

# Round 1". Discovering the profile and relevance of the attributes of ninth generation videogames.

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## ABSTRACT

**Objective:** To find out which attributes are considered important in a ninth generation video game and their relevance for the Portuguese consumer. In addition, raise the sociodemographic profile of the gamer and verify the differences in preferences between attributes by gender.

**Method:** A survey was carried out, using a Likert scale questionnaire distributed in the main gamer groups on Facebook, obtaining 394 respondents. The ranking used the Top Two Box technique and to verify the differences between the sociodemographic variables, the non-parametric Wilcoxon-Mann-Whitney test was used.

**Originality/Relevance:** There is a considerable gap in marketing knowledge on the subject, the situation is aggravated in marketing terms, as most works are related to Health and Education.

**Results:** The Portuguese gamer profile and 39 attributes were mapped. In addition, their relevance to the Portuguese consumer was ranked, as well as significant differences in grades by gender were verified.

**Theoretical/methodological contributions:** Understanding the attributes of a product as well as the profile of a consumer is of paramount importance not only for industry participants, but also for future academic studies on the subject.

**Keyword:** video games; attributes; gamer; genre; games



## INTRODUCTION

Video games have become part of the everyday leisure and social activities of many families, transforming play, art, learning and understanding of culture (Bassiouni & Hackley, 2016, Guins, 2016). And its starts early, along with cell phones and computers are items commonly identified in children's routines (Santos & Coelho, 2017). This market moved around the world, in 2017, US\$ 1.9 trillion, and the expectation is that by 2022 it will grow by 5.3%, according to data from the consultancy Newzoo (2016) and the 19th Global Research on Entertainment and Media, by PWC (2018). It is worth mentioning that growth is not restricted to the market (Arruda Filho, 2018, Higuchi, 2018), in bibliometrics carried out by García-Sánchez (2019), this topic had an academic growth, with a 60% increase in published articles from 2013 to 2018.

However, despite a growing interest in the subject by the academy, there are still few studies, and the situation is worsening in terms of marketing, since most works are related to Health, Psychology, and Education (Martins *et al.*, 2015; Wang & Goh, 2017). In this way, the present work intends to contribute with this knowledge by answering some questions such as: What attributes are relevant in an electronic game console, also called video game or console, by the consumer in Portugal? What is the profile of this player? Is there variation in the relevance of attributes by gender and age?

According to Zeithaml (1988) this knowledge of attributes, which is the lowest level in a product, is one of the main priorities of marketers. Finding out which consumers prefer around the purchase and use of a product is crucial for many actions. For that, an exploratory and descriptive research was carried out, based on an extensive bibliographic and documentary research, followed by quantitative research, using the hypothetical-deductive scientific method, being carried out a survey, using a questionnaire as an instrument, applied in a sample of 394 players.



## LITERATURE REVIEW

### Consumption journey

The consumption journey has some stages according to Blackwell, Miniard and Engel (2001), and begins with a pre-purchase phase, which has the awakening of the need. The consumer's perception and the need for the desired situation leads to the search for information on existing alternatives; and the need to compare and evaluate the differences between products, brands and offerings (Lovelock *et al.*, 2011). A relevant part of this process is based on the characteristics of the product, called attributes, these are identified by customers, forming a judgment to make the purchase, and each person may perceive a different relevance for the same attribute. (Szybillo & Jacoby, 1994, Solomon, 2002, Rocha, 2012).

The purchase process can become simpler, or complex, due to some factors, for example, a deliberate purchase, for example, characterized by items purchased routinely, will not take the same effort as a purchase where there is a high degree of consumer involvement (Solomon, 2002, Rocha, 2012). Nevertheless, even the consumer's emotional state can change their perception and interaction with attributes (Vasconcelos *et al.*, 2015). Griffiths, Davies, and Chappell (2004) regarding video games, highlighted large differences related to age group, such as time spent playing, preference for violent games and how long they have been playing. And several authors point out that demographic factors such as age, education, family size and gender also have a great influence (Kotler, 2000, Lovelock *et al.*, 2011). About gender, several studies on preferences in games have already been carried out, citing for example that females prefer social, educational, dance and puzzle games, while men prefer RPG, Action and Fighting. But there are no recent studies on preferences among video game attributes. In this way, a hypothesis is built: There is a difference between the attributes among the genders (H1).



