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## ***eSports*: profile of participants, complementarity with sports and its perception as sport. Evidence from sports video games**

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**The "Brown Box" prototype at display at the Smithsonian Institution**

**1967**

Ralph H. Baer invented the first videogame console “Brown Box”.

**21<sup>st</sup> July 2018**

The first Esports Forum was held in Lausanne, hosted by the International Olympic Committee (IOC) and the Global Association of International Sports Federations (GAISF).

IOC Director Kit McConnell:

*“... we have a strong plan for ongoing dialogue and engagement, and are in a strong position to coordinate and support the wider engagement of the Olympic Movement and eSports”*

**18<sup>th</sup> August to 2<sup>nd</sup> September 2018**

*eSports* were included in the program of the 2018 Asian Games, held in Jakarta and Palembang (Indonesia), as a demonstration sport.



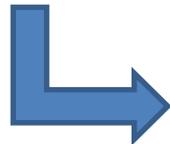
## Motivation: Three pieces of evidence

Total *eSports* audience in 2018 is estimated in 380 million people (Newzoo, 2018)



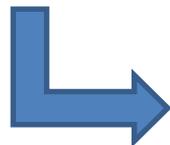
Profile of *eSports* participants

Total *eSports* revenue in 2021 is estimated in \$1,650 millions (Newzoo, 2018)



Complementarity between *eSports* and traditional sports

Institutional and academic consensus (?) about *eSports* being a sport



Perception by the population of *eSports* as sport

## Presentation

- Motivation for the analysis of *eSports*
- *eSports* industry (including the definition of *eSports*)
- Survey on Sporting Habits in Spain 2015
- Profile of *eSports* participants
- Complementarity between *eSports* and traditional sport
- Perception of *eSports* as sport
- Research about *eSports* in sports (and) economics: actual and future situation
- Summary of conclusions

Y. Chikish, M. Carreras and J. García (2018). “*eSports*: A new era for the sports industry and a new impulse for the research in sports (and) economics?”, mimeo.

## ***eSports industry (including the definition of eSports)***

### First and specific definition of eSports: Wagner (2006)

[eSports as a consequence of a transition from an industrial to an information and communication based society]

*“eSports is an area of sports activities in which people develop and train mental or physical abilities in the use of information and communication technologies”*

### Criticisms:

- Centrality of computers vs. “complexifications” of bodies and technologies together as the central element. (Witkowski, 2012)
- No clear limits between eSports and traditional sports. Difference in terms of where the activities with respect to the outcome of the game take place. (Hamari & Sjöblom, 2017)
- eSports: (e) electronic vs. economic. (Karhulahti, 2017)

### Characteristics of sport (Jenny et al., 2017):

Play (motivated activity)

Skill (no chance)

