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## **A conceptualisation of the relationship between virtual experience and cybersnauts' satisfaction with virtual communities**

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**Abstract:** In this research, we developed and tested an integrated model relating individuals' satisfaction with their experiential values in virtual communities. Using a realised factorial analysis and regression, we identified the factors that influence member satisfaction in virtual communities. Adopting Mathwick et al.'s (2001) concept of experiential value, we proposed a conceptualisation of a virtual experience that fits closely with the original nomological framework advocated by Holbrook and Hirschman (1982).

**Keywords:** satisfaction; virtual communities; value of the experiential system; extrinsic values; intrinsic values.

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## 1 Introduction

Virtual communities (VCs) are considered, according to Kaplan and Haenlein (2010), to be an essential component of modern society, whether in reference to individuals or the activities of organisations. Mata and Quesada (2014) define VCs as groups of individuals sharing common goals and interests who interact and communicate through the internet. We posit that VCs are not so dissimilar to Marshall McLuhan's (1911–1980) concept, before the development of ICT, of the tribalisation process, which results in the unification of the 'nervous system of humanity' and the gradual creation of a global, tribal and global village. The explosion of VCs on the internet, including social networks, has brought back the sense of this reflection model to everyday life (Coupland, 2010).

The social changes brought about by this new media have been a source of a large field of study. Among the changes that have been noted are the increasing numbers of users in VCs who, by communicating with each other, contribute considerably to making social networks more dense. These VCs appear and are the result of interests shared between people coming from very different backgrounds who have formed groups on the web or are extensions of social groups from the real world into a virtual space. To best serve these groups' needs, administrators of VCs are faced with the necessity of providing the best services to their members. These include product development, advertisement and sales, evaluations of product demands and the increase of barriers to competitors' entries (Punakivi et al., 2001). In this respect, VCs could be of great strategic value to online companies and suppliers. Moreover, members face and have experiences within these communities which represent a new means to contributing to the survival of community ties and strengthening the sense of belonging to a group. Through Holbrook and Hirschman's (1982), experiences provide consumers a way to engage physically, mentally, emotionally, socially and spiritually in the consumption of the product or service making the interaction meaningfully real. This experiential value could

impact the characteristics of a VC to make the quality perfect. Members would thus be more satisfied with the services provided by a particular VC.

The previous studies on VCs have focused primarily on understanding the nature and the motivations of its members (Lee et al., 2003; Ridings and Gefen, 2004). However, a better understanding of the factors that satisfy users of VCs has become necessary, knowing that satisfaction stimulates users' loyalty and their recommendation intentions.

As such, our study seeks to analyse the factors influencing member satisfaction of VCs and the impact of the quality of the latter on level of satisfaction. This leads us to ask the following central question: What are the factors of an experiential model that influence the satisfaction of cybernauts within VCs? In other words, the major objective of this paper is to identify the factors that influence member satisfaction of these VCs and how these experiential values and the quality of VCs interact with member satisfaction. For this reason, we will tackle the concept of experiential value in the context of Mathwick et al.'s (2001) work in which experiential values are perceived by the user, either directly through their use or indirectly by the realisation of the explicit objectives during its use.

The versatility of VCs provides a value from the utilitarian and hedonic experience. This later engenders an experiential value that, in turn, feeds user satisfaction. By having recourse to the value of expectancy and cognitive assessment as a theoretical basis, we proposed a model integrating experiential value and satisfaction.

The model focused on four sources of value: two intrinsic (escape value and entertainment value) and two extrinsic (economic value and ease of use). These four sources of value derive their interactive and multi-use aspect from within these VCs in order to ensure the users' satisfaction. As such, we intend to address these two intermediary questions:

- What elements of experiential value may be relevant factors of user satisfaction in VCs?
- How and to what extent do these factors explain satisfaction in these communities?

## **2 The theoretical and conceptual framework of the research**

The theoretical background of our study was essentially based on experiential value and user satisfaction. We, first, focus on values as determinants of user satisfaction and, second, on user satisfaction. We then focus on the values of the experiential system and their influence on user satisfaction.

### *2.1 Virtual communities*

Despite varying definitions of the term 'virtual community', most researchers agree that they can be traced back to the sociological definition of 'community', which, in itself, is controversial (Rothaermel and Sugiyima, 2001). According to Tönnies (1944), who was one of the first to discuss the concept of community as different from society (Rothaermel and Sugiyima, 2001), community is an intimate, private and exclusive way of living together, whereas society is the public life – that is, the world itself. Tönnies implicitly gave the concept of community a spatial form by contending that the prototypical community could be found in the rural agrarian village.

The development of VCs does not stop influencing the behaviour of the internet users. In fact, these communities have reduced the distance between people (Wind and Mahajan, 2002), which, in turn, has encouraged their interactions and permanent sharing of information. The latter have become essential components of modern society, as they have been extended to individuals' privacy and organisational activities.

