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Why do adolescents play videogames? Proposal of a scale of motives to play videogames based on the theory of uses and gratifications

¿Por qué los adolescentes juegan videojuegos? Propuesta de una escala de motivos para jugar videojuegos a partir de la teoría de usos y gratificaciones

Por que os adolescentes jogam videogame? Proposta de uma escala de motivos para jogar videogame a partir da Teoria de Usos e Gratificações

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ABSTRACT
This paper proposes a scale of motives for playing video games in adolescents, adapted to Spanish from the previous works of Selnow (1984), Wigand et al. (1985), Raney et al. (2006) and Sherry et al. (2006). We used the data obtained from 400 questionnaires applied to Spanish students between 14 and 20 years was analyzed. The reliability of the model was verified through factorial confirmatory analysis and internal consistency analysis. The construct and criterion validity of the scale model were studied relating the four factors of the model with consumer variables and personality traits, respectively.

Keywords: uses and gratifications; motives; video games; measuring scales.

RESUMEN
Este artículo propone una escala de motivos para jugar videojuegos en adolescentes, adaptada al castellano a partir de los estudios previos de Selnow (1984), Wigand et al. (1985), Raney et al. (2006) y Sherry et al. (2006). Se utilizaron datos obtenidos a partir de 400 cuestionarios aplicados a estudiantes españoles de entre 14 y 20 años. Se ha comprobado la fiabilidad del modelo mediante el análisis factorial confirmatorio y de consistencia interna, así como la validez de criterio y constructo relacionando los cuatro factores del modelo con variables de consumo y rasgos de personalidad, respectivamente.

***Palabras clave**: usos y gratificaciones; motivos; videojuegos; escalas de medición.*

RESUMO
O presente artigo propõe uma escala de motivos para jogar videogame em adolescentes, adaptada ao castelhano a partir dos estudos prévios de Selnow (1984), Wigand et al. (1985), Raney et al. (2006) e Sherry et al. (2006). Se utilizaram dados obtidos a partir de 400 questionários realizados por estudantes espanhóis entre 14 e 20 anos. Foi comprovada a confiabilidade do modelo através da análise fatorial e da consistência interna, assim como a validade de critério e construto relacionando os fatores do modelo com variáveis de consumo e traços de personalidade respectivamente.

Palavras-chave: usos e gratificações; motivos; videogame; escalas de medida.

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INTRODUCTION

For years, the videogame industry in Spain has been consolidated as one of the key elements of the leisure and entertainment sector. According to data from the Spanish Association of Videogames (AEVI), in 2016 about 9.1 million units of videogames, 1.2 million consoles and 4.2 million peripherals were sold. These figures reflect a total consumption of 1163 million euros in that country alone (of which 781 million euros correspond to the billing for physical sale and 382 million euros, to online billing), which represents an increase of 7.4 % since 2015 (AEVI, 2016). This figure also exceeds the sum of the turnover of the film industry (601 million euros) and the music industry (163.7 million euros). The rise of videogames is linked to the demand of a market in constant expansion, which in 2017 reached 15.8 million video players in Spain, who invest an average of 6.2 hours per week in this leisure according to data from the Interactive Software Federation of Europe. This public is composed of 56% of men and 44% of women, and is mainly concentrated between 6 and 34 years, with a very high participation of adolescent or preadolescent users, between 11 and 14 years; of them, 79% habitually play videogames of any type (ISFE, 2017).

Thus, the success of this type of multimedia content is today an indisputable phenomenon in our country: videogames are a fundamental element of both the entertainment industry and western contemporary culture (Vorderer, Bryant, Pieper, & Weber, 2006). But why this enormous popularity? What makes them so attractive to the public? In other words, what motives and preferences lead a person to become a constant video player? To answer this question, this paper proposes a scale of measurement of reasons to play videogames as a tool to determine the individual reasons that lead users to consume this kind of leisure, specifically among the Spanish-speaking adolescent audience. This scale is based on the theory of uses and gratifications and the previous works of Selnow (1984), Wigand, Borstelmann and Boster (1985), Raney, Smith and Baker (2006), and Sherry, Lucas, Greenberg and Lachlan (2006). Likewise, this paper is based on data from two previous studies conducted by the authors of this text, in which we developed the field work, the exploratory factor analysis and the preliminary analysis of the model's reliability and validity (Rodríguez de Sepúlveda & Igartua, 2010; González & Igartua, 2015). Thus, this document provides the final version of the scale after submitting it to confirmatory factor analysis.