**Institutional stability**

Governed by rules

**Physical skill**

Competition

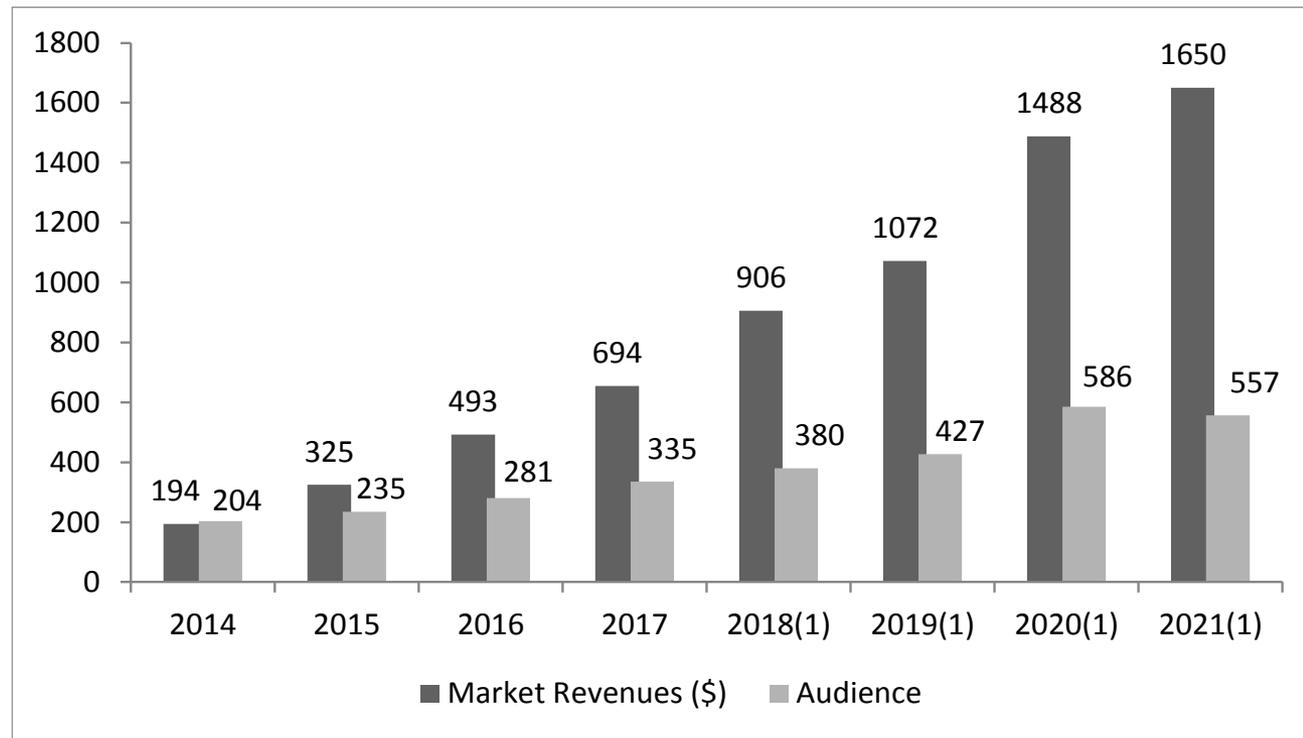
Broad following

Definition by Jenny et al. (2017): **Organized video games competitions**

## Definition Newzoo (2018):

*“Competitive gaming at a professional level and in an organized format (a tournament or a league) with a specific goal (i.e. winning a champion title or prize money) and a clear distinction between players and teams that are competing against each other.”*

**Figure 1. eSports worldwide: market revenues and audience 2014-2021 (in millions)**



(1) Data are forecasts. *Source:* Newzoo (2016, 2017 and 2018)

**Table 1. eSports revenues per stream (in \$ millions) audience (in millions)**

|                                  | 2017         | 2018 (f)     | 17-18        | 2021(f)       | 18-21a       |
|----------------------------------|--------------|--------------|--------------|---------------|--------------|
| <b>REVENUES (\$ millions)</b>    |              |              |              |               |              |
| <i>Brand Investment</i>          | 421.6        | 533.2        | 26.5%        | 1385.0        | 25,9%        |
| <i>Media Rights</i>              | 92.5         | 160.7        | 73,7%        |               |              |
| <i>Publishers Fees</i>           | 115.8        | 116.3        | 0,4%         | 265.0         | 7.8%         |
| <i>Merchandising and Tickets</i> | 63.7         | 95.5         | 49.9%        |               |              |
| <b>TOTAL</b>                     | <b>693.6</b> | <b>905.7</b> | <b>30.6%</b> | <b>1650.0</b> | <b>22.1%</b> |
| <b>AUDIENCE (millions)</b>       |              |              |              |               |              |
| <i>Occasional viewers</i>        | 192          | 215          | 12.0%        | 307           | 12.6%        |
| <i>Enthusiats</i>                | 143          | 165          | 15.4%        | 250           | 14.9%        |
| <b>TOTAL</b>                     | <b>335</b>   | <b>380</b>   | <b>13.4%</b> | <b>557</b>    | <b>13.7%</b> |

Source: Newzoo (2017, 2018)

# Survey on Sporting Habits in Spain 2015

**Sample:** 11,018 individuals aged 15 years and older

**Q.III.1: How do you rate your interest in the following sports activities?**

**(Scale 0-10)**

- a) Sports in general*
- b) Practising sports*
- c) Attending sports events (live)*
- d) Watching sports events (audience)*
- e) Being informed about sports (press, television, radio, internet,...)*
- f) Playing sports video games*

**Q.V.1: Have you practised sport during the last year?**

**Q.V.2: Frequency** (*daily, at least once a week, at least once a month, at least once a quarter, at least once a year*)