Thus, a VC is defined as an aggregation that emerges in a cyberspace when there is a grouping of a sufficient number of members able to establish discussions and share feelings enough to form personal networks (Rheingold, 1993). Balasubramanian and Mahajan (2001) define this concept as a cyberspace that allows the communication and interaction of participants. This is confirmed by Lee et al. (2003) who consider VCs as groupings of individuals or business partners who interact around a shared or common interest, where the interaction is partially or completely carried out by an electronic means and guided by some protocols or norms.

## *2.2 Values as determinants of user satisfaction*

We have based our study on the foundations of the expectancy value theory; a paradigm often used by theorists of consumption value in order to explain the satisfaction of an individual with an object or behaviour. Indeed, an individual will be more satisfied with an object or behaviour if he or she perceives it as something that probably has a value. This theory has mainly been applied to model the direct influence of perceived value on satisfaction. This theoretical field tends to support our central hypothesis, which is mainly based on the premise that value determines satisfaction.

## *2.3 User satisfaction*

Recently, some of the literature on marketing and information science and communication has focused on e-satisfaction, which shows consumer satisfaction in an online context in which the importance of VC can be correlated with the development of e-commerce. According to Anderson and Srinivasan (2003), e-satisfaction is a feeling of consumer contentment brought about by an online consumption experience. Similarly, Cyr et al. (2008) emphasise that e-satisfaction is a global evaluation of a site's ability to meet online users' needs and expectations. Consequently, Wicks and Roethlein (2009) consider that e-satisfaction is formed by an experiential evaluation process. This pushes us to investigate this aspect in order to better identify the drivers of satisfaction in the virtual world, in general, and in VCs, in particular.

## *2.4 The value of the experiential system*

In the context of social communities, Hart et al. (1997) support the importance of experience within these communities, which is defined as a perception, a relativistic preference for attributes or system performance resulting from the use of the latter to achieve the objectives of the user. By using the theory of expectancy value and cognitive evaluation as theoretical foundations, which, according to Scherer (2001), aim to explain "the differentiation of emotional states as a result of an evaluative sequence of a stimulus or a particular event", we propose a model integrating experiential value and satisfaction. In recent years, experiential consumption has grown considerably among members of VCs, according to Reisch (2003).

The valorisation of browsing experiences has increasingly become a primary vector of web designers and providers of online services. These aim to optimise the virtual environment through the establishment of a set of devices able to stimulate the internet users' interests and generate favourable feelings. In our study, the concept of experiential values was put in the spotlight, providing then a collection of feelings that explain user satisfaction.

### **3 The conceptual model and hypotheses**

In this research, we study the model of the experiential value system and, more particularly, the four sources of value in this system, which can be particularly useful in VCs, namely, the two sources of intrinsic value (escape value and entertainment value) and the two sources of extrinsic value (economic value and ease of use value) and their complementarities in value creation. We are also interested in the role of quality of VCs on satisfaction of their members.

#### *3.1 The values of the experiential system*

Characteristics of the values of the experiential system can be directly derived from the experience or a compromise between users who receive and invest in the use of the latter, i.e., extrinsic and intrinsic values. In the case of extrinsic values, these values are linked to concrete benefits. On the other hand, they may be dependent on interaction with the system itself and thus be reactive or active depending on the kind of the experiment with the experiential system. This is what we call intrinsic values. This model focuses on four sources of value: two intrinsic (escape value and entertainment value) and two extrinsic (economic value and ease of use). These four sources of value derive from their interactive and multi-use within the VC.

Edgell et al. (1996) state that "social relationships shape the consumption experience". Thus, the four mentioned concepts of value constitute, within social communities, an integrated model with a direct effect, an indirect effect and involve seven hypotheses. These concepts are divided into two categories.

##### *3.1.1 Extrinsic values*

The extrinsic values of an experiential system correspond to concrete benefits derived directly from an experience or a compromise between users who receive and invest in the use of this system. According to the theory of cognitive evolution, these benefits tend to improve the intrinsic values in order to achieve user satisfaction.

The extrinsic values are composed of:

- *Economic value*: According to Pénard (2002), this represents the net gain of buyers when purchasing a product or service. The growing importance of economic activity in VCs can be an important factor for user satisfaction, which can justify an empirical investigation of its role.
- *Ease of use value*: The belief of a user in the fact that navigating the system is a free effort. According to Brown and Gillooly (2003), this is fundamental for participation within VCs. In fact, ease of use may be a driver to user satisfaction.

