

Assessment of Academic Digital Platform Through Social Networks in Economics Degree

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Abstract. In this paper, an analysis of the appropriateness of academic digital platform by undergraduates through the valuation of social networks (Facebook, Tuenti, Twitter) is proposed. This analysis shows the potential utility of these academic platforms in various areas, such as downloads, supplements, contents, functions and learning efficiency. The study was conducted among students of various disciplines and faculties of the University of A Coruña (Spain). The results show that the use of social networks has a significant influence on the various benefits of using digital platforms in educational environments. Specifically, access to course contents without barriers of time and space and educational functions offered (blogs, chats, tests, etc.) stand out as the greatest advantages. This allows to state that the introduction of new technologies in higher education contributes greatly to improving the learning efficiency.

Keywords: Information and communication technologies · Social networks · Knowledge management · Economy · Higher education

1 Introduction

In recent decades, institutions of higher education are engaged in a process of adaptation to changes involving the evolution of Information and Communications Technology (ICTs), the information society and the requirements of an education system more flexible.

The application of ICTs in higher education institutions allows the creation of a more flexible model of learning and the development of an education based on learning where students acquire a more proactive role in the education process. It involves a series of changes in relation with the way to develop, acquire and transmit knowledge with criteria of quality and equity.

Web 3.0 consists of a network that provides various web applications that facilitate to publish, share and disseminate information as well as encourage collaboration and online interaction. Therefore, the information flows through the web system, providing dynamic content. This system is especially relevant in the field of higher education, in which the acquisition and transfer of knowledge is encouraged to obtain the required competences of each degree. So, when students enter on the labour market, they will have to apply these competencies to real situations.

In this context, virtual learning environments (VLEs) appear as a way to enable educational interaction. VLEs are educational spaces implemented on the web consisting of a set of software tools that allow students to develop flexible and autonomous learning models. These VLEs are focused on learning by doing and use several web 3.0 tools in order to promote the construction and dissemination of knowledge [1].

Knowledge of ICTs is one of the factors that influence the use and subsequent positive evaluation of VLEs by students. The case of social networks sites (SNSs) related to VLEs is emphasized as a particularly interesting research. The SNSs are defined as those which, through the Internet, allow for collaboration between groups of people who share common interests and interacting with each other on equal terms controlling the information that they share. In the case of Spain, youth aged 19 to 25 are using this technology further. Moreover, 41% of the members of this age group used more than two social networks [2].

The basis of SNSs lies in the collaborative activity that it is a characteristic that tends to be applied in VLEs. The literature has mainly focused on the study of the implications of online platforms and social networks on the learning process [3] and the social integration of students [4]. This work aims to extend this area of research with the aim of analysing the influence of SNSs on the assessment of the functions and learning efficiency of a particular VLE (Moodle) among Spanish college students. Our results show that the assessment of academic digital platform is determined by the use of three analysed social networks: Tuenti, Twitter and Facebook. The importance of network Tuenti is remarkable because it is the most commonly used for Spanish youth.

This paper is structured as follows. Section 2 develops literature review. The model is presented in Sect. 3 and the main results obtained in their application to Spanish colleague students are described and discussed in Sect. 4. Finally, the main conclusions of the work are drawn in Sect. 5.

The influence of the use and value of SNSs for relational purposes and friendship by college students on the assessment of the digital platform used for academic purposes is assessed.

2 Literature Review

There are many definitions and theories about social networks. [5] defines SNSs as services over the Internet that allow users to create a public profile, which capture personal data and information about yourself, having tools to interact with other like-minded users or not profile published. [6] define SNSs as virtual communities that allow people to connect and interact with each other on a particular subject or to just “hang out” together online. Similarly, [7] refers to this tool as the practice of expanding knowledge through connections with people of similar interests.

Therefore, one of the key elements of social networking is that, through the network, allows users to interact, communicate, share content and create communities. So, it becomes a tool of democratization of information that transforms people into receivers and content producers [2]. Web 3.0 provides a number of tools to create and manage virtual communities where individuals share interests, establish links and contacts and

share information useful for the group. For this reason, a number of tools are needed to share multimedia resources (graphic, audio and written content).

