

**WHAT'S KEEPING PEOPLE IN VIRTUAL COMMUNITIES? A SURVEY STUDY
OF THE DETERMINANTS OF PARTICIPANT'S SATISFACTION**

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WHAT'S KEEPING PEOPLE IN VIRTUAL COMMUNITIES? A SURVEY STUDY OF THE DETERMINANTS OF PARTICIPANT'S SATISFACTION

Abstract: Participation in virtual communities (VC) has dramatically increased during the last few years; for instance, in Spain, 44.6% of Internet users belong to an online community, using it at least once a week. This new trend opens up the possibility of extensive research in marketing in order to propose useful managerial implications. In particular, this research aims at explaining the drivers and effects of the participant's satisfaction in VC. The recent literature review on social communities leads us to a set of hypotheses about the impact of six main motivations to participate on satisfaction level and on satisfaction prototypes which in turn may influence the participants' loyalty. We also explore the impact of individual factors (gender, situation, lifestyles values) and the VC's characteristics (size, usage frequency, duration of participation). To contrast empirically the proposed hypotheses, an online survey was carried out on a sample of 118 Spanish undergraduate students. The results demonstrate that 5 main motives have a significant impact on satisfaction level, satisfaction prototypes and continuance intention. The main drivers of those relationships are the duration of participation and the lifestyles values.

Key words: Virtual community, Motivation, Satisfaction, Loyalty

INTRODUCTION

The emergence of “virtual communal marketing” offers an attractive approach for organizations to collect information regarding customer motivations, perceptions, needs evolution, and segmentation variables; as well as to obtain revenue through sales of goods, services, contents, and advertising. As an evolution from “virtual relationship marketing”, “virtual communal marketing” is the marketing discipline response to meet the challenge of the new competitive cyber space. In the Internet age the customer is an active creator of multifaceted information and an active part of multinodal networks that is, as the same time, more communally influenced (Kozinets, 1999). These characteristics add complexity to the classical assumptions underlying the key principles of relationship marketing. The antecedents of customer satisfaction and long term client relationships must be re-analysed in the environment of the virtual communities where the consumer became a member of virtual communities.

According to Rheingold (1993) the name “virtual community” (VC) was proposed by Internet pioneer Howard who defines VC as the “social aggregations that emerge from the net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace”. More recently, Pentina et al. (2008, p.114) define VC as “self-selecting groups of individuals engaged in sustained computer-mediated interactions around common interests or goals, governed by shared norms and values, and serving individual and shared needs”. In both definitions, we found the two main elements that build a community: a group of people who share values, social interaction, social ties, and a common ‘space’ (computer-mediated or ‘cyberspace’ in this case). The social interaction is a web of affect-laden relations that encompasses a group of individuals-relationships that interlace and strengthen one another, rather than simply a chain of one-on-one relationships. In addition, a community requires a measure of commitment to a set of shared values, meanings, and a shared historical identity, i.e. a culture (Etzioni and Etzioni, 1999).

Various types of virtual communities can be identified, (a) *VC of interest*, with members sharing a common interest, such as associations, (b) *VC of practice*, with members focused on a set of professional responsibilities and activities, (c) *VC of purpose*, where the focus is to articulate a shared view of the future, (d) *VC of passion*, with members sharing an

interest but further, becoming passionate advocates of it, and (e) *VC of place*, where the origin is a geographic community such as a region or school (Khoshoie, 2006). All of them are increasing in popularity, according to recent estimations, 84% of US Internet users belong to virtual communities of different types, as professional associations, hobby groups, political organizations, and entertainment communities (Pentina et al., 2008). In Spain, 44.6% of Internet users belong to an online community, using it at least once a week (M.R.S. 2008). Consequently, VC have awake the interest of marketers and scholars by their potential to increase sales by spreading electronic word of mouth (Hennig-Thurau et al., 2004), serve as self-selected well specialized target markets, and being rich sources of information regarding preferences, new product ideas and trends (Muniz and O'Guinn, 2001).

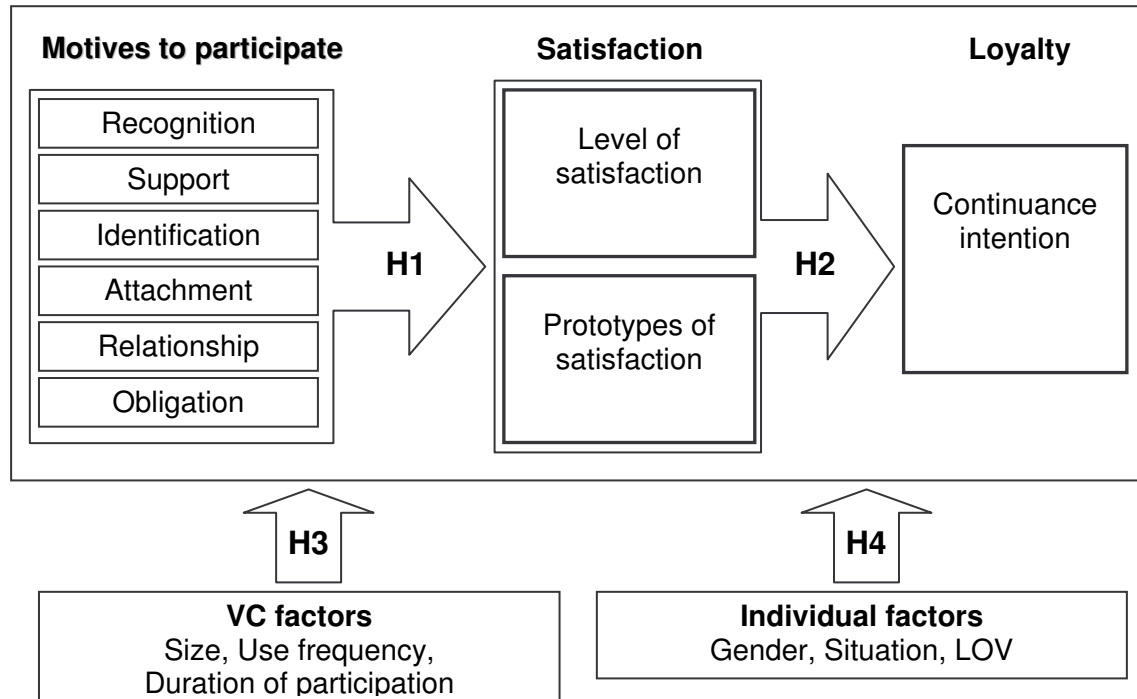
Up to now, most scholars have focused on underlying these strategic issues in relation to consumption VC through conceptual and qualitative frameworks. A second field of research has emerged in order to underline the social psychological processes that make VC's so popular. Online surveys have been traditionally carried out to identify the motives to participate to a VC which, in turn, could have an impact on the attitudes and the behaviour of the participants. Nevertheless, the researches reach diverging conclusions due to the variety of VC studied: indeed, results are different for brand communities (Popp et al., 2008; Gupta and Kim, 2007), for opinion platforms (Henning-Thurau et al., 2004; Wang and Fesenmaier, 2004) or for chat communities (Bagozzi and Dholakia, 2002). Only two recent studies looked into the motivations to participate in VC in general (Pentina et al., 2008; Dholakia et al., 2004).