First, we present the theoretical framework on which the research is based; then, we introduce the items that constitute the proposed scale, grouped according to their theoretical dimensions, as well as the methodology used to obtain the empirical data and the measurement instruments used for the rest of the variables collected. Third, we detail the study of its content validity through confirmatory factor analysis, criterion validity based on the correlation of model factors with other variables (preference of videogame genres and consumption habits), and construct validity through its convergent validity with personality traits (aggressiveness and empathy). Finally, we present the conclusions and the discussion of the employability of the scale and its possible limitations.

THEORETICAL FRAMEWORK

From the point of view of media psychology, when approaching the study of the motivations that underlie the consumption of multimedia leisure there are different theoretical perspectives that contribute different conceptual approaches (Sherry et al., 2006). An example is the theory of self-determination (Deci & Ryan, 1985), based on the extrinsic-intrinsic duality of the rewards that motivate an action, or the social cognitive theory (Bandura, 1986; De Grove, Cauberghe, & Van Looy, 2015), which raises motivation as part of a narrative system based on the social consequences of a behavior.

However, several authors (Selnow, 1984; Ruggiero, 2000; Sherry et al., 2006; Klug & Schell, 2006; Ohler & Nieding, 2006; Jansz & Tanis, 2007; Schumann & Schultheiss, 2009) defend the use of the theory of uses and gratifications (Blumler & Katz, 1974) as the most appropriate theoretical framework for the development of this kind of research. This theory assumes that individuals belonging to an audience should not be understood only as passive consumers who are limited to receiving and processing audiovisual products; on the contrary, they must also be considered as active beings that autonomously seek to satisfy their psychological and social needs by selecting and choosing some contents in detriment of others based on their expectations, needs and personal values.

Expectations and values can be conceptualized as stable individual trends (Palmgreen & Rayburn, 1985), i.e., as non-equivalent elements, but very associated with personality patterns related to self-perception and the individual's self-beliefs (Krampen, 2000). These

self-beliefs imply a prior evaluation of the situation to which the individual is confronted (in this case, the videogame) in terms of their skills and their ability to adapt to it, and they precede the affective evaluation linked to the needs, values or expectations of the person that can be satisfied in said situation (Vorderer et al., 2006). That is to say, to the extent that a user has a certain perception of himself/herself (for example, considering himself/herself extroverted), he/she will tend to opt for a general type of content (for example, multiplayer videogames), with which he/she will seek to respond to certain specific personal needs (for example, social interaction). It is logical, therefore, that in the research on the use of videogames, the observation of the relationship between the motives and the personality traits of the users is recurrent. The study of aggressiveness and empathy –or lack of it– is especially relevant, having found empirical evidence that suggests the existence of a strong link between these traits and the choice of violent and competitive content (Colwell & Payne, 2000; Olson, 2007; Vieria & Krcmar, 2011). Thus, both features are outlined as good tools to study the existence of an interaction between the traits of the players' personality and their choice of videogames as a leisure element based on their needs, values and expectations, just as described in the theory of uses and gratifications.

Although originally designed for television consumption studies, the theory of uses and gratifications has gained importance as a theoretical framework of reference for research on the use of new media (Ruggiero, 2000). In the eighties, Selnow (1984) conducted a first study, which aimed to establish the different motivational dimensions in adolescents for the use of arcade videogames (genre of greater popularity at the time) from the modification of the scales validated by Greenberg (1974) for television consumption. In that research, and through the technique of exploratory factor analysis, he determined the presence of five motivational factors, very similar to those found in the studies related to television: (a) game play is preferable to human companions, (b) game play teaches about people, (c) game play provides companionship, (d) game play provides activity/action, and (e) game play provides solitude/escape. In a similar study, Wigand, Borstelmann and Boster (1985) concluded that the motivations for the use of arcade videogames were grouped into three dimensions called (a) excitement, (b) satisfaction of doing-well and (c) tension-reduction. Years later, Myers (1990) developed a new research considering the rise of domestic game consoles and the use of PC, proposing as main motivational factors (a) fantasy, (b) curiosity, (c) challenge, and (d) interactivity.

