WhatsApp Web for academic purposes in times of covid-19

WhatsApp Web con fines académicos en tiempos de la covid-19

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ABSTRACT

One of the most used communication tools is WhatsApp, which increased its use due to covid-19, along with other social networks. In the educational field, students are also increasingly adopting this application for academic purposes from their computers called WhatsApp Web. However, more knowledge is needed about the factors that influence the acceptance and use of this social network. Therefore, the purpose of this study is to understand from the perspective of students the factors of acceptance and use of WhatsApp Web for academic purposes during the covid-19 pandemic. A qualitative methodology was used to achieve this objective, through fourteen semistructural interviews with students from various disciplines and universities. The findings of this study were analyzed with the unified theory of acceptance and use of technology (UTAUT). Where a fifth factor teamwork was incorporated, being additional to the factors already existing in this theory (the expectation of performance, the expectation of effort, the social influence and the facilitating conditions). This study provides new insights as it is a pioneering research that UTAUT uses to interpret the acceptance and use of WhatsApp Web for academic purposes.

RESUMEN

Una de las herramientas de comunicación más utilizada es WhatsApp, la cual incrementó su uso a causa de la covid-19, junto a otras redes sociales. En el ámbito educativo, los estudiantes adoptan mayormente esta aplicación desde sus computadoras, denominada WhatsApp Web, con fines académicos; sin embargo, se necesita un conocimiento más amplio sobre los factores que influyen en la aceptación y el uso de esta red social. El propósito de este estudio es comprender, desde la perspectiva de los estudiantes, los factores de aceptación y uso de WhatsApp Web con fines académicos durante la pandemia de la covid-19. Se empleó una metodología cualitativa para alcanzar este objetivo, por medio de catorce entrevistas semiestructuradas con estudiantes de diversas disciplinas y universidades. Los hallazgos de este estudio se analizaron con la teoría unificada de aceptación y uso de tecnología (UTAUT), en la cual se incorporó un quinto factor: el trabajo en equipo, adicional a los factores existentes en la teoría (la expectativa de desempeño, la expectativa de esfuerzo, la influencia social y las condiciones facilitadoras). Este estudio aporta nuevos conocimientos al ser una investigación pionera que emplea la UTAUT para interpretar la aceptación y el uso de WhatsApp Web con fines académicos.

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INTRODUCTION

The global covid-19 pandemic has presented unprecedented challenges in education (Guiñez-Cabrera, Jeldes-Delgado, Ganga-Contreras, & Mansilla-Obando, 2021; Sobaih, Hasanein, & Elnasr, 2020). With the need to contain the outbreak of the virus, one of the measures adopted was the closure of higher education institutions (HEIs) (Zubillaga and Gortázar, 2020). The suspension of face-to-face activities in HEIs caused immediate changes towards technological platforms as they had to be implemented in online teaching (García-Peñalvo, Corell, Abella-García, & Grande, 2020). The literature has indicated the difference between online teaching and teaching delivered during the pandemic. Bozkurt and Sharma (2020) refer to the latter as "emergency remote teaching".

The developments indicated above have led to the increased use of social platforms and networks for academic purposes (e.g., Zoom, Microsoft Teams, Google Meets). For most users, these technological applications have become one of the indispensable day-to-day resources (Veytia and Bastidas, 2020). Likewise, previous studies on the use of social networks in HEIs have shown that they can be used as a support in communication with students (Chan, Yong, & Harmizi, 2020; Sobaih & Moustafa, 2016).

One of the most used technological resources in communication is WhatsApp, a social network with low data consumption, which has been transformed into a teaching-learning tool for students (Maphosa, Dube & Jita, 2020). A recent study found that Facebook and WhatsApp are the most used tools in HEIs for different academic purposes (Manca, 2020); likewise, the study by Maphosa *et al.* (2020) indicates a high acceptance and use of WhatsApp for learning.

WhatsApp Messenger is a social network that allows the exchange of messages (short message service, SMS) at no cost (Actoriano and Riadi, 2018), which facilitates communication in a simple and fast way (Yeboah and Ewur, 2014); the above allows sending and receiving multimedia data in audio, image, video and text formats without character limits, as well as video calls, with absolute control by the user (Cremades, Maqueda and Onieva, 2016; López and Castro, 2019). Other features include free availability, ease of use, speed and convenience with a reliable personal communication mode (Maphosa *et al.*, 2020).