Our own contribution therefore aims to verify and extend the knowledge already acquired about motivations to participate in VC's and, in turn, to measure its impact on satisfaction and continuance intention on which very little academic literature is available. Several effects related to the characteristics of the participants and the nature of the participation in the VC's will be also explored. First, the paper offers a theoretical framework which allows modeling conceptually the relationships between motivations, satisfaction, continuance intention and moderating variables. Second, it presents the methodological concerns related to the online survey and the results are discussed. We are finally able to identify several implications for academics and managers and to point out issues and topics for future research.

1. THEORETICAL FRAMEWORK AND HYPOTHESES

Figure 1 summarizes our theoretical framework and the hypotheses derived from the following discussion.

Figure 1. The conceptual framework of the research



1.1. Motives to participate in a VC

Many typologies of motives to join or participate in VC have been proposed and their influences on attitudes and behaviour reach different conclusions (cf. Table 1).

A first approach is to distinguish between cognitive needs, related to information acquisition, and affective needs related to emotional experiences (Gupta and Kim, 2007). Another classification is to consider goals and especially functional goals, such as the symbiotic exchange of useful information, and hedonic goals with the creation and consumption of a positive, confluent experience through interaction (Bagozzi and Dholakia, 2002). And, to go further, two others goals have been traditionally studied: the social goals (trust, communication, identification and involvement) and the psychological goals (belonging, relationship and affiliation) (Wang and Fesenmaier, 2004).

A second approach is to consider two levels of motives: the individual-level motives and the group-level motives (Dholakia et al., 2004). At the individual-level, we can list 5 main motivations. The first two values are self referent: *Purposive value* is related to the utilitarian value derived from accomplishing some pre-determined instrumental purpose, *Self-discovery value* focuses on discovering salient aspects of one's self through social interactions. The next two values are group referent: *Maintaining interpersonal connectivity* refers to the social benefits such as friendship; *Social enhancement* is the value that participants are looking for to obtain recognition by peers, for example. Finally the fifth value is the *entertainment value* derived from fun through playing and interacts with others. The group-level motives are closed to the social identity construct which is composed of *self categorization*, *affective commitment* and *group based self esteem*. Based on the previous classification, Pentina et al. (2008) identify three main motivations categories to join and participate in virtual communities: Socially-Oriented, Informational/Purposive, and Transactional. The first category is a second-order factor including three dimensions: Social Integration, Entertainment, and Status Enhancement.

We can therefore draw several conclusions from the previous studies. First, the results show that the main motives are related to informational or functional goals, then to social oriented needs and hedonic goals and finally to psychological needs. Second, the structural equation models indicate that the individual-level motives are the first antecedents which, in turn and in a second order, have an impact on group-level motives. Generally speaking, we also observe that there is not a clear difference between motivations to join or motivations to participate in VC (Ridings et al., 2006). Nevertheless, according to Blanchard and Markus (2004), the motivations to participate are much more related to the "sense" that the participants give to the VC.

Table 1. Empirical studies on motivations to participate in VC

Authors	Type of VC	Classification of Motives, Needs, Benefits	Methodology	Results
Pentina et al. (2008)	Virtual communities in general	<ul style="list-style-type: none"> ▪ Socially oriented (social integration, entertainment and status enhancement), ▪ Informational/Purposive, ▪ Transactional. 	Online survey to 533 undergraduate students belonging to a VC + PLS	The main motives are: 1) Informational/Purposive, 2) Social oriented, 3) Transactional.
Popp and al. (2008)	Virtual Brand Community (liqueur producer)	25 different items /motives to participate	Online survey of 4534 members + Factorial analysis	The dominant dimensions are: 1) Community related motives, 2) Brand related motives, 3) Added values.
Gupta and Kim (2007)	Web site of an online store for mothers	<ul style="list-style-type: none"> ▪ Cognition (functional usefulness, social usefulness, system quality) ▪ Affect (pleasure, arousal) 	Online survey of 275 women participants + LISREL	The main antecedents of “Attitude toward VC” + “Commitment to VC” are: 1) System quality, 2) Functional Usefulness, 3) Pleasure.
Dholakia and al. (2004)	Network VC* and Small group VC**	<ul style="list-style-type: none"> ▪ Self referent values (Purposive, Self-discovery), ▪ Group referent values (Interpersonal, enhancement) ▪ Entertainment value 	Online survey of 545 regular participants of the 264 different VC + LISREL	The main antecedents of “Desire”+ “Willingness to participate” + “Participation behaviour” are: 1) Purposive value, 2) Entertainment value, 3) Self-discovery.
Henning-Thurau et al. (2004)	Web-based consumer-opinion platforms	11 potential motives to participate in eWOM (read and write comments in platforms)	Online survey of 2 000 consumers + Factorial analysis	The 4 main motives to participate are: 1) Social benefits, 2) Economic incentives, 3) Concern for others, 4) Extraversion/Self-esteem enhancement
Wang and Fesenmaier (2004)	Online travel community	<ul style="list-style-type: none"> ▪ Functional (information, efficiency, convenience) ▪ Social (trust, communication, identification, 	Online survey to 322 members of the VC	The main antecedents of the “Nature of participation” are: 1) Social, 2) Functional.

		involvement) <ul style="list-style-type: none"> ▪ Psychological (belonging, relationship, affiliation), ▪ Hedonic (amusement, fun, enjoyment, entertainment). 	+ LISREL	Hedonic.
Bagozzi and Dholakia (2002)	Virtual community of chat	<ul style="list-style-type: none"> ▪ Individual-level motives (attitudes, positive and negative anticipated emotions) ▪ Group-level motives or social identity (self categorization, affective commitment, group based self esteem) 	Paper survey of 157 regular participants + LISREL	The main antecedents of “Desires” + intention to participate” are: 1) social i 2) positive anticipated emotions.

