growing practices of social distancing and working from home. MS Teams is part of Microsoft 365, a set of collaboration applications and services launched in July 2017, which can be accessed through desktops, websites or mobile devices. MS Teams was used for online teaching during the COVID-19 pandemic

at the FEB. Some features were used such as online lectures, chats, announcements, different groups for each subject, assignments, maps and files sharing, online exams, calendar, meetings, different calls (phone calls or video calls), online discussion hours for students, etc. For the purposes of this study, the authors used one of the newer acceptance models named the framework of Unified Theory of Acceptance and Use of Technology (UTAUT) and investigated the acceptance of the MS Teams mobile app among the students. The UTAUT model is a technology acceptance model formulated by Venkatesh and others (2003), which aims to explain user intentions to use an information system and subsequent usage behaviour. The theory holds that there are four key constructs: 1) performance expectancy (PE), 2) effort expectancy (EE), 3) social influence (SI), and 4) facilitating conditions (FC). This model provides a framework that not only explains the acceptance of information technology (IT) and information systems (IS), but also elucidates the actual use of such technologies and systems (Chao, 2019). Therefore, this study used the UTAUT model as the theoretical background to evaluate the influences of technology-related factors on the adoption of the MS Teams mobile app. The following is a description of the model used for this study.

2 UTAUT model

Several technology acceptance models and theories were used by Venkatesh et al. (2003) to define and describe the new model – the UTAUT model, including the Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975), the Theory of Planned Behaviour (TPB) (Ajzen 1991), the Technology Acceptance Model (TAM) (Davis 1989), the Combined-TAM-TPB (Taylor and Todd 1995), the Model of PC Utilization (MPCU) (Thompson et al. 1991), the Motivational Model (MM) (Davis et al., 1992), the Social Cognitive Theory (SCT) (Bandura 1986) and the Innovation Diffusion Theory (IDT) (Rogers 1995). The UTAUT model is defined by four constructs shown and described in Table 1 (Venkatesh et al., 2003).

The four constructs of the UTAUT also have a significant influence and impact on the behavioural intention (BI) to accept and use the new system by the users (Oye & Iahad, 2014). This study focused on measuring whether these four constructs (PE, EE, SI and FC) significantly influence the BI of the students at FEB to accept and use the Microsoft Teams mobile app for their educational process.

Table 1: Description of UTAUT constructs

Performance Expectancy (PE)	The degree to which an individual believes that using the system will help them to attain gains in job performance.
Effort Expectancy (EE)	The degree of ease associated with the use of the system.
Social Influence (SI)	The degree to which an individual perceives that other important people believe they should use the new systems.
Facilitating Conditions (FC)	The degree to which an individual believes that organisational and technical infrastructure exists to support the use of the system.

3 Research methodology

The case study in this research is based on a survey of students from the FEB at the University of Maribor, Slovenia. Data was collected using a questionnaire designed in Microsoft Forms (as an online survey) and divided into two parts. In the first part, a five-point Likert scale was used with the ranges from (1) to (5), representing (1) – Strongly disagree, (2) – Disagree, (3) - Neither Agree or Disagree, (4) - Agree and (5) – Strongly agree. The second part of the questionnaire was designed to gather demographic information from the students, which are illustrated in Table 2. A total of 158 questionnaires were collected. Twelve of the respondents said that they were not using the MS Teams mobile app (7.6 %), therefore this research is based on the 146 completely filled-in questionnaires (N=146). The statistical tools used to collect and analyse data from the questionnaires were SPSS 27 and Microsoft Excel.

Table 2 shows the demographic information of the respondents – 39.7% of them were male, and 60.3% were female. In terms of age, 93.8% of the respondents are aged 19-25 years. Of the 146 students, 16.4% said they use the MS Teams mobile app less than once a day, while 42.5% – the highest percentage – said they use it once to twice a day. In addition, 19.9% of the students use it once a week, while 2.7% said they use it once a month for learning. These results show that FEB students frequently use the MS Teams mobile app. As a result, the authors of this study concluded that the students are aware of the positive aspects of using this application for the educational process in the faculty and that they considered it useful.