WhatsApp Web is a computer extension connected to the WhatsApp account on the user's phone (Actoriano and Riadi, 2018). Sent and received messages are synchronized between the phone and the computer, so it is possible to view them on both devices. Therefore, all actions performed by the user on the phone will also be applied on WhatsApp Web and vice versa (Actoriano and Riadi, 2018).

In the context of education, WhatsApp has sparked widespread interest in academia (Dahdal, 2020; Maphosa *et al.*, 2020; Sobaih *et al.*, 2020; Susilo and Sofiarini, 2021); some research has focused on its application as an informal electronic learning platform (Mpungose, 2020) and as a lecture sharing tool (Maphosa *et al.*, 2020), on its use to form groups (de Dahdal, 2020), on interpersonal communication skills in students who use it (Chan, Yong and Harmizi, 2020), among other aspects.

As reviewed in the literature, there is no exploration of the use of WhatsApp for academic purposes from direct use on the computer, i.e. WhatsApp Web. Sobaih *et al.* (2020) indicate that the appropriate use of social networks could promote a new era of social presence and learning, as well as an alternative platform to promote online learning. On the other hand, Shim and Lee (2020) indicate that there are a limited number of studies exploring this new emergency remote learning product of covid-19.

Based on the above, this study seeks to answer the following research question: why do university students accept and use WhatsApp Web for academic purposes in emergency remote teaching in times of covid-19 pandemic? Specifically, the aim of this research is to explore what are the key determinants in the acceptance and use of WhatsApp Web for academic purposes during emergency remote teaching.

To answer this research question and achieve the stated objective, data were collected through a qualitative methodology with semi-structured interviews applied to fourteen undergraduate university students from different disciplines. The data were analyzed using the unified theory of acceptance and use of technology, known as UTAUT (unified theory of acceptance and use of technology).

Venkatesh, Morris, Davis, and Davis (2003) integrated eight models of information technology (IT) acceptance research from a review of the literature. In developing and validating them with UTAUT they highlighted the following dimensions: "performance expectancy", which corresponds to the perceived usefulness of accepting and using an IT - in this case of accepting and using WhatsApp Web; "effort expectancy", which corresponds to the perceived ease of using WhatsApp Web; "social influence", in relation to the user's perception of the importance that other people attribute to the use of WhatsApp Web; as well as "facilitating conditions", the user's perception of the existence of support for WhatsApp Web use through technical and organizational infrastructure, which is measured mainly in terms of knowledge, resources and availability of appropriate advice and equipment (Venkatesh *et al.*, 2003).

This research takes the conceptual framework of UTAUT to explain the acceptance and use of WhatsApp Web for academic purposes in HEI students in covid-19 times. Next, the methodology implemented in this

study is presented, then the results and main discussions are shown and, finally, the conclusions of major relevance.

METHODOLOGY

Because the acceptance and use of WhatsApp Web among HEI students for academic purposes in times of covid-19 pandemic is little explored, this study adopted an approach with qualitative methodology to understand this phenomenon (Corbin and Strauss, 2015).

To answer the research question posed, data were obtained through semi-structured interviews, from the perspective of HEI students, which were applied only to students who used WhatsApp Web for academic purposes in 2020 during emergency remote teaching.

The interviews were applied by the two authors of the study, which helped to have a better understanding of the answers made by the participants in this research. The design of the instrument was structured with open-ended standardized questions, which allowed for greater guidance in the data collection stage.

First, questions were asked about the personal background of the students interviewed in order to know their age, their career and the IES to which they belong. Then, an introduction was made to the interviewed participants about the topic to be discussed with questions such as: did you use WhatsApp Web for academic purposes for your activities during 2020, how and for what academic purposes do you use WhatsApp Web, and can you give specific examples of these uses?

Finally, more specific questions were proposed regarding the acceptance and use of WhatsApp Web for academic purposes in HEI students in covid-19 times (Corbin and Strauss, 2015). Some of these were: in what ways do you find it beneficial to use WhatsApp Web, is it easy or difficult for you to use WhatsApp Web, what resources do you have to use WhatsApp Web, when and why did you start using WhatsApp Web, did someone influence you to use WhatsApp Web, and do you consider that there are other factors that influence WhatsApp Web use?