* Email list, Website bulletin boards, Usenet newsgroup **Real time online chat, web based chat room, multiplayer virtual games, multi-user domains.

Therefore, we propose to study the individual-level motives to participate in VC's by considering the informational, social, hedonic and psychological benefits and its 6 related motives previously identified by the conceptual paper of Blanchard and Markus (2004):

1. *Recognition* takes place when the informational benefit is based on the recognition of the others participants,
2. *Support* is an informational benefit due to the exchange of interesting and relevant data or topics,
3. *Identification* refers to the social benefits derived from the identification with the others members,
4. *Attachment* is another social benefit which refers to the involvement that a participant feels towards the VC.
5. *Relationship* is a more hedonic benefit derived from the friendship that participants can develop.
6. *Obligation* is a more psychological motive that is based on the feeling that the participants are obliged to maintain their participation.

We assume that these 6 motives to participate to VC's have a significant and positive impact on satisfaction. This is the first hypothesis (H1) in this research.

1.2. Participants' satisfaction and continuance intention

Research on satisfaction has a long tradition in services marketing literature, and lately is taking relevance in the Internet setting. First, it started with commercial web pages satisfaction, involving aspects as trust in transactions, quality attributes, easiness of use, *etc.* Also in the open source development context, involving participation in projects, motivations to contribute, *etc.* And, it is more recent the phenomenon of virtual communities where there is not a commercial provider or direct economic purpose for interaction among participants, such is the case of *facebook* and *myspace*. These social communities are gaining participants and it seems interesting to know why individuals stay in, how satisfied they are, and also what is the main orientation or type of satisfaction they report when rating their level of satisfaction.

According to Oliver (1997, p. 13) satisfaction is the consumer's fulfilment response in the form of a judgment depending on the pleasurable level that a product or service

experience have provided, with reference to a standard. That response comprises cognitive and affective judgements (Mano and Oliver, 1993) and the combination of different levels of those two judgments point out to alternative experiential bases (Westbrook and Oliver, 1991). These findings are especially important since participants may have diverse orientations to the VCs they stay in, for instance some individuals can be interested only in retrieving information, while others participate just to have fun. These response orientations have been called prototypes, and so far research has proved the existence of six of them (Oliver 1997): Satisfaction-as-*delight*, Satisfaction-as-*pleasure*, Satisfaction-as-*contentment*, Satisfaction-as-*surprise*, Satisfaction-as-*relief*, and Satisfaction-as-*tolerance*. We expect that these prototypes translated to the VC participations show the profile of different groups of participants that allow us to realize what is keeping them in the VC.

In the services literature, satisfaction has been found to be a determinant of loyalty or retention, positive word of mouth in the form of recommendations, and in the case of dissatisfaction to be a determinant of exit, change of provider and negative word of mouth. There are few researches that study the relationship of satisfaction with VC and the participant's behavioural intentions. One of the studies (Langerak et al., 2003) sees satisfaction as a multidimensional construct, consisting of four dimensions, which were supposed to have a positive effect on VC members' participation. The dimensions were reported on the bases of the level of satisfaction with: member-to-member interactions, organizer-to-member interactions, community site, and organizer-to-community interactions. The last dimension did not affect member participation in the VC but the other three dimensions did impact participation, being the most important dimensions the satisfaction with member-member interactions and the satisfaction with the community site.

Two other studies model satisfaction as one-dimensional construct. One of the studies (Chen, 2007) proposes a continuance model for a professional virtual community based on the expectation-confirmation theory. Thus, proposed a pre-usage stage where the community participant held expectations about social interaction ties, knowledge quality and system quality. In a second stage the participant confirm those expectations and they were assumed to affect the participant satisfaction. In turn, satisfaction was assumed to affect the participant continuance intention. This model was tested in a professional community in Taiwan, and the author found that member social interaction ties confirmation affected, positively, satisfaction with the website, as also did member knowledge quality confirmation. The effect of

satisfaction on continuance intention was positive and very high (0.56). In line with other authors, Chen suggests that if expectations are not met, dissatisfaction will lead to desertion. Another study (Jin et al., 2007), based on the theories of uses and gratifications, sense of belonging and expectation disconfirmation, proposes a model where satisfaction with the VC influences the participant continuance intention. The authors tested this relationship finding a strong relationship (0.54). *In line with these findings we also expect that satisfaction with a VC has a strong and positive impact on the participant continuance intention (Hypothesis 2).*

1.3. Individual and VC drivers of motivations, satisfaction and continuance intention

Very few drivers have been studied but we can nevertheless argue that scholars have mostly focused on the influence of VC types. To our knowledge, we can quote two studies interested in measuring the role of the VC types. On the one hand, Koh and Kim (2001) test the moderating effect of the VC origin (online vs. offline) on the sense of virtual community. On the other hand, by conducting multiple sample analysis, Dholakia et al. (2004) identify the moderating role of network and small-group VC. Network VC such as e-mail lists or website bulletin boards are composed of participants that do usually interact with different groups. At the opposite, small-group VC are real-time online chat system or multiplayer virtual game in which the participants are used to interact with the same group of people. The results show that in small group-based communities, group-referent values (maintaining interpersonal interconnectivity, social enhancement) are stronger whereas in network-based communities the main motivations are self-referent values (purposive value and self discovery). *Therefore, the size of the VC, the participation frequency and the activities displayed in the VC should play a role on motivations, satisfaction and continuance intention to participate in VC that we will explore in a third hypothesis (H3).*

Factors related to individual characteristics have not yet been studied except in the study conducted by Porter and Donthu (2008) which argues that women are more motivated in social interaction than men when participating to VC. Another interesting individual variable refers to personal values as they could be predictive factors of consumer attitudes and behaviour in VC. In particular, we can test the effect of the List of Values (LOV) developed by Kahle (1983). The LOV draws a distinction between external and internal values, and gives the importance of interpersonal relations in value fulfilment as well as personal factors

(i.e., self-respect, self-fulfilment) and apersonal factors (i.e., fun, security, and excitement) in value fulfilment. *Therefore, we will test the role of gender and individual values on motivations, satisfaction and continuance intention to participate in VC in a fourth hypothesis (H4).*

2. RESEARCH METHOD

2.1. Subjects and procedure

Students are among the early adopters of innovations, especially for technology based products and they are familiar with a wide range of Internet communities (Perlusz et al., 2003). For these reasons, students have been considered, in previous studies, as an appropriate source of data to improve the understanding of VC (Pentina et al., 2008; Wang and Fesenmaier, 2003) and have been actually chosen for our study. A total of 118 Spanish students from undergraduate courses of marketing participated in the online survey, the URL of which was distributed via email. The demographic characteristics of the sample indicate that most of the participants do not have any job (50% are only studying), have a medium age of 22.4 years old and are living with their family (73%). This profile is representative of general student population except in terms of sex distribution as the sample is mostly composed of women (77%).