From these two values, we can make the following hypotheses:

*H1: Economic value positively influences the satisfaction of virtual communities' members.*

*H2: Ease of use positively influences the satisfaction of virtual communities' members.*

### 3.1.2 *The intrinsic values*

The intrinsic values can be dependent on interactions with the system itself. Active or reactive, they are manifest through feelings they can cause when being used by VCs. According to the theory of cognitive evaluation, these are not controllable and are stimulated by extrinsic values. The intrinsic values are defined by two components:

- *Escapism*: The fact that the user becomes eagerly wrapped up in his or her desire to 'get carried away' by virtual reality in a cognitive and emotional way (Henning and Vorderer, 2001). Within VCs, users can use their avatars to participate in further discussion, give opinions about their choices and share their everyday life experiences (Dholakia and Algesheimer, 2009).
- *Entertainment*: Entertainment value is presented by the perceived degree in which the use of an information system is fun and enjoyable. It is, according to Hagel and Armstrong (1997), an intrinsic value because it provides instant entertainment, regardless of the task realisation. In this sense, VCs offer multiple entertainment experiences in persistent worlds that exist parallel to reality.

So, here we can make the following hypotheses:

*H3: The escape value has a positive influence on satisfaction in virtual communities.*

*H4: The entertainment value has a positive effect on satisfaction in virtual communities.*

### 3.2 *The relationship between the values of the experiential system*

Apart from the current cognitive thinking, several researchers, such as Arnould and Price (1993), Celsi et al. (1993), Holbrook and Hirschman (1982) and Sherry (1998), have shown the importance of the experiential dimension in the consumption act. The basic premise is that the value lies not only in the product purchased, the chosen brand, the object possessed and the used service, but also in the experience of buying and consumption by the individual on this occasion (Holbrook, 1999).

The authors state that consumption of a product or service can contribute to a memorable and enjoyable experience for individuals who are evolving the time of their consumption within an experiential universe. Indeed, beyond the act of purchase, or the consumption, the latter will experience several emotions. This consumption mode is present at the information and communications technology (ICT), in general, and in VCs, in particular.

We consider that there is an interrelationship between the extrinsic and intrinsic elements in this experiential system. This interrelationship is explained by the use of the theory of cognitive evaluation, which, according to Darpy and Volle (2003), contributes to the immediate satisfaction of users by supporting the intrinsic motivations. This theory,

whose main focus is to seek for sensation, was applied by Graillet (2008) on different forms of behaviour associated with the entertainment sector, which convene situations where both extrinsic and intrinsic motifs exist. Its central proposal states that contextual cues or events that induce feelings of autonomy and competence are likely to improve the intrinsic motivation of an action. This autonomy feeling concerns the voluntary and uncontrolled engagement in an activity, while competence concerns the feelings of effectively meeting the challenges of an activity (Ryan and Deci, 2000).

In situations where extrinsic motifs are perceived as uncontrollable by transmitting positive information about the competence of an individual, intrinsic motivation is likely to be stimulated. It seems plausible to assume that such situations exist in the context of VCs where the ease of use value reflects the experiences of autonomy, while the economic value reflects the experiences of competence.

Both extrinsic values deliver positive information about the ability of an individual to control the environment, which is likely to have a positive effect on the intrinsic structures such as the value of entertainment and escape (Bruner and Kumar, 2005). Thus, online shopping can be considered as an entertaining experience that offers the opportunity to escape reality.

In this context, we propose the following hypotheses and subhypotheses:

*H5: The studied extrinsic values positively affect intrinsic values.*

*H5.1: The economic value positively influences the escape value.*

*H5.2: The economic value positively influences the entertainment value.*

On the other hand, Bruner and Kumar (2005) emphasise the accessibility of the internet, which is designed to be easy to use and is therefore likely to give the user a sense of control, which increases the pleasure of using it. This observation leads to the proposition of the following subhypothesis.

*H5.3: The ease of use value positively affects the entertainment value.*

Similarly, according to Brown et al. (2008), an easy-to-use system suggests that the user is free from negative mental reactions, such as anxiety when manipulating a system. Therefore, the ease of use value can have a positive impact on the ability of users to immerse themselves in the system, which leads us to make the following hypothesis:

*H5.4: The ease of use value positively affects the escape value.*

### *3.3 The role of quality of virtual communities*

VCS are considered, according to Mata and Quesada (2014), to be “groups of individuals sharing common goals and interests who interact and communicate through the internet”. For their part, Bagozzi and Dholakia (2002) define VCS as “aggregations of collective expertise whose content is managed by its members”. This definition refers to the power of members of VCS to manage the content of VCS and their contributions to their success. One of the main characteristics of VCS is the fact that the content is created by users in order to enhance their knowledge, share their experiences and exchange or solve their problems (Hsu and Lin, 2008). According to Othmani and Bouslama (2014), the perceived quality of a VC is expressed by its popularity, the quality of the members present in this community, the quality of content and interactivity and security.



