Using the Consumption Values Theory to Analyze the Relationship between the Motives for Facebook Use and Its Perceived Usefulness for University Students

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The usage of Facebook among university students is more and more widespread. Students are using Facebook anywhere and anytime, sometimes too much. Several researchers questioned the usefulness and the motives for its use. This paper aims to analyze the relationship between the motives for Facebook use and its perceived usefulness from the perspective of consumption values theory. The motives for Facebook use have been conceptualized as a formatively measured construct that impacts two drivers of the intention to use: the perceived usefulness and the perceived ease of use. This approach has the advantage of using a small set of indicators corresponding to the main categories of motives. The model has been tested on a sample of 182 university students from a technical faculty. The results show that the perceived usefulness is relatively low, a little bit over the neutral value. As regards the motives for using Facebook, the estimation results revealed four motives: keeping in touch with known people, finding information and resources, socialization, and entertainment.

Keywords*: Motives for Facebook use, perceived usefulness, formative measurement, MIMIC models*
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1 Introduction

According to statista.com, Facebook is the largest social network having over 2.6 billons active users per month. The usage of Facebook by university students is more and more widespread. Romanian students are using Facebook anywhere and anytime, sometimes too much, which may lead to negative effects on their university work (Balog et al., 2013; Gorghiu et al., 2016). Although the educational potential of Facebook is widely recognized, there are few cases of its integration in the educational process (Manea et al., 2015; Dhir et al., 2017). As such, many researchers questioned the usefulness of Facebook for university students. A related question is why do they use Facebook so much.

These research questions triggered various approaches in social media research. Traditionally, the perceived usefulness has been mainly investigated in the framework of TAM (Technology Acceptance Model) as an important driver of the behavioral intention to use or to continue using Facebook (Davis et al., 1992).

The motives for Facebook use have been investigated by using various theoretical background, such as social action theory (Cheung et al., 2011), the uses and gratifications theory (Park et al., 2009; Aldawani, 2014; Ifinedo et al., 2016; Dhir et al, 2017), value-based theory (Yang et al., 2014), or TAM (Turel et al., 2010; Chang et al., 2014). In most of the cases, the motives have been conceptualized as a multidimensional construct.

The objective of this work is to analyze the relationship between the motives for Facebook use and its perceived usefulness. The analysis takes the perspective of consumption values theory (Sheth et al., 1991) which states that the consumer choice (to buy or not to buy, in this case, to use or not to use Facebook) is a function of independent consumption values that "make differential choice contributions in any given choice situation" (Sheth et al., 1991).

According to the authors, the theory may be used to predict, describe, and explain the consumer's behavior and preferences. This theory has been also used in the work of Turel et al. (2010) for the acceptance of hedonic artifacts

and by Aldawani (2014) for the conceptualization of motives for using Facebook.
As previously mentioned, most approaches grouped the motives for Facebook use in categories that were further conceptualized as dimensions of a multidimensional construct. Since the motives are quite diverse, the resulted model requires a relatively large number of constructs and indicators. In this study, a formative measurement approach has been taken that has the advantage of using a small set of indicators corresponding to the main categories of motives.
The formatively measured construct has effects on two variables: the perceived usefulness and the perceived ease of use. The formative model has been tested on a sample of 182 Romanian university students from a technical faculty.
The rest of this paper is organized as follows. In section 2, related work is discussed with a focus on the motives for using Facebook. The method and results of the empirical study are presented in sections 3 and 4. The paper ends with a conclusion in section 5.