Table 2: Demographic data of the respondents (N=146)

Variables		Frequency	Relative frequency (in %)
Gender	Male	58	39.7
	Female	88	60.3
Age	Under 19 years	0	0
	19-25 years	137	93.8
	25 years and over	9	6.2
Usage of Microsoft Teams mobile app	less than once a day	24	16.4
	once to twice a day	62	42.5
	three or more times a day	27	18.5
	once a week	29	19.9
	once a month	4	2.7

The authors analysed the influence of the constructs of the UTAUT model on the students' behavioural intention towards the usage and acceptance of the MS Teams mobile app for online teaching and learning, using regression analysis.

As shown in Table 3, a reliability analysis was conducted for the 34 items (constructs from the UTAUT model) using Cronbach's Alpha. The UTAUT constructs appear to have a good degree of reliability with values above 0.8. Values greater than 0.6 are considered acceptable in different technology acceptance literature (Zhang et al., 2006).

Table 3: Reliability Statistics

Cronbach's Alpha	N of Items
0.822	34

4 Results

The influence of all four constructs (PE, EE, SI and FC) on the BI to accept and use the Microsoft Teams mobile app by students measured with regression analysis is shown in Table 4. For every independent variable, the authors measured how it influences the dependent variable, in this case, BI. In the UTAUT model, the BI is defined by five different items (BI1-BI5). The results show the influence of Performance Expectancy with 10 items (PE1-PE10), Effort Expectancy with 8 items

(EE1-EE8), Social Influence with 6 items (SI1-SI6), Facilitating Conditions with 5 items (FC1-FC5), and Behavioural Intention 5 items (BI1-BI5).

Table 4: Model summary

Rows	Independent Variables	Dependent Variables	R	R ²	Significant
1	PE 1-10	(BI1)	.489	.239	.000
2	PE 1-10	(BI2)	.315	.099	.151
3	PE 1-10	(BI3)	.586	.343	.000
4	PE 1-10	(BI4)	.624	.390	.000
5	PE 1-10	(BI5)	.626	.392	.000
6	EE 1-8	(BI1)	.515	.265	.000
7	EE 1-8	(BI2)	.280	.079	.178
8	EE 1-8	(BI3)	.509	.259	.000
9	EE 1-8	(BI4)	.507	.257	.000
10	EE 1-8	(BI5)	.487	.237	.000
11	SI 1-6	(BI1)	.341	.116	.008
12	SI 1-6	(BI2)	.262	.069	.122
13	SI 1-6	(BI3)	.438	.192	.000
14	SI 1-6	(BI4)	.454	.206	.000
15	SI 1-6	(BI5)	.426	.182	.000
16	FC 1-5	(BI1)	.397	.157	.000
17	FC 1-5	(BI2)	.276	.076	.047
18	FC 1-5	(BI3)	.533	.284	.000
19	FC 1-5	(BI4)	.546	.298	.000
20	FC 1-5	(BI5)	.576	.332	.000

From Table 4 it can be seen that rows 2, 7 and 12 (bolded text in the rows) are the only ones that are not significant, with a $p > 0.05$ value. In the second row (2), items PE 1-10 contributed only 9.9 % of the total variation observed in the students' behavioural intention to accept and use the MS Teams mobile app. The R^2 is 0.099 and the correlation is 0.315. Therefore, it can be concluded that independent variables have little influence on the BI2 dependent variable. The regression equation is not significant, with a 0.151 p-value. None of the independent variables are significant. Therefore, we conclude that the independent variables have no positive influence on item BI2, which refers to the perceived use of the MS Teams mobile app as involuntary.