There are different types of SNSs, depending on whether the connection is related to business (e.g. LinkedIn) or is social in nature (e.g. Facebook) or mix the two concepts (e.g. Ryze). However, the main feature of all is that users are the main characters, since they are responsible for increasing the content of such networks. Thus, the key feature of such SNSs is the “social capital” generated by users and their interactions and what gives value to networks [8].

In the case of Spain, the emergence of new social networks and mobile access has meant that 78% Internet users used the network daily in 2015 [9]. SNSs showing greater preferences by users are direct personal profile [2]. Facebook is the best known and most used network, being preferred by 54% of users of SNSs and shows a penetration of 39.34% in the online population. The next one is Tuenti, with 20% of Internet users who prefer this network.

[2] shows that the highest average use of social networks is within the age group of 19 to 25 years with average 2.56 networks. In addition, 41% of the members of this age group use two social media networks. Regarding the type of social network, younger Internet users (16 to 25 years) use daily Facebook (80%), Tuenti (75%) and Twitter (21%).

[9] states that the social networking user spends more time on this service to other services on the Internet since it is the tool considered the funniest and the most actual and dynamic one. In addition, users of SNSs have increased the frequency in the use of forums and blogs. Thus, 33% of these users use daily these tools [2].

Therefore, college students use these networks as digital natives in leisure activities. Thus, participation in SNSs requires knowledge of a range of ICTs, such as the ability to search out, preview, select, incorporate and share audio and video files; the ability to create, edit, copy, find, upload, tag and arrange images files; the capacity to strategically monitor, respond, multitask and navigate multiple communication channels such as, instant messaging, wall posts, blog comments, among others [10].

Therefore, knowledge of social media by students can influence their appraisal of VLEs. Thus, social networks resemble creating collaborative environments for teaching and learning. In this sense, social networks, like the VLE, facilitate collective intelligence through social negotiation where participants are encouraged to achieve a common goal [11].

The literature has focused on analyzing the effects mainly involved in SNSs in education on learning. The results show positive effects in terms of promoting the assimilation of learning and collective learning. Thus, [12] find that SNSs influence the processes and outcomes of student learning positively and also encourage their social integration. [7] states that SNSs allow to create a spiral of creative and transformational knowledge generating both explicit and tacit knowledge. Similarly, [13, 14] find that SNSs facilitate communication, equal access to information and knowledge and allow collaboration and cooperation between members.

Therefore, creativity and ability to solve new problems is another important element in the learning process through social networks. In this context, [15] emphasizes creativity as the most important element in the learning process through SNSs but as a

previous step to develop a methodology that promotes the design of learning activities through interaction. Similar results are obtained by [16], applied to college students in Australia, in which the social web provides a better learning accompanied by a planned strategy in the methodology design.

Therefore, the literature on SNSs in teaching and learning shows that these tools create new pedagogical approaches that facilitate the creation and transmission of knowledge between students whenever a methodological planning is established previously.

Furthermore, scientific research has barely focused on aspects related to the effects of the use of SNSs in the valuation of VLEs by college students. [17] establish the importance in the knowledge of several software tools by students with the aim of optimizing the learning through ICTs (including SNSs). [18] state that the use of the tools used in SNSs in other fields can create “transactional spaces” fostering their use in education. [19] analyses a sample of students from UK and obtain that those using SNSs tend to be slightly more skilled in using VLEs as a support. For this reason, in the next section we continue in this field of research in order to determine the influence of SNSs on functionality and learning efficiency of VLE.

3 Methodology

In this section, the influence of the use and value of SNSs for relational purposes and friendship by college students on the assessment of the digital platform used for academic purposes is assessed by using a structural equation modelling (SEM).

The procedure involves designing and conducting a questionnaire for college students at the University of A Coruna (Spain). The survey was based on the questionnaire developed in [20] and it is shown in Table 1. The sample was collected from students of the Faculty of Business and Economics, Law and Tourism at the University of Coruna. The population was around 3000 students, and the respondents were 497. The incomplete and wrong answers were eliminated, then, the valid responses were 381.