## Video game market

Video games, also called consoles, or platforms, are characterized as information technology entertainment (Wang & Goh, 2017). The broader definition of the video game industry includes not only consoles, but also portables, computers, tablets and smartphones (Nascimento, 2013). They consist predominantly of experience, that is, only after playing the game will consumers know if they liked it. This experimental nature implies considerable risk for consumers as their prices are high (Marchand & Hennig-Thurau, 2013).

A unique component of this product are the joysticks, these are responsible for handling the platform and the movement of characters in the games and affect the entire experience of use (Wang & Goh, 2017), and each platform has its own pattern, with specific format and buttons. (Playstation, 2020; Xbox, 2020, Nintendo, 2020). When it comes to games, it should not be confused with consoles, these are the technological means that enable the execution of games (Marchand & Hennig-Thurau, 2013; Higuchi, 2018).

Regarding the attributes, the cell phone and the computer, as they are also technological entertainment are even competitors (Nascimento, 2013), and therefore some of their attributes were used as a reference. Thus, features such as interaction interface, ease of use, simultaneity, performance, usability, among others, were some of those used (Venkatesh *et al.*, 2012, Okazaki & Mendez, 2013, van Rooji, 2017). Performance when it comes to video games is very much linked to graphics/processing, that is, the ability to generate high quality images for games. Being cyclical, as the performance of games depends heavily on the capabilities of the hardware on which they will be run (Marchand & Hennig-Thurau, 2013, Higuchi, 2018). For Wood, Griffiths, Chappell, and Davies (2004), graphic quality is an important attribute in the game evaluation framework, along with sound.

Dhargalkar *et al.* (2016) highlight some more attributes such as: comfort, durability, available accessories, and customization, while Mokhlis *et al.* (2012) cite storage, video recording, sound, weight and design. It is worth



mentioning that both studies are not directly related to the video game product, but deal with modern and similar technological devices, such as cell phones and laptops.

Other attributes, also mentioned by Dhargalkar *et al.* (2016) have already been extensively studied in different products, such as: ease of use (Parasuraman, Zeithaml and Berry, 1985); the brand (Jacoby *et al.*, 1971, Aaker *et al.*, 1998, Kotler, 2000, Arruda Filho, 2018); color and design (Zeithaml, 1988, Solomon, 2002); and warranty (Jacoby *et al.*, 1971). The multi-utility; intersystemic capacity; convergence, and others were also raised from an extensive historical analysis of the evolution of video games in the studies by Gallanguer & Park (2002), Nascimento (2013).

### **Video games industry**

To subtract more attributes from the consoles relevant to the study, the industry was also analyzed. It is characterized not only by growth and revenue, but also by a high degree of innovation. It also has specific characteristics, the main players in this industry are game providers (also called content providers), such as Activision; and console providers such as Sony and Microsoft (Marchand & Hennig-Thurau, 2013). For Higuchi (2018), it is a two-sided market, characterized by a platform mediating contact between producers and users. In addition to them, there are also communication distribution channels and the consumer (Marchand and Hennig-Thurau, 2013). Other studies, such as those by Coughlan and Peter (2001) and Briken *et al.* (2017), suggest the participation of more actors in this scheme, such as software publishers and hardware assemblers. In all cases, the platform is the central and absolute element (Marchand & Hennig-Thurau, 2013).

This centralization on the platform and the few competitors characterizes the market as an oligopolistic structure centered on video games, in fierce competition, with constant changes in market leadership (Gallagher & Park, 2003). Part of this are the exclusivity contracts in the production of games, called exclusives, such as the famous God of War and



Spiderman for Playstation (Playstation, 2020). And about games, the greater the quantity, the more attractive it will be to the consumer and the more successful the video game will be (Higuchi, 2018). In the past good consoles have failed to have little content (Sheff, 1993). The truth is that the more popular a console is, the more games are produced for it, and the more attractive it becomes, increasing the consumption of this video game, and the production of games, in a cycle (Liu, 2010, Nascimento, 2013, Higuchi, 2018). But the quality of games also matters (Higuchi, 2018), perhaps, the main attribute for purchasing a console, especially the popularity of a successful game (Kim *et al.*, 2013), citing Pac-Man to Atari; Super Mario Brothers for Nintendo; Sonic for Sega; and Tomb Raider for Sony Grant (2010). Gallanher and Park (2003) call this a "Killer Application", which is a software that, because it is so attractive, drives the sale of hardware to which it belongs (Higuchi, 2018).