Raney, Smith and Baker (2006) also found evidence of the presence of motivations to play videogames congruent with the aforementioned studies: (a) pleasure and enjoyment, (b) excitation and arousal, (c) mood enhancement and mood management and (d) mastering the challenge. Sherry et al. (2006) presented an updated scale of motives for the use of videogames based on the classic studies of Bartle (1996), composed of 27 items articulated in six theoretical dimensions such as (a) arousal, (b) challenge, (c) competition, (d) diversion, (e) fantasy, and (f) social interaction. On this scale, the competition and challenge factors appeared as the two main reasons for playing videogames (Vorderer et al., 2006), while the number of hours spent on videogame consumption was mainly related to fun, social interaction and arousal (Sherry et al., 2006).

This last 27-item scale has been the starting point for authors such as Yee (2006) and Williams, Consalvo, Caplan and Yee (2009) in their studies on massive online multiplayer videogames and their relationship with sociodemographic variables such as gender, works in which they developed their own measurement tool based on the findings of Sherry et al. (2006). More recently, the work of Sherry and his collaborators has also been the base for research on the consumption of this type of leisure in the adult public (De Schutter, 2011; Delwiche & Henderson, 2013; Osmanovic & Pecchioni, 2015), on gender differences in the motivation to participate in violent videogames (Lin, 2010; Hartmann, Möller, & Krause, 2014), or on the relationship between civics and the use of multiplayer videogames (Dalisay, Kushin, Yamamoto, Liu, & Skalski, 2015). Thus, it is evident that there is academic consensus regarding the validity of the proposal by Sherry et al. (2006), as well as the validity of the theory of uses and gratifications in the current study of the consumption of videogames.

Considering the above, the aim of this paper is the defense of a scale of measurement developed from the items of Sherry et. al. (2006), but also taking into account the contributions of other authors (Selnow 1984; Wigand, Borstelmann, & Boster, 1985; Raney, Smith, & Baker, 2006) regarding the theoretical dimensions of the reasons for playing videogames. This research proposes a different grouping of the items into four factors: a) fantasy, b) escape and entertainment, c) competition and challenge, and d) socio-emotional

activation, compared to the six proposed by Sherry et al. (2006); we also conducted a debugging of the less relevant items and a reduction of the scale extension, without compromising its reliability, which eases its management and analysis. In addition, we provide such instrument in Spanish to the scientific community, to facilitate its application in Spanish-speaking samples, controlling the effect of the translation of the items from the original scale, in English. The defense of this tool will be conducted by checking its internal reliability and content validity in the adjustment to the proposed four-factor model, and its criterion and construct validity, taking as a reference the studies by Colwell & Payne (2000), Vorderer et al. (2006), Olson (2007) and Vieria and Krcmar (2011). To do so, we pose as working hypothesis:

a) The factors have an acceptable internal consistency (Cronbach's alphas close to 0.8) and the four-factor model has an acceptable goodness of fit after submission to the confirmatory factor analysis;

b) The factors of competition and challenge and socio-emotional activation correlate in a positive and significant way with the habits of consumption and preference for genre of videogames;

c) The personality traits aggressiveness and empathy correlate significantly with the reasons for competition and challenge, positively in the first case and inversely in the second.

METHODOLOGY

PARTICIPANTS

As mentioned, the data used to analyze the reliability and validity of the scale are based on a previous study conducted by the authors of this text (Rodríguez de Sepúlveda & Igartua, 2010). Therefore, we used a sample of 400 participants aged between 12 and 20 years (M = 14.7, SD= 1.58), of which only three exceeded 18 years (0.8% of the total), and equally distributed by gender (49.3% men, 49.5% women, 1.3% lost values). In addition, following the criteria of AEVI (2016), 194 individuals of the total sample were considered habitual consumers of videogames or hard players.