The questionnaire has been prepared with google drive through a link to the digital platform in several courses in economics and business in the three faculties. Students completed the survey before returning it. In the questionnaire, the respondents’ answers should show how you agree or disagree, based on a Likert scale of 1 to 5, where 1 means “strongly disagree” and 5 “strongly agree”.

As a preliminary step, a descriptive analysis is performed to show the characteristics of students who participated in the survey. The number of respondents was 381: 72.7% from the Faculty of Economics and Business, 20.7% from the Faculty of Law and the remaining 6.6% from the Faculty of Tourism.

Regarding the distribution of respondents by course, the importance of second-course students is emphasized (at a rate of 64%), then, first-course students (23%) and, with lower rates, students in third-course (9.4%), fourth-course (2.6%) and fifth-course (0.3%) were found. Regarding to gender, 180 were male (47.2%) and the remaining 201 were women (52.8%). Likewise, the experience using Internet took similar values for both cases (with mean values between 5.51 and 5.68 and a standard deviation between 1.312 and 1.352).

Table 1. Questionnaire: items and latent variables in the model

Latent variable	Item	Convergent Validity (AVE)	Composite Reliability	Alpha Cronbach
Academic digital platform	Digital platform: I prefer to download materials from digital platform instead getting them from another sources	0.46	0.99	0.79
	Digital platform: it is very useful to supplement other learning tools			
	Digital platform: I think that the contents of the digital platform are very useful			
	Digital platform: I think the digital platform functions are very useful			
	Digital platform: I think it is useful for improving learning efficiency			
Facebook	General use of Facebook	0.66	0.96	0.85
	Use of Facebook for social network			
	Value of Facebook for social network			
Twitter	General use of Twitter	0.81	0.95	0.92
	Use of Twitter for social network			
	Value of Twitter for social network			
Tuenti	General use of Tuenti	0.73	0.97	0.88
	Use of Tuenti for social network			
	Value of Tuenti for social network			

The dependent variable is the assessment of the digital platform used for academic purposes (in our case, Moodle platform). We try to link this assessment with the use and value of SNSs for relational and friendship purposes, based on the three SNSs used by young people in Spain: Facebook, Tuenti and Twitter. Thus, our model has four variables considered as latent variables, constructed by the items of the questionnaire conducted among students grouped as is reflected in Table 1.

The estimation method used in the study was the structural equation modelling (SEM) based on the proposed model in Fig. 1. Thus, the assessment of academic digital platform is determined by their use for download, use as a supplement, contents,

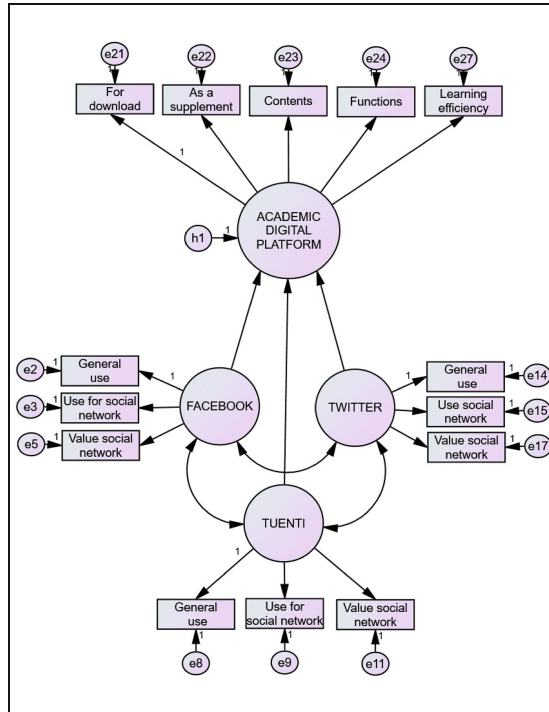


Fig. 1. Proposal of assessment of academic digital platform in function of the use of SNS

functions and learning efficiency in the formation of the construct called academic digital platform. Moreover, the use of each of the three analysed SNSs (Facebook, Twitter and Tuenti) is generally determined by their general use, use for social network and value of social network. This multivariate analysis of structural equations allows us to work with “constructs” or directly unobservable latent variables. In particular, the constructs called Facebook, Twitter and Tuenti are developed.

