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Research Article

The attitudes of Algerian students on Facebook: how are they constructed?

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Abstract

Facebook is recognized as a place of interaction between people seeking pleasure and professionals. In this regard, in order to investigate the attitude of users when exploring the blue environment, an online survey distributed to 89 students from the University of Algiers 3 in Algeria was carried out. The ultimate goal of the study is to analyze the behaviour of Algerian students on Facebook since the internet has become a crucial technology not only to strengthen social interaction but also to develop educational and business activities of universities. Therefore, three factors justify Algerian students' behavior on Facebook, namely, actions of protection and confidentiality; the daily activities carried out on Facebook, and the temporal circumstantial actions driving their attitude on Facebook. These actions revealed three fallouts: an affected academic or professional performance; complaints from relatives and friends following the abusive time spent on Facebook, and finally, the health consequences due to excessive and late connection on Facebook.

Keywords: Facebook, attitude, protection activities, daily activities, temporal activities.

Introduction

Undoubtedly, the world of Facebook is growing in terms of the number of users. At the start of the first quarter of 2020, the number soared to 2.6 billion monthly active users, an increase of 9.2% from early 2019, (JDN, 2020). However, the use of the Facebook network takes on another dimension beyond the social one.

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The informative dimension of Facebook has gained ground compared to other platforms as seen in its contribution in supporting the work of the global public health community in terms of ensuring that everyone has access to accurate information regarding the phenomenon of COVID-19. At this point, a COVID-19 data center has been developed by Facebook with the aim of providing real time information on the health situation (Facebook, 2020). In addition, Facebook has become the main hub for digital marketing. In figures, 1.47 billion people connect to Facebook every day (Facebook, 2019). This figure encourages companies and individuals to invest their resources over time and to transform their business strategies into a digital environment.

In Algeria, according to the Blog Medianet (2016), Facebook has 15 million users, or 37.8% of the population. According to estimates, 14% rely on entertainment and technology, 13.6% are projected for hobbies and various activities, and 12.2% for sports and outdoor activities. Therefore, behind these numbers, there is a collection of knowledge and attitudes towards actions taken by users. In this context, identifying attitudes can generate new needs, and therefore new business opportunities.

In this article, the author wants to explore what is hidden behind the world of Facebook especially in the purely conservative Arab world. The main objective is to analyze the attitude of Algerian students towards Facebook. This choice is due to academic and business reasons, since each university is looking for ways to market its future educational products by analyzing students' behaviours on Facebook and thus develop its future educational strategies by integrating the social dimension as a key factor of its strategy. For this reason, universities have an interest to know how students behave on Facebook on a daily basis.

This paper is divided as follows. The first part describes what is actually happening on Facebook and how it affects users' attitudes. The second part is purely practical, analyzing the attitude of the Algerian students and what are the rules that can be drawn behind each action taken by the user. In the last part, the empirical model that describes the attitude of Algerian students towards Facebook is discussed.

Attitudes towards Facebook: what happens behind?

Everyone knows Facebook as the most popular social network in the world. Facebook allows different user categories (students, professionals, bloggers, and influencers ...) to introduce themselves via shared profiles with their fans and friends. Facebook allows users to engage in various social activities (posting activities, building relationships...), educational (giving advice, leading conferences and presenting announcements and online training...), or cultural (hosting stages and shows, founding an online video library…). According to Padyab et al. (2016), the sharing process on Facebook depends on a set of factors such as trust in the site of the social network in question and especially the confidentiality of the disclosure of personal information. According to Debatin et al. (2009), some researchers have aroused the following concern: "Does what happens on Facebook stay on Facebook?"

In this context, the Organization of International Privacy Surveillance has accused Facebook of serious privacy breaches (Race to the Bottom, 2007). This memo is based on a mistrust of the process of data mining, transferring data to other companies, and collecting data from newspapers, blogs and instant messaging services.

In this context, using Facebook in blind mode is highly dangerous either for individuals or professionals. Social media are technological artefacts used by millions of users in different ways (Tartaglia, 2016). For some, like novices (teenagers), Facebook is seen as a vital network affecting their sense of themselves. This category sees Facebook as a space to

compensate the social deficit due to low self-esteem. At this point, users are looking to assert themselves and replace their real personality with a virtual one. Fullwood et al. (2016) indicate that some users spend more time on Facebook seeking to increase the fewest friends existing on their Facebook list. This is achieved by using a virtual nickname that claims to have an important social capital. Others see Facebook as a good opportunity to express and collect relevant information to work on their personalities.

Users are affected by feedback from their peers who comment on their posts. This action can generate a positive attitude only if the comments are encouraging to such practices or it can generate a negative attitude if the comments are against the activities carried out. As a result, according to Halder and Khatun (2018), users feel depressed when spending more time on social media. This is due to the fact that the user is often linked to self-improvement images of others. This can cause mental damages to one's self, increasing the lack of self-confidence, the degree of loneliness and the negative mood towards the surrounding social context.

For adult learners, the mode of use and the purposes are different compared to adolescents. Adults seek to create buzz through news boards presented by small teasers and pictures (Schäfer, 2020). This intention to exploit social networks contributes to the development of a Snack news channel with an information flow that spreads on a large scale. At this point, the effect of such action on Facebook will gradually impact the user's mind. This will create different levels of understanding which will lead to different behaviours, attitudes and reactions.

For professionals, online social networks attract the attention of specialists. This is due to its social and psychological impact. In this regard, the activity of professionals on social networks is associated with legal and ethical constraints (Nyangeni et al., 2015; Ross and Myers, 2017). Professionals must be careful in their actions on social networks, as these actions could affect the reputation of the profession and the institution (Nason et al., 2018). Professionals presented by organizations benefits from social networks because they allow them to reach customers and visitors using social media as an advertising tool (Kent and Taylor, 2016). Consequently, customers have the opportunity to choose the highest quality and most suitable product based not only on manufacturers' announcements, but also on respondents' feedback.

In this regard, there are a few examples of some initiatives from organizations such as universities that offer advertising and communication programs that include courses on the social media platform (Childers and Levenshus, 2016). Social media have changed the process of the educational system (Trust et al., 2016). Learners acquire knowledge by sharing the experiences of others and increasing their professional knowledge (Shestak et al., 2020). Moreover, a study conducted at the level of Dutch elementary schools asserts that social networks have a positive effect on students' performance (Moolenaar et al., 2012). Parents are part of the academic community, so it has become easier for them to receive information about their children's performance. Mettle (2018), in his study, indicated that professional social networks are also present in the health sector. They often include video conferences on medical topics, recordings of surgical procedures and testing tasks. Finally, it is crucial to emphasize the importance of social networks in the process of sharing information about extreme situations such as natural disasters (earthquakes, tsunamis, tornadoes, floods) (Yates and Paquette, 2011), epidemics, technological disasters, air disasters and terrorist attacks (Stieglitz et al., 2018).

The variety and cultural diversity of Facebook users serve in leading to different behaviours and attitudes. An attitude is built on the basis of a thought, a background and a reflection that determine the positive or negative responses to the

stimulus. Jordan et al. (2002) affirm that attitude is strongly linked to the Theory of Planned Behaviour (TPB). This is in order to identify the different modalities that lead to a change in behaviour. A variety of actions on Facebook can generate different attitudes. The author of this paper presents a set of more popular practical actions on Facebook that may affect the attitude of users: (Błachnio et al., 2016; Cvijikj et al., 2011; Anspach, 2017; Tran and Shcherbakov, 2016).

Post style:

The post style, defined by (1) status, i.e. text only, (2) photo, containing an uploaded photo, (3) link, representing a link to external URL, and (4) video, containing an uploaded video, can lead to different attitudes, relationships, emotions and commitments. For example, statements led by the conservative party in the UK elections focus more on negative issues such as Brexit, terrorism and national security. In return, the labor party focuses on positive issues, such as the promise of increased social spending (Gerbaudo et al., 2019).

User interaction with the post:

The interaction with the advertising content is defined by the user's interaction level through (1) the number of comments on individual posts, (2) number of likes, and (3) interaction duration. This can develop a variety of attitudes and reactions. According to Chin et al. (2015), a study conducted with Taiwanese undergraduate students indicates that students' interaction with Facebook's content via the "Like" button will induce different behaviours and levels of motivation such as:

- A hedonic motivation: Which is linked to playfulness, entertainment and pleasure.
- A utilitarian motivation: Which aims to change the user's attitude to take external expectations into account.
- A conformity motivation: Which refers to the phenomenon whereby a person, under the influence of a group, changes his/her attitude or opinion about something to follow the most popular opinion.
- An affiliate motivation: Which makes an action match friendly measures and social interactions. In this case, each user seeks how to have his actions approved while maintaining his interpersonal relationships in harmony with others.

Leadership opinion:

The notion of opinion leadership refers to an individual's ability to influence the attitude of other users. The opinion groups are the most influential groups in social systems (Nunes et al., 2018). At this point, opinion leaders have several experiences on how to disseminate positive information based on the most beneficial and innovative concepts. Conversely, negative information is more homogeneous with the most disadvantageous and less innovative concepts.

Analysis of comments:

Nothing happens by chance. Facebook's black box will also contribute to the diversion of user's attitudes towards niche markets that work in relation to the ideologies, beliefs of politicians and lobbies as in the case of natural language processing systems that analyze sentiments from textual contents used in opinion polls. In this regard, according to Tran and Shcherbakov (2016), two approaches have been used to analyze the behaviour of users on social networks. The first approach aims to analyze comments in real time. The second approach analyzes the data stored in batch mode.

The automatic intelligence processing systems provide the opportunity to process comments posted on social networks. The approach proposed by Tran and Shcherbakov (2016) is based on four important steps: I) transform comments to batches on the basis of a positive/negative/neutral classification, II) build a comparative model that detects the trend of comments and what it looks like

compared to the current situation, III) understands how this situation will be developed based on pattern prediction, and IV) implement actions to follow the trajectory and evolution of attitudes for ideological purposes.