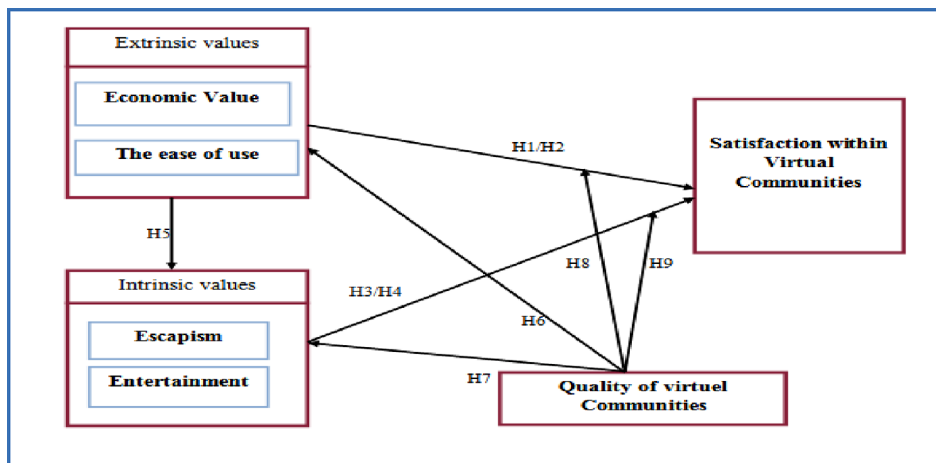
We highlight here the importance of the influence of these VCs on different experiential values inducing users' satisfaction. The characteristics of VCs have different dimensions, namely, the quality of members forming this community, the quality of its content, the popularity of the VC, the interactivity and the security. From these reflections, we refer to the hypotheses and subhypotheses presented in Table 1.

From all the hypotheses presented and to illustrate the process, the research model is shown in Figure 1.

**Table 1** Assumptions summary

H6	The quality of virtual communities positively influences the extrinsic values of the experiential system
H6.1	The quality of virtual communities positively influences the economic value
H6.2	The quality of virtual communities positively influences the ease of use value
H7	The quality of virtual communities positively influences the intrinsic values of the experiential system
H7.1	The quality of virtual communities positively influences the feelings of escape
H7.2	The quality of virtual communities positively influences the feelings of entertainment
H8	The quality of virtual communities moderates the relationship between extrinsic values and satisfaction in these communities
H8.1	The quality of virtual communities moderates the relationship between economic value and satisfaction in these communities
H8.2	The quality of virtual communities moderates the relationship between ease of use and satisfaction in these communities
H9	The quality of virtual communities moderates the relationship between intrinsic values and satisfaction in these communities
H9.1	The quality of virtual communities moderates the relationship between feelings of escape and satisfaction in these communities
H9.2	The quality of virtual communities moderates the relationship between feelings of fun and satisfaction in these communities

**Figure 1** Integrated model of experiential values within virtual communities (see online version for colours)



## **4 Research methodology**

### *4.1 Measurement of variables*

To measure the different variables in our model, we have used multiple scales, namely:

- Mathwick et al.'s (2001), for the economic value of the benefit within the VC
- Mathwick and Rigdon's (2004), for the ease of use of VCs
- Mathwick et al.'s (2001), for the feeling of entertainment within the community
- Mathwick and Rigdon's (2004), for feelings of escape
- Plichon (1999), for user satisfaction.

Concerning the quality of VCs, we used scales for measuring the dimensions (see Annex 2), proposed by Park and Kim (2008).

The questionnaire items were measured by using Likert-type scales of five points: 1 'Not agree at all' to 5 'strongly agree'.

### *4.2 E-survey questionnaire*

The collection of data needed was gathered through a web-administered questionnaire. This collection was created with internet user volunteers of different ages, having at minimum a Facebook account. They responded positively to the survey of different groups on Facebook. During this period, 564 surveys were completed with our assistance on Skype by means of screen sharing, to limit any lack of comprehension concerning the questionnaire. A principal components analysis was used to study the factors used to build the model. These results were used in the analysis of correlations between the variables and the regression analysis to predict the factors influencing member satisfaction in VCs.

The sample consisted of 63.8% women. More than half (57.4%) of the members were aged between 20 and 30 years. The majority of respondents (66%) had a level of baccalaureate +5.

## **5 Data analysis and presentation of results**

Two types of analysis were used in this research: a principal component analysis for the performance and reliability of the measurement scales and a regression analysis in order to determine the different relationships between variables. Consequently, we were able to confirm or refute the proposed research hypotheses.

### *5.1 Principal component analysis*

A principal component analysis was done on the different measurement scales. Cronbach's alpha was used to assess reliability (see Table 2 and Appendix 2).