Before the final data collection, two test interviews were carried out to verify that the participants understood the questions posed. After this procedure, the data collection instrument was refined and applied to the HEI students. The interviews with the sample participants were conducted during the months of February and March 2021, through telephone contact, recognized as an important method of data collection (Cohen, Manion and Morrison, 2007). In this way, the health restriction measures of physical distancing to avoid covid-19 infection were complied with.

The application of the interviews began by informing each student of the IES about the protection of their identity and the audio recording of the interviews by means of an informed consent. The interviews lasted approximately 37 minutes each and were then transcribed verbatim, which was a crucial step in analyzing the data (Cohen *et al.*, 2007).

Non-probability convenience sampling was used to obtain the study participants, which incorporated interviews until there was sufficient information and the data saturation point was reached (Cohen *et al.*, 2007), which was reached with participant number 14, since no additional data were obtained for analysis (Corbin and Strauss, 2015). Information was collected until we had enough to create a theoretical explanation of what was happening in this study phenomenon (Cohen *et al.*, 2007). Table 1 presents the participants' data, equally distributed between women and men.

Table 1. Characterization of the sample

Student	Gender	Age	Career	S/P	ID
E1	Woman	26	Pedagogy of mathematics	State	1:11:53
E2	Man	20	Journalism	Private	40:11
E3	Woman	23	Journalism	Private	25:07
E4	Man	22	Graphic Design	State	27:34
E5	Woman	24	Design	State	23:23
E6	Woman	22	Design	Private	45:53
E7	Man	20	Civil engineering	Private	41:18
E8	Man	20	Civil engineering	Private	28:33
E9	Woman	20	Veterinary Medicine	Private	37:00
E10	Woman	25	Administration	Private	47:30
E11	Man	19	Medicine	State	39:42
E12	Woman	19	Odontology	Private	28:28
E13	Man	22	Civil Engineering	State	38:09
E14	Man	21	Journalism	Private	25:27

Note: S/P: state or private university; ID: interview duration.

Using a thematic analysis (TA) proposed by Braun and Clarke (2006), the data collected in the interviews were examined and interpreted. This TA was adopted because it is a flexible method that provides copious descriptions of educational phenomena (Xu and Zammit, 2020); moreover, TA can be used in the identification, interpretation, and description of "categories" (themes) from six stages that were applied in this study. The findings of this research are indicated below.

RESULTS

Within the data collected regarding the acceptance and use of WhatsApp Web for academic purposes by HEI students in times of emergency remote teaching, it was identified that all interviewees in this study accept and use this tool to carry out their university studies (see Table 2). The data obtained were analyzed by means of UTAUT and the categories of performance expectation, effort expectation, social influence, facilitating conditions and teamwork were stratified.

Table 2. Categories of acceptance and use of WhatsApp Web for academic purposes.

Categories	N	%
Performance (utility)		
Speed	9	13
Send information	7	10
Information storage	2	3
Reach	2	3
Distraction	4	6
Technical problems	1	1
Total	25	37
Effort (ease)		
Easy	10	15
Total	10	15
Social influence		
Influence of family, friends and peers	7	10
They were not influenced	2	3
Total	9	13
Enabling conditions		
Basic tangible and intangible resources	8	12
Free app	3	4
Total	11	16
Teamwork		
Communication	7	10
teaming up	4	6
Organizing tasks	2	3
Total	13	19
Total of categories	68	100%

Source: prepared by the company, based on the interviews conducted.

Performance expectation (37%)

Within the category of performance expectation or benefit of accepting and using WhatsApp Web for academic purposes, one of the subcategories

most indicated in the use of this application is speed, as reflected in the following student quotes:

> I needed it at the beginning too, in a subject we had to send links of papers to read, where I had to read together with a classmate to make a report. Through WhatsApp Web it was faster because, in fact, we were right at the deadline when we had to hand in a paper. It was a last minute thing (Student 1, personal communication, February 2021).

> Yes, for papers and things like that, to send things, it is faster WhatsApp Web [...], since you were all the time with the computer it was easy to see it there, it was more comfortable; to download files you did it at the moment, you did not have to send it to the mail or do something else, it was more instantaneous (Student 7, personal communication, March 2021).