The survey was presented as an “opinion study” and participants had to fulfil, first, general questions about Internet use. We can particularly observe that Internet is the second activity of those students (after studying): they spend 25% of their time connected on Internet versus 14% of their time looking at TV. They do connect on Internet when they (1) need information (95% are using Google or Yahoo when connecting), (2) want to communicate (92% are using their e.mail when connecting), and (3) want specific product or service (60% are downloading music and 44% are checking their bank account).

Then, participants were asked to indicate how much they know and how much they participate in different VC. According to previous interviews, we were able to propose a list of eight popular VC among the student population: *My Space, Hi5, Facebook, LinkedIn, Tuenti, Orkut, Messenger* and *Skype*. According to the classification of Dholakia et al. (2004),

we thus focus on small-group VC composed of participants that do usually interact with the same group of people. The descriptive analysis shows that the 5 most popular VC in terms of knowledge are Messenger (97%), My Space (82%), Tuenti (75%), Skype (64%) and Facebook (56%). In addition, we can observe that 71% of the students do participate to at least one VC and we can present descriptive results towards a reduce sample of 68 students (cf. table 2).

Table 2. Descriptive analysis of the VC characteristics (n=68)

Concepts	Questions	Main results
Frequency of participation to VC	<i>How much do you participate in the following VC?</i>	1. Messenger 2. Tuenti 3. Skype 4. Facebook 5. My Space
Usage and activity in the VC	<i>Are you participating in the following activities?</i>	1. Communication with others (yes=82%), 2. Sending Photos (yes=75%), 3. Sharing what I like and I am interested in (yes=56%) 4. Discuss the blogs of others (yes=46%) 5. Sharing works (yes=44%)
Size of the VC	<i>How many contacts do you have on average?</i>	Average number of contacts per participant= 109
Duration of participation	<i>When did you join the VC the first time?</i>	▪ 5 years ago (35%) ▪ 6 months / 1 year ago (18%) ▪ less than 6 months ago (15%)
Reasons to join the VC	<i>Why did you join this VC?</i>	1. To be with my friends (26%), 2. For having fun (25%) 3. To communicate with friends that live far from me (21%)

2.2. Measures of motivations, satisfaction and continuance intention

To explore the *motivation to participate to a VC*, we carried out an analysis of the internal validity (with an exploratory factorial analysis) and the reliability (based on the Cronbach test). The factorial analysis (KMO=0.667; sign. Test Bartlett=0.000) demonstrates that the first item do not fit the requirements of the model (community index=0.296).

Only 5 of the 6 items do complete the different requirements of validity and reliability: the cumulative variance is higher to 60% (Malhotra, 1993); the Cronbach's alpha is greater than 0.6 and is always higher when the 5 items are included (Peterson, 1995). Therefore, we can argue that the motivation to participate to VC is a construct that could be measured through 5 items.

Table 3. Internal validity and fiability of the construct “Motivations to participate to a VC”

Items	Contribution to Factor 1	Cronbach's alpha / item
<i>RECOGNITION (“I can identify the participants”)</i>		
IDENTIFICATION (“I feel identified with the others”)	0.740	0.845
SUPPORT (“I find interesting and supportive information”)	0.823	0.818
RELASHIONSHIP (“I met new and interesting people”)	0.773	0.836
EMOT. ATTACHEMENT (“I feel involved in this community”)	0.808	0.823
OBLIGATION (“I feel obliged to fulfil in this community”)	0.846	0.813
% of variance explained (for the 5 items)	63.9%	
Cronbach's Alpha (for the 5 items)	0.846	

Satisfaction with the VC was a global measure, taking into consideration all previous experiences with the VC (cumulative satisfaction). We want to identify if there are different prototypes of satisfaction or orientations toward the VC, thus we translate the six prototypes proposed by Oliver (1997) to the VC context. We asked students to pick the orientation that best fitted the orientation they have toward the VC. The options were:

1. It makes me feel well (Satisfaction-as-*delight*)
2. It entertains me (Satisfaction-as-*pleasure*)
3. It is a routine/costume for me (Satisfaction-as-*contentment*)
4. I always find something new (Satisfaction-as-*surprise*)
5. I do not want to miss something (Satisfaction-as-*relief*)
6. I do not have any other alternative (Satisfaction-as-*tolerance*)

Continuance intention was measured by asking the VC participant whether she will use the VC in the future, having 5 options ranging from very likely to very unlikely, as in the Jin et al (2007) study.

2.3. Measures of individual and VC drivers

VC drivers have been measured using mono-items scales. The *size of the VC* depends of the average number of persons who are participating in the VC. Thus, we asked for the average number of contacts of the respondent. To measure the *usage frequency*, the students indicated on a 5-points scale their frequency of participation for each of the most popular VC. Then, they were asked to write down the VC that they connect to most often. Matching the results to the previous measures allows for a global measure of usage frequency. Finally, the *duration of participation* was measured through an ordinal scale and the question was: “From how long to you participate to this VC?”.

Individual drivers have been measured through mono-items scales except for the individual values construct. In particular, the 9 values of *the LOV* scale which are evaluated with 10 points (very unimportant to very important) as recommended by Khale (1983). This scale was first presented (“The following is a list of things that some people look for or want out of life”) then, the students were asked to rate each value on how important it is for them in their daily life. The 9 values and its corresponding domains are compared with the results of the factorial analysis carry out towards the sample of Spanish students.