Video games, despite being a modern technological device, have been around for 50 years and have been subdivided into so-called generations. These group video games of similar capacity and that existed in the same range of time (Nascimento, 2013). Each generation had an average of 10 releases by different companies, also having its own life cycle, highlights, and especially the massive increase in attributes compared to the previous generation. These increments by one supplier often led to the foreclosure of strong competitors such as Sega and the pioneer Atari. To have a dimension of evolution, the Atari 2600, released in 1977, was one of the first consoles and contained a 1.2 MHz CPU and 128 bytes of memory, the PlayStation 4, of the eighth, contains an 8-core processor at 2 GHz and 8 GB of memory, a capacity increase of 8 million times in a few years (Marchand & Hennig-Thurau, 2013).

The ninth generation, object of this study, launched in November 2020, brings the great rivals of the current video game market Microsoft and Sony, with similar capacities and performances, such as memory, video, and processing. Microsoft innovated with the launch of not one, but two consoles,



the Series S, and the Series X, different in design, but also in performance. Series X is considered the top of the line, while the other is less powerful and cheaper. The Playstation 5, in capacity, is between the two Microsoft video games, but closer to the Series X. (Playstation 5, 2021; Xbox, 2021). The graphics quality of the previous generation was already high, and the advancement of this generation is only in the details, such as Ray Tracing (detailed rendering of light and its variations) and 8K videos (Garrett, 2020; Playstation 5, 2021; Xbox, 2021). The Xbox game library is initially bigger because it has access to games from previous versions, and the PS5 promises access to all PS4 games, on the other hand, the list of exclusive games for this one is bigger and more famous (Garrett, 2020; Playstation 5, 2021; Xbox, 2021). And finally, improvements were also made in subscription programs and forms of social interaction (Playstation, 2020; Xbox Wire, 2020). Nintendo so far has not commented on the ninth generation and has taken the Nintendo Switch as belonging to this generation.

It is noticed that this industry requires a lot of technological innovation (Grant, 2010), for Gammarano (2018) companies are increasingly trying to generate value for users, adding various attributes such as interaction, sociability, convergence, etc. Marking an extremely aggressive market, which has gone through multiple generations and consoles, and each has tried to elevate the quantity and quality of attributes, generating a very intense cycle of improvement and differentiation. The main ones were consolidated in an extensive list of 39 items that was used as the basis of the questionnaire.

## **METHODOLOGY**

### **Population and Sample**

The study was conducted by probability sampling, for Aaker, Kumar and Day (2004) this is a better approach because it uses a random process. For the research, the sample consisted of 394 video game players, well above the minimum value specified by Malhotra *et al.* (2017), who says that 200 people is an interesting size to ensure robustness in research that estimates





market trends. Respondents were randomly obtained from the dissemination of the questionnaire in Portuguese game groups present on Facebook in May 2021.

Table 1 - Sample Characteristics

Type	Subtype	Percentage
Genre	Male	80%
	Female	20%
Age	Over 50	1%
	Between 40 and 49	10%
	Between 30 and 39	41%
	Between 20 and 29	42%
Education	Under 20	7%
	Elementary/High School	35%
	University education	46%
	Postgraduate	19%

### Data collection

The procedure is a Survey, it was developed based on the quality assumptions of Bhattacharjee (2012) and elaborated in Microsoft Forms. It consisted of 11 objective questions, divided into 3 sessions. The core of the research, question 12, which deals with the understanding of the attributes, had 39 items, which were raised after an extensive study of the market and the video game industry, which are: High Storage Capacity; High performance and processing; Game Subscriptions and Services (e.g. Live Gold and Gamepass); Comfortable Control; Differentiated/Innovative Control (e.g. Wii Control); Customization of the device; Design; Distribute Free Games; Color Diversity; Durability; Packing; USB for exchanging files and accessories; Run programs at the same time, e.g. switching between Netflix and the game. (simultaneity); Warranty; High Quality Graphics; Large Number of Players with the Console; Interact with other objects, such as cell phones