> I think the most positive thing about [WhatsApp Web] is the immediacy compared to other platforms; for example, for Drive you need an email and a password, sometimes it asks you to change the password because you do not remember the one you had. In WhatsApp, on the other hand, you use your phone number, and when you connect from the computer, you enter the QR code and that's it, it's not so much tied up. That would be the positive thing, the immediacy and the ready-made contacts. We are used to it because we all use our cell phones (Student 14, personal communication, March 2021).

As part of the utility given to WhatsApp Web, the storage of files is identified, which is evidenced in the following quotes:

> I don't see any disadvantages, to tell the truth. The advantage is to store information, communicate, share photos, share documents. I think it is super necessary and it also makes university life much easier (Student 3, personal communication, February 2021).

> In the sense of sending things yes [it helps], especially to save them. I have a personal chat and there I used to send me some work and save them as a backup in case they were not saved on the computer. In that sense, I did use it (Student 6, personal communication, February 2021).

Another reason indicated why WhatsApp Web is considered useful in the academic performance of students is in sending information, for example, sending and receiving files or links to the class they had to attend, as indicated below:

> Since there was no list of the links they had to send weekly for the classes in Zoom, I had to ask my delegate to please send me the links weekly. Then, just before class she sent them to me and I used WhatsApp Web, because if I opened it from my cell phone, I had to see the class right there, but I was not working with my cell phone, I was working with my notebook. To get to the notebook, I had to use WhatsApp Web, click and

the Zoom platform would open. So in the beginning it was super useful (Student 1, personal communication, February 2021).

When I started downloading files, sometimes in groups they would send things, before I found it unnecessary to open the computer if I had it on my phone. For example, now, if they send a heavy file, a PowerPoint or Word, then I download it from the computer and everything is more organized. That way I don't have to download it to the phone and then send it to me by mail, and then open it on the computer and download it. It's a lot of mess (Student 7, personal communication, March 2021).

[I use WhatsApp Web] to send files, because it was a waste of time to be sending so many files from one phone to another and it is more annoying. On the other hand, through the computer, no (Student 11, personal communication, March 2021).

In addition, the usefulness of the range is indicated. The ease of communicating with many people through WhatsApp Web is reflected in the examples narrated by the interviewees:

The WhatsApp Web issue is used because we all have it, then there was a scope to talk to all the people I wanted, everyone had that platform, both teachers and classmates. On the other hand, if I wanted to communicate through another platform, there were people who did not have it and that caused communication to be delayed (Student 13, personal communication, March 2021).

It is a platform like an instant mail, you have all the contacts on your cell phone, so you can talk to them for anything and you can even send them information texts. I feel that, in that sense, it is very useful (Student 1, personal communication, February 2021).

However, using WhatsApp Web for academic purposes also has its drawbacks, such as the distraction that its use can generate or disorganization. Participants indicate in this regard:

I just didn't need it because I knew it was distracting. I knew that by having WhatsApp Web open I could talk to anyone and I would not focus on doing my work. You tend to get distracted by having all your contacts there, as people are talking to you while you are working with someone else, you are going to be connected. So, maybe someone will say why aren't you answering them when you're online, but you're working. It distracts me, I prefer to talk just enough, send an audio and make everything clear, or do the work through video call, but not using WhatsApp Web. I feel that it is a very distracting tool (Student 1, personal communication, February 2021).

There were problems when, together with other female classmates, we did work and had to send it. The issue of organizing ourselves was a bit tedious, some [people] did not respond at the time, they responded later; that generated a bit of disorder (Student 6, personal communication, February 2021).

They also reported technical problems when the platform goes down, as indicated by one interviewee:

> 'The negative thing is that [WhatsApp] belongs to Facebook, then sometimes the platforms go down. The other day Facebook and WhatsApp went down, so if we have documents there, we can't do much (Student 14, personal communication, March 2021).

Effort expectancy (15%)

Another relevant dimension in the UTAUT is effort expectation. Within this, the most frequently mentioned subcategory was the ease of use of WhatsApp Web. For the most part, respondents indicate that they find it easy to accept and use the application from the computer, which can be seen in the following quotes:

> 'The first time I didn't know how to enter [WhatsApp Web] because I didn't need it before, but it's just scan the QR code and that's it. It's easy to use it, it's simple, the same as the phone, it's nothing complicated; you put WhatsApp Web and it appears (Student 7, personal communication, March 2021).