Table 4. Items and its corresponding domains of LOV scale (Khale, 1983)

Initial components and items (Khale, 1983)			Factor 1	Factor 2
Internal values	Interpersonal factors	Self-fulfilment (“Autorealización”)	0.815	
		Self-respect (“Autorespeto”)	0.851	
	Apersonal factors	Excitement (“Diversión”)		0.892
		Fun and enjoyment of life (“Disfrutar de la vida”)		0.829
		Security (“Seguridad”)		0.716
External value	Sense of belonging (“Sentido de pertenencia”)		0.604	
	Warm relationships with others (“Relaciones cercanas con los demás”)		0.581	0.612

	Being well respected (“ <i>Sentirse respetado</i> ”)	0.662	0.453
	A sense of accomplishment (“ <i>Tener metas</i> ”)	0.775	
	Own value	5.12	1.01
	Variance %	56%	13%

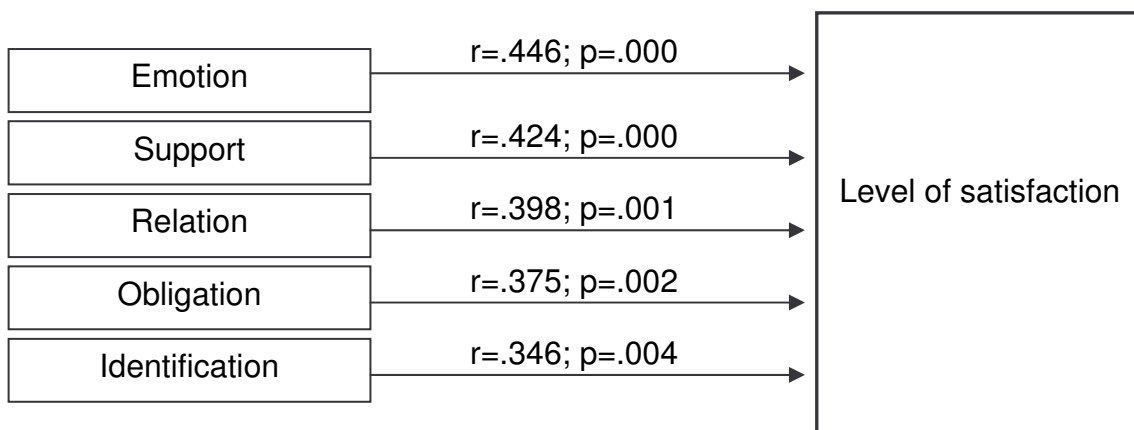
According to the Kaiser criteria of an own value stronger than 1, two factors can be extracted from the factorial analysis. It doesn't correspond to the initial structure of 3 factors identified by Khale (1983) and this difference is certainly due to cultural differences. Herein, we observe that the first factor represents more the interpersonal factors of self-fulfilment and self-respect. The second factor corresponds to the dimension of apersonal factors such as excitement, fun and enjoyment of life and security.

3. DATA ANALYSIS AND RESULTS

3.1. The impact of the five main motivations on satisfaction

Figure 2 shows the correlation test between the motivations to participate and the level of satisfaction reported. We observe that all the tests are positive and significant at a 5%. For instance, participants who are feeling emotionally implicated in the VC are the most satisfied. At the opposite, participants that are willing to participate in the VC because they feel obliged to do have a lower impact on satisfaction.

Figure 2. Correlations between motives and satisfaction level (n=68)



Therefore, hypothesis 1 (H1) is validated and we can argue that the motives to participate to VC are mostly hedonic, functional and social.

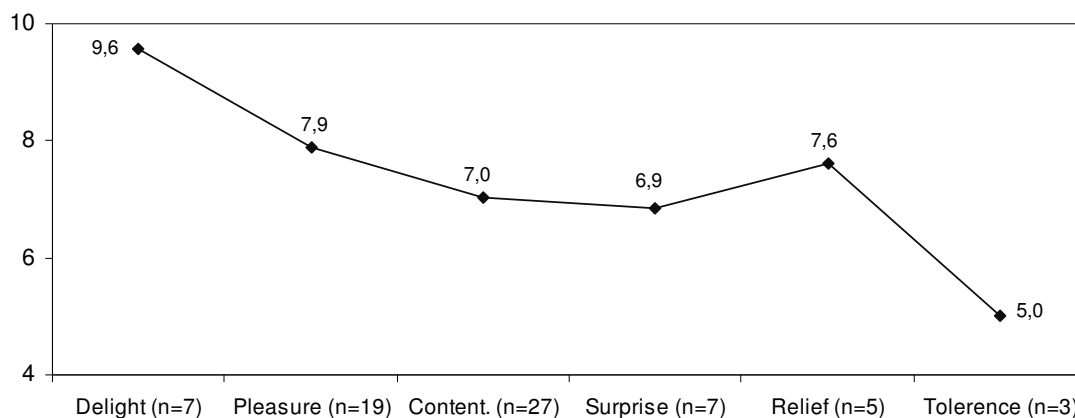
3.2. Satisfaction prototypes

Satisfaction level and satisfaction prototypes

Based on the satisfaction level reported by students, in a 0-10 scale, and following the 6 prototypes or orientations towards the VC, we group students and present the mean rating of satisfaction in Figure 3. In this figure, the prototypes are following the order suggested by Oliver (1997), so we expect the level of satisfaction to decrease, thus, the level of satisfaction of participants in group 1 (delight) should be higher than that of group 6 (tolerance).

We ran an ANOVA test and identified that there are significant differences among groups ($F=6.429$, $p=0.000$). As we can see in Figure 3 the trend is negative, except for the relief group that represents the group of participants that stay in the community because they do not want to miss something. A possible explanation is that they enjoy this feeling of curiosity, conversely to the definition which is more an apprehension. It is important to note that given our sample size the some sub-samples are really low and we cannot draw definite conclusions yet.

Figure 3. Satisfaction level by prototypes (total n=68)