## 5.2 Regression analysis

The factors obtained by the principal component analysis were used as inputs in the first correlation analysis between variables and then in the regression analysis to confirm or refute the hypotheses proposed in the research. After checking the correlations between variables, we used the linear regression analysis to test the relationships between those variables. The results show that five hypotheses were accepted, since their test is significant ( $p < 0.05$ ) (See Table 3 and Appendix 3).

**Table 2** Results of the principal-component analysis (PCA)

<i>Measurement scale</i>	<i>Result</i>
Economic value	The results of this PCA are good: KMO = 0.500, Bartlett's test is significant. The reliability of this scale is medium with a Cronbach's alpha of 0.556 and 69.24% of explained variance
Ease of use	The results of this PCA are good: KMO = 0.689, Bartlett's test is significant. The reliability of this scale is good with a Cronbach's alpha of 0.77 and an explained variance of 69.35%
Feelings of escape	The results of this PCA are good: KMO = 0.677, Bartlett's test is significant. The reliability of this scale is good with a Cronbach's alpha of 0.81 and an explained variance of 73.02%
Feelings of entertainment	The results of this PCA are good: KMO = 0.500, Bartlett's test is significant. The reliability of this scale is good with a Cronbach's alpha of 0.62 and an explained variance of 73.92%
Quality of virtual communities	The results of this PCA are good: KMO = 0.782, Bartlett's test is significant. The reliability of this scale is good with a Cronbach's alpha of 0.716 and an explained variance of 60.48%
User satisfaction	The results of this PCA are good: KMO = 0.848, Bartlett's test is significant. The reliability of this scale is very good with a Cronbach's alpha of 0.907 and an explained variance of 78.49%

**Table 3** Results of the hypotheses linear regression

<i>Hypotheses</i>	<i>Indicators</i>	<i>Comments</i>	<i>Validation/invalidation</i>
H1: Economic value positively influences the satisfaction of virtual communities' members.	$R^2 = 0.278$ $\beta = 0.528$ Sig. = 0.000	There is a positive relationship between economic value and members' satisfaction. Sig = 0.000 Therefore, there is no degree of connection between economic value and satisfaction,	Validated
H2: Ease of use positively influences satisfaction of the virtual communities' members.	$R^2 = 0.678$ $\beta = 0.824$ Sig. = 0.000	There is a strong positive relationship between ease of use and members' satisfaction.	Validated
H3: Escape has a positive influence on satisfaction in virtual communities.	$R^2 = 0.117$ $\beta = 0.342$ Sig. = 0.000	There is a positive relationship between feelings of escape and members' satisfaction within virtual communities.	Validated

**Table 3** Results of the hypotheses linear regression (continued)

<i>Hypotheses</i>	<i>Indicators</i>	<i>Comments</i>	<i>Validation/invalidation</i>
H4: Entertainment value has a positive effect on virtual communities' satisfaction.	$R^2 = 0.513$ $\beta = 0.717$ Sig. = 0.000	There is a significant positive relationship between feelings of fun and members' satisfaction in virtual communities.	Validated
H5: Extrinsic values positively affect intrinsic values.		Extrinsic values have small positive effects on intrinsic values.	Validated
H5.1: Economic value positively influences feelings of escape.	$R^2 = 0.084$ $\beta = 0.290$ Sig. = 0.000	There is a positive relationship between economic value and members' sense of escape in virtual communities.	Validated
H5.2: Economic value positively influences feelings of entertainment.	$R^2 = 0.285$ $\beta = 0.534$ Sig. = 0.000	There is a weak positive relationship between economic value and members' feelings of fun in virtual communities.	Validated
H5.3: Ease of use positively influences feelings of entertainment.	$R^2 = 0.059$ $\beta = 0.243$ Sig. = 0.000	There is a positive relationship between ease of use and members' feelings of entertainment in virtual communities.	Validated
H5.4: Ease of use positively affects feelings of escape.	$R^2 = 0.444$ $\beta = 0.666$ Sig. = 0.000	There is a positive relationship between ease of use and members' feelings of escape in virtual communities.	Validated
H6: Quality of virtual communities has a positive influence on extrinsic values of the experiential system.		There is a positive relationship between the quality of communities and extrinsic values of the experiential system within virtual communities.	Validated
H6.1: The quality of virtual communities positively influences economic value.	$R^2 = 0.052$ $\beta = 0.228$ Sig. = 0.000	There is a positive relationship between the quality of communities and the economic value of benefits within virtual communities.	Validated
H6.2: The quality of virtual communities positively influences ease of use.	$R^2 = 0.173$ $\beta = 0.415$ Sig. = 0.000	There is a positive relationship between the quality of communities and ease of use of the virtual communities.	Validated
H7: The quality of virtual communities has a positive influence on the intrinsic values of the experiential system.		The quality of virtual communities positively influences the intrinsic values of the experiential system.	validated
H7.1: The quality of virtual communities has a positive influence on feelings of escape.	$R^2 = 0.669$ $\beta = 0.262$ Sig. = 0.000	The quality of the communities has a direct effect on members' feelings of escape.	Validated
H7.2: The quality of virtual communities positively influences feelings of entertainment.	$R^2 = 0.096$ $\beta = 0.310$ Sig. = 0.000	The quality of the communities has a direct effect on members' feelings of fun.	Validated