Today, with the arrival of artificial intelligence techniques, Facebook can guide the publication chain either to protect the human life (against diseases or suicides) (Facebook, 2018), or to eliminate abusive and dangerous contents. According to the Financial Times, in a statement that appeared in 2019, the predictive learning machines would detect and stop bullying, hate speech and other political violations before they spread over the network. For this purpose, Facebook has developed a multidisciplinary team specializing in psychology, sociology, machine learning and data analysis with the aim of developing algorithms that can automatically flag unwanted content on Facebook in order to avoid every negative attitude that affects the morale and behaviour of others.

Privacy setting:

Privacy is one of the basic human needs, giving people their identity, autonomy, and individuality (Jędruszczak, 2005). The exposure of privacy is a very sensitive issue that affects the morality of social network users. In this regard, according to Ibrahim et al. (2012), damage caused due to privacy concerns includes the unintentional exposure of personal information, such as the visibility of personal profiles. Faced with its confidentiality concerns, the number of confidentiality parameters has dropped from 15 to 8 confidentiality options. Currently, Facebook allows you to configure privacy settings for basic information and for each type of data based on groups of default profiles (for example, friends, friends with their friends, and members of the restricted network or everyone).

Consequently, protective actions, in terms of access to information will have repercussions on the user's psychology. Indeed, users will be involved through their personal or professional ideas with others. In addition, users will be affected by the opinions of others due to their trust in this type of group. For this reason, Facebook explains how the protection and privacy procedure will affect the behaviour and attitude of users.

The direct consequence of the modification of confidentiality parameters will therefore modify the relations between the members, and in particular, the nature of the information and the data that will be shared. At this point, two factors are strongly affected (Fred Cavazza, 2010), the first is the social factor since the social circle will be disrupted following the appearance of new constraints of confidentiality. In this regard, the author therefore finds a set of parameters such as the phenomenon of avatarization of the members. Facebook offers the possibility to shape a character using the best facet of their profile. For example: a background avatar of a discussion group that describes the environment and the greenery. In this context, the user will be better placed to share his attitude and ecological opinions to the members of the group, introducing the illusion into the user's mind by the background avatar of the discussion group. This encourages the user to carry out his activities in a purely professional environment.

The second factor is presented by the privilege factor used in networks. The user posts photos in groups which will be seen by leaders as young, funny and dynamic. In this regard, a selection system will be deployed based on the best combination of behavioural targeting. This type of action develops in the user a sense of self. Consequently, this modality develops homogeneous attitudes and behaviours toward the gender and individual style involved in the network.

The attitude built when using social media won't come out of nowhere. Behind each action or decision hides a set of knowledge that will be strongly linked to the expectations of users and their social-

demographic context. This is in order to analyze how attitudes will be constructed and to measure the type of popular actions carried out by users.

The cultural and social particularity of the Arab world, a very conservative world, makes the investigation and analysis of attitudes an extremely difficult procedure. Indeed, the originality of this study depends on the scarcity of the pre-existing studies, in particular, on the way in which the attitude of the user is conceived in the Arab context.

Methodology

A quantitative study was carried out measuring the attitude and mode of consumption of social networks in Algeria in order to build a psychometric model that interprets the behavioural scales of users on Facebook. An online survey, distributed in March 2020 to undergraduates at the University of Algiers 3, Faculty of Economics, Business and Management Science was conducted. For the survey, a random sample was selected, composing of 89 students who carry out face-to-face training in business management for the 2019-2020 academic years. The structure of the survey is subjected to a set of sections presented in the table below:

Table 1: data structure

Sections	**Variables and items**		
Part 1: Socio-demographic	*Gender, age, occupation, location*		
Part 2: Generic information on Facebook	*Cost of use, other media of interaction, media of use, how long of use and style of activity.*		
Part 3: Attitude towards Facebook	*Type of activity per day,*	Look at your profile; chat with friends; upload photos; search for people… etc.	
	Frequency of use	Section 1: stay connected for a long time; ignore household chores and work duties; excited about Facebook; forming new relationships; people are complaining about the time you spend on Facebook; negative impact on academic and professional performance Section 2: protection of your data; block and replace any threats, person or dangerous information; anticipation on Facebook; life without Facebook would be boring, empty and joyless; annoy you if someone bothers you while using Facebook; the risk of losing sleep. Section 3: feel preoccupied when you are not connected; try to reduce time on Facebook; hidden behind the time you spend on Facebook; spent more time online instead of going out.	

Source: Google Forms (see appendix)

The data structure has been subjected to data analysis processing under SPSS version 24.0 and Amos version 23.0. For this reason, the author made a set of assumptions listed in the following points:

- H_1: There is a significant relationship between the different elements with regard to the different factors that measure “user attitude”.
- H_2: There is a significant relationship between gender, occupation and location with respect to the type of activity performed per day.
- H_3: There is a significant relationship between gender, occupation and location with respect to the different items that measure "user attitude".
- H_4: There is a significant relationship between the user support and various items that measure "user attitude".
- H_5: There is a significant relationship between the cost of using social networks and the various items that measure "user attitude".

Findings

In order to investigate these assumptions, different analysis techniques were carried out. First, a validity and reliability test was presented to test the reliability of the measures selected in this study. Then, the author chose to extract the impact factors using an exploratory factor analysis technique. In the second phase, the author opted for a confirmatory factor analysis technique based on the test of goodness-of-fit statistics in order to approve hypothesis H1. The last phase of analysis is based on the Anova One Way test in order to approve the hypotheses H2, H3, H4 and H5.

Reliability test:

The instruments for measuring concepts refer to scales developed in the form of a Likert-type questionnaire. It can be seen that 100% of the 89 observations were found. This proves that there were no missing values in the database (See Table 2).

Table 2: summary of observation processing

	N	%
Observations		100,0
Valide	89	,0
Excluded	0	100,0
Total		

Source (SPSS)

The following table shows the descriptive statistics for the 19 elements. It can be seen that all the items are measured on five-point scales with an average close to 2. This means that the 89 participants are, on average, from time to time moderately integrated on Facebook through a set of activities presented in the discussion section (See table 3).

Table 3: summary element statistics

	Average	Variance	Minimum	Maximum	Band	Maximum/Minimum	Number of elements
Average of elements	1,987	,108	1,596	2,708	1,112	1,697	19
Element variance	,991	,078	,438	1,401	,963	3,197	19
Inter-element correlations	,245	,017	-,052	,559	,611	-10,739	19

Source (SPSS)

Table 4 shows the value of the Cronbach's alpha index. It is noticeable here that the value of the Cronbach's alpha index is 0.859, which is excellent, because it exceeds the required minimum threshold of 0.70 (Nunnally, 1978).

Table 4: reliability statistics

Cronbach's alpha	Cronbach's alpha based on standardized elements	Number of elements
,859	,861	19

Source (SPSS)

Explore the impact factors:

An exploratory factor analysis technique was carried out in order to explore the factors that measure the attitudes of Algerian students towards Facebook. The latent variable was the subject of a set of measures (19 items) presented in the following table:

Table 5: descriptive statistics

Items	Average	Standard deviation
BHV1: Stay on Facebook longer than expected.	2,71	1,110
BHV2: Neglect household chores, work chores or university homework.	1,89	,818
BHV3: Prefer the excitement of Facebook to spend time with your partner or best friends.	2,18	1,173
BHV4: Form new relationships with a friend.	1,75	,662
BHV5: Other people in your life complain about your time on Facebook.	1,90	1,056
BHV6: Your schoolwork or work suffer from the time you spend on Facebook.	1,78	,938
BHV7: Check your Facebook messages.	2,60	1,165
BHV8: Your academic (or professional) performance suffer.	1,60	,794

BHV9: Get defensive or secretive on Facebook.	1,66	,865
BHV10: Block disturbing thoughts about your life, replace it with calming thoughts.	1,99	1,028
BHV11: Anticipate when you go back online.	2,03	1,005
BHV12: Life without Facebook would be boring, empty, and joyless.	2,09	1,184
BHV13: Slam, scream, or act in annoyance if someone bothers you while you're on Facebook.	1,73	,863
BHV14: Lose sleep due to a late Facebook connection.	1,94	1,026
BHV15: Feel concerned about Facebook when you are not logged.	1,82	,912
BHV16: Find yourself saying "just a few more minutes" on Facebook.	2,36	1,121
BHV17: Try to cut down on the time you spend on Facebook and fail.	2,40	1,115
BHV18: Try to hide nearby how long you've been on Facebook.	1,73	,986
BHV19: Choose to spend more time on Facebook rather than hanging out with others.	1,60	,901

Source (SPSS)

The items presented are very well correlated. This was confirmed by the estimated KMO index of 0.765, which is perhaps qualified as excellent. This confirms the good correlation between items. Then, the result of Bartlett's sphericity test is very significant (p value = 0.000) (See Table 6). Therefore, the author of this paper rejects the null hypothesis that his data come from a population whose matrix is an identity matrix. The correlations are therefore not all equal to zero. Therefore, this analysis can go forward.

Table 6: KMO index and Bartlett test

Kaiser-Meyer-Olkin index for measuring sampling quality.	,765
Bartlett's sphericity test Chi-square approx.	606,717
DF	171
Significance	,000

Source (SPSS)

In the next step, the author explores the number of factors to extract. To do this, table 7 below is analyzed. It is found that in the second column, five factors (components) have a total VP greater than 1, so, they are kept for analysis. The first factor alone explains 29.13% of the total variance among the 19 items selected for analysis. However, the five factors commonly explain 62.080% of the variance. In addition, the factors 6 to 19 do not explain enough variance. For this reason, they are not retained for the following steps (See Table 7).