2 Theoretical background

2.1 Consumption values theory

The consumption values theory tries to answer the question "Why we buy what we buy" (Sheth et al., 1991) to describe, understand, and predict the consumer's behavior. The authors are assuming that the choice is a function of several independent consumption values which are making "differential choice contributions in any given context".
Sheth et al. (1991) defined five independent consumption values: functional value, social value, emotional value, epistemic value, and conditional value.
Functional value has been defined as a perceived utility related to the capabilities of a product, such as functionality, ease of use (ergonomics), robustness, safety, and efficiency (price, use, and maintenance costs). For task-based (pragmatic) systems, it is the main driver of the intention to buy or use a given product.
Social value has been defined as a perceived utility related to identification with or association of a specific social group.
Emotional value has been defined as a perceived utility related to the affective aspects of the experience with a given product, such as pleasure, enjoyment, or fun.
Epistemic value has been defined as a perceived utility related to the capabilities of a product to arouse novelty, curiosity, or new knowledge.
Conditional value has been defined as a perceived utility related to the outcomes of a specific situation or circumstance. As examples, Seth et al. (1991) give seasonal, occasional, and emergency or unanticipated situation values.
It is worth to note that Sheth et al. (1991) defined all five values in terms of perceived utility. This definition placed the consumption values as *antecedents* of the perceived usefulness in a nomological network related to the behavioral intention to buy or to use a given product.
A review of research in the area of perceived value (Sanchez-Fernandez & Iniesta-Bonillo, 2007) highlighted the perceptual, preferential, and cognitive-affective nature of the perceived value concept. They also noticed that the perceived value is subject to change given the situational nature of value and the potential changes in the evaluative judgments.

2.1 Motives for Facebook use

There is a plethora of approaches to the study of perceived usefulness and the motives for Facebook use and, correspondingly, a large diversity of theoretical perspectives.
Ellison et al. (2007) found a positive relationship between Facebook use and social capital. According to their study, one of the most important reasons for using Facebook is keeping in touch with old friends and high-school connections, especially when moving from one (offline) community to another.
In the study of Park et al. (2009), the uses and gratifications theory (Ruggiero, 2000) has been used to investigate the reasons for participating in Facebook groups. The authors identified four reasons for joining Facebook

groups: socialization, entertainment, self-status seeking, and information. These reasons are varying in hometown, gender, and year in school.

Another study taking the perspective of uses and gratifications theory has been carried on by Raacke & Bond-Raacke (2008). They found that the main gratifications were to keep in touch with known people, posting pictures, reading posts, make new friends, and locate old friends.

Yang & Brown (2013) analyzed the motives for Facebook use on a sample of 193 undergraduate students. They measured two social-related motives for Facebook use: developing new relationships and maintaining existing ones. Their results showed that college students were more interested to use Facebook for maintaining existing relationships.

Aldawani (2014) analyzed the motives for Facebook use from the perspective of consumption value theory applied to the understanding of hedonic technologies. His study distinguished between four categories (facets) of motives: social, functional, emotional, and epistemic. The multidimensional approach resulted in eight factors underlying a 34-item evaluation instrument: sharing content, relaxing, connecting, learning, organizing, monitoring, branding, and expressing oneself.

Cheung et al. (2014) analyzed the motives for the use of social networks from the perspective of social action theory and uses and gratifications theory. Their conceptualization of motives considered three social influence factors (subjective norm, group norms, and social identity), social presence, and five factors from the uses and gratifications theory (purposive value, self-discovery, social enhancement, entertainment value, and maintaining interpersonal connectivity). They found that social presence and social-related factors have the most significant impact on the intention to use.

A similar perspective has been taken in the study of Ifinedo et al. (2016) that used as antecedents of the behavioral intention to use social networking sites three variables related to the social influence process (compliance, identification, and internalization) and five variables related to the uses and gratification theory (purposive value, self-discovery value, entertainment value, maintaining interpersonal connectivity, and social enhancement). Their results highlighted the entertainment value and maintaining interpersonal interconnectivity as the main drivers of the intention to use.

Gwena et al. (2018) analyzed the relationship between the motives for Facebook use and the usage of Facebook by international students. They found that students were using Facebook mainly for discussion, connecting, share media, meeting new people, and information.

Two previous studies analyzed the motives for Facebook use by Romanian university students. The former (Manea et al., 2015) found that the main reasons were to communicate with friends, keep in touch with former high-school friends, and finding what is new in the university. The latter (Iordache & Pribeanu, 2016) took a multidimensional approach featuring three dimensions: extending social relationships, information, and collaboration, and maintaining social relationships explored the motives for Facebook use from an educational perspective. The results show that the main reason is maintaining social relationships. More recently, Cristescu and Balog (2018) took a latent profile analysis to better understand the motives for using Facebook. Their study identified three profiles which differ with respect to the category of motives. Another finding was the association between the profile and the time spent on Facebook.