### 5.3 The study of quality moderation of virtual communities

According to Baron and Kenny (1986), “A moderating variable is a qualitative or quantitative variable that affects the direction and/or strength of the relationship between an independent variable and a dependent or predictive or criterion variable”. In our research, the quality of VCs is the moderating variable which intervenes to moderate the relationship between the satisfaction of members of VCs and the various extrinsic and intrinsic values of the experiential system. An analysis of the moderation process by Hayes (2009) was used by means of SPSS 20 to measure these relationships.

We present the results of the quality moderation of VCs in Table 4.

Through this study, we have shown the direct effects of experiential values within VCs on member satisfaction (confirmed by hypotheses H1 and H2). The two dimensions of experiential values, namely extrinsic values (H1) and intrinsic values (H2), act on the levels of member satisfaction in VCs. Thus, administrators of VCs should continuously offer new opportunities for their members to renew their previous experiences and to face new ones. This would be made possible by a quality VC. To do this, administrators must rethink and improve the quality of their VC in order to impact the relationship between extrinsic values (also intrinsic) and member satisfaction. Our hypotheses H8 and H9 confirm the moderating role of quality of VCs.

**Table 4** Results of the effect of the quality moderation of virtual communities between the values of the experiential system and user satisfaction

<i>Hypotheses</i>	<i>Indicators</i>	<i>Comments</i>	<i>Validation/ Invalidation</i>
H8: The quality of virtual communities moderates the relationship between extrinsic values and satisfaction in these communities.		The quality of virtual communities moderates the relationship between extrinsic values and members' satisfaction.	Validated
H8.1: The quality of virtual communities moderates the relationship between economic value and satisfaction in these communities.	$R^2 = 0.543$ $P = 0.000$ $t = 13.29$	The quality of virtual communities moderates the relationship between economic value and members' satisfaction.	Validated
H8.2: The quality of virtual communities moderates the relationship between ease of use and satisfaction in these communities.	$R^2 = 0.811$ $P = 0.000$ $t = 29.77$	The quality of virtual communities moderates the relationship between ease of use and members' satisfaction.	Validated
H9: The quality of virtual communities moderates the relationship between intrinsic values and members' satisfaction.		The quality of virtual communities moderates the relationship between intrinsic values and members' satisfaction.	Validated
H9.1: The quality of virtual communities moderates the relationship between feelings of escape and satisfaction in these communities.	$R^2 = 0.281$ $P = 0.000$ $t = 6.255$	The quality of virtual communities moderates the relationship between feelings of escape and satisfaction in these communities.	Validated
H9.2: The quality of virtual communities moderates the relationship between feelings of fun and satisfaction in these communities.	$R^2 = 0.731$ $P = 0.000$ $t = 22.00$	The quality of virtual communities moderates the relationship between feelings of fun and satisfaction in these communities.	Validated

## **6 Discussion, contribution and limitations of this research**

This research has addressed several points that have not been discussed at length in previous research. Among these points, we find the concept of e-satisfaction has been largely developed in the context of the virtual world, in general, and has been neglected in the context of VCs. We mention, as an example, the works of Anderson and Srinivasan (2003), Bansal and Yaron (2004), Cyr et al. (2008), Jin et al. (2008), and Wicks and Roethlein (2009), which mainly focus on e-satisfaction on websites. In our context, the results show the influence of experiential values on user satisfaction within VCs. These users derive satisfaction from a combination of intrinsic and extrinsic values, adding then to the approaches of Shen and Eder (2009) and Shin (2009), which highlight the influence the characteristics of multi-use of these values have on user satisfaction.

On the other hand, our study has paid particular attention to the interactions between extrinsic and intrinsic values of the experiential system. As a result, we have shown that the extrinsic experiential values associated with autonomy (ease of use) and skill (economic value) have second-order influence on satisfaction through intrinsic experiential values (entertainment and escape). This result provides us with evidence of the operational capability of the theory of cognitive evaluation tested by Verhagen et al. (2006) within VCs, which has improved research on the factors that induce satisfaction in these communities.

Our study also demonstrates the influence of the quality of VCs on member satisfaction. The quality of the communities has a direct and positive effect on the different values of the extrinsic and intrinsic experiential system, as well as member satisfaction. Our results also show the existence of a relationship of moderation, where the quality of VCs moderates the relationship between the values of the experiential system and satisfaction within these communities.