Table 7: total variance explained

Component	Initial VP			Sums extracted from the load square			Sums of rotation of the load square		
	Total	% of variance	% Cumulated	Total	% of variance	% Cumulated	Total	% of variance	% Cumulated
1	5,53	29,13	29,133	5,535	29,133	29,133	2,9514	15,533	15,533
2	1,980	10,421	39,554	1,980	10,421	39,554	2,663	14,017	29,551
3	1,601	8,428	47,983	1,601	8,428	47,983	2,621	13,797	43,349
4	1,445	7,606	55,590	1,445	7,606	55,590	2,163	11,384	54,734
5	1,233	6,490	62,080	1,233	6,490	62,080	1,395	7,345	62,080
6	0,995	5,236	67,317						
7	0,860	4,527	71,844						
8	0,832	4,381	76,225						
9	0,697	3,671	79,897						
10	0,588	3,096	82,994						
11	0,554	2,917	85,911						
12	0,486	2,561	88,473						
13	0,453	2,386	90,860						
14	0,380	2,002	92,863						
15	0,358	1,884	94,747						
16	0,330	1,738	96,486						
17	0,244	1,285	97,771						
18	0,222	1,172	98,944						
19	0,200	1,055	100						

Source (SPSS)

Next, the author carried out a VARIMAX rotation in order to get a simpler factorial representation. This type of rotation preserves independence between factors. It is noted that the variables are much better distributed over the different factors. In addition, the difference between the correlations is greater after the rotation has been carried out. Thus, at least two variables were found to be part of a factor, and therefore, they can be kept to build scales (See Table 8).

Table 8: rotation of the component matrix

1		2		3		4		5	
Items	**Value**	**Items**	**Value**	**Items**	**Value**	**Items**	**Value**	**Items**	**Value**
BHV8	,579	BHV3	,696	BHV14	,700	BHV2	,734	BHV1	-,495
BHV9	,674	BHV4	,574	BHV15	,749	BHV6	,723	BHV18	,811
BHV10	,787	BHV5	,548	BHV16	,660				
BHV11	,737	BHV7	,728	BHV17	,509				
BHV12	,612			BHV19	,645				
BHV13	,584								

Extraction method: Principal component analysis. *Source (SPSS)*

Confirmatory factor analysis:

A confirmatory factor analysis via Amos was carried out in order to validate the number of factors that contribute to the evaluation of the latent variable "user's attitude towards Facebook". The technique confirms that the five factors are adequate to better assess users' attitudes (See Figure 1).

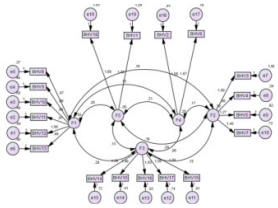
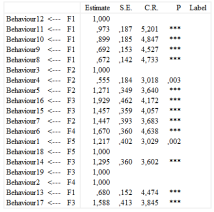


Fig 1. Model for estimating user behaviour towards Facebook

Source (Amos)

It is noted that all the factors strongly contribute to the process of analyzing the attitude of users towards Facebook with a P value of less than 1%. The estimates are presented in the first column (See table 9). In this case, at a time when the factor 1 increases by 1%, the behaviour 11 increases by 97.3%. The anticipation of the users when they reconnect to Facebook has a greater contribution to the composition of the first factor. Otherwise, the users have an attitude to anticipate on Facebook directly after their first reconnection to Facebook.

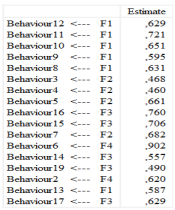
Table 9: Regression weight estimates



			Estimate	S.E.	C.R.	P	Label
Behaviour12	<---	F1	1,000				
Behaviour11	<---	F1	,973	,187	5,201	***	
Behaviour10	<---	F1	,899	,185	4,847	***	
Behaviour9	<---	F1	,692	,153	4,527	***	
Behaviour8	<---	F1	,672	,142	4,733	***	
Behaviour3	<---	F2	1,000				
Behaviour4	<---	F2	,555	,184	3,018	,003	
Behaviour5	<---	F2	1,271	,349	3,640	***	
Behaviour16	<---	F3	1,929	,462	4,172	***	
Behaviour15	<---	F3	1,457	,359	4,057	***	
Behaviour7	<---	F2	1,447	,393	3,683	***	
Behaviour6	<---	F4	1,670	,360	4,638	***	
Behaviour1	<---	F5	1,217	,402	3,029	,002	
Behaviour18	<---	F5	1,000				
Behaviour14	<---	F3	1,295	,360	3,602	***	
Behaviour19	<---	F3	1,000				
Behaviour2	<---	F4	1,000				
Behaviour13	<---	F1	,680	,152	4,474	***	
Behaviour17	<---	F3	1,588	,413	3,845	***	

Source (Amos)

Table 10: Standardized regression

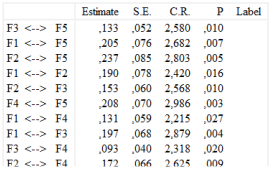


			Estimate
Behaviour12	<---	F1	,629
Behaviour11	<---	F1	,721
Behaviour10	<---	F1	,651
Behaviour9	<---	F1	,595
Behaviour8	<---	F1	,631
Behaviour3	<---	F2	,468
Behaviour4	<---	F2	,460
Behaviour5	<---	F2	,661
Behaviour16	<---	F3	,760
Behaviour15	<---	F3	,706
Behaviour7	<---	F2	,682
Behaviour6	<---	F4	,902
Behaviour14	<---	F3	,557
Behaviour19	<---	F3	,490
Behaviour2	<---	F4	,620
Behaviour13	<---	F1	,587
Behaviour17	<---	F3	,629

Source (Amos)

It is found that the expected change on each factor in the study has a significant impact on the other estimated factors. It is noted that the non-standardized covariance estimated between factors 1 and 2 is measured in 0.190 with a significant correlation estimated at 47%. In this regard, the variability of each element of factor 1 will affect the other factors of the same measure (See Tables 11 and 12).

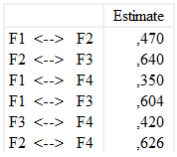
Table 11: Non-standardized covariances



			Estimate	S.E.	C.R.	P	Label
F3	<-->	F5	,133	,052	2,580	,010	
F1	<-->	F5	,205	,076	2,682	,007	
F2	<-->	F5	,237	,085	2,803	,005	
F1	<-->	F2	,190	,078	2,420	,016	
F2	<-->	F3	,153	,060	2,568	,010	
F4	<-->	F5	,208	,070	2,986	,003	
F1	<-->	F4	,131	,059	2,215	,027	
F1	<-->	F3	,197	,068	2,879	,004	
F3	<-->	F4	,093	,040	2,318	,020	
F2	<-->	F4	,172	,066	2,625	,009	

Source (Amos)

Table 12 : Correlations



			Estimate
F1	<-->	F2	,470
F2	<-->	F3	,640
F1	<-->	F4	,350
F1	<-->	F3	,604
F3	<-->	F4	,420
F2	<-->	F4	,626

Source (Amos)

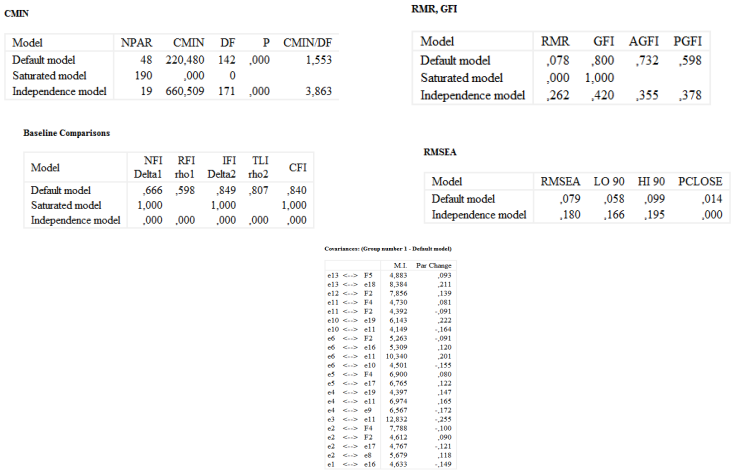
Assessment of the estimated quality of the model:

In the standards, CMIN/DF test represents an acceptable fit between the hypothetical model (Default Model) and the sample data. In other words, if the value of CMIN/DF is close to 0.00, then the model is considered good. In addition, the values of the Comparative Fit Index (CFI), Tucker-Lewis coefficient (TLI), Incremental Fit Index (IFI), Relative Fit Index (RFI) and the Goodness of fit (GFI) are close to 1, so the model has a very good fit. In the same time, the Root Mean Square Error of Approximation (RMSEA) has a value of about 0.08 or less. This means that the approximation error is reasonable. In other words, the model has fewer errors in estimating the user's attitude when using the blue environment.

In this context, it is noted that the results are close to the references measurements presented above. This is with the impossibility to recover the standard errors which are in the modification indices pane due to the fact that the standard errors are coming from a different nature, i.e. resulting from different factors. Ultimately, this confirms that the estimated final model is good with

an estimated percentage of fit (GIF) of 80%. This proves that the hypothesis H_1 is correct (See the results set in Table 13).

Table 13: Measurement standards



CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	48	220,480	142	,000	1,553
Saturated model	190	,000	0		
Independence model	19	660,509	171	,000	3,863

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,078	,800	,732	,598
Saturated model	,000	1,000		
Independence model	,262	,420	,355	,378

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,666	,598	,849	,807	,840
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,079	,058	,099	,014
Independence model	,180	,166	,195	,000

Covariances: (Group number 1 - Default model)

			M.I.	Par Change
e13	<-->	F5	4,883	,093
e13	<-->	e18	8,384	,211
e12	<-->	F2	7,856	,139
e11	<-->	F4	4,730	,081
e11	<-->	F2	4,392	-,091
e10	<-->	e19	6,143	,222
e10	<-->	e11	4,149	-,164
e6	<-->	F2	5,263	-,091
e6	<-->	e16	5,309	,120
e6	<-->	e11	10,340	,201
e6	<-->	e10	4,501	-,155
e5	<-->	F4	6,900	,080
e5	<-->	e17	6,765	,122
e4	<-->	e19	4,397	,147
e4	<-->	e11	6,974	,165
e4	<-->	e9	6,567	-,172
e3	<-->	e11	12,832	-,255
e2	<-->	F4	7,788	-,100
e2	<-->	F2	4,612	,090
e2	<-->	e17	4,767	-,121
e2	<-->	e8	5,679	,118
e1	<-->	e16	4,633	-,149

Source (Amos)

Analysis of variance:

This technique provides the opportunity to test the variability of grouping variables such as gender, occupation and location towards the type of activity and attitude of users towards Facebook. This allows measuring whether the type of activity and the user's attitude towards Facebook are different with respect to the demographic factors presented below.