**Table 1.**

**Descriptive analysis of the interest in playing videogames by gender and age**

|  | <b>Males</b> | <b>Females</b> | <b>TOTAL</b> |
|--|--------------|----------------|--------------|
| <b>Interest in playing videogames &gt; 0 (%)</b> | <b>41.38</b> | <b>24.10</b>   | <b>32.52</b> |
| <i>15 - 19</i>                                   | <i>91.08</i> | <i>50.25</i>   | <i>71.25</i> |
| <i>20 - 29</i>                                   | <i>78.21</i> | <i>39.45</i>   | <i>58.66</i> |
| <i>30 - 44</i>                                   | <i>53.17</i> | <i>31.90</i>   | <i>42.73</i> |
| <i>45 - 54</i>                                   | <i>32.92</i> | <i>23.26</i>   | <i>28.10</i> |
| <i>55 or more</i>                                | <i>12.81</i> | <i>10.21</i>   | <i>11.40</i> |
| <b>Interest in videogames (mean)</b>             |              |                |              |
| <b><i>Whole sample</i></b>                       | <b>2.18</b>  | <b>0.97</b>    | <b>1.56</b>  |
| <i>15 - 19</i>                                   | <i>6.26</i>  | <i>2.41</i>    | <i>4.39</i>  |
| <i>20 - 29</i>                                   | <i>4.76</i>  | <i>1.79</i>    | <i>3.26</i>  |
| <i>30 - 44</i>                                   | <i>2.70</i>  | <i>1.30</i>    | <i>2.01</i>  |
| <i>45 - 54</i>                                   | <i>1.35</i>  | <i>0.86</i>    | <i>1.11</i>  |
| <i>55 or more</i>                                | <i>0.48</i>  | <i>0.32</i>    | <i>0.39</i>  |
| <b>Interest in videogames (mean)</b>             |              |                |              |
| <b><i>Subsample (interest &gt; 0)</i></b>        | <b>5.27</b>  | <b>4.03</b>    | <b>4.80</b>  |
| <i>15 - 19</i>                                   | <i>6.87</i>  | <i>4.80</i>    | <i>6.16</i>  |
| <i>20 - 29</i>                                   | <i>6.08</i>  | <i>4.53</i>    | <i>5.56</i>  |
| <i>30 - 44</i>                                   | <i>5.09</i>  | <i>4.08</i>    | <i>4.72</i>  |
| <i>45 - 54</i>                                   | <i>4.10</i>  | <i>3.71</i>    | <i>3.94</i>  |
| <i>55 or more</i>                                | <i>3.73</i>  | <i>3.09</i>    | <i>3.42</i>  |
| <b>Sample size</b>                               | <b>5386</b>  | <b>5632</b>    | <b>11018</b> |

Source: Own calculations using the microdata from EHD (2015).

Table 2.

Descriptive statistics of the variables [%, except for age (mean)]

|   | Non-participant videogames | Participant videogames | Total |
|---|----------------------------|------------------------|-------|
| <b>Age</b>                                  | 53.33                      | 37.23                  | 48.09 |
| <b>Gender</b>                               |                            |                        |       |
| <i>Male</i>                                 | 42.35                      | 67.02                  | 48.75 |
| <i>Female</i>                               | 57.65                      | 37.98                  | 51.25 |
| <b>Education</b>                            |                            |                        |       |
| <i>Illiterate or &lt; 5 years of school</i> | 7.91                       | 1.55                   | 5.84  |
| <i>Primary school</i>                       | 20.97                      | 8.56                   | 16.93 |
| <i>Secondary school</i>                     | 44.30                      | 59.16                  | 49.13 |
| <i>Advanced professional studies</i>        | 8.14                       | 11.45                  | 9.22  |
| <i>University degree</i>                    | 18.69                      | 19.28                  | 18.88 |
| <b>Labour status</b>                        |                            |                        |       |
| <i>Occupied</i>                             | 42.74                      | 51.35                  | 45.54 |
| <i>Unemployed</i>                           | 13.02                      | 17.17                  | 14.37 |
| <i>Retired</i>                              | 26.83                      | 6.25                   | 20.14 |
| <i>Permanent disability</i>                 | 1.28                       | 0.72                   | 1.10  |
| <i>Student not working</i>                  | 4.64                       | 19.31                  | 9.41  |
| <i>Housework</i>                            | 10.70                      | 4.55                   | 8.70  |
| <i>Other</i>                                | 0.80                       | 0.65                   | 0.75  |

Table 2.

Descriptive statistics of the variables [%, except for age (mean)]