3. Method

3.1 Research model and measures

In this research, six categories of motives have been considered: meeting new people, keeping in contact with known people, finding information and resources, socialization, collaboration, and entertainment. The construct conceptualizing the motives for using Facebook (FBU) has been conceptualized as a formatively measured construct, having six indicators. The variables used in this study are presented in Table 1.

The first indicator taps on one of the basic Facebook capabilities: getting in touch with new

people via "friend request". Getting in touch with new people is important since it helps to enlarge the social network thus increasing the social capital. For university students this helps the integration into the students' community Elisson et al., 2007, Yang et al., 2013). It is also important since it brings new opportunities as regards potential information and resources as well to connect with other people or groups (Elisson et al., 2007; Park et al., 2009). Therefore, this motif for Facebook use is related mainly to the social value, and, to some extent, to the epistemic value.

The second indicator is related to the maintenance of the existing social relations (Elisson et al., 2007; Park et al., 2009; Yang & Brown, 2013; Cheung et al., 2014; Iordache & Pribeanu, 2016). University students are interested to maintain relationships with former friends, especially when moving from the home town to the university town. They are also interested to keep in touch with former school mates. This indicator taps on to the social value of using Facebook.

The third indicator is related to the interest of university students to find out what is new in their university and what is new worldwide and to get various resources they need (Park et al., 2009; Manea et al., 2015; Iordache & Pribeanu, 2016; Dhir et al., 2017). Therefore, this indicator is measuring the functional and epistemic value of Facebook use.

The fourth indicator is related to the need for socialization which seems to be the main reason for Facebook use (Elisson et al., 2007; Raacke & Bond-Raacke, 2008; Park et al., 2009; Iordache et al., 2016). As such it has a social value.

Table 1. Variables

Item	Statement
FBU1	I use Facebook to get in touch with new people
FBU2	I use Facebook to keep in touch with people I know
FBU3	I use Facebook to find information and resources
FBU4	I use Facebook for socialization purposes
FBU5	I use Facebook for collaboration purposes
FBU6	I use Facebook for entertainment purposes
PEU	Facebook is easy to use
PU	Facebook is useful for me

Facebook enables the creation of groups based on a shared concern which enables collaboration between people for various purposes such as learning, sharing of resources, and organizing events (Park et al., 2009, Iordache et al., 2016). This indicator taps on the functional value of Facebook.

The last indicator is related to the possibilities to access entertainment content (posts from other Facebook users, movies, news, video clips) and gaming (Cheung et al., 2001, Reinecke et al., 2014). Entertainment satisfies the need for enjoyment and has an emotional value.

Summing up, three indicators measuring the motives for Facebook use are related to the social value, two indicators to the functional value, and one indicator to the emotional value. Two indicators are also related to the epistemic value of Facebook. Overall, from the perspective of consumer values theory, the indicators provide good coverage of the domain of content.

A formative model taken in isolation is underidentified and needs two effect variables to be estimated (Diamantopoulos, 2011; Bollen, 2011). The motives for using Facebook have an impact on two variables: the perceived ease of use (PEU) and the perceived usefulness (PU).

The choice of effect variables has several reasons. First of all, the consumption values are defined in terms of the perceived usefulness of various categories of capabilities of a product. Second, the perceived ease-of-use is the perceived cost in terms of effort to use. Last, the perceived usefulness and the perceived ease of use are the main drivers of the intention to use. The research model is presented in Figure 1.

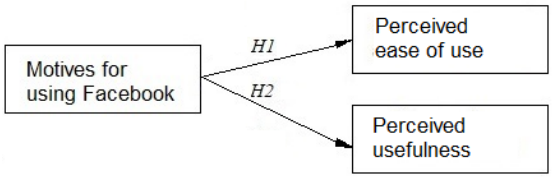

Figure 1. Research model

The following two hypotheses are tested in this study:

[H1] The motives for using Facebook have a positive influence on the perceived ease of use (FBU → PEU).

[H2] The motives for using Facebook have a positive influence on the perceived usefulness (FBU → PU).