DESIGN AND PROCEDURE

To obtain the data, we proceeded to supply anonymous and self-administered questionnaires to a sample of young Spanish, selected by random sampling among the students of five secondary education centers and high schools in Madrid and Salamanca throughout the year 2010.

MEASURING INSTRUMENTS

Based on the above, this research proposes a scale, adapted to Spanish, for the reasons to play videogames from the original questionnaire developed by Sherry et al. (2006) composed of 27 items and the conclusions obtained in previous works (González & Igartua, 2015), of which eleven were eliminated for the sake of internal reliability. This scale is formed by a total of 16 Likert-type items with values between 1 (strongly disagree) and 5 (strongly agree). The configuration of the items can be observed in table 1, grouped under a four-dimensional model or main motivational factors: (a) fantasy, (b) escape and entertainment, (c) competition and challenge, and (d) socio-emotional activation.

Structuring the model through these factors aims to reflect and group the categories proposed by the authors cited above. Thus, in the first place, the fantasy factor would be comparable to the curiosity and fantasy dimensions of Myers (1990) and Sherry et al. (2006), which refer to the fact of playing with the objective of exploring and knowing imaginary worlds and characters. Next, the factor called escape and entertainment would be related to the factors solitude and game play is preferable to human companions (Selnow, 1984), tension reduction (Wigand, Borstelmann, & Boster, 1985) and diversion (Sherry et al., 2006), linked to the use of videogames as a means of escape or escape from everyday problems through entertainment and the distraction they provide. On the other hand, the competition and challenge dimension includes the challenge, mastering the challenge and competition dimensions (respectively, Myers, 1990; Raney, Smith, & Baker, 2006, and Sherry et al., 2006), i.e., the presence of a motivation focused on testing the abilities of the player facing both other users and the difficulty of the game itself. Finally, the socio-emotional activation groups all those elements that involve an excitement or the joy of playing a videogame due to the content it offers or the possibility of interacting with other people. Thus, it includes on the one hand the factors linked to emotional activation proposed by other authors –such as arousal and excitement/excitation (Myers, 1990; Raney, Smith, & Baker, 2006; Sherry et al., 2006)– and on the other, those related

Factor	Reason
Fantasy factor (Factor fantasía):	"I like to play because I can do impossible things, things I could not do in real life". ("Me gusta jugar porque puedo hacer cosas imposibles, cosas que no podría hacer en la vida real".)
	"With videogames I can explore and get to know imaginary worlds and characters". ("Con los videojuegos puedo explorar y conocer mundos y personajes imaginarios".)
	"I play videogames because they allow me to do things that I would not normally do in real life". ("Utilizo los videojuegos porque me permiten hacer cosas que normalmente no haría en la vida real".)
Escape and entertainment factor (Factor escape y entretenimiento):	"I play to kill time". ("Juego para matar el tiempo".)
	"I always play videogames when I am bored and I am looking for some fun". ("Siempre juego a videojuegos cuando estoy aburrido y busco algo de diversión ".)
	"I play to fight against boredom". ("Juego para luchar contra el aburrimiento ".)
	"I play when I do not have other things to do". ("Juego cuando no tengo otras cosas que hacer ".)
Competition and challenge factor (Factor competencia y desafío):	"I like to play videogames to prove to my friends that I am the best". ("Me gusta jugar a videojuegos para probar a mis amigos que soy el mejor)".)
	"When I lose playing against someone, I immediately propose another game...". ("Cuando pierdo jugando contra alguien, inmediatamente propongo otra partida...".)
	"It is important for me to be the best at playing a game". ("Es importante para mí ser el mejor jugando a un juego ".)
Socio-emotional activation factor (Factor activación socio-emocional):	"My friends and I use videogames as a pretext to spend time together". ("Mis amigos y yo usamos los videojuegos como pretexto para pasar tiempo juntos ".)
	"I prefer video games to other activities because I have more fun". ("Prefiero los videojuegos a otras actividades porque me divierten más ".)
	"I always play videogames with other people (friends, siblings, parents...)". ("Siempre juego a los videojuegos con otras personas (amigos, hermanos, padres...)".)
	"Videogames stimulate my emotions". ("Los videojuegos son un estímulo para mis emociones ".)
	"I like to play to make new friends". ("Me gusta jugar para hacer nuevos amigos ".)
	"I play videogames because I find them very exciting". ("Juego a videojuegos porque me parece algo muy excitante y emocionante ".)