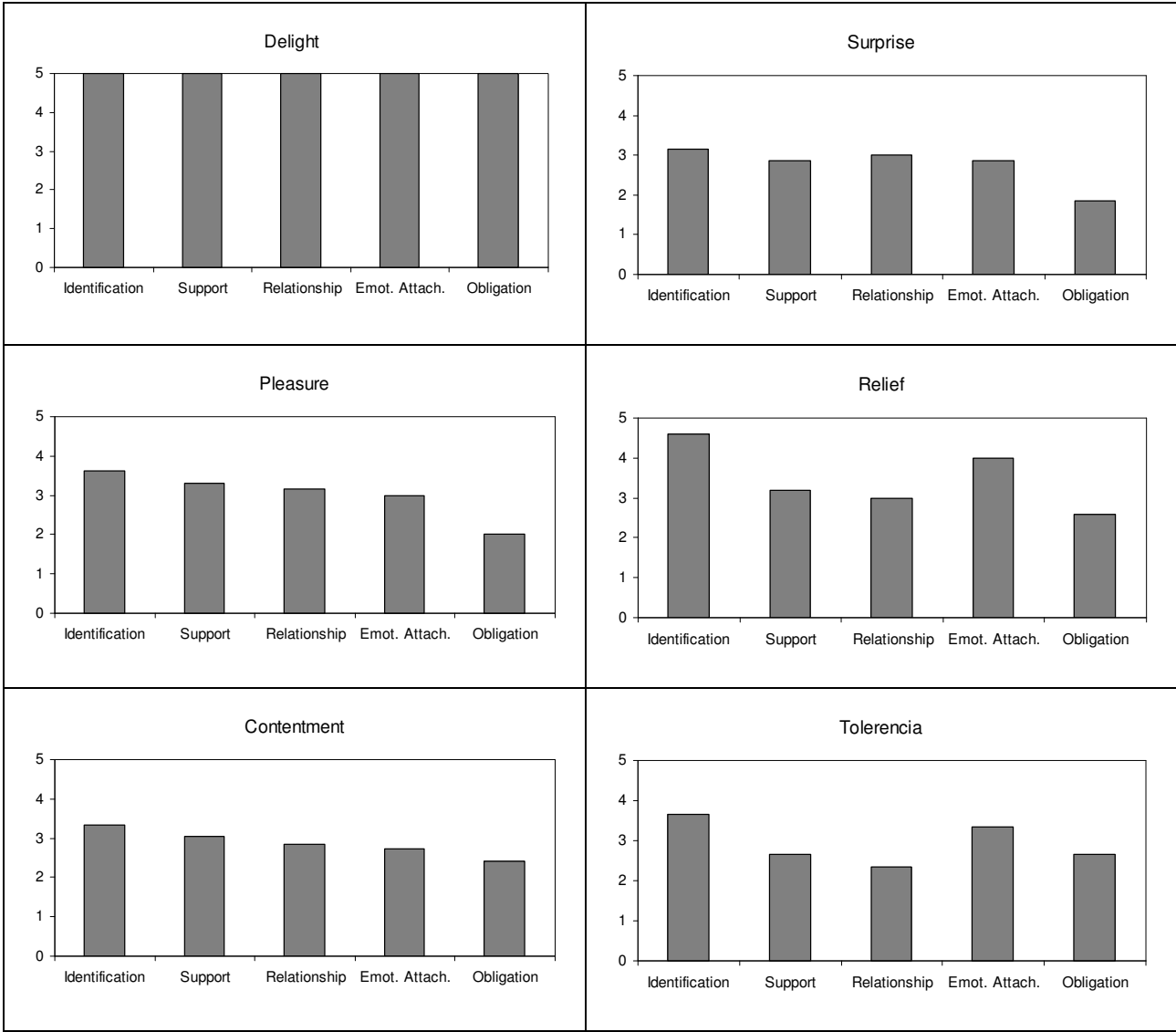
Motivations and satisfaction prototypes: Group profiles

Given that there are differences between prototype-groups, it results interesting to determine if there are motivations to participate that relate more to these six different groups. This analysis will help in identifying the profiles of different groups of participants, which in turn will allow us to realize what is keeping them in the VC.

Figure 4 shows for each prototype-group the level to which they agree to stay in the VC by motivation. Again, given sub-sample sizes we need to be careful; but in any case we can see that the delighted group is strongly agree in staying in the VC because they feel identified with others, they find support, they meet interesting people, they get involved in the community and they feel obliged to stay in. Conversely, in the tolerance group the ratings are around 2 and 3, showing that they are not very agree with these motivation confirmations.

With a bigger sample size we will be able to fully identify the motivations for staying in the VC by prototype-group.

Figure 4. Satisfaction prototypes and motivations to stay in the VC



3.3. The impact of satisfaction on Continuance intention

As in previous researches (Chen, 2007; Jin et al, 2007) we found a positive and strong influence of participants' satisfaction on continuance intention. The standardized coefficient is 0.593 ($t=5.98$), a slightly higher value than the other two studies. This means, that the higher the satisfaction level, the bigger is the participant intention to continue using/staying in the VC. Satisfaction explains in 0.34% the continuance.

Therefore, hypothesis 2 (H2) is validated and we can confirm that participants satisfaction with the VC increases the probability to stay in.

3.4. The VC drivers

We observe that the *size of the VC* do not have any significant impact. Nevertheless, usage frequency and especially duration of participation are significant drivers of motivation, satisfaction and continuance intention.

The *usage frequency* is significantly correlated to three motives: relation ($r=0.37$; $p=0.003$), emotion ($r=0.38$; $p=0.002$) and obligation ($r=0.28$; $p=0.024$). The frequency of use is positively and highly correlated to satisfaction level ($r=0.609$; $p=0.000$) and to continuance intention ($r=0.419$; $p=0.001$). The *duration of participation* is correlated to satisfaction level ($r=.432$; $p=0.000$) and continuance intention ($r=0.34$; $p=0.005$). And we can report the following correlations between motives and duration (cf. table 5):

Table 5. Correlation tests between the 5 motives and the duration of participation

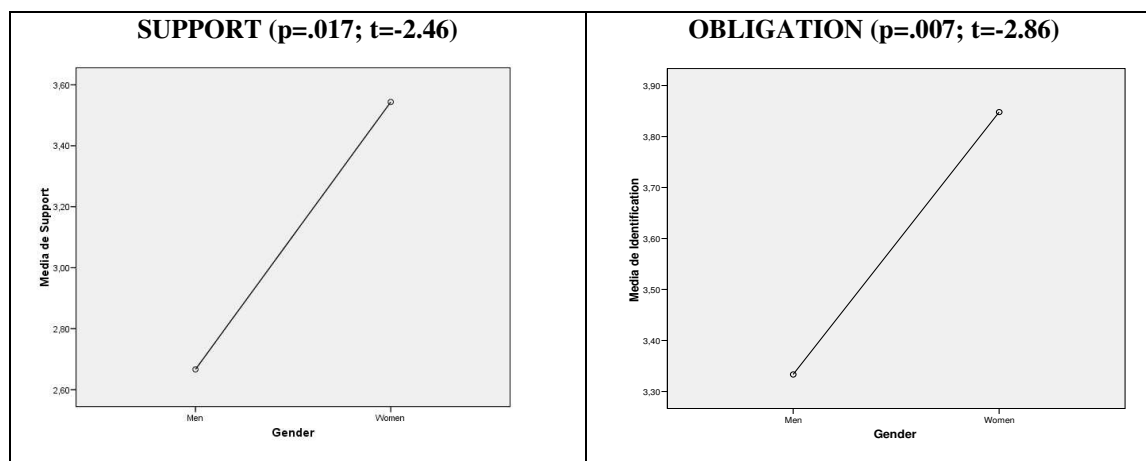
Correlations scores with “ <i>duration of participation</i> ”	Pearson r	Sign.
Obligation	.43	.000
Support	.342	.004
Relation	.34	.012
Identification	.248	.04
Emotional Attachment	.262	.031

Therefore, hypothesis 3 (H3) is partly validated as usage frequency and duration of participation can influence the motivations to participate, the satisfaction of the participants and their probability to continue participating in the VC.