The research model is operationalized as a MIMIC model, which is the simplest type of formative model having multiple causes and multiple effects (Jöreskog & Goldberger, 1975).

The study has been extended with regression analysis, to separately assess the effect of motives for Facebook use on each effect variable.

2.2 Model validation

The following criteria have been used, based on the recommendations from the literature (Bollen, 2011; Diamantopoulos, 2011):

- coverage of the domain of content,
- correct sign of indicators
- significance of γ-coefficients (relating the formative construct to its indicators),
- the significant influence of the formative construct on the outcome variables (λ-coefficients)
- an acceptable fit of the model with the data.

The following goodness-of-fit (GOF) measures have been used (Hu & Bentler, 1998; Schermelleh-Engel et al., 2003; Hair et al., 2006): chi-square (χ^2), normed chi-square (χ^2/df), comparative fit index (CFI), goodness-of-fit index (GFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA).

4 Empirical study

4.1 Sample

The questionnaire has been administrated to university students from the University of Building Engineering in Bucharest. The data has been collected in May 2019. The students have been asked to answer general questions such as demographics, enrollment, and Facebook usage, then to evaluate items on a 7-points Likert scale. After data screening, 12 questionnaires out of 194 have been eliminated for incomplete data.

The final data sample has 182 observations (127 male and 55 female). The mean age of students was 20.36 years (SD=2.00).

4.2 Formative model estimation results

The formative model has been estimated with Lisrel 9.3 for Windows (Mels, 2006), using a Simplis file as input and maximum likelihood estimation method. The results are presented in Figure 2.

As it could be noticed, one indicator has a negative γ-coefficient (FBU5) and another indicator has a nonsignificant γ-coefficient (FBU1). The formative indicators having the largest γ-coefficients are FBU3 (γ = 0.41, p=0.000) and FBU2 (γ = 0.40, p=0.001). The other two indicators, FBU4 (γ = 0.31) and FBU6 (γ = 0.29) are significant at p<0.01 level.

The correlations between indicators are not too high, bellow the recommended threshold value (Diamantopoulos, 2011).

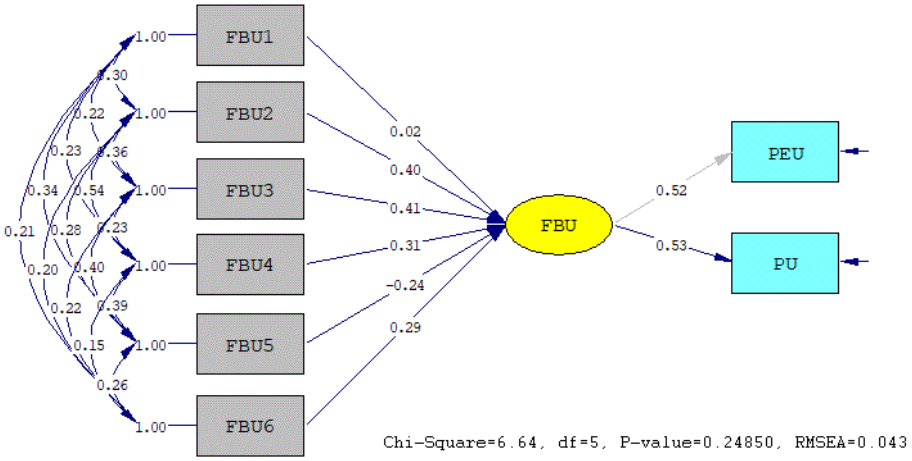

Figure 2. Model estimation results

The descriptive statistics, factor loadings (λ), and γ-coefficients are presented in Table 2.

Table 2. Descriptive statistics, λ and γ coefficients

Item	M	SD	λ	γ	Sig.
FBU1	3.54	1.60		0.02	0.850
FBU2	5.69	1.55		0.40	0.001
FBU3	4.22	1.75		0.41	0.000
FBU4	5.18	1.66		0.31	0.009
FBU5	4.17	1.76		-0.24	0.034
FBU6	5.13	1.73		0.29	0.005
PEU	6.10	1.44	0.52		0.000
PU	4.33	1.67	0.53		0.000

With one exception (FBU1), the observed scores of the motives for Facebook users are over the neutral value of 4.00. Facebook has been perceived as very easy to use and moderately useful.