> I would say that [its use is] easy, it does not require more effort [...]. It is simpler, you can send audios, documents, photos, videos. Everything is at hand (Student 9, personal communication, March 2021).

> Easy [to use], because we are already used to WhatsApp on the phone, and WhatsApp Web is practically the same. One is used to that, one already knows it (Student 12, personal communication, March 2021).

> I consider it easy to use WhatsApp Web for academic purposes [...]. It is much easier to drag documents to the chat than to download them from the cell phone. Everything is more practical than from the cell phone (Student 13, personal communication, March 2021).

Social Influence (13%)

Social influence is another dimension in the UTAUT theory. Within this variable is the relationship of how others affect the acceptance and use of WhatsApp Web. Some participants indicate that the influence of family, friends and peers is determinant in the use of this communication tool, which is reflected in the following interviewees:

> A cousin used this tool [...]. She taught me how to use it, that it was much faster, that's how I got informed (Student 6, personal communication, February 2021).

> I saw that my older brother used it a lot and I didn't understand why. Then I realized that it was useful for me too (Student 7, personal communication, March 2021).

Yes, in the group of the generation we have, there we talked about using WhatsApp and mails, there I started using WhatsApp Web (Student 8, personal communication, March 2021).

However, some interviewees indicated that they were not influenced by others to use WhatsApp Web for academic purposes, that their employment was by their own motivation. This can be seen in the following quotes:

I have known that many classmates use it, but it has not influenced me to use it because from the beginning I explored it and I realized the utilities it had (Student 1, personal communication, February 2021).

I found it good, there was not someone who told me to put WhatsApp Web, I realized through an advertisement that I could use it on the computer, from there I started to use it (Student 13, personal communication, March 2021).

Facilitating conditions (16%)

Regarding the resources needed to use the WhatsApp Web application, it is perceived that they are not different from those usually used to study. This is confirmed by the students:

You must have the resources, have a computer yes or yes [...]. Obviously you must have internet connection, also with your cell phone, if your cell phone is discharged (no battery), the WhatsApp Web does not work. In the end, you always have to make sure that your computer is charged, ready to use it. I think that would be: the internet connection and that it is good, because you have to have both the cell phone and the computer connected, both with a good connection (Student 1, personal communication, February 2021).

I have the resources to use WhatsApp Web. It was easy for me to use it and access it [...]. I accessed from my personal computer, so it was no cost and didn't require too much effort; I feel that it is easy to access (Student 10, personal communication, March 2021).

Like other platforms, you need internet and performance depends on that. I do not find the access complex, you do not need many resources (internet, cell phone and computer), the same as for using other platforms (Student 14, personal communication, March 2021).

They also make it clear that the application is free:

In addition to what I had told you, maybe the fact that it is free - I don't know if for other operating systems they charge them - but I who have iPhone have not received any cost for using it. At least for me it is free and through the computer as well, I have not been charged anything. That benefits me. The people around me also use iPhone. That I could say, it's free (Student 1, personal communication, February 2021).

Economic [resources] I think you don't need, it's an application that everyone can access, it's free (Student 6, personal communication, February 2021).

Teamwork (19%)

A new dimension identified in this study for UTAUT is teamwork. Students used it to socialize with their peers, to form work teams and to communicate. In team building we can visualize the following examples:

Yes, [I use it] for academic purposes, to make groups (Student 3, personal communication, February 2021). I mainly used it for groups. All year the teachers formed teams and we could not choose the people to do the work. So the easiest thing to do was to ask for the WhatsApp group where everyone was. The teachers would send us a list of the groups and we had to start looking for who was who. There were so many of us that we didn't all know each other, so we would consult and, based on that, we would form groups [...]. That's where the communication was, that's where we connected to do our work (Student 9, personal communication, March 2021).

WhatsApp Web is a technological tool for organizing tasks for academic purposes, as follows:

[We used it] to organize ourselves as a group, to do work and save information (Student 3, personal communication, February 2021).