Type of activity and gender:

It is important to verify the premise of variances equality with the Levene test. The author tests the hypothesis H_0 in terms of whether the type of activity is similar with regard to gender (Male, Female).

Table 14: Homogeneity of variance test

	Levene statistics	DF1	DF2	Sig.
Type of activity per day: Look at your profile	7,242	1	87	,009
Type of activity per day: To chat with friends	1,171	1	87	,282
Type of activity per day: Upload photos	2,392	1	87	,126
Type of activity per day: Search people	,006	1	87	,937
Type of activity per day: Read comments posted on your wall	,922	1	87	,340
Type of activity per day: Read comments on your photos	,881	1	87	,350
Type of activity per day: To play games	,306	1	87	,581
Type of activity per day: Find information about friends or others	,887	1	87	,349
Type of activity per day : Get updates on friends' activities	1,022	1	87	,315

Source (SPSS)

For the first step, as the test is not significant (p> 0.05) on all the variables except activity 1: "look at your profile". Therefore, the author can reject the null hypothesis of variances equality except for Activity 1 where the variance is heterogeneous (See Table 14).

This is perfect in allowing the author to move on to the interpretation of ANOVA. From Table 15, the last column indicates that the probability of finding this value of F when the null hypothesis is true is greater than 0.05, or more than 5%. In this context, as the test is not significant (p> 0.05) on all the variables, then the gender factor is not a determining factor to describe the type of activity per day.

Table 15: ANOVA

		Sum of squares	DF	Medium square	F	Sig.
Type of activity per day: Look at your profile	Intergroups	,432	1	,432	,886	,349
	Intragroups	42,444	87	,488		
	Total	42,876	88			
Type of activity per day: To chat with friends	Intergroups	,089	1	,089	,075	,785
	Intragroups	103,731	87	1,192		
	Total	103,820	88			
Type of activity per day: Upload photos	Intergroups	,042	1	,042	,045	,833
	Intragroups	80,453	87	,925		
	Total	80,494	88			
Type of activity per day: Search people	Intergroups	,685	1	,685	2,002	,161
	Intragroups	29,765	87	,342		
	Total	30,449	88			
Type of activity per day: Read comments posted on your wall	Intergroups	,502	1	,502	,421	,518
	Intragroups	103,857	87	1,194		
	Total	104,360	88			
Type of activity per day: Read comments on your photos	Intergroups	,141	1	,141	,115	,735
	Intragroups	106,960	87	1,229		
	Total	107,101	88			
Type of activity per day: To play games	Intergroups	,417	1	,417	,505	,479

	Intragroups	71,763	87	,825		
	Total	72,180	88			
Type of activity per day: Find information about friends or others	Intergroups	,109	1	,109	,211	,648
	Intragroups	45,015	87	,517		
	Total	45,124	88			
Type of activity per day: Get updates on friends' activities	Intergroups	,562	1	,562	1,007	,318
	Intragroups	48,561	87	,558		
	Total	49,124	88			

Source (SPSS)

Type of activity and occupation:

The premises of equality of variance are present for some items. In this context, the test is not significant (p> 0.05) on all the variables, with the exception of three items, namely look at your profile, read comments posted on your wall and to play games on Facebook. The author cannot therefore reject the null hypothesis of equality variances except for activity 1; activity 5 and activity 7 where the variance is heterogeneous (See Table 16).

Table 16: Homogeneity of variance test

	Levene statistics	**DF1**	**DF2**	**Sig.**
Type of activity per day: Look at your profile	4,727	1	87	,032
Type of activity per day: To chat with friends	1,669	1	87	,200
Type of activity per day: Upload photos	3,305	1	87	,072
Type of activity per day: Search people	,343	1	87	,560
Type of activity per day: Read comments posted on your wall	4,568	1	87	,035
Type of activity per day: Read comments on your photos	3,422	1	87	,068
Type of activity per day: To play games	4,323	1	87	,041
Type of activity per day: Find information about friends or others	1,263	1	87	,264
Type of activity per day: Get updates on friends' activities	1,662	1	87	,201

Source (SPSS)

From Table 17, the last column indicates that the probability of finding this value of F when the null hypothesis is true is greater than 0.05, or more than 5%. In this case, the author has enough evidence to accept the null hypothesis and say that it is likely that the type of activity on Facebook is homogeneous according to occupation. However, there is an exception in two activities carried out on Facebook, namely "to chat with friends" and "upload photos" which vary in relation to the occupation, 68.5% presented by students and 31.5% presented by the category of civil servants.

Table 17: ANOVA

		Sum of squares	DF	Medium square	F	Sig.
Type of activity per day: Look at your profile	Intergroups	,774	1	,774	1,599	,209
	Intragroups	42,102	87	,484		
	Total	42,876	88			
Type of activity per day: To chat with friends	Intergroups	7,830	1	7,830	7,097	,009
	Intragroups	95,990	87	1,103		
	Total	103,820	88			
Type of activity per day: Upload photos	Intergroups	4,284	1	4,284	4,891	,030
	Intragroups	76,210	87	,876		
	Total	80,494	88			
Type of activity per day: Search people	Intergroups	,408	1	,408	1,181	,280
	Intragroups	30,042	87	,345		
	Total	30,449	88			
Type of activity per day: Read comments posted on your wall	Intergroups	,285	1	,285	,238	,627
	Intragroups	104,075	87	1,196		
	Total	104,360	88			
Type of activity per day: Read comments on your photos	Intergroups	,441	1	,441	,360	,550
	Intragroups	106,660	87	1,226		
	Total	107,101	88			
Type of activity per day: To play games	Intergroups	2,400	1	2,400	2,992	,087
	Intragroups	69,780	87	,802		
	Total	72,180	88			
Type of activity per day: Find information about friends or others	Intergroups	,480	1	,480	,935	,336
	Intragroups	44,644	87	,513		
	Total	45,124	88			
Type of activity per day: Get updates on friends' activities	Intergroups	1,320	1	1,320	2,403	,125
	Intragr	47,803	87	,549		

	oups					
	Total	49,124	88			

Type of activity and location:

The premises of variance equality are present for all items with the exception of one item, namely "to play a game on Facebook". In this context, the author cannot therefore reject the null hypothesis of the variances equality except for activity 7 where the variance is heterogeneous (See table 18).

Table 18: Homogeneity of variance test

	Levene statistics	DF1	DF2	Sig.
Type of activity per day: Look at your profile	,297	1	87	,587
Type of activity per day: To chat with friends	2,914	1	87	,091
Type of activity per day: Upload photos	,284	1	87	,596
Type of activity per day: Search people	,054	1	87	,817
Type of activity per day: Read comments posted on your wall	2,896	1	87	,092
Type of activity per day: Read comments on your photos	,026	1	87	,873
Type of activity per day: To play games	4,997	1	87	,028
Type of activity per day: Find information about friends or others	,033	1	87	,856
Type of activity per day: Get updates on friends' activities	,086	1	87	,770

Source (SPSS)

From Table 19, the last column indicates that the probability of finding this value of F when the null hypothesis is true is greater than 0.05, or more than 5%. In this case, the author has enough evidence to accept the null hypothesis and say that it is likely that the type of activity on Facebook is homogeneous according to the location distributed in two distinct places: 84.3% located in downtown and 15.7% located far from the city center.

Table 19: ANOVA

		Sum of squares	DF	Medium square	F	Sig.
Type of activity per day: Look at your profile	Intergroups	,173	1	,173	,352	,555
	Intragroups	42,704	87	,491		
	Total	42,876	88			
Type of activity per day: To chat with friends	Intergroups	1,816	1	1,816	1,549	,217
	Intragroups	102,004	87	1,172		

	Total	103,820	88			
Type of activity per day: Upload photos	Intergroups	,091	1	,091	,098	,755
	Intragroups	80,404	87	,924		
	Total	80,494	88			
Type of activity per day: Search people	Intergroups	,306	1	,306	,882	,350
	Intragroups	30,144	87	,346		
	Total	30,449	88			
Type of activity per day: Read comments posted on your wall	Intergroups	,116	1	,116	,097	,757
	Intragroups	104,244	87	1,198		
	Total	104,360	88			
Type of activity per day: Read comments on your photos	Intergroups	,000	1	,000	,000	,991
	Intragroups	107,101	87	1,231		
	Total	107,101	88			
Type of activity per day: To play games	Intergroups	1,636	1	1,636	2,018	,159
	Intragroups	70,544	87	,811		
	Total	72,180	88			
Type of activity per day: Find information about friends or others	Intergroups	,195	1	,195	,378	,540
	Intragroups	44,929	87	,516		
	Total	45,124	88			
Type of activity per day: Get updates on friends' activities	Intergroups	,537	1	,537	,961	,330
	Intragroups	48,587	87	,558		
	Total	49,124	88			

Source (SPSS)

Attitude towards Facebook broken down by gender, occupation and location:

The premises of variance equality are present for some items with the exception of the following items: BHV10 is broken down according to gender, and the items BHV3, BHV6 and BHV7 are broken down in relation to the user's occupation. Finally, two items, BHV8 and BHV11, are broken down according to location. In this context, as the test is not significant (p> 0.05) on all the variables, with the exception of the items presented above, the author cannot therefore reject the null hypothesis of the variances equality except for BHV10, BHV3, BHV6, BHV7, BHV8 and BHV11 where the variance is heterogeneous (See table 20).