|  | Non-participant videogames | Participant videogames | Total |
|--|----------------------------|------------------------|-------|
| <b>Nationality</b>                                   |                            |                        |       |
| <i>Spanish</i>                                       | 91.64                      | 88.71                  | 90.69 |
| <i>Double nationality</i>                            | 2.32                       | 2.86                   | 2.50  |
| <i>Foreigner</i>                                     | 6.04                       | 8.42                   | 6.82  |
| <b>Personal status</b>                               |                            |                        |       |
| <i>Single living with parents</i>                    | 11.59                      | 35.67                  | 19.42 |
| <i>Single without dependent children</i>             | 14.06                      | 9.45                   | 12.56 |
| <i>Single with dependent children</i>                | 4.52                       | 4.89                   | 4.64  |
| <i>Married without dependent children</i>            | 9.55                       | 8.28                   | 9.14  |
| <i>Married with a dependent child (&lt;18)</i>       | 23.39                      | 27.95                  | 24.87 |
| <i>Married with dependent children (&gt;=18)</i>     | 15.69                      | 7.31                   | 12.97 |
| <i>Married with non-dependent children (&gt;=18)</i> | 17.03                      | 4.55                   | 12.97 |
| <i>Other</i>   | 4.18                       | 1.92                   | 3.44  |
| <b>Size of municipality</b>                          |                            |                        |       |
| <i>Capital of province</i>                           | 31.60                      | 32.85                  | 32.01 |
| <i>More than 50,000 inhabitants</i>                  | 20.25                      | 21.57                  | 20.68 |
| <i>Less than 50,000 inhabitants</i>                  | 48.15                      | 45.58                  | 47.32 |
| <b>Sample size</b>                                   | 7548                       | 3470                   | 11018 |

Source: Own calculations using the microdata from EHD (2015).

## Profile of *eSports* participants

### Two-part model:

- **Participation:** Having interest or not (scale > 0 vs scale = 0) **PROBIT**
- **Intensity:** scale > 0 (ordinal variable) **ORDERED PROBIT**

Table 3.

Estimation results of the two-part model

| Variables  | Probit  |         | Ordered Probit |         |
|--|---------|---------|----------------|---------|
|  | Males   | Females | Males          | Females |
| <b>Age (/10)</b>   |         |         |                |         |
| <i>Linear</i>  | -0,88** | -0,21** | -0,46**        | -0,19** |
| <i>Quadratic</i>   | 0,05**  |         | 0,03**         |         |
| <b>Education (ref.: Illiterate or &lt;5 years of school)</b> |         |         |                |         |
| <i>Primary school</i>  | 0,06    | 0,33**  | -0,04          | 0,91**  |
| <i>Secondary school</i>                                      | 0,24**  | 0,52**  | -0,04          | 0,79**  |
| <i>Advanced professional studies</i>                         | 0,35**  | 0,45**  | -0,20          | 0,85**  |
| <i>University degree</i>                                     | 0,30**  | 0,44**  | -0,28**        | 0,50**  |
| <b>Labour status (ref.: Occupied)</b>                        |         |         |                |         |
| <i>Unemployed</i>  | 0,11**  | -0,01   | 0,04           | -0,06   |
| <i>Retired</i>   | -0,11*  | 0,19**  | 0,05           | 0,21*   |
| <i>Permanent disability</i>                                  | -0,20*  | 0,15    | -0,26          | 0,07    |
| <i>Student not working</i>                                   | 0,02    | 0,12*   | -0,05          | -0,16** |
| <i>Housework</i>   | 0,26    | 0,06    | 0,70           | 0,09    |
| <i>Other</i>   | -0,18   | -0,09   | 0,04           | 0,03    |

Table 3.

## Estimation results of the two-part model

| Variables   | Probit  |          | Ordered Probit |         |
|---|---------|----------|----------------|---------|
|   | Males   | Females  | Males          | Females |
| <b>Nationality (ref.: Spanish)</b>                        |         |          |                |         |
| <i>Double nationality</i>                                 | -0,08   | 0,00     | -0,20**        | 0,12    |
| <i>Foreigner</i>  | 0,02    | 0,08*    | -0,19**        | 0,09    |
| <b>Personal status (ref.: single living with parents)</b> |         |          |                |         |
| <i>Single without dependent children</i>                  | -0,04   | -0,07    | -0,21**        | 0,09    |
| <i>Single with dependent children</i>                     | 0,15*   | 0,27**   | 0,13           | -0,16*  |
| <i>Married without dependent children</i>                 | 0,02    | -0,21**  | -0,21**        | -0,08   |
| <i>Married with a dependent child (&lt;18)</i>            | 0,03    | 0,09*    | -0,03          | 0,00    |
| <i>Married with dependent children (&gt;=18)</i>          | 0,06    | -0,11*   | -0,18**        | -0,02   |
| <i>Married with non-dependent children (&gt;=18)</i>      | -0,09   | -0,08    | -0,30**        | -0,12   |
| <i>Other</i>  | 0,05    | -0,11    | -0,00          | 0,15    |
| <b>Size of municipality (ref.: Capital of province)</b>   |         |          |                |         |
| <i>More than 50,000 inhabitants</i>                       | 0,04    | -0,01    | 0,03           | -0,10*  |
| <i>Less than 50,000 inhabitants</i>                       | -0,13** | 0,05*    | -0,08**        | -0,22** |
| <b>Constant</b>   | 2.49**  | (1)      | -0.16          | (1)     |
| <b>Log likelihood</b>                                     | -9746.6 | -17051.6 | -9809.2        | -9908.5 |
| <b>Sample size</b>  | 5386    | 2162     | 3470           | 1308    |

Notes: Regional dummies are included in all the models.