In row 7, the model summary shows that items EE 1-8 contributed only 7.9 % of the total variation observed in the students' behavioural intention to accept and use the MS Teams mobile app. The correlation and R^2 are 0.280 and 0.079 respectively. The regression equation is not significant, with a 0.178 p-value. None of the independent variables are significant on BI2. The authors concluded that items EE 1-8 have no positive influence on item BI2 (refers to the perceived use of the MS Teams mobile app as involuntary) of the students to accept and use the mobile app.

In row 12, the model summary shows that items SI 1-6 contributed 6.9 % of the total variation observed in the behavioural intention to accept and use the MS Teams mobile app by the students. The correlation and R^2 are 0.262 and 0.069 respectively. The regression equation is not significant, with a 0.122 p-value. None of the independent SI1-6 variable are significant. The authors concluded that items SI1-6 have not influenced a positive change in item BI2 of the students acceptance and use of the MS Teams mobile app.

Performance expectancy is defined as the degree to which an individual believes that using the system will help them to attain gains in job performance – in this case, the degree to which students believe that using the MS Teams mobile app will help them improve their student work (tasks, assignments, projects, seminar papers, etc.). Effort expectancy is defined as the degree of ease associated with the use of the system – in this case, the degree to which students believe that the MS Teams mobile app is easy to use. Social influence is defined as the degree to which an individual perceives that other people who are important to them believe they should use the new systems. This means that people who influence the behaviour of the students and are important to them think that they should use the MS Teams mobile app. Facilitating conditions are defined as the degree to which an individual believes that organisational and technical infrastructure exists to support the use of the system – in this case the degree to which students believe that they have knowledge and resources but also technical support from the faculty when using the MS Teams mobile app.

In this study, the UTAUT model aims to explain students' intentions to use the MS Teams mobile app and explain their behavioural intention to use the application. As previously mentioned, the UTAUT model explains that four key constructs – PE, EE, SI and FC – are direct determinants of usage intention and behaviour (Venkatesh et al., 2003). From the regression analysis used to test the model, performance expectancy (items PE5, PE7 and PE10) is significant with a <0.05 p-value. The effort expectancy (items EE4, EE6 and EE7) is significant with a <0.05 p-value. The social influence (items SI1, SI2 and SI4) is significant with a <0.05 p-value, and the facilitating condition (items FC3 and FC5) is significant with a <0.05 p-value. A detailed analysis of the research is available from the authors of the article. According to these results, it can be concluded that each of the four constructs of the UTAUT model have a positive influence on the behavioural intention of the students to accept and use the MS Teams mobile app for their educational process (teaching and learning).

4 Conclusion

This study presents the UTAUT technology acceptance model, which was used to investigate the acceptance of the MS Teams mobile app among the students from the FEB at the University of Maribor, Slovenia. Using regression analysis in SPSS, the authors presented the influence of all four constructs (PE, EE, SI and FC) on the BI to accept and use the MS Teams mobile app by students. The authors found that all four key constructs of the UTAUT model have a positive impact on the acceptance and usage of the MS Teams mobile app by the students. The results show that the decision to use this mobile app is influenced by various factors, such as an understanding that using this app would make it easier for them to do their student work (tasks, assignments, projects, seminar papers, etc.). They also consider that using the MS Teams mobile app would cause their colleagues to perceive them as competent, and they agree that using the mobile app would be useful for teaching and learning. The intention to use the MS Teams mobile app is also determined by their perception that the app is very flexible to interact with and easy to use. The results also show that students' behaviour to accept and using the MS Teams mobile app is influenced by the people who are important to them as well as by the professors from the faculty who are very supportive of the use of the mobile app for their lectures. The authors concluded that all four constructs positively impact

the acceptance and usage of the MS Teams mobile app by the students of the FEB, and the results of this research confirm the validity of the UTAUT model.

Future research could focus on the following methodological aspects. The constructs in the model could be further analysed by conducting the reliability analysis separately for independent and dependent constructs, followed by the factor analysis. All four multiple regression models presented in this paper could be replaced by a single one (if factor analysis for the dependent construct leads to a single-factor solution), with constructs instead of measured variables both as independent variables as well as the dependent variable.

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