Table 20: Homogeneity of variance test

	Gender				Occupation				Location			
	Levene statistics	DF 1	DF2	Sig.	Levene statistics	DF 1	DF2	Sig.	Levene statistics	DF1	DF2	Sig.
BHV 1	,952	1	87	,332	1,905	1	87	,171	,604	1	87	,439
BHV 2	,399	1	87	,529	,011	1	87	,916	,097	1	87	,756
BHV 3	,097	1	87	,756	9,624	1	87	,003	1,954	1	87	,166
BHV 4	,031	1	87	,861	,004	1	87	,951	,139	1	87	,711
BHV 5	,134	1	87	,715	3,399	1	87	,069	,525	1	87	,471
BHV 6	3,735	1	87	,057	5,467	1	87	,022	,093	1	87	,761
BHV 7	,283	1	87	,596	6,359	1	87	,014	1,194	1	87	,278
BHV 8	,165	1	87	,685	,236	1	87	,628	6,296	1	87	,014
BHV 9	,140	1	87	,710	,199	1	87	,657	,135	1	87	,714
BHV 10	4,711	1	87	,033	,605	1	87	,439	,528	1	87	,470
BHV 11	,806	1	87	,372	,284	1	87	,595	4,726	1	87	,032
BHV 12	,048	1	87	,828	,449	1	87	,505	,461	1	87	,499
BHV 13	,423	1	87	,517	,962	1	87	,329	,099	1	87	,753
BHV 14	1,103	1	87	,297	2,610	1	87	,110	,360	1	87	,550
BHV 15	,010	1	87	,920	,698	1	87	,406	,141	1	87	,709
BHV 16	3,003	1	87	,087	4,860	1	87	,030	,001	1	87	,975
BHV 17	,066	1	87	,799	1,944	1	87	,167	2,465	1	87	,120
BHV 18	1,002	1	87	,320	2,532	1	87	,115	,246	1	87	,621
BHV 19	,015	1	87	,903	4,647	1	87	,034	,358	1	87	,551

Source (SPSS)

According to Table 21, the first part presents statistics that analyze the relationship between gender and the different ways of using social networks. Overall, the author accepts the hypothesis H_0 that there is no relationship between gender and the user's attitude towards Facebook, with the exception of the two items: BHV4: "Form new relationships with a friend" and BHV15: "Feel concerned about Facebook when you are not logged", which have a different average around a threshold of 5%. So, the probability of finding this value of F, when the null hypothesis is true, is less than 0.05, or less than 5%.

The second part of the analysis process consists of testing the relationship between the occupation and the different ways of using social networks. The different behaviours of users on Facebook which vary by occupation are: BHV2: "Neglect household chores, work chores or university homework", BHV3: "Prefer the excitement of Facebook to spend time with your partner or best friends", BHV4: "Form new relationships with a friend", BHV5: "Other people in your life complain about your time on Facebook", BHV6: "Your school work or work suffer from the time you spend on Facebook" and BHV14: "Lose sleep due to a late Facebook connection".

The third part of the analysis process consists of testing the relationship between the location and the different ways of using social networks. It is found that in column (sig), the probability of finding this value of F, when the null hypothesis is true, is greater than 0.05, or more than 5%. In this case, the author has enough evidence to accept the null hypothesis and say that it is likely that the behaviour of using social media is consistent from one location to another.

Table 21: ANOVA

		Gender					Occupation					Location				
		Sum of squares	df	Medium square	F	Sig	Sum of squares	df	Medium square	F	Sig	Sum of squares	df	Medium square	F	Sig
BHV 1	Intergroups	,103	1	,103	,082	,775	,760	1	,760	,615	,435	,070	1	,070	,056	,813
	Intragroups	108,302	87	1,245			107,644	87	1,237			108,334	87	1,245		
BHV 2	Intergroups	,763	1	,763	1,143	,288	4,085	1	4,085	6,486	,013	,499	1	,499	,744	,391
	Intragroups	58,113	87	,668			54,792	87	,630			58,377	87	,671		
BHV 3	Intergroups	,285	1	,285	,205	,652	8,852	1	8,852	6,859	,010	1,048	1	1,048	,760	,386
	Intragroups	120,839	87	1,389			112,272	87	1,290			120,075	87	1,380		
BHV 4	Intergroups	2,910	1	2,910	7,102	,009	1,925	1	1,925	4,572	,035	,018	1	,018	,041	,910
	Intragroups	35,651	87	,410			36,636	87	,421			38,544	87	,443		
BHV 5	Intergroups	,126	1	,126	,111	,739	5,388	1	5,388	5,056	,027	,015	1	,015	,013	,841
	Intragroups	97,964	87	1,126			92,702	87	1,066			98,075	87	1,127		
BHV 6	Intergroups	,445	1	,445	,503	,480	5,975	1	5,975	7,267	,008	,690	1	,690	,782	,379
	Intragroups	77,060	87	,886			71,531	87	,822			76,815	87	,883		
BHV 7	Intergroups	,096	1	,096	,070	,791	3,921	1	3,921	2,953	,089	,037	1	,037	,027	,870
	Intragroups	119,342	87	1,372			115,518	87	1,328			119,401	87	1,372		
BHV 8	Intergroups	,015	1	,015	,023	,880	,092	1	,092	,144	,705	,234	1	,234	,369	,545
	Intragroups	55,423	87	,637			55,347	87	,636			55,204	87	,635		
BHV 9	Intergroups	,213	1	,213	,282	,597	,016	1	,016	,022	,883	,139	1	,139	,184	,669
	Intragroups	65,675	87	,755			65,871	87	,757			65,749	87	,756		
BHV 10	Intergroups	,017	1	,017	,015	,901	,376	1	,376	,353	,554	,845	1	,845	,798	,374
	Intragroups	92,972	87	1,069			92,613	87	1,065			92,144	87	1,059		
BHV 11	Intergroups	,669	1	,669	,659	,419	,452	1	,452	,444	,507	1,055	1	1,055	1,04	,310
	Intragroups	88,230	87	1,014			88,447	87	1,017			87,844	87	1,010		
BHV	Intergr	,145	1	,145	,1	,7	,330	1	,330	,2	,6	,006	1	006	,0	,9

12	oups	123,136	87	1,415	03	50	122,951	87	1,413	34	30	123,275	87	1,417	04	50
	Intragroups															
BHV13	Intergroups	,34265,186	187	,342,749	,456	,501	,01665,512	187	,016,753	,021	,885	,00465,524	187	,004,753	,006	,940
	Intragroups															
BHV14	Intergroups	3,797 88,922	187	3,7971,022	3,715	,057	9,394 83,325	187	9,394,958	9,808	,002	,00492,715	187	,0041,066	,004	,952
	Intragroups															
BHV15	Intergroups	5,115 68,008	187	5,115,782	6,544	,012	1,855 71,269	187	1,855,819	2,264	,136	,02073,104	187	,020,840	,024	,878
	Intragroups															
BHV16	Intergroups	,436110,059	187	,4361,265	,344	,559	3,391 107,103	187	3,3911,231	2,755	,101	,091110,404	187	,0911,269	,071	,790
	Intragroups															
BHV17	Intergroups	,306109,132	187	,3061,254	,244	,623	,576108,862	187	,5761,251	,461	,499	1,594107,844	187	1,5941,240	1,28	,260
	Intragroups															
BHV18	Intergroups	,07885,450	187	,078,982	,079	,779	2,892 82,636	187	2,892,950	3,044	,085	,12785,401	187	,127,982	,130	,720
	Intragroups															
BHV19	Intergroups	2,008 69,430	187	2,008,798	2,517	,116	1,678 69,761	187	1,678,802	2,092	,152	,15271,287	187	,152,819	,185	,668
	Intragroups															

Source (SPSS)

Effect of user support on attitude towards Facebook:

From Table 22, the author retains heterogeneity around the variance for the following items: BHV1, BH7, BH16, BH17 and BH18, where the significance level is less than 5%. The rest of the items show homogeneity around the variance. This leads the author to accept the null hypothesis.

Table 22: Homogeneity of variance test

	Levene statistics	df1	df2	Sig.
BHV1	3,513	3	85	,019
BHV2	,501	3	85	,683
BHV3	1,168	3	85	,327
BHV4	1,877	3	85	,140
BHV5	1,131	3	85	,341
BHV6	,542	3	85	,655
BHV7	4,055	3	85	,010
BHV8	1,571	3	85	,202
BHV9	2,433	3	85	,070
BHV10	2,447	3	85	,069
BHV11	1,537	3	85	,211
BHV12	,790	3	85	,503
BHV13	,846	3	85	,473
BHV14	2,397	3	85	,074
BHV15	,545	3	85	,653
BHV16	3,776	3	85	,013
BHV17	4,766	3	85	,004
BHV18	3,012	3	85	,035
BHV19	,469	3	85	,705

Source: (SPSS)

Table 23 shows that the behaviour of the user is the same regardless of the activity medium used when logging in. More than 85.5% of the Algerian students use Smartphone as a means of interaction with the blue environment, while 10.1% are strongly linked to the machine (Laptop). Finally, only 4.4% use the desktop and the I-pad.