Table 1. Items of the scale Reasons to play videogames

Source: Own elaboration.

to social interaction, such as game play provides companionship (Selnow, 1984), interactivity (Mayers, 1990) and social interaction (Sherry et al., 2006).

Regarding the variables external to the proposed scale used for the validity analysis, in the case of the measurement of empathy and aggressiveness, we used the Prosocial Behavior Questionnaire of Martorell, González and Calvo (1998) adapted by Rey (2003), and the Aggression Questionnaire (AQ) of Buss and Perry (1992), adapted to the Spanish language by Andreu, Peña and Graña (2002), respectively. In addition, we included a set of questions that considered sociodemographic variables, consumption, preferences and control variables.

DATA ANALYSIS

For the treatment of the data, we used the confirmatory factor analysis technique to study the adjustment of the data to a four-factor model. This technique starts from the assumption of the a priori

existence of some theoretical factors in the scale and seeks, therefore, to check if the factors obtained and their loadings are coherent with the dimensions pre-established by the researcher. It differs from the exploratory factor analysis, which only seeks to reflect the internal structure of a scale by obtaining a number of factors not previously set. To conduct the confirmatory factor analysis, we used the statistical program EQS 6.1.

In addition, we used the exploratory factor analysis technique to reduce the dimensions in the videogame genre variables and Pearson's correlation technique (r) to analyze the relationship of personality traits, consumption and preference for genres with the four factors that constitute the scale. For this, we used the statistical program IBM SPSS Statistics (version 21).

RESULTS

To interpret the adjustment of the model through confirmatory factor analysis, we used the maximum likelihood method as an estimation method using a robust method (since multivariate normality cannot be assumed due to the nature of the variables). Specifically, we used the goodness of fit indicators Chi-square ($\chi 2$), Comparative Fix Index (CFI), Non-Normed Fit Index (NNFI) and Root Mean-Square Error of Approximation (RMSA). Table 2 shows the value of these indicators, as well as the indicators of internal consistency, represented by Cronbach's alpha, for each factor.

As can be seen, the proposed model has scores greater than 0.9 on the CFI and NNFI indicators, as well as an RMSEA value within the confidence interval. All this indicates an acceptable goodness of fit of the proposed model, as well as an adequate internal consistency of the four factors that construct it, since the values of Cronbach's alpha are close to 0.8.

Regarding the relationship of motivational factors of the model with the preference variables of videogames genres, we chose to group them in two indices obtained by exploratory factor analysis that explained 62.6% of the variance. Thus, the items referring to shooting, fighting, driving and sports constitute the first factor, called Action genre (Cronbach's alpha of 0.82); secondly, the genres of role and adventure, arcade, strategy and simulation are grouped under the Role and simulation genre (Cronbach's alpha of 0.81). Table 3 shows the correlation of the Action genre and the Role and simulation genre with the four factors of the model using the Pearson correlation coefficient (r). The data show the presence of significant correlations in all cases, being especially relevant the one between the competition and challenge factor ($r = 0.46$, $p < 0.01$) with the Action genre and the correlation of socio-emotional activation with the Action genre and the Role and simulation genre ($r = 0.40$, $p < 0.01$ and $r = 0.39$, $p < 0.01$, respectively).

Similarly, Table 4 shows the correlation of the four factors of the model with variables related to consumption habits. We observe how all the correlations found are significant; the factor of socio-emotional activation is the element of the scale most related to variables such as the frequency of gaming on weekends ($r = 0.44$, $p < 0.01$), and competition and challenge is the most related with the number of hours played per week ($r = 0.40$, $p < 0.01$).