and computers; Pleasant Interaction Interface (Menus and Store); High quality games; Famous Exclusive Games; Brand; Country of Origin (give preference for being American, Japanese, Korean, etc.); Allow Avatar and Profile Creation and Customization; Allow taking photos and recording videos for sharing; Allow Live Streaming Video; Lightweight; Have Various Accessories (e.g. keyboard, external HD); Have rewards and achievements for use (e.g. Gs and Microsoft Rewards); Price; Presence of several friends and acquaintances on the same Platform; Backward compatibility (run games from previous versions); Be innovative (e.g. Kinect); Be portable (e.g. Gameboy); High Quality Sound; Have lots of games available; Have many Exclusive Games; Have Several Apps available for download in the store (e.g. Netflix, Spotify and YouTube); Have Several Popular Games; Wi-Fi and Bluetooth.

This part followed a 5-point non-comparative ordered semantic differential scale, Likert scale, this scale is very efficient, and allows the assessment of the distance between respondents (Kinnear & Taylor, 1996, Samartini, 2006). Ranging from "Not Important" to "Very Important," following the study of attributes by Espartel (1999) and Loriato and Pelissari (2017). To validate the semantic clarity and the performance of the questionnaire, following the guidance of Hair *et al.* (2009) and Malhotra *et al.* (2017), a pre-test was carried out with 10 individuals, 3 of which were heavy users of videogames, 1 statistician, 2 postgraduates in business, and 5 casual gamers, all proposed adjustments in the wording of the questions, among other improvements, providing greater clarity in reading.

## Research instrument

Table 2 – Research Instrument

Nº	Question Command
1	Gender, you identify with? A: Male or Female.



- 2 What year were you born? Eg: 1985.
  - 3 3. Level of Education  
Elementary School; High school; University education; MBA or Masters/Doctorate.
  - 4 How long have you been playing video games?  
A: 0 to 1 year; 1 to 3 years; 3 to 5 years; 5 to 10 years or More than 10 years.
  - 5 How often do you currently play?  
A: High (6 to 7 days a week); Medium (3 to 5 days a week) or Low (0 to 2 days a week).
  - 7 Does video game play an important role in your life?  
A: Yes or No.
  - 8 What portable video games do you own or have you owned?  
A: I never had one; Playstation Portable; Nintendo DS; Nintendo 3DS; Gameboy; Gameboy Advance or Game Gear.
  - 9 What kind of player do you consider yourself?  
A: Casual or Regular.
  - 10 Regarding the acquisition of a new video game, do you consider yourself more emotional or rational?  
A: Emotive (motivated by the emotions that the video game causes you) or Rational (I analyze the functional and logical aspects of the purchase).
  - 11 Do you use any of these devices to play games too?  
A: Cellular; PC Gamer; Common Computer or None of these.
  - 12 Block of Attributes – Table containing 39 items to be answered on a Likert scale of importance.
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### Data processing and analysis

The database originally obtained underwent a treatment of filtering and cleaning of the data, from the verification of the standard deviation of the answers, when equal or close to zero, characterizing as someone who answered without zeal. Some variables of interest were submitted to the treatment of descriptive statistics with the purpose of describing the different distributions related to demographic data, such as gender, age, education, and income, as well as the gamer profile, such as frequency of use and importance of the product. According to Mattar (2001), descriptive methods provide summarized information on the data, characterize what is common in the group, and measure how the elements are distributed. Multivariate statistics were also used to measure the different variables simultaneously



(Mingoti, 2005). First, a reliability analysis of the scale used was performed, for which the internal consistency method was adopted, to assess the homogeneity of the set of items, using the calculation of Cronbach's Alpha coefficient (Malhotra, 2001) which obtained a high score, of 0.887, higher than the target value of 0.8 (Hair *et al.*, 2009). The item-rest correlation was also verified, this correlation is used to define the reliability of the item by associating it with the total score. The minimum required is 0.2 (de Groot & van Naerssen, 1969) and most items had good discrimination, above 0.3, some items were below but notoriously important, such as Price and High Performance, and were kept in the scale. It was also analyzed whether the removal of these would improve the overall reliability of the scale measured by the Cronbach of Alpha, but all items had good discrimination, and no item removed would increase the total reliability of the scale, all of which were kept.