I was in charge of organizing things, talking for the groups. In general, it helped me to get more organized by using these platforms and in a good way, to grow in that [...]. Yes, I feel that it is very useful to use it because, as I said, it gives you more organization (Student 10, personal communication, March 2021).

Finally, there is communication to achieve teamwork, as stated in the following quotes:

Yes, especially when we worked in groups we would send each other materials: PDFs, videos, lab images, and I wanted to see them on the computer because, obviously, it is clearer [...]. I used WhatsApp Web to download files, or also to send files to my classmates, when we had to send work to each other, so that we were not passing by USB cable from the computer to the phone (Student 11, personal communication, March 2021).

Yes, [I used it] when I was in group work, when we got together to make reports. In order not to send things through Gmail, I would open the computer at the moment and send them through WhatsApp Web (Student 12, personal communication, March 2021).

Having WhatsApp on the computer makes that, in some way, in the academic subject, you have communication with your work group and you

focus on a single device to move forward with the work, as if we were talking: dividing the screen, having on one side the work and on the other to socialize with my classmates to see what we add or remove from the work [...]. Because of the same issue of communication, which was important to maintain with my classmates and with the course groups, [it was] beneficial to maintain active communication when developing a work, you even kept in touch with everyone in the course. If there were any doubts about the work or the topic to be developed, all the classmates were willing to help [...]. We shared information, we made group calls, that's what [we used it] for, to communicate (Student 13, personal communication, March 2021).

DISCUSSION

In this research, it is identified that the use of WhatsApp Web was high, just like the study by Maphosa *et al.* (2020), where the use of WhatsApp was moderately high. All interviewees accepted and used WhatsApp Web for academic purposes; however, two participants used it for specific activities (e.g., sending information), with no major use of this social network for teaching-learning.

Following the dimensions of the UTAUT theoretical framework, in the performance expectation (37%), students indicated that WhatsApp Web helped them in their learning performance, they consider it as the social network that allows them to improve their academic purposes. The subcategories that stand out are speed (13%), information storage (3%), sending information (10%) and WhatsApp Web reach (3%). This is in line with the study by Maphosa *et al.* (2020), where students agreed that WhatsApp helped them improve, motivated and engaged them in their learning, offered them the opportunity to learn during confinement and the covid-19 pandemic. Furthermore, in Barry, Murphy, and Drew's (2015) study, it was found that the use of WhatsApp improved student engagement, leading to better learning outcomes.

Additionally, in the findings of Bansal and Joshi (2014) and Plana *et al.* (2013), it is observed that students agreed that WhatsApp increased their motivation and willingness to learn. Regarding the subcategory reach (3%), it is similar to the studies of Kushwaha and Jhawar (2018), who noted that WhatsApp had a positive impact on learning, as it provided multimedia content accessible to students anytime, anywhere; as well as in Andujar (2016) and Gon and Rawekar (2017), who indicate that WhatsApp allows students to obtain resources anywhere, anytime, and independently. However, this dimension presents disadvantages such as the found subcategories of distraction (6%) and technical problems (1%) in the acceptance and use of WhatsApp Web for academic purposes.

The distraction of messages received on the social network agrees with the analysis of Maphosa *et al.* (2020), where 65% of students noted some technical disadvantage related to the flood of messages, which is similar to the findings of Gon and Rawekar (2017). Additionally, Veytia *et al.* (2020) also refer to the distractions generated by the application; even Rubio-Romero and Lamo (2015) indicate that there is an increase of distractors with this technological resource when executing some task. In tune with Veytia *et al.* (2020) and Gon and Rawekar (2017), it was observed that the use of WhatsApp on smartphones caused visual fatigue, flooding of messages and the burden of following up on them. Thus, the social network can cause unexpected effects, which can turn it into an obstacle rather than a contributor to learning.