Finally, Table 5 presents the Pearson (r) correlations between the model factors and the personality traits empathy ($\alpha = 0.82$) and aggressiveness. In the case of aggressiveness, we decided to subdivide the scale into four indices or dimensions, following the recommendations of Andreu, Peña and Graña (2002): anger ($\alpha = 0.71$), hostility ($\alpha = 0.77$), verbal aggression ($\alpha = 0.72$) and physical aggression ($\alpha = 0.84$).

According to the data, the empathy personality trait does not seem to correlate significantly with the factors of the motives to play videogames model, except for its negative relationship with the reason competition and challenge ($r = -0.24$, $p<0.01$). On the contrary, the four dimensions of aggressiveness are significantly related to all the motivational factors, especially the relationship of the mentioned competition and challenge factor with verbal and physical aggression ($r = 0.38$, $p < 0.01$ and ($r = 0.36$, $p < 0.01$, respectively).

CONCLUSIONS

As indicated at the beginning of this paper, the main objective of the study is the proposal of a scale of motives to play videogames adapted to Spanish and the verification of its validity. To fulfill this purpose, we firstly subjected the model based on four factors –a) fantasy, (b) escape and entertainment, (c) competition and challenge and (d) socio-emotional activation– to the confirmatory analysis technique to check its factorial validity. The presence of adequate values for the CFI, NNFI and RMSA indicators allows us to conclude that the four-factor model can be considered valid, although the interpretation of Chi-square scores

Motivational factors				α	
Fantasy				0.82	
Escape and entertainment				0.80	
Competition and challenge				0.73	
Socio-emotional activation				0.73	
4 factors model	χ2	df	CFI	NNFI	RMSEA
	146.6	98	0.97	0.97	0.04

Table 2. Internal consistency and model confirmatory analysis

Source: Own elaboration..

I.C. RMSEA: (0.02. 0.05)

χ2: p < 0.00

Factor	Genre	
	Action	Role and simulation
Fantasy	0.30	0.30
Escape and entertainment	0.30	0.25
Competition and challenge	0.46	0.29
Activación socio-emocional	0.40	0.39

Table 3. Correlation between videogame genre and model factors

Source: Own elaboration.

All the correlations present in the table are significant at the level p <0.01 (unilateral).

Factor	Number of hours played		Frequency of gaming	
	Yesterday	Per week	Weekends	Business days
Fantasy	0.20	0.27	0.35	0.29
Escape and entertainment	0.20	0.21	0.35	0.31
Competition and challenge	0.34	0.40	0.32	0.33
Socio-emotional activation	0.32	0.35	0.44	0.33

Table 4. Correlation between consumption habits and model factors

Source: Own elaboration.

All the correlations present in the table are significant at the level p <0.01 (unilateral).

	Model factors			
	Fantasy	Escape and entertainment	Competition and challenge	Socio-emotional activation
Empathy	0.00	-0.05	-0.24**	-0.05
Anger	0.15**	0.17**	0.19**	0.12*
Hostility	0.21**	0.19**	0.22**	0.24**
Verbal aggression	0.15**	0.17**	0.38**	0.21**
Physical aggression	0.21**	0.21**	0.36**	0.23**

Table 5. Correlation between personality traits and model factors

Source: Own elaboration.

*** The correlation is significant at the level p <0.01 (bilateral).*

** The correlation is significant at the level p <0.05 (bilateral).*

($\chi 2$) must be conducted prudently since it is highly dependent on the size of the sample. However, the acceptable internal consistency of the different factors of the model reinforces the claim that the proposed scale is a reasonably well-structured measurement tool with an acceptable content validity.

Secondly, regarding the criterion validity of the scale, the data show that there is a significant correlation of the model factors with variables related to the preference of different genres of videogames and their frequency of use. I.e., it is observed that high scores on the scale are related to a high consumption and vice versa, in the same way that the different motivational factors are associated in the expected way and coherently to the preferences for one type of videogame compared to others (for example, competition and challenge is strongly associated with shooting, sports, driving or fighting games).