The influence of FBU on PEU (β=0.52) and PU (β=0.53) is significant at p<001 level, which supports the two hypotheses H1 and H2.

The error term (error variance of FBU) is only 0.225 which shows good coverage of the domain of content. The model explains a 77.5% variance in the focal construct, .

The GOF indices indicate a very good level of fit of the proposed model with the data: χ^2=6.64, DF=5, p=0.249, χ^2/DF=1.329, CFI=0.994, GFI=0.991, SRMR= 0.026, RMSEA=0.043.

However, the negative γ coefficient of FBU5 and the lack of significance of FBU1 and FBU5 suggest that these indicators are not valid measures (Bollen, 2011; Diamantopoulos, 2011) and therefore may be eliminated.

4.3 Revised model estimation results

The results of a revised model estimation are presented in Figure 3.

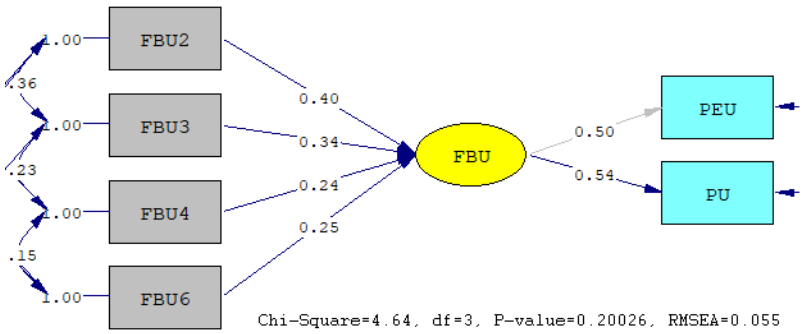

Figure 3. Revised model estimation results

All formative indicators are significant. The most important reason for Facebook use is keeping in touch with known people (FBU2) with $\gamma = 0.40$, significant at p=0.001. Next indicators are FBU3 ($\gamma = 0.34$, p=0.0031), FBU6 ($\gamma = 0.25$, p=0.012), and FBU4 ($\gamma = 0.24$, p=0.037).
The descriptive, factor loadings, and contributions of formative indicators are presented in Table 3.

Table 3. Descriptive statistics, λ and γ coefficients

Item	M	SD	λ	γ	Sig.
FBU2	5.69	1.55		0.40	0.001
FBU3	4.22	1.75		0.34	0.002
FBU4	5.18	1.66		0.24	0.037
FBU6	5.13	1.73		0.25	0.012
PEU	6.10	1.44	0.50		0.000
PU	4.33	1.67	0.54		0.000

The GOF indices are also indicating a very good level of fit of the model with the data: χ^2=4.64, DF=3, p=0.200, χ^2/DF=1.547, CFI=0.991, GFI=0.992, SRMR= 0.022, RMSEA=0.054.
The revised model explains 73.2% variance in the motives for using Facebook, 25.4% variance in the perceived ease of use, and 29.5% variance in the perceived usefulness.

4.3 Regression analysis

In order to better understand the influence of indicators on the effect variables, two regression models have been tested having the perceived usefulness (PU) and perceived ease of use (PEU) as dependent variables. This enables a separate analysis of the relationship between the motives for Facebook use and the perceived usefulness.
The results of regression for PU are presented in Table 3. The multiple correlation is significantly different from 0 (R=47.97) and F (6, 181) = 8.72 (p=0.000).
The most important predictor is FBU3 (β=0.27, p=0.000), then FBU4 (β=0.18, p=0.033), and FBU6 (β=0.15, p=0.031). The regression model explains a 20.37% variance in the perceived usefulness.

Table 4. Regression results for PU

PU	β	Error	t-Stat	p-value
Intercept	0.96	0.52	1.84	0.067
FBU1	0.06	0.08	0.72	0.471
FBU2	0.12	0.09	1.35	0.180
FBU3	0.27	0.07	3.71	0.000
FBU4	0.18	0.08	2.15	0.033
FBU5	-0.08	0.08	-1.05	0.296
FBU6	0.15	0.07	2.17	0.031

For PEU, the multiple correlation is R=46.98 and F (6, 181) = 8.26 (p=0.000).
The most important predictor for PEU is FBU2 (β=0.29, p=0.000), then FBU4 (β=0.13, p=0.081), and FBU3 (β=0.12, p=0.081).