To obtain a ranking of the attributes, a frequency distribution was performed, consisting of the percentage listing of the different values that each variable can assume, considering the scale adopted, with the number of times each value occurs. It is possible to define a ranking of which attributes were considered the most important based on the Top/Bottom Two Box technique, that is, a higher percentage of respondents assigning degrees of importance to the two most and least favorable categories of the scale, 4 and 5, and , 1 and 2, respectively (Dillon, Madden, & Firtle, 1993). About this, for van Doorn *et al.* (2007) and Oliver *et al.* (1997), it makes sense that only the extreme points are considered, since the middle, called the zone of indifference, are moderate attitudes. The ideal method of direct ranking, in which the preference position is given directly, without repetition per attribute, is not applicable when there is a large list of attributes, as in this study (Lagerkvist, 2013).

The Wilcoxon-Mann-Whitney non-parametric test was used to obtain the difference in grades between male and female genders, due to the nature of the data, ordinal categorical, obtained on a Likert scale, that is,



non-normal. This test is used to compare 2 groups, with significant results for  $p < 0.05$ , testing the null hypothesis that the populations have equal distribution against the hypothesis that the groups have different distribution functions. Being the most recommended to evaluate non-normal quantitative or ordinal qualitative variables (Sheskin, 2000).

## RESULTS

80% of the sample were male and 20% were female, a number close to that found in the research by Yee (2017) and 83% are in the age groups of 20 to 39 years. Regarding education, 65% have higher education or higher.

Regarding the level of involvement with games, 88% have played for more than 10 years, 78% have played more than 3 days a week and for 85% the video game has been declared as something important in their lives. And 52% self-declared as a regular player. Unlike other surveys that work with a broader and more diverse spectrum of gamers, this sample has gamers with an elevated level of involvement with games, and this probably occurred because it was obtained from Facebook gamer groups.

80% use a cell phone or computer to play in addition to video games, corroborating what was seen of these devices as major competitors (Nascimento, 2013, Higuchi, 2018, Reviewgeek, 2020). Regarding portables, like Gameboy, 88% have had or have one.

60% said they were rational when buying a video game and lastly, they were asked if the pandemic had an impact on video game use and 82% said it caused an increase.

### Attributes analysis

It is worth mentioning that understanding the important attributes in a product from the point of view of consumers is critical to delivering superior value and can also indicate improvement targets. And if such attributes provide greater benefit than cost, then the result of the acquisition will tend to satisfaction (Angnes & Carlos, 2013)



The attributes ranking was elaborated from the frequency table obtained and with the grades received for each attribute. Four blocks containing 10 attributes each were defined to facilitate understanding, the first block, called superior, contains the 10 most relevant attributes, given top two box (grades 5 and 4). Of the ten attributes, the top 5 are Durability, Very High-Quality Games, Having Lots of Games Available, High Storage Capacity, and Having Lots of Popular Games. It is worth mentioning that these also had the lowest standard deviation, that is, less dispersion in the responses, different for example from the attributes: Allow Streaming, Have Multiple Applications and Have Rewards.

Regarding the first block, Durability stands out in first and with the highest absolute number of grades 5, this may have occurred due to the trauma related to overheating and definitive breakage of some consoles in the past (Nascimento, 2013). Also highlighted, in second and third place, the attributes Having many games available and Games of very high quality, corroborate what has been seen in history, in which several video games, even ahead of their time, failed to release great video games, but with a few games, such as Jaguar and Turbo Grafix16 (Landsman & Stremersch, 2011), showing that the number of games matters (Liu, 2010, Nascimento, 2013, Higuchi, 2018), but also the quality is duly noted (Higuchi, 2018).

Fourth, the attribute Having several popular games, which can be understood as the killer applications, which even cause the direct sale of video games, such as Super Mario and Pac Man (Gallagher & Park, 2003, Grant, 2010). And fifth, Storage Capacity, since the more games, and the more quality, the greater the need for storage, this combined with the movement of companies to eliminate physical media (Marchand & Hennig-Thurau, 2013, Statista, 2019), leads to this importance as the games are stored on the console itself.