Finally, in the case of the study of construct validity through the correlation between the reasons for playing videogames and personality traits, we found statistically significant correlations, fundamentally for aggressiveness dimensions. Particularly noteworthy is the case of the competition and challenge factor, which has the highest scores in relation to verbal and physical aggression, as well as being the only factor on the scale that correlates with the empathy trait.

DISCUSSION

The results show that the scale proposed to measure the reasons for playing videogames is a reliable tool, since it has a content validity that conforms to the theoretical dimensions proposed by previous authors (Selnow, 1984; Wigand, Borstelmann, & Boster, 1985; Raney, Smith, & Baker, 2006; Sherry et al., 2006), as reflected in the confirmatory factor analysis in four factors.

In addition, the correlations obtained in the study of their criterion validity are coherent with the previous studies of Vorderer et al. (2006) and Sherry et al. (2006), since the data indicate that the factors of competence and challenge and socio-emotional activation are the reasons that best predict the consumption of videogames, as well as the preference for certain genres. In the same way, the existing relationship between motives for playing videogames and personality traits is consistent with the evidence found by other authors (Colwell & Payne, 2000; Olson, 2007; Vieira & Krcmar, 2011), so it is possible to affirm that the construct validity of the scale is reasonably adequate. However, regarding this last point, it would be advisable to deepen future research into the lack of relationship of the empathy trait with the rest of the motivational factors, as well as to extend the study to other personality traits to reinforce and establish the convergent validity of the proposed scale.

In this regard, it is also necessary to consider the possible influence of other elements, such as sociodemographic variables of gender and age. Although the distribution by gender of the participants is fair, we must bear in mind that the proposed scale is validated on a sample of adolescents between 12 and 20 years old; therefore, it is possible that in other

age ranges or distribution of the users' gender the grouping and prevalence of the motives will differ from this model. Another evident limitation is the fact that the sample used is relatively old, and is also circumscribed to the Spanish context, which affects the representativeness of a population of global and constantly expanding Spanish-speaking consumers. It is therefore plausible to suggest that the results obtained in the application of the proposed scale on other samples may differ from those reflected in this study, so it is recommended to consider these limitations at the time of its use in future research.

Furthermore, the videogame industry is in constant evolution and development, with the emergence of new genres and platforms that are likely to modify the use that consumers will make of videogames in the future. Thus, it is necessary that studies of this nature remain in constant development, advancing and updating along with the entertainment software industry. This is the only way to achieve the objective of having measurement tools that reflect the social reality in the most reliable and pertinent way possible.

It is also noteworthy, on the other hand, that the proposed scale of motives does not contemplate the influence of other possible variables, such as pathologies and addictions related to the fields of clinical psychology or psychiatry. These aspects are not considered relevant for this work, since it is not intended to be a tool for clinical diagnoses, but rather an instrument to evaluate the reasons for playing videogames, adhering to the assumptions raised and defended by the theory of uses and gratifications, framed in turn in communication studies and media psychology. For such effects, there are other works that address the study of addiction to videogames and develop a scale suitable for this kind of analysis, notably the studies by Lemmens, Valkenburg and Peter (2009) and Brunborg et al. (2013).

In this study, we have not analyzed in depth the socio-economic factors and of access to technology linked to more sociological and economic approaches, or the role that gender can play in the choice of a type of content. As mentioned, the objective is none other than the approach of a methodological tool and the defense of its validity through its relationship with variables of consumption and personality, and is in no case intended to be a descriptive or comparative investigation of the characteristics and the game habits of specific populations. On the contrary, the purpose is to provide the scientific community with a reliable measurement instrument for use in studies of this nature, which undoubtedly have an enormous interest and significance to understand the dynamics of consumption of our society and, in general, the relationship we have with information technologies.

In short, and always bearing in mind the limitations explained above, we consider that the scale of reasons for playing videogames in adolescents adapted to Spanish emerges as a valid and useful tool. This affirmation is supported by the fact that the proposed scale shows solidity in all the parameters analyzed, both in its content validity –reflected in a high internal reliability and in an adequate adjustment to the theoretical model of four factors (contrasted through confirmatory factor analysis)– as in its criterion and construct validity, by correlating other external variables (consumption and personality traits) in a manner consistent with the findings of other authors.

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