4 Results and Discussion

A multivariate analysis of SEM has been developed in order to analyse the relationships and interactions between the different variables of the model. One of the main advantages of this methodology is that it allows working with unobservable variables (assessment of academic digital platform and SNSs: Facebook, Twitter and Tuenti). However, the model allows us to translate these variables into observable ones from the development of constructs from the items achieved in the questionnaire.

The results show a good fit of the model (with a Chi-Square 343.122 (P = 0.000 and 71 degrees of freedom), CFI = 0.913). Table 2 shows the standardized regressions weights.

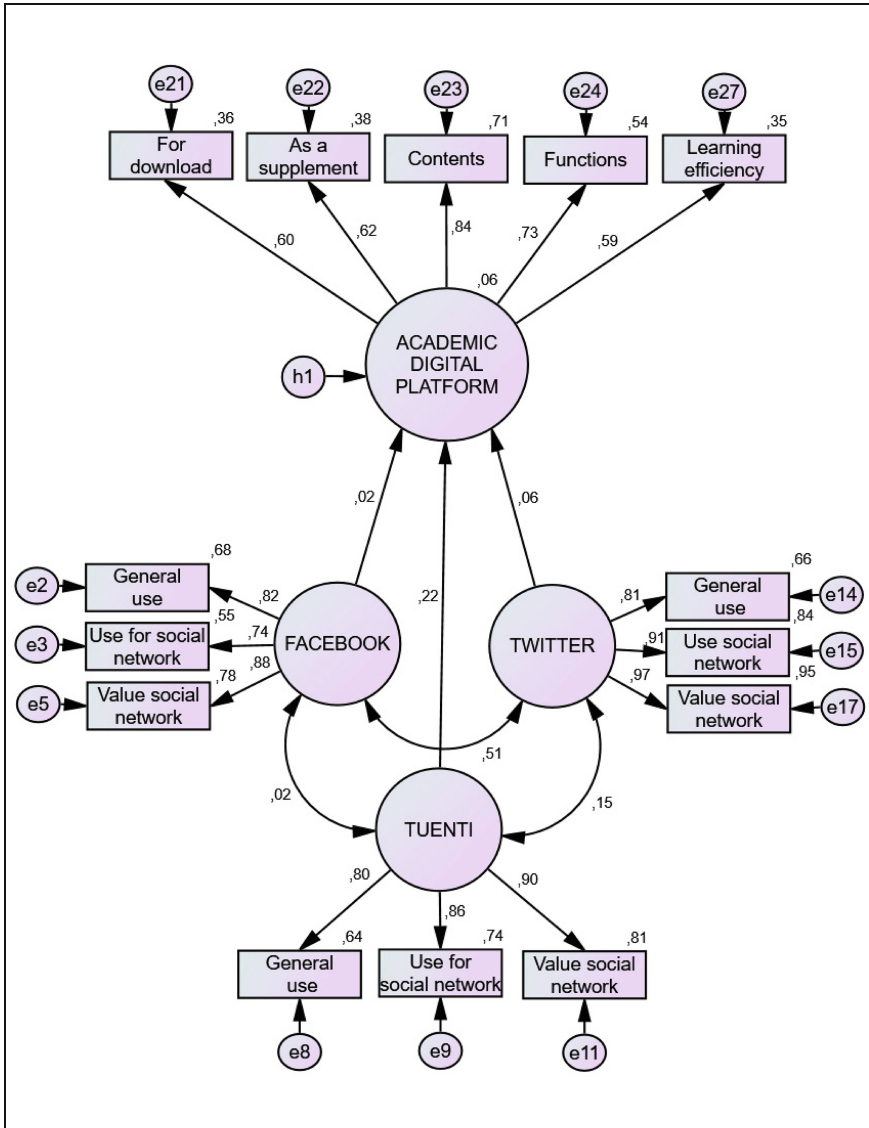


Fig. 2. Results in the assessment of academic digital platform in function of the use of SNSs

Table 2. Standardized regression weights

Independent variable	Standardized estimates	Standard error	t-student	p
Facebook	0.024	0.039	0.343	0.732
Twitter	0.058	0.033	0.846	0.398
Tuenti	0.217	0.037	3.537	***

*** p < 0.001

Figure 2 shows the results of the model. In this context, it is necessary to consider the strength of the constructs that have been developed in the model. Thus, the four observables are characterized by having a strong correlation with the items from the questionnaire that allow the elaboration of the model, as it can be seen in Fig. 2.