Table 5. Regression results for PEU

PEU	β	Error	t-Stat	p-value
Intercept	3.38	0.455	7.44	0.000
FBU1	-0.03	0.07	-0.48	0.634
FBU2	0.29	0.08	3.61	0.000
FBU3	0.12	0.06	1.88	0.062
FBU4	0.13	0.07	1.76	0.081
FBU5	-0.14	0.07	-2.13	0.035
FBU6	0.12	0.06	2.10	0.037

Two coefficients (FBU3 and FBU4) are only marginally significant. The regression model explains 19.40% variance in the perceived ease of use.

4.4 Discussion

The results of this study highlight the main reasons why university students from this faculty are using Facebook: keeping in touch with people they know (maintaining social relationships), finding useful information and resources, socialization, and entertainment.
As the results of this study show, three out of four motivators for using Facebook have a social value (keeping in touch with known people and socialization) and a hedonic value (entertainment). These results are consistent with

the findings of other studies (Elisson et al., 2007; Yang & Brown, 2013; Cheung et al., 2014; Iordache & Pribeanu, 2016; Cristescu et al., 2018; Gwena et al., 2018).

Contrary to many other studies, using Facebook for meeting new people and for collaboration were not confirmed as significant predictors of Facebook's usefulness.

Nevertheless, according to Seth et al. (1991), Sanchez-Fernandes et al. (2007), and Park et al. (2009) the user's choice is situational and context-dependent. This means that the motives for Facebook use may be influenced by a diversity of factors, such as university profile, year of study, or period of the year (i.e. school time or holiday time.

The model explains only a 29.5% variance in the perceived usefulness. This is not surprising since Facebook is perceived as having a hedonic nature rather than a utilitarian nature (Heijden, 2004). Hedonic nature is related to emotional, social, and epistemic values. According to the results of this study, only one motif is related to the functional value.

The results of testing the MIMIC model and the two regression models are quasi-similar and confirm that two formative indicators are not suitable, respectively FBU1 (getting in touch with new people) and FBU5 (collaboration). There are also differences that are explained by the nature of the model.

It is worth to note that the regression analyses bring insights into the relevance of each of the two outcomes variables. In this respect, FBU2 (keeping in touch with known people) is more relevant for the perceived ease of use than for the perceived usefulness (β nonsignificant) which suggests that the tasks performed for this purpose may be perceived as requiring more effort. On the other hand, the influence of FBU3 (finding information and resources) and FBU4 (socialization) on the perceived ease of use are only marginally significant predictors of the ease of use.

This work has several implications for researchers and practitioners. First, it contributes to a better understanding of the reasons why university students are using Facebook and how these reasons are reflected in the perceived usefulness and perceived ease of use. Up to now, there is no quantitative study addressing this issue from a formative measurement perspective. The main advantage of this approach is an instrument having a small set of indicators.

Second, it shows the advantage of using a mix of methods in the analysis. The regression analyses are contributing to a better explanation of the MIMIC estimation results and the validation of formative indicators.

There are also some inherent limitations of this exploratory study. First, the formative measurement has its own limitations related to model identification. Second, the number of formative indicators is relatively small. Moreover, based on the estimation results, two indicators have been eliminated. Third, each outcome variable is measured with only one item. Last but not least, the results are based on the perceptions of students from a technical university which might be different from students from other universities.

5. Conclusion and future work

This study contributes to a better understanding of the motives for using Facebook by taking a formative measurement approach from a theory of consumption values perspective. The results show that the perceived Facebook usefulness is predicted by four categories of motives for Facebook use: keeping in touch with known people, finding useful information & resources, socialization, and entertainment.

Although the results are validating a small set of four indicators, representing four categories of motives, the model is explaining 73% of the variance in the latent variable which shows good coverage of the domain of content and suggests a promising starting point for future studies.

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