Backward Compatibility surprises by appearing in front of attributes such as High Performance and Pleasant Interaction Interface. This can be



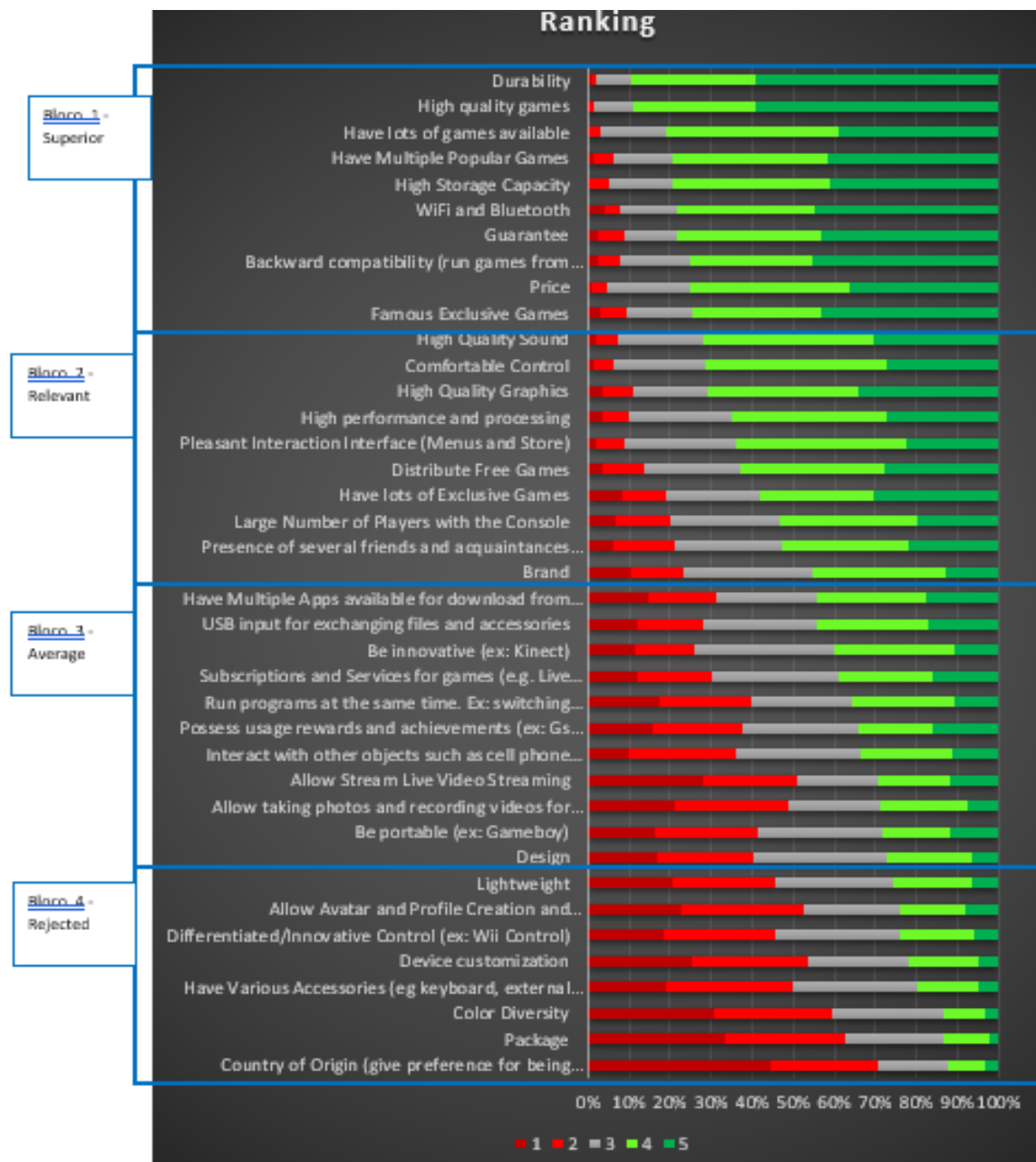
explained by the aging of the gamer population as seen in the research itself and by Guins (2016).