The second dimension corresponds to the expectation of effort (15%), it refers to the acceptance of any technology that depends on its ease of use. All participants agreed that WhatsApp Web was convenient and easy to use. In addition, they find themselves in agreement that this social network does not require more additional effort via computer for academic purposes in an emergency remote teaching context, as it is the same as using it on the smartphone. These findings are in agreement with Maphosa *et al.* (2020) study of WhatsApp in a covid-19 context, where users consider it easy, simple, less effort and requiring little or no training. Ahad and Lim (2014) also confirmed that the popularity of WhatsApp was due to its low cost, ease of use, and unlimited instant messaging. Mistar and Embi (2016) noted that once a person has a smartphone with internet access, using WhatsApp is a simple operation that does not require significant effort. This was corroborated by Church and De Oliveira (2013), who mentioned that WhatsApp was simple, accessible, efficient and inexpensive compared to other tools that can support the teaching-learning process, in addition to the free of charge and convenience granted by this technological resource (Fondevila-Gascón, Marqués-Pascual, Mir-Bernal, & Polo-López, 2019; Fondevila-Gascón, Mir, & Polo, 2018).

Regarding the social influence dimension, 60% of the interviewees indicated that they used WhatsApp Web because other people influenced them to use it in the pandemic; however, some students had already used WhatsApp Web before. The subcategory of influence of family, friends and peers (10%) in the use and acceptance of WhatsApp Web coincides with what was expressed by Maphosa *et al.* (2020), who indicate that this application is widely used among students.

The facilitating conditions dimension (16%) is related to enabling conditions for the acceptance and use of this social network, as well as previous studies in the context of WhatsApp. The subcategories identified in this study were basic tangible and intangible resources (12%) as well as the free nature of the app (4%). Students agreed that WhatsApp Web is a medium for low-cost academic purposes, which is consistent with the findings of Maphosa *et al.* (2020) and Bouhnik and Deshen (2014), who

established that free of charge, simplicity and privacy were the main drivers of the acceptance of this app.

Finally, regarding the teamwork dimension (19%), students identified the subcategories of communication (10%), forming teams (6%) and organizing tasks (3%); the results of this dimension coincide with the study by Chan *et al.* (2020), who show that the use of WhatsApp fosters interpersonal communication skills among students. Likewise, Veytia *et al.* (2020) indicate that WhatsApp is an educational technological resource that serves as a support, encourages the development of creativity and autonomy in the conformation and organization of work groups. This strengthens the exchange of information, the relationship and communication among peers, in the generation of support networks among HEI students.

Furthermore, Bouhnik and Deshen (2014) conclude in their study that WhatsApp creates an atmosphere that supports interaction, peer collaboration and content sharing. Ali (2017) also indicates that this social network, from the perspective of smartphones, allows connecting with peers and learning collaboratively at any time. Likewise, Gómez and Shafirova (2016), Comas-Quinn, De los Arcos and Mardomingo (2012) and Palacios (2020) confirm that WhatsApp favors collaborative learning, as well as different forms of interaction and social participation, in addition to the fact that different roles can be established among the participants of a group (Gómez and Shafirova, 2016).

CONCLUSIONS

This study demonstrated that WhatsApp Web is useful for academic purposes and, in a pandemic context, is beneficial. The results revealed that performance expectancy (usefulness) of the platform was the most prominent category, which facilitates the acceptance of WhatsApp Web in educational activities. Students' positive perceptions suggest that it is a fast and easy to use social network, which does not require a lot of equipment beyond what is usually used by a higher education student; they even value that it is a free social network. When compared to other media, they feel it is more efficient.

In addition, the findings of this study revealed that WhatsApp Web supported learning during the covid-19 pandemic, which was identified in the new category of teamwork that was incorporated into the UTAUT model. This category indicates that this technological resource provides importance to communication among students during emergency remote teaching. It is also confirmed that using this social network from the computer facilitates the organization of tasks and the formation of work teams among students in HEIs.

The acceptance and use of WhatsApp Web for academic purposes among students in HEIs is not without disadvantages. For example, in the expectation of performance, the distraction that this application can cause is considered as a negative feature, as well as the technical problems that can be evidenced (as in any other social network).

This research has limitations such as the non-probabilistic and limited sample of fourteen participants, but it lays the groundwork for future research that could quantitatively analyze and statistically corroborate these findings, so that more conclusive and generalizable evidence can be obtained.

Finally, this work provides evidence for higher education institutions to consider WhatsApp Web as a fast, easy-to-use social network that can enhance teamwork. Thus, this application used from computers could stop being considered only an informal social network for academic purposes, which provides more importance and benefit in an educational context; in addition, it contributes to formal academic communication and in the teaching-learning process of students in HEIs.

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