Table 23: ANOVA

		Sum of squares	df	Medium square	F	Sig
BHV1	Intergroups	2,112	3	,704	,563	,641
	Intragroups	106,292	85	1,250		
	Total	108,404	88			
BHV2	Intergroups	2,216	3	,739	1,108	,351
	Intragroups	56,661	85	,667		
	Total	58,876	88			
BHV3	Intergroups	6,926	3	2,309	1,718	,169
	Intragroups	114,197	85	1,343		
	Total	121,124	88			
BHV4	Intergroups	,256	3	,085	,190	,903
	Intragroups	38,306	85	,451		
	Total	38,562	88			
BHV5	Intergroups	1,986	3	,662	,586	,626
	Intragroups	96,104	85	1,131		
	Total	98,090	88			
BHV6	Intergroups	,769	3	,256	,284	,837
	Intragroups	76,737	85	,903		
	Total	77,506	88			
BHV7	Intergroups	4,128	3	1,376	1,014	,390
	Intragroups	115,310	85	1,357		
	Total	119,438	88			
BHV8	Intergroups	,780	3	,260	,404	,750
	Intragroups	54,658	85	,643		
	Total	55,438	88			
BHV9	Intergroups	2,468	3	,823	1,103	,353
	Intragroups	63,420	85	,746		
	Total	65,888	88			
BHV10	Intergrou	5,462	3	1,821	1,7	,159

	ps				68	
	Intragroups	87,526	85	1,030		
	Total	92,989	88			
BHV11	Intergroups	2,873	3	,958	,946	,422
	Intragroups	86,026	85	1,012		
	Total	88,899	88			
BHV12	Intergroups	,847	3	,282	,196	,899
	Intragroups	122,434	85	1,440		
	Total	123,281	88			
BHV13	Intergroups	1,600	3	,533	,709	,549
	Intragroups	63,928	85	,752		
	Total	65,528	88			
BHV14	Intergroups	2,497	3	,832	,784	,506
	Intragroups	90,222	85	1,061		
	Total	92,719	88			
BHV15	Intergroups	,458	3	,153	,179	,911
	Intragroups	72,665	85	,855		
	Total	73,124	88			
BHV16	Intergroups	1,968	3	,656	,514	,674
	Intragroups	108,526	85	1,277		
	Total	110,494	88			
BHV17	Intergroups	7,523	3	2,508	2,091	,107
	Intragroups	101,915	85	1,199		
	Total	109,438	88			
BHV18	Intergroups	2,674	3	,891	,915	,438
	Intragroups	82,854	85	,975		
	Total	85,528	88			
BHV19	Intergroups	,412	3	,137	,164	,920
	Intragroups	71,026	85	,836		
	Total	71,438	88			

Source: (SPSS)

Effect of user cost on attitude towards Facebook:

From Table 24, the author retains homogeneity around the variance on all the items of the study. The test of Levene made the exception around the variance on some elements of the study. The variance is strongly different between the following items: BHV4, BHV8, BHV9, BHV10, BHV16 and BHV19.

Table 24: Homogeneity of variance test

	Levene statistics	ddf 1	ddf2	Sig.
BHV 1	2,110	2	86	,127
BHV 2	,131	2	86	,877
BHV 3	,120	2	86	,887
BHV 4	9,115	2	86	,000
BHV 5	,903	2	86	,409
BHV 6	1,108	2	86	,335
BHV 7	1,840	2	86	,165
BHV 8	4,100	2	86	,020
BHV 9	6,996	2	86	,002
BHV 10	4,531	2	86	,013
BHV 11	,045	2	86	,956
BHV 12	1,619	2	86	,204
BHV 13	,630	2	86	,535
BHV 14	,271	2	86	,763
BHV 15	1,018	2	86	,365
BHV 16	6,516	2	86	,002
BHV 17	1,118	2	86	,332
BHV 18	,271	2	86	,763
BHV 19	5,674	2	86	,005

Source: (SPSS)

Table 25 shows that the financial factor has no effect on the behaviour and attitude of the user when using Facebook. In this context, the user's behaviour on Facebook will be the same regardless of the cost of use estimated by the user. In the case under study, 70.8% of Facebook users see that the cost of use is not expensive at all, 24.7% see that the cost of using Facebook is moderately expensive, and 4.5% see that the cost of use is very expensive compared to their standard of living. In conclusion, the author accepts the null hypothesis which describes the equality of variances.

Table 25: ANOVA

		Sum of squares	df	Medium square	F	Sig.
BHV1	Intergroupes	,945	2	,473	,378	,686
	Intragroupes	107,459	86	1,250		
	Total	108,404	88			
BHV2	Intergroupes	,700	2	,350	,517	,598
	Intragroupes	58,177	86	,676		
	Total	58,876	88			
BHV3	Intergroupes	2,046	2	1,023	,739	,481
	Intragroupes	119,078	86	1,385		
	Total	121,124	88			
BHV4	Intergroupes	1,091	2	,546	1,252	,291
	Intragroupes	37,471	86	,436		
	Total	38,562	88			
BHV5	Intergroupes	2,131	2	1,065	,955	,389
	Intragroupes	95,959	86	1,116		
	Total	98,090	88			
BHV6	Intergroupes	2,281	2	1,141	1,304	,277
	Intragroupes	75,224	86	,875		
	Total	77,506	88			
BHV7	Intergroupes	1,234	2	,617	,449	,640
	Intragroupes	118,205	86	1,374		
	Total	119,438	88			
BHV8	Intergroupes	1,805	2	,902	1,447	,241
	Intragro	53,633	86	,624		

	upes					
	Total	55,438	88			
BHV9	Intergroupes	,667	2	,333	,440	,646
	Intragroupes	65,221	86	,758		
	Total	65,888	88			
BHV10	Intergroupes	2,022	2	1,011	,956	,389
	Intragroupes	90,967	86	1,058		
	Total	92,989	88			
BHV11	Intergroupes	1,097	2	,548	,537	,586
	Intragroupes	87,802	86	1,021		
	Total	88,899	88			
BHV12	Intergroupes	,148	2	,074	,052	,950
	Intragroupes	123,133	86	1,432		
	Total	123,281	88			
BHV13	Intergroupes	1,330	2	,665	,891	,414
	Intragroupes	64,198	86	,746		
	Total	65,528	88			
BHV14	Intergroupes	1,167	2	,583	,548	,580
	Intragroupes	91,552	86	1,065		
	Total	92,719	88			
BHV15	Intergroupes	,783	2	,392	,466	,629
	Intragroupes	72,340	86	,841		
	Total	73,124	88			
BHV16	Intergroupes	1,906	2	,953	,755	,473
	Intragroupes	108,588	86	1,263		
	Total	110,494	88			
BHV17	Intergroupes	1,517	2	,758	,604	,549
	Intragroupes	107,921	86	1,255		
	Total	109,438	88			
BHV18	Intergroupes	,937	2	,469	,476	,623
	Intragro	84,591	86	,984		

	upes					
	Total	85,528	88			
BHV19	Intergroupes	2,101	2	1,051	1,303	,277
	Intragroupes	69,337	86	,806		
	Total	71,438	88			

Source: (SPSS)

Discussion

The behaviour of using the blue environment varies from one context to another. The purely conservative Arab context has just started to stretch and open up to the outside world. Today, all commercial, educational, cultural, industrial and even governmental activities include the social dimension in their current and future development plan. Algeria as a nation, having more than half of its population of young people under 30 years of age, is more exposed to a virtual lifestyle on social networks. This factor pushed the author to find out how Algerians behave in the face of this new trend and to know how they interact with everyone via networks.

The behaviour of using the blue environment by Algerian students is subjected to five main factors structured as follows:

- The first factor is calculated based on the expected network protection measures followed by the initial fallout.
- The second is measured by the mode of using social networks.
- The third factor presents the second level of fallout expected following the pilot actions on the network.
- The fourth factor presents the final degree of fallout.
- The fifth factor presents the time spent by the student using social networks.

The first factor presents the protection measures used on Facebook. It is found that 33.71% of the population split into two gender categories, 14.16% for men and 19.10% for women, are sometimes defensive or secret on Facebook (See Figures 2 and 3). In this context, different formulas can be implemented to properly identify the defensive or secret behavior of facebookers. According to Deptula et al. (2020), secret Facebook groups can be used as an effective platform for educational purposes. According to Stutzman and Kramer-Duffield (2010), having a Facebook profile reserved for friends can reduce interpersonal violations that can affect a person's identity.

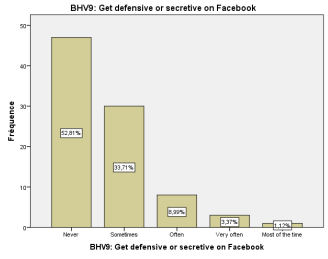


Fig. 2. Distribution of number of defensive or secret actions on Facebook, Source (SPSS)

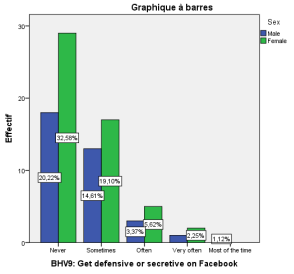


Fig. 3. Distribution of number of defensive or secret actions on Facebook according to gender,

In the context of other protective procedures planned, it is found that 39.33% divided into two gender categories, 23.60% for men and 15.73% for women, sometimes perform actions to block disturbing thoughts about their life and replace them with calming thoughts (See Figures 4 and 5). According to Gashi and Knautz (2016), hiding or unsubscribing, as well as defusing, is an online strategy used to avoid contact with others and move towards the dissolution of relationships.

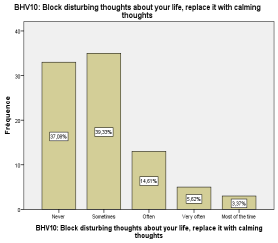


Fig. 4. Distribution of number of actions blocking disturbing thoughts about one's life and replacing them with calming thoughts, Source (SPSS)

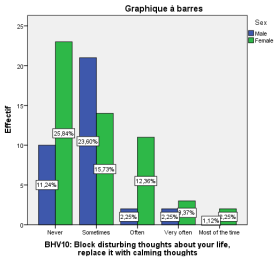


Fig. 5. Distribution of number of actions blocking disturbing thoughts about one's life and replacing them with calming thoughts according to

For more protection against external threats, it is found that 42.70% divided into two gender categories, 17.98% for men and 24.72% of women, have an anticipatory character when they try to reconnect on Facebook (See Figures 6 and 7). According to Rainie et al. (2013), a set of latent factors can drive the action to induce the user to leave Facebook. It is worth mentioning that 61% of Facebook users have taken a voluntary break from using the site at some point. This action is justified in percentage via a set of items including the following:

- 21% of respondents were too busy/ did not have time to connect to Facebook.
- 10% of respondents just weren't interested/just didn't like it.
- 10% of respondents consider social media a waste of time/irrelevant content.
- 9% of respondents consider social networks as a space that brings together drama activities.
- 8% of respondents are concerned about going on vacation/travel/deployment.
- 1% of respondents took a break for religious reasons.