In the same logic, the least relevant attributes of the Rejected block were: Color Diversity; Country of Origin and Packaging; these accumulated low grades greater than 60%. Design was also not as relevant as that cited in the results of the study by Arruda Filho (2018). Another aspect different from the theoretical reference is the Innovative Control in the last positions, since this attribute was one of the main reasons for the success of the Nintendo Wii and its Wii Remote, in the sixth generation (da Cruz *et al.*, 2008, Grant, 2010, Gammarano, 2014, da Silva, 2014, Arruda Filho, 2018). The attribute with the highest absolute number of grades 1 is the Country of Origin (41%), which can be explained because, unlike foods such as wine, cheese, or olive oil, as in the study by Espejel, Fandos and Flavián (2007), the origin is not affects the other attributes of the video game.

Block 2, Relevant, brings some attributes that had high marks and are interesting for the study, such as very High-quality graphics and High performance and processing, both of which are incessantly improved since the first console, being the beacons of changes in the first generations, called "bits". Interesting to see that relatively recent attributes in video games had high relevance and were in this block as well, such as Pleasant interaction interface and Free Games Distribution.



Figure 1 - Ranking of Attributes



In block 3, Average, as a highlight, Innovation appears, which despite having brought great success to some consoles such as Xbox and its Kinect in the past (da Cruz *et al.*, 2008, Gammarano, 2014, da Silva, 2014, Arruda Filho, 2018), is not directly perceived as relevant. However, it makes some sense, as it is difficult to know the relevance of an innovation until it exists, perhaps the attribute has been compared with existing innovations. Innovation research shows that innovation is not important for the purchase, but strongly affects a





small group of consumers, less sensitive to price, who have a high need for unique products (Sadik-Rozsnyai & Bertrandias, 2019).

Some attributes related to social interaction, such as Allowing to stream and Allowing to take photos also appear in this block, although widely used by influencers, the use by the community in general still low.

Recalling that the relevance of the attributes does not define the purchase intention, for Alpert (1971), this attribute is called Determinant, although others have higher scores, they may be important or salient, and having them is the minimum expected. In addition, the consumption journey and purchase intention have other factors, such as the involvement of the object for the customer, and even prior knowledge of the product, which can make all the evaluation stages, as well as the attributes are not considered (Grönroos, 1984, Solomon, 2002).

### Difference in preferences of attributes between genres

As in other studies, such as those by Wood, Griffiths, Chappell, and Davies (2004) and Silva *et al.* (2020), differences were found between genders, using the Mann Whitney test, in the preferences of the attributes given a p value less than 0.05. That is, the opinions of female gamers were different from males for 15 of the 39 attributes, as shown in the table below. Those with the lowest p value were: High performance, Comfortable Control, Differentiated Control, Customization and Design.

Table 3 - P-value and attributes

Attributes	Statistic	p	Mean difference
High performance and processing	31968	0.010	-4.38e-5
Comfortable Control	34741	0.209	-1.27e-5



Differentiated/Innovative Control (ex: Wii Control)	31199	0.004	5.10e-6
Device customization	32742	0.030	6.55e-5
Design	31517	0.006	4.95e-5
Color Diversity	27927	< .001	1.000
Durability	33766	0.048	6.40e-6
Packing	33900	0.104	2.09e-5
USB input for exchanging files and insert accessories	33553	0.075	7.07e-6
High Quality Graphics	34950	0.251	-1.40e-5
Lightweight	23049	< .001	1.000
Have Various Accessories (e.g. keyboard, external hard drive, steering wheel)	37311	0.985	-5.09e-5
Run programs at the same time. Ex: switching between Netflix and the game. (simultaneity)	34542	0.192	-1.45e-5
Wi-Fi and Bluetooth	34696	0.188	-2.95e-5
Allow Stream Live Video Streaming	36663	0.750	-6.05e-5
Have Multiple Apps available for download from the store (ex: Netflix, Spotify, YouTube, and Explorer)	34083	0.127	-3.57e-5