3.5. The individual drivers

We observe that the motives to participate to VC are partially due to the *gender of the participant*. Nevertheless, we demonstrate that support and obligation are significant and stronger motives for women compared to men (see figure 5).

Figure 5. Significant mean tests between motives and gender



The satisfaction level is statically equal for men and women: the average satisfaction for men is 7.6/10 vs. 7.5/10 for women. Even if satisfaction level is equal for men and women, we show that women are more likely to continue in the VC than men ($t=-2.117$; $p=0.044$). This interesting result underlines that the average intention to continue for men is 3.6/5 vs. 4.2/5 for women.

The table 6 shows that there are significant correlations between *LOV* and motives and that for two main motives (Identification and Relationship) the difference between Interpersonal and Apersonal values has a specific impact.

Table 6. Correlations between motives to participate to VC and LOV

Motives	Interpersonal values	Apersonal values
	Self-fulfilment and Self-respect	Excitement, Fun and enjoyment of life, Security
Identification	$r=.31$; $p= .014$	n.s.
Support	$r=.31$; $p= .014$	$r=.25$; $p= .046$
Relationship	n.s.	$r=.33$; $p= .009$
Emot. Attachment	$r=.31$; $p= .007$	$r=.48$; $p= .000$
Obligation	$r=.37$; $p= .003$	$r=.48$; $p= .000$

The satisfaction level is not significantly correlated to the Interpersonal values (Self-respect and self-fulfilment) but there is a significant and positive correlation with Apersonal values ($r=0.366$; $p=0.004$). In the same line, the continuance intention is positively correlated to the Apersonal values ($r=0.285$; $p=0.026$) but we didn't find any correlation with the interpersonal values. Therefore, hypothesis 4 (H4) is partly validated and the results show the possibility of extensive research focused on individual drivers.

CONCLUSION

Understanding what makes satisfied and loyal participants in VCs is a critical knowledge for designers and developers of on-line communities. Thomas et al. (2007) notes that research in this arena is important since it is a new powerful context for consumers, it offers opportunities for businesses and can help in understanding changes in the ways people make a decision on which products and services to consume, and how they actually consume them.

Our study sought to understand the motives for participating in VC, the types of satisfaction evoked for different groups of participants, and the participants' continuance intention. The results suggest that the motives to participate in VC have hedonic, functional and social roots. More specifically, we found that support, identification, attachment, relationship and obligation are the main motivations to be involved in a VC. Participants who are feeling emotionally implicated in the VC are the most satisfied. These findings can be translated to the commitment theory since participants that invest the most (time and emotions) in the VC, get more involved and as they spend time and effort they expect to receive the same from other participants, which may retain their participation. Our results indicate that VC that better fit member's motivations and satisfaction have higher potential to retain their participants. We found a positive and strong influence of participants' satisfaction on continuance intention. In brief, the results provide an overall support of the theoretical model.

Among the limitations and future lines of research it is important to note that we asked for motivations, satisfaction and continuance intention to the most popular VCs among the sample. We particularly focus on VC such as Messenger, My Space, Tuenti, Skype or Facebook. Our conclusions are therefore only valid for small-group VC in which participants interact with the same group of people and we should also expand our research to network VC composed of participants that do usually interact with other groups of people (Dholakia *et al.*, 2004). We did not differentiate the type of participation in the VC. It will be then interesting to study the active versus lurking (passive) behaviour of participants (Ridings et al., 2004).

In addition, it will be interesting to assess the roles that play individual and psychological variables in participation, such as personality traits (e.g. introversion vs. extroversion). Also, a longitudinal analysis will shed light on the life cycle of VCs and the

variation of satisfaction prototypes across time, since VC are in a very incipient state and because of the novelty almost everyone wants to participate, but in the long term their use can become more rational and specific.

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APPENDIX 1. QUESTIONNAIRE (original in Spanish)

Cuestionario

Actualmente estamos realizando un estudio sobre las actividades que realizan los jóvenes.

Nos gustaría que participases en la presente encuesta; cumplimentarla te llevará solo unos minutos y tus opiniones serán una información muy valiosa. Todos los participantes entrarán en el sorteo de un cheque regalo de 1.500 euros siempre que se obtengan más de 200 respuestas a la encuesta. Si reenvías la encuesta a tus amigos y conocidos tendrás entonces más oportunidades de ganar.

Agradecemos de antemano tu colaboración

El cuestionario intenta incidir y profundizar sobre distintas áreas.

- 1. Queremos que nos cuentes qué te gusta hacer en tu tiempo libre, ¿podrías repartir 100 puntos entre las siguientes actividades, de tal forma que reflejen el porcentaje de tiempo que dedicas a cada una de ellas?**

		% Tiempo (total 100%)
1.	Hacer deporte	
2.	Estudiar	
3.	Ver la tv	
4.	Leer revistas, diarios, libros	
5.	Conectarme a Internet (navegar, chatear, blogs, descargas ...)	
6.	Salir de copas/botellón/fiestas	
7.	Ir a conciertos, festivales	
8.	Ir a espectáculos deportivos	
9.	Jugar con consolas o pc ...	
10.	Ir de compras	

- 2. ¿Cuántas horas al día te conectas a Internet?**

▪ En la semana:horas/día

- 3. ¿Cuántas horas al día te conectas a Internet?**

▪ En fines de semana:horas/día

- 4. ¿Desde dónde te conectas y con qué tipo de terminal?**

	PC	Portatil	Movil	Otros
Casa				
Universidad				
Trabajo				
Cibercafé				
Otros (especificar)				

- 5. Durante la última semana dinos cuales de las siguientes actividades has realizado en Internet . (Rotar listas de actividades)**