The anticipatory task on Facebook can generate a set of relevant information that can be used in professional and academic tasks. A study was conducted by Nadkarni and Hofmann (2012) on undergraduate students at the University of Illinois where an anticipatory task was asked from students to browse a teacher's FB website and anticipate what it would be like to be in a classroom with this teacher. At this stage, the actions most frequently performed by the teacher, such as: uploading photos to social networks; respond to messages from relatives or give their opinion on certain subjects. Indeed, these actions can induce a feeling of belonging in the mind of the student and even have a deeper social information on the teacher, which helps the learners to determine the means and the style of communication with their teachers and therefore to strengthen the emotional relationship between them.

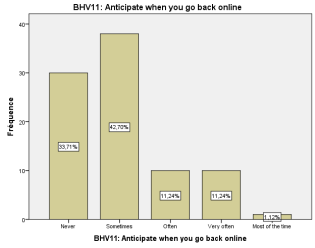


Fig. 6. Distribution of the number of anticipatory actions when they reconnect on Facebook, Source (SPSS)

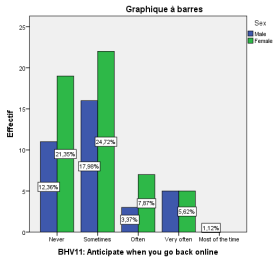


Fig. 7. Distribution of the number of anticipatory actions when they reconnect on Facebook according to gender, Source (SPSS)

The fallouts of using social networks are varied and multiple. Three aspects are presented. The first concerns the academic and professional dimension. It is found that women are more disciplined in carrying out their academic and professional tasks than men, with a percentage of 32.58% and 22.47%, respectively (See figures 8 and 9). On the other hand, household chores are sometimes more affected due to excessive consumption of Facebook network with a percentage of 28.09% among women.

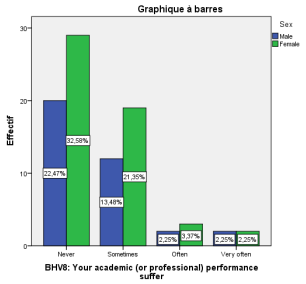


Fig 8. Distribution of the difficulty of the academic (or professional) performance according to gender, Source (SPSS)

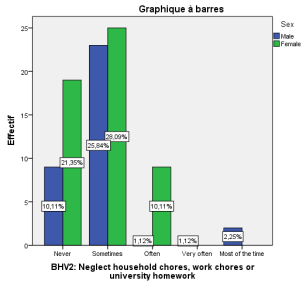


Fig. 9. Distribution of the difficulty of performing household (professional) and academic tasks according to gender, Source

Internationally, the effects are close to what is happening at the national level. In their study, Whelan et al. (2020) assert that excessive use of social media may require high cognitive and energetic processing. This was scientifically proven by the study conducted by Kauser and Awan (2019) on a sample of 300 postgraduate students located in the Vehari district, Pakistan. The results show that the academic performance is severely affected for the category of students who use social media as a teaching tool during the training path.

The second factor is presented via a set of actions driven by the user. It is noted that 57.3% of Algerian students are sometimes confronted with developing new relationships by forming new friends. Among them, 21.35% sometimes use the new relationships established for exchange purposes with their friends, versus 34.83% who are not at all interested in developing a new relationship. Finally, 41.57% of users are sometimes asked to consult their posts, among them 19.10% sometimes consult

their messages for discussion purposes between friends (See Figures 10, 11, 12 and 13).

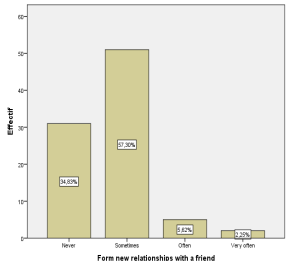


Fig. 10. Distribution of new relationships on Facebook, Source (SPSS)

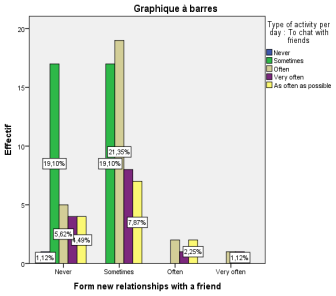


Fig. 11. Distribution of new relationships on Facebook based on discussions with friends, Source

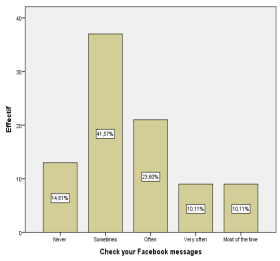


Fig. 12. Distribution of messaging consultation on Facebook, Source (SPSS)

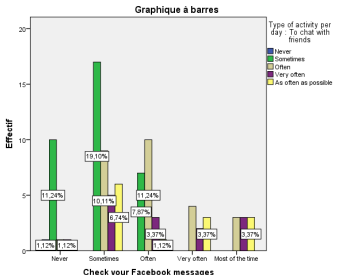


Fig. 13. Distribution of messaging consultation on Facebook based on discussions with friends, Source (SPSS)

The mode of action on Facebook differs in terms of interaction and level of excitement. The author retains that 33.71% are never excited when using Facebook, versus the same volume of the population who are sometimes excited to spend time on Facebook with their partners and friends (See Figure 14).

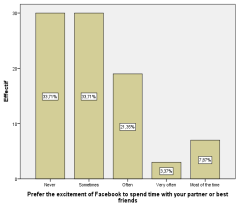


Fig. 14. Distribution of the frequency of excitement on Facebook, Source (SPSS)

In previous studies, things were not too far from what happens in the Algerian context. According to the study carried out by Brandtzæg and Heim (2009), among 5.233 users who answered the questionnaire distributed on Norwegian territory context, 31% of users are found to be motivated to build new relationships; versus 21% of the population following their friends who are part of a community or an association. Some mention social media as a place to get some kind of support when they are

depressed and have suicidal thoughts. Others identify themselves as verbal ping-pong spaces that enrich discussions by incorporating fruitful ideas. At most, 10% of them are oriented to open channels of access to information, including fashion, music, politics, literature and cultural events. Finally, over 3% of users view photos and videos.

In addition, some were especially excited to check their profile to see if anyone has commented on their published content. In this context, 1.5% of users are reporting the ability to surf other users' profiles as the main reason to use Facebook. At this level, people look for other profiles in order to update the information about different people. In this case, the behaviour of using the social network develops a sense of curiosity in people. Finally, 1%, mostly girls, indicated that the family contact was the most important reason to visit the social media.

Scientists are questioning about the behaviour of users on the social network. Is it connected to socio-professional contexts? In the academic context, the class of students does not behave away from other categories. According to Mese and Aydin (2019), in a study carried out with undergraduates from various faculties of a Turkish public university, the authors identified three main factors that contribute to the development of user behaviour when using Facebook.

The first factor is presented in the communication section where there was a significant difference between different platforms. According to the test Post-Hoc of Scheffe, participants differ in terms of communication in relation to the variety of social platforms. In conclusion, both Instagram and WhatsApp environments received more usage in terms of communication compared to Facebook. The second factor is presented by sharing content on Facebook. According to the test Post-Hoc of Scheffe, the Instagram environment is more preferred than WhatsApp and Facebook. The third factor is presented by entertainment. It is found that the Instagram environment is used more for entertainment than WhatsApp and Facebook.

The second important aspect that can affect a relationship between the users and the blue environment is presented by the complaint of relatives and friends due to the time spent on Facebook. It is noted that 44.94% of Algerian students have never received any criticism from others about the abusive time spent on Facebook, versus 32.58% who are sometimes confronted with similar situations (See figure 15). This demonstration was confirmed by Jha et al. (2016) via the study conducted with dental medicine students. The study revealed that 86.7% of the users said they were annoyed when someone disturbed them while using Facebook. Among respondents, 13.5% said that their friends and family frequently complained about spending time on Facebook, while 24.3% of participants agreed that it was difficult not to connect to Facebook for one whole day. Meanwhile, in Algeria, among a sample of 89 students, it is found that 30.13% of them sometimes experience a situation of a boring, empty and joyless feeling when they are far from being active on the blue environment (See figure 16).

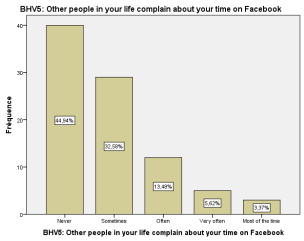


Fig. 15. Distribution of the percentage of complaints retained following abuse Facebook consumption, Source (SPSS)

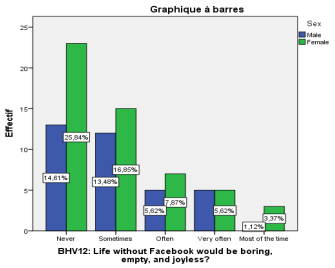


Fig. 16. Distribution of percentage of feelings: Boredom, emptiness, and joylessness according to gender, Source

As for the average time spent by Algerian students on social media, this study indicates that 31.45% use Facebook when they have more free time or nothing else to do. 45% never think about spending time on Facebook when they are not connected. At the same time, 49.4% are sometimes confronted with saying "I add a few more minutes on Facebook". In compliance, the majority of students, estimated at 42.7%, sometimes seek to reduce the time they spend on Facebook.

It is estimated that 60.7% of Algerian students never think of spending more time on Facebook than spending time with others. This rule takes on a different disposition with adolescents. In the study conducted by ÜNAL (2018) among Facebook users living in Kütahya, Turkey, with a sample made up of primary schools, high schools, vocational schools and educational centers in Kütahya, it is shown that 67.9% of participants connect to Facebook in the presence of their family, while 32.1% prefer otherwise.

It is found that 25.84% of Algerian students are never connected to the network during the study session or the period of work. In addition, 68.54% of students will never be concerned about social media in their free time (See figures 17 and 18).