Backward compatibility (run games from previous versions)	37268	0.967	-6.29e-5
Be innovative (ex: Kinect)	33548	0.074	4.18e-5
High Quality Sound	32687	0.024	-5.81e-5
Be portable (ex: Gameboy)	23039	< .001	1.000
Price	34017	0.100	5.55e-5
Guarantee	36158	0.554	3.37e-5
Have Multiple Popular Games	33996	0.102	-5.32e-5
Game Subscriptions and Services (e.g. Live Gold and Gamepass)	34823	0.238	-2.07e-5
Allow Avatar and Profile Creation and Customization	27743	< .001	1.000
High Storage Capacity	33837	0.082	3.11e-5
Famous Exclusive Games	32876	0.033	-1.18e-5
Distribute Free Games	32064	0.012	5.05e-5
Large Number of Players with the Console	32294	0.017	-4.03e-5
Interact with other objects such as cell phone and computer	36820	0.804	-4.01e-5
Pleasant Interaction Interface (Menus and Store)	35436	0.357	3.39e-5
High quality games	25532	< .001	-4.59e-5



Brand	35323	0.341	-3.84e-5
Have lots of games available	35410	0.338	-2.51e-6
Possess usage rewards and achievements (ex: Gs and Microsoft Rewards)	36055	0.547	2.30e-5
Presence of several friends and acquaintances on the same platform	32647	0.027	-3.78e-6
Allow taking photos and recording videos for sharing	36396	0.657	-3.53e-5
Country of Origin (give preference for being American, Japanese, Korean, etc.)	34900	0.240	3.11e-5
Have lots of Exclusive Games	34586	0.197	-1.19e-5

The ranking of attributes between men and women also showed differences, both gave similar relevance to the attributes High Quality Games, Durability and Having many games available, ranking at the top of the ranking. Interestingly, the attribute Having several popular games, which was third for men, was tenth for women, and the price for women, which was fourth, was only eleventh. Several other differences were found, but the comparative ranking is highlighted below.

Table 3 - Comparison of the ranking of the first 10 attributes between men and women

Attributes	Male	Female
High quality games	1 °	5 °
Durability	2 °	1 °
Have Multiple Popular Games	3 °	10 °



Have lots of games available	4 °	3 °
Wi-Fi and Bluetooth	5 °	9 °
Guarantee	6 °	6 °
High Storage Capacity	7 °	2 °
Famous Exclusive Games	8 °	13 °
backward compatibility	9 °	7 °
Comfortable Control	10 °	15 °

In addition, an analysis was also carried out on which video games each gender intended to buy and there was statistical significance found, the result is that the female sex has a considerable greater preference in relation to the Nintendo Switch than the male, about 50%, already on the side male, this percentage was found in the intention to get the PlayStation 5.

## CONCLUSIONS

The main objective of this study was to find out which attributes are considered important in a video game for the Portuguese gamer audience and if there are differences in relevance by gender. For this, the academic and non-academic literary history of video games and related technologies was analyzed to build an extensive list of attributes. This exploratory phase of the research generated 39 attributes, which served as the basis for the questionnaire.

Regarding the attributes, the research results highlighted the attributes related to games, such as the quantity, quality and popularity of these. In addition, it was possible to portray the Portuguese gamer profile in its various sociodemographic aspects and even confirm that there are significant differences in the relevance given to attributes by gender.

## Theoretical and practical contributions

Thus, this study brought important knowledge to the gap existing in the academy on the video game market; also, an important value for the



national market, as it shows a portrait of the consumer, based on a sample of 394 players.

This attribute-level video game product knowledge is critical as it offers a wide range of benefits; how to conduct product promotions based on the most relevant attributes, improve attributes that are not yet valued, promote yourself as the best supplier of attributes, differentiate your offer of attributes, and even develop new products.

### **Limitations and future research**

Since there are few academic works in this area, there are numerous possibilities for future research, such as the reuse of the list of attributes applied in another country to investigate cultural differences. The reuse of the list of attributes can also be done in a broader application, as the sample was obtained from groups of gamers, so it is deduced that they are players more engaged with video games than ordinary players.

And finally, it would be interesting to evaluate the permanence and loyalty of a gamer with the same brand for generations, and the influence of exclusive games, this research was not able to obtain answers in this regard, although these two aspects are known to be mentioned both by gamer communities, and by the market itself as extremely relevant.



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