	Si	No
<ul style="list-style-type: none"> ▪ Buscador ▪ Correo electrónico ▪ Consulta de noticias ▪ Mensajería instantánea ▪ Ayudas al estudio ▪ Descarga de software ▪ Descarga de música ▪ Descarga de otros ficheros ▪ Visita a sites de organismos públicos ▪ Chat ▪ Descargas de vídeo ▪ Foros ▪ Consultas bancarias ▪ Juegos en red ▪ Compras viajes, vacaciones ▪ Información sobre salud ▪ Formación on-line ▪ Lectura de blogs ▪ Operaciones bancarias/financieras ▪ Compra de entidades espectáculos ▪ Transferencia via FTP ▪ Videoconferencia ▪ Compras habituales: alimentación, limpieza ... ▪ Compra libros/música/vídeo ▪ Apuestas, juegos de azar ▪ Escribir blog personal ▪ Mantenimiento o consulta de redes sociales ▪ Otras compras Otros _____ (especificar)		

6. Ahora vamos a pasar a centrarnos en las comunidades virtuales tipo Facebook, tuenti, Hi5, linkedin ...¿Las conoces?

	Si	No
My space		
Hi5		
Facebook		
Linkedin		
Tuenti		
Orkut		
Messenger		
Skype		
Otras (especificar)		

7. ¿Estas registrado en alguna comunidad virtual?

- SI
 NO

8. ¿Con qué frecuencia utilizas cada una de las siguientes herramientas o aplicaciones?

	No estoy registrado					
		Siempre	Frecuentemente	De vez en cuando	Pocas veces	Nunca
My space Hi5 Facebook Linkedin Tuenti Orkut Messenger Skype Otras (especificar)						

9. Si has dejado de utilizar una comunidad virtual, dínos, por favor, el principal motivo: (respuesta abierta)

10. A continuación aparecen distintos usos de las comunidades virtuales señala cuáles de los mismos utilizas.

	Si	No
Postear, subir fotos para que otros las vean (facebook,...) Compartir trabajos, divulgar conocimientos Crear o actualizar mi propio blog Comentar blog de otros Mantener mi propia web Crear o trabajar en web de otros Mezclar contenidos Postear/subir videos para que otros los vean (youtube...) Contactar o mantener el contacto con amigos y conocidos		

11. ¿Cuál es la comunidad virtual donde más te conectas?

	Si	No
My space Hi5 Facebook Linkedin Tuenti Orkut Messenger Skype Otras (especificar)		

12. Pensando en la comunidad virtual que más utilizas, cuántas personas aproximadamente tienes entre tus contactos: personas

13. Continuando con la misma comunidad virtual, podrías decirnos hace cuanto tiempo comenzaste a utilizarla?

- Menos de 6 meses
- Entre 6 meses y 1 año
- De 1 a 2 años
- De 2 a 3 años

- De 3 a 4 años
- De 4 a 5 años
- Más de 5 años

14. ¿Cómo te enteraste de la existencia de esta comunidad virtual? => Respuesta única

- Cuando estuve de Erasmus, allí las utilizaban mis amigos
- Me lo comentó un amigo o conocido
- Navegando a través de Internet
- A través de los medios tradicionales
- A través de menciones o comentarios en los blog
- Otros ...(especificar)

15. ¿Cuál fue el principal motivo por el que empezaste a utilizarla? => Respuesta única

- Para mantenerme en contacto con amigos fuera de mi ciudad
- Para localizar a antiguos amigos o compañeros de clase
- Para compartir fotos con mis amigos
- Por diversión (juegos, aplicaciones,...), por probar
- Porque todos mis amigos lo tenían
- Otros ...(especificar)

16. Indique el grado de acuerdo de las siguientes afirmaciones: Participo en esta comunidad virtual por que.....

	Muy de acuerdo	Bastante de acuerdo	No en acuerdo ni en desacuerdo	Poco de acuerdo	Nada de acuerdo
Puedo identificar quienes participan en la comunidad					
Me identifico con los miembros de la comunidad					
Encuentro información útil y apoyo					
He conocido personas interesante por medio de la comunidad					
Me siento muy involucrado en esta comunidad					
Me siento obligado a continuar siendo miembro de la comunidad virtual					

17. ¿En general, cuál es el nivel de satisfacción basado en todas las experiencias que has tenido con esta comunidad virtual?

Poco satisfecho	1	2	3	4	5	6	7	8	9	10	Muy satisfecho
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18. De las siguientes frases, ¿cuál describe mejor tu orientación hacia esta comunidad virtual? Visito esta comunidad virtual:

- Por costumbre o rutina
- Porque me hace sentir bien
- Porque siempre encuentro algo nuevo
- Porque no quiero perderme algo
- Porque no tengo otra alternativa
- Porque me entretiene mucho

19. Pensando en el futuro crees que

- Seguro que seguiré utilizando la comunidad virtual
- Probablemente la seguiré utilizando
- No se
- Probablemente no
- Seguro que no

Otros datos

20. A continuación, se muestran una serie de valores que busca la gente en la vida. Señala la importancia que tienen para ti cada uno de ellos siendo 1 poco valor y 10 mucho valor.

Tener un Sentido de pertenencia
 Disfrutar de la vida
 Tener relaciones cercanas con los demás
 Autorrealización
 Sentirme respetado
 Diversión
 Seguridad
 Autorespeto
 Tener metas

~~21.~~ **Por favor, indica tu edad:**

22. Por favor, indica tu género:

- Hombre
- Mujer

23. Por favor, marca tu situación:

Trabajador a tiempo completo
 Estudiante y trabajador
 Estudiante no trabajador

24. Por favor, indica tu nivel de estudio acabado o cursando actualmente:

Educación secundaria o menor
 Formación profesional nivel medio
 Formación profesional grado superior
 Universidad
 Master o superior

25. Indica la situación que corresponda:

Vivo solo

Comparto piso

Vivo con mi pareja

Vivo con mi familia (padres o hermanos)

26. Por favor, marca tu dinero disponible al mes para hacer compras de moda y ocio (ropa, electrónicos, música, viajes...):

Menos de 50 € al mes

50 a 150 € al mes

150 a 250 € al mes

250 a 350 € al mes

350 a 450 € al mes

450 a 550 € al mes

Más de 550 € al mes

27. ¿Cuántos años has vivido en España?

a. Llevo toda la vida viviendo aquí

b. He vivido algunos años fuera de España