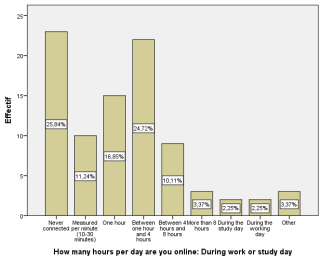


Fig. 17. Distribution of time consumed during the work and study session, Source

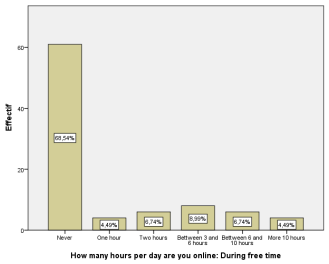


Fig. 18. Distribution of time consumed during free time, Source (SPSS)

Regarding the gender aspect, 22.47% of women are more disciplined than men in terms of not being online during the study session or the work period. At most, 44.94% of women prefer to spend their free time away from social networks, versus 23.60% of men who prefer otherwise (See Figures 19 and 20).

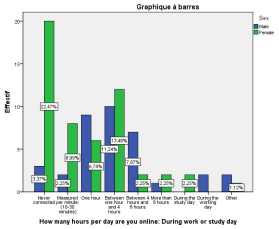


Fig. 19. Distribution of time consumed during the work and study session according to gender, Source (SPSS)

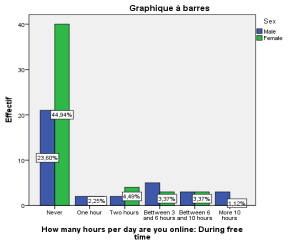


Fig. 20. Distribution of time consumed during free time according to gender, Source (SPSS)

When it comes to the frequency of hours spent online things are a bit close. Huang's study (2017) asserts that 28% of the time spent online is consumed on social networks. Now, the users spend an average of 2 hours and 24 minutes per day working in a multi-network on an average of eight interfaces (Facebook, Instagram, WhatsApp, etc.) followed by messaging apps (Smart insights, 2020).

A study conducted by MACİT and MACİT (2018) in Turkey indicates that the average time spent on social networks is estimated at 2 hours 48 minutes. In this context, different means are used for interaction, 50.7% dedicated to social media and 15.3% to emails. In contrast, 24.72% of Algerian students spend their time on Facebook for a period between one and four hours (See figure 18). In this context, different means are used for varied interactions according to gender such as: Viber with an estimated usage percentage at 71.91%, distributed between 23.60% used by men versus 48.31% by women; WhatsApp Messenger with an estimated usage percentage at 18.0%; Twitter with an estimated usage percentage at 5.6%; and Skype with an estimated usage percentage at 4.5% (See Figure 21).

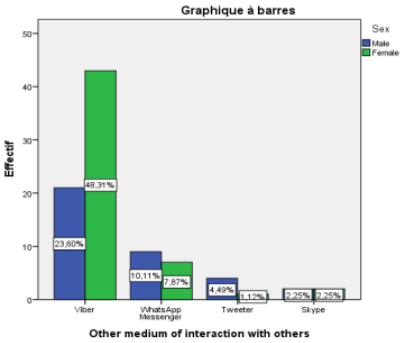


Fig. 21. Other means of interacting with others according to gender, Source (SPSS)

The third fallout is manifested in the user's state of health, which can be affected by excessive use of the Facebook network. As a result, 37.1% of respondents said that sometimes their sleep is disturbed during the night. In contrast, 40.4% were never affected when using the blue environment (See figure 22).

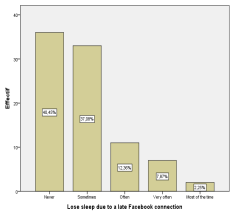


Fig. 22. Distribution of percentage of sleep loss due to late Facebook login, Source (SPSS)

This demonstration is approved by several studies conducted to analyze the impact of social networks on the quality of sleep. The study conducted by Long Xu et al. (2015) emphasizes a cross-sectional diagnosis that was carried out on undergraduate students in Chongqing, China. The result indicates that more than half of the undergraduates who use social media have poor quality of sleep. Moreover, according to the study conducted in the US by Levenson et al. (2016) on a sample of 1788 individuals including young adults aged between 19 to 32 years, the volume and frequency of social media were evaluated based on the self-reported minutes per day spent in the blue environment. The test was done in the city of Pittsburgh and provided a strong association between the utilization of social media and sleep disorders. This was endorsed in a study carried out by Coyne et al. (2020) who found a link between times spent using social media and mental health problems, such as depression and anxiety.

Conclusion

The Arab context, and particularly the Algerian context, overlaps other contexts in the world, especially in the generic use of social networks. The use of social networks is distinct with respect to demographic factors such as location, occupation, family status and education level ... etc.

This study examines how Algerian students behave in the face of the blue environment. During this study, the researcher faced difficulty in collecting the necessary number of respondents due to the Covid-19 pandemic where direct contact with students has become a bit complicated because of interruptions in the face-to-face study in the period from March to September, 2020.

The generic behaviour of Algerian students on the network is presented through three dimensions. The first dimension is presented by "the protective actions carried out by the user". This action generates, in the mind of the user, an attitude of reserve and prudence about any activity on Facebook (publications, advertisements, story and online broadcast). At this point, the users seek to develop a relationship of loyalty with their virtual environment.

The second dimension is presented by "the mode of using the social networks". In this regard, each user develops attitudes which give signs of presence on the network. At this level, the user feels his presence and values his contributions in this virtual world.

The third dimension is presented by "the time reserved by the student to use social networks". This dimension develops the temporal attitudes of the user who manages the circumstantial activities on Facebook. For example: publishing a story on Facebook joints the user to the blue environment to login in time before the expiration of the publication.

This study offers academics and managers of higher education institutions (teachers, managers, deans, academic advisors and digital advisors, etc...) the opportunity to develop informational content on Facebook that will reflect the most frequent set of behaviour followed and the attitude developed by users. In subsequent studies, the author will develop informational

content on Facebook in collaboration with the staff of the University of Algiers 3 in Algeria relying on all behavioural information generated by Algerian students on Facebook.

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Appendix: Survey

Section A: A few words about you
Gender: Male; Female. What is your age? What is your main occupation? Student; Civil servant; Unemployed; In the business. Would you say using Facebook is expensive, given your monthly budget? Not at all expensive; A little expensive; Very expensive. Your location: Downtown; Far from the city center. Do you use any other medium of interaction with others more than Facebook? Twitter; Skype; Viber; WhatsApp Messenger; Others.
Section B: Can you describe your actual use of Facebook?
B1. How long have you been using Facebook? How many months? How many years?
B2. Most of the time, what do you use Facebook on? What is your usage medium? Smartphone; I-pad or another brand; Laptop; Desktop at home; Desktop elsewhere.
B3. When you are online (whatever the device), how would you rate your connection to Facebook? Your moment of connection: As soon as possible; When I open the device; As soon as I finish other tasks; If I have nothing else to do.
B4. When you use the Internet in an Internet cafe, what is the main reason you rent a computer? ◯ I need to get information from the browser outside Facebook. ◯ I want to chat using Skype or Messenger or another instant messaging system outside Facebook. ◯ I want to use Facebook. ◯ I want to listen to music outside Facebook. ◯ I want to play games outside Facebook. ◯ Others

B5. How often do you perform the following function on Facebook per day?

- Look at your profile:
Never; Sometimes; Often; Very often; As often as possible

- Chat with friends:
Never; Sometimes; Often; Very often; As often as possible

- Upload photos:
Never; Sometimes; Often; Very often; As often as possible

- Search people:
Never; Sometimes; Often; Very often; As often as possible

- Read comments posted on your wall:
Never; Sometimes; Often; Very often; As often as possible

- Read comments on your photos:
Never; Sometimes; Often; Very often; As often as possible

- To play games:
Never; Sometimes; Often; Very often; As often as possible

- Find information about friends or other people:
Never; Sometimes; Often; Very often; As often as possible

- Get updates on friends' activities:
Never; Sometimes; Often; Very often; As often as possible

Section C: Your attitude and behavior towards Facebook

C1. For each of the following statements, please indicate your level of agreement.

- How often do you find that you are staying on Facebook longer than expected?
Never; Sometimes; Often; Very often; Most of the time

- How often do you neglect household chores, work chores or college homework to spend more time on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you prefer the excitement of Facebook to spending time with your partner or best friends?
Never; Sometimes; Often; Very often; Most of the time

- How often do you form new relationships with a friend found on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do other people in your life complain about your time spent on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often does your schoolwork or job suffer from your time spent on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you check your Facebook messages before doing anything else you need to do?
Never; Sometimes; Often; Very often; Most of the time

C2. For each of the following statements, please indicate your level of agreement.

- How often does your academic (or professional) performance suffer from your use of Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you get defensive or secretive when someone asks you what you're doing on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you block disturbing thoughts about your life with calming thoughts on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you anticipate when to get back online?
Never; Sometimes; Often; Very often; Most of the time

- How often do you think life without Facebook would be boring, empty, and joyless?
Never; Sometimes; Often; Very often; Most of the time

- How often do you slam, scream, or act in annoyance if someone bothers you while you're on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you lose your sleep due to a late connection to Facebook ?
Never; Sometimes; Often; Very often; Most of the time

C3. For each of the following statements, please indicate your level of agreement.

- How often do you feel concerned about Facebook when you are not logged in or wondering how to log in?
Never; Sometimes; Often; Very often; Most of the time

- How often do you find yourself saying "just a few more minutes" on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you try cutting down on your time spent on Facebook and fail?
Never; Sometimes; Often; Very often; Most of the time

- How often do you try to hide nearby how long you've been on Facebook?
Never; Sometimes; Often; Very often; Most of the time

- How often do you choose to spend more time on Facebook rather than hanging out with others?

C4) How many hours do you spend online (logged in) on Facebook per day?

- How many hours during work or study day?

- How many hours during free time?

After answering this questionnaire, would you say that your opinion on Facebook:

◯ Exactly the same;

◯ The same but a few questions made me think about my behaviour

How did you find out about this questionnaire?

◯ In class

◯ A colleague

◯ Through Facebook