This study suffers from a number of limitations, namely, that several other variables can integrate the system of experiential values, such as sources of experience including product consumption, citizenship, family affiliation and friendship. Therefore, the obtained results should be treated with caution. The data were in fact collected from VCs that do not necessarily represent the variables and the selected sample represents 66% of those with a level of baccalaureate +5, so that the generalisation of results may not be useful under the conditions of our context. Furthermore, the method of data analysis by means of regressions should be complemented by other analytical tools, such as discourse analysis software (i.e., Tropes or Alceste) and also by considering a semiotic analysis of the drawings, videos, photos, etc. of members of VCs that were studied to test the conceptual model presented, which is relatively complex.

## **7 Conclusion**

This paper's primary aim was to explain the cybernauts' satisfaction of the use of VCs and their services based on their experiential value in VCs and to determine the influence of the quality of these communities on different existing relationships. The confirmation of these relations was demonstrated through study of the relationships between the variables. In this context, we opted for a quantitative questionnaire survey. The latter was administered online to 564 respondents, of whom 57.4% were women, who have an account with various social networks and are members in VCs.

A principal component analysis was performed initially to test the reliability and validity of the measures used. An analysis of correlation and regression a second time allowed us to validate the assumptions described below and to meet our research objectives. In addition, the analysis showed that the five factors found after the regression analysis are good predictors of user satisfaction within VCs.

Two inputs can be derived from this research. The first rather theoretical one presents the contribution of this paper to marketing research and information science and communication, by clarifying the intrinsic and extrinsic values influencing user satisfaction of VCs, the exploitation of the interdependence of these experiential values to ensure satisfaction and relief for the influence of the quality of VCs in this process. The second one has a managerial nature. This research could be beneficial for traders and administrators of VCs. They should take into account the different experiential values and safeguard the quality of the communities in their marketing strategies in order to ensure the propagation of the customers' shopping experiences and help its members meet their information needs so as to guarantee loyalty.

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**Annex 1** Measuring scales

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Items of the economic value variable (Mathwick et al., 2001).

Benefits presented in virtual communities have a good economic value.

As a whole, I am happy with the cost of services provided in virtual communities.

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Items of ease of use variable (Mathwick and Rigdon, 2004).

In virtual communities, I know how to find what I'm looking for.

I feel very comfortable navigating virtual communities.

I access these virtual communities from my home.

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Items of sense of escape variable (Mathwick et al., 2002).

At times, research in this virtual community makes me forget the surrounding reality.

When I'm in this virtual community, I feel immersed in another world.

While viewing the virtual community, I am so taken by what I am doing to the extent that I lose the notion of time.

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Items of sense of entertainment variable (Mathwick et al., 2001).

I think that accessing this virtual community is a pleasant way to spend time.

The virtual community does not just sell me products: it also entertains me.

It's fun to shop in virtual communities.

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Items of the quality of virtual communities' variable (Park and Kim, 2008).

A good virtual community is represented by serious helpful present and knowledgeable experts.

A good virtual community provides useful and reliable information.

A good virtual community rarely has spam or unwanted messages.

A good virtual community contains a large number of friends.

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Items of satisfaction variable (Plichon, 1999).

I think frequenting this space was a good decision.

I am satisfied with my visit to this space.

I think I had a good idea when I decided to go in this space.

I'm glad to have been in this space.

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**Annex 2** The dimensions of group quality

<i>Dimensions</i>	<i>Items</i>	<i>References</i>
Quality of membership	A good virtual community is represented by serious, helpful, present and knowledgeable experts	Sempé (2000)
Interactivity	A good virtual community is characterised by the interaction between its members	Wang et al. (2002)
The quality of the information	A good virtual community provides useful and reliable information	Huizingh (2000)
Security	A good virtual community rarely has spam or unwanted messages	Eleonora and Di Pietro (2012)
Popularity	A good virtual community contains a large number of friends	Freud (1921)

*Source:* Kim et al. (2008)

**Appendix 1: Summary of variables**

<i>Factors</i>	<i>Components</i>
Economic values	Individuals were asked about the perceived economic value of the services in the virtual community.
Ease of use	Individuals were asked about their facilities in handling the technological tool in virtual communities.
Sense of escape	The questions were related to feelings of escape experienced during navigation within virtual communities.
Feeling entertainment	The questions were related to feelings of entertainment experienced during navigation within virtual communities.
Quality of virtual communities	The questions were related to the qualities of virtual communities in which the respondent belongs
Satisfaction	The questions were related to the satisfaction experienced by members of virtual communities.