The results show how the assessment of academic digital platform is determined by the use of SNSs: Tuenti (0.22), Twitter (0.05) and Facebook (0.02). Therefore, the use of SNSs by college students positively affects their assessment of academic digital platform and particularly the presence of Tuenti is remarkable. The explanation of the high penetration of Tuenti is that, in the case of Spain, this SNS is gaining rapid growth by young people between 19 and 25. In fact, it becomes one of the most popular ones for this group of age (which coincides with the age of the students surveyed) in recent years [2]. In addition, this type of users values usability and structural information that Tuenti provides from other SNSs attributes [21].

The dependent variable (Use/opinion/assessment of academic digital platform) is explained mainly for the use of Tuenti, once that its coefficient shown the higher value and, on the other hand, it has shown strongly significant ($p < 0.001$). Therefore, college students consider the use of SNSs (especially Tuenti) as an important platform to explain the digital academic element. The assessment of the elements of this construct (use for download, use as a supplement, contents, functions and learning efficiency) comes conditioned by the use and value of SNSs for relational purposes and friendship. The reason behind these results is that SNSs are characterized by a number of applications that promotes the development of users' skills to find and share information with others through the use of synchronous and asynchronous tools. These features are also present in academic digital platforms where several tools allow students to create and manage learning spaces. They share interests, establish links and contacts and share useful information for the group in order to facilitate active learning among them. Therefore, a prior use of SNSs by college students increases their assessment of academic digital platform because of their previous knowledge of computer skills is required for its use.

5 Conclusions

The information society and the requirements of the Bologna Declaration have led to major changes in the educational process of higher education institutions. In this context, ICTs are positioned as a key element favoring the creation and transmission of knowledge in the university community. Given this new university educational context, the VLEs arise as the predominant key tool to reach a more active role by students in their learning process.

One application that has led to a further growth in the web in recent years is SNSs. This website can be considered as a technological tool that facilitates social-publish, share and disseminate digital content that encourage online collaboration and social interaction through several tools (chat, blogs, etc.) that facilitate the search and organization of online information. Moreover, SNSs may allow the design of learning environments that favor group work in the context of university education.

Therefore, the features of SNSs are included in the VLEs. The Spanish university students are characterized by an intensive use of such SNSs. Thus, young people use these networks 2.56 on average where Tuenti is the most remarkable.

In this context, this paper analyses the influence of the use and value of social networks for relational purposes and friendship among college students in the assessment of the used VLE for academic purposes. A multivariate analysis of structural equations is implemented to convert the unobservable variables of the model (assessment of academic digital platform and SNSs) into observable variables from the items of a given questionnaire. The results show that the assessment of academic digital platform is determined by the use of three analysed social networks by college students: Tuenti, Twitter and Facebook. The importance of Tuenti is remarkable because it is the most commonly used among Spanish youth.

On the other hand, our results show the importance of promoting actions in the university context that involve a greater use of ICT in the university. It is necessary to consider the changes that occur in this area are constant which implies the need to be updated permanently. Therefore, the development of courses, forums and seminars should be promoted in order to permit to the university community the management of the various tools and applications that generate unstoppable learning in the field of ICT. In the current university educational context, this is a key issue where ICT take a crucial role in the learning process led to the configuration of VLE that allow students to generate and transfer tacit and explicit knowledge.

Another important educational policy could be given by adapting the use of VLEs to those tools used by students in their social relationships and friendship. So, they would feel more involved in their learning process. Therefore, it might set personal learning environments that enable each student to design their own learning platform according to their tastes and times. Moreover, it would continue the necessity of monitoring and counseling faculties to optimize students' interactive learning and encourage them critical analysis.

As future research, it would be emphasized the assessment of these issues in other Spanish universities in order to verify if it is possible the application of the same proposed strategies regarding the role of social networks in the education process.

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