**Appendix 2: Reliability and purification analysis of the measurement scales**

<i>Items</i>	<i>Components</i>	<i>Commonalities</i>
<i>Economic value scale</i>		
Benefits presented in virtual communities have a good economic value	0.832	0.692
As a whole, I am happy with the cost of services provided in virtual communities	0.832	0.692
KMO		0.500
Khi-square approximated		59.866
Ddl		1
Bartlett's test		0.000
Cronbach's alpha		0.556
Variance explained		69.242

## Appendix 2: Reliability and purification analysis of the measurement scales (continued)

<i>Items</i>	<i>Components</i>	<i>Commonalities</i>
<i>Ease of use scale</i>		
In virtual communities, I know how to find what I am looking for	0.791	0.625
I feel very comfortable navigating virtual communities	0.859	0.738
I access these virtual communities from my home	0.847	0.718
KMO		0.689
Khi-square approximated		157.598
Ddl		3
Bartlett's test		0.000
Cronbach's alpha		0.776
Variance explained		69.358
<i>Scale: Quality communities</i>		
A good virtual community incorporates serious, helpful, present and knowledgeable experts	0.792	0.627
A good virtual community is characterised by the interaction between its members	0.778	0.606
A good virtual community provides useful and reliable information	0.824	0.680
A good virtual community rarely has spam or unwanted messages	0.712	0.507
KMO		0.758
Khi-square approximated		223.324
Ddl		10
Bartlett's test		0.000
Cronbach's alpha		0.716
Variance explained		50.234

## Appendix 3: Reliability and purification analysis of the measurement scales

<i>Items</i>	<i>Components</i>	<i>Commonalities</i>
<i>Scale: Feelings of escape</i>		
At some point, research in this virtual community makes me forget the surrounding reality	0.875	0.766
When I'm in this virtual community, I feel immersed in another world	0.897	0.805
While viewing the virtual community, I am so absorbed by what I do that I lose track of time	0.787	0.619
KMO		0.677
Khi-square approximated		210.234

### Appendix 3: Reliability and purification analysis of the measurement scales (continued)

<i>Items</i>	<i>Components</i>	<i>Commonalities</i>
<i>Scale: Feelings of escape</i>		
Ddl		3
Bartlett's test		0.000
Cronbach's alpha		0.814
Variance explained		73.023
<i>Scale: Feelings of entertainment</i>		
I think that accessing this virtual community is a pleasant way of spending time	0.860	0.724
It is fun to shop in virtual communities	0.860	0.438
KMO		0.572
Khi-square approximated		78.165
Ddl		3
Bartlett's test		0.000
Cronbach's alpha		0.625
Variance explained		73.929
<i>Scale: Satisfaction</i>		
I think frequenting this space was a good decision	0.849	0.721
I am satisfied with my visit to this space	0.896	0.803
I think I had a good idea when I decided to go to this space	0.882	0.777
I'm glad to have been in this space	0.916	0.838
KMO		0.848
Khi-square approximated		494.665
Ddl		6
Bartlett's test		0.000
Cronbach's alpha		0.907
Variance explained		78.494

### Appendix 4: Regression results

**Table A4.1** Results of regression analysis between the extrinsic values and satisfaction

	<i>Satisfaction (dependent variable)</i>		
	<i>T</i>	<i>B</i>	<i>Significance</i>
Economic value	14.722	0.528	0.000
Ease of use	34.460	0.824	0.000

**Table A4.2** Results of regression analysis between intrinsic value and satisfaction

	<i>Satisfaction (dependent variable)</i>		
	<i>T</i>	<i>B</i>	<i>Significance</i>
Feelings of escape	8.631	0.342	0.000
Feelings of entertainment	24.354	0.717	0.000

**Table A4.3** Results of the regression analysis between economic value and intrinsic values

	<i>Economic value (dependent variable)</i>		
	<i>T</i>	<i>B</i>	<i>Significance</i>
Feelings of escape	7.173	0.290	0.000
Feelings of entertainment	14.984	0.534	0.000

**Table A4.4** Results of the regression analysis between ease of use and intrinsic values

	<i>Ease of use (dependent variable)</i>		
	<i>T</i>	<i>B</i>	<i>Significance</i>
Feelings of escape	5.930	0.243	0.000
Feelings of entertainment	21.185	0.666	0.000

**Table A4.5** Results of the regression analysis of the quality of virtual communities

	<i>The quality of virtual communities (dependent variable)</i>		
	<i>T</i>	<i>B</i>	<i>Significance</i>
Economic value	5.551	0.228	0.000
Ease of use	10.826	0.415	0.000
Feelings of escape	6.443	0.262	0.000
Feelings of entertainment	7.740	0.310	0.000
Satisfaction	12.988	0.480	0.000

**Table A4.6** Results of the regression analysis of the quality of virtual communities

<i>The relationship of the moderation quality of virtual communities</i>	<i>Satisfaction</i>		
	<i>T</i>	<i>R<sup>2</sup></i>	<i>Significance</i>
Economic value	13.29	0.543	0.000
Ease of use	29.77	0.811	0.000
Feelings of escape	6.255	0.281	0.000
Feelings of entertainment	22.00	0.731	0.000