\* p<0.05; \*\* p<0.01

(1) Nine cut-off points have been estimated.

# Complementarity between *eSports* and traditional sport

Table 4.

Descriptive analysis of the relationship between the interest in playing sports videogames and the interest in other activities related to sports by gender [males (M) and females (F)]

| Activity          | (1)         |             | (2)  |      | (3)  |      | (4)         |             |
|-------------------|-------------|-------------|------|------|------|------|-------------|-------------|
|                   | M           | F           | M    | F    | M    | F    | M           | F           |
| Sports in general | 43.0        | 27.0        | 7.41 | 6.50 | 7.85 | 7.05 | 5.27        | 4.02        |
| Practice          | 45.7        | 28.8        | 6.83 | 6.20 | 7.38 | 6.68 | 5.29        | 4.02        |
| Live attendance   | 48.1        | 33.1        | 6.01 | 5.12 | 6.49 | 5.56 | 5.27        | 4.00        |
| Audio visual      | 44.0        | 30.1        | 6.99 | 5.54 | 7.28 | 5.79 | 5.28        | 4.02        |
| Information       | 44.9        | 32.1        | 6.74 | 5.18 | 7.06 | 5.40 | 5.27        | 4.01        |
| <b>TOTAL</b>      | <b>41.4</b> | <b>24.1</b> |      |      |      |      | <b>5.27</b> | <b>4.03</b> |

Notes: (1) Percentage of participants in sports videogames among those interested in a particular activity.

(2) Average intensity in each activity among those interested in that particular activity

(3) Average intensity in each activity among those interested in that particular activity and in playing sports videogames.

(4) Average intensity in playing sports videogames among those interested in a particular activity and in playing sports videogames.

**Table 5**

**Analysis of correlation between the different activities related to sports and playing sports videogames by gender [males (M) and females (F)]**

| Activity          | Corr. Coef.<br>(whole sample) |       | Corr. Coef.<br>(videogamers) |       | Bivariate Probit<br>(Corr. Coef.) |
|-------------------|-------------------------------|-------|------------------------------|-------|-----------------------------------|
|                   | M                             | F     | M                            | F     |                                   |
| Sports in general | 0.296                         | 0.255 | 0.306                        | 0.315 | 0.501                             |
| Practice          | 0.348                         | 0.272 | 0.258                        | 0.291 | 0.510                             |
| Live attendance   | 0.385                         | 0.326 | 0.335                        | 0.332 | 0.597                             |
| Audio visual      | 0.277                         | 0.270 | 0.339                        | 0.357 | 0.598                             |
| Information       | 0.300                         | 0.298 | 0.341                        | 0.358 | 0.624                             |

**Table 6**

**Average marginal effects of the variables related to the different sports activities in the participation (Probit) and the intensity of playing sports videogames (Ordered Probit) by gender [males (M) and females (F)]**

| Activity          | Probit |       | Ordered Probit |        |
|-------------------|--------|-------|----------------|--------|
|                   | M      | F     | M              | F      |
| Sports in general | 0.254  | 0.230 | 0.109          | 0.114  |
| Practice          | 0.128  | 0.123 | 0.018          | 0.031  |
| Live attendance   | 0.219  | 0.143 | 0.077          | 0.079  |
| Audio visual      | 0.146  | 0.081 | 0.039          | 0.007* |
| Information       | 0.140  | 0.163 | 0.043          | 0.058  |

Note: \* p-value>0.05

**Table 2: Descriptive statistics of sports practice (%)**

|                                     | Non video gamers |            | Video gamers |            |
|-------------------------------------|------------------|------------|--------------|------------|
|                                     | Full sample      | <=25 years | Full sample  | <=25 years |
| <b>Sports practice</b>              | 44.53            | 74.20      | 72.19        | 85.44      |
| <b>Frequency</b>                    |                  |            |              |            |
| <i>Daily</i>                        | 35.15            | 37.15      | 38.10        | 46.73      |
| <i>At least once a week</i>         | 50.14            | 54.23      | 49.41        | 45.58      |
| <i>At least once a month</i>        | 9.18             | 6.07       | 8.82         | 6.06       |
| <i>At least once a quarter</i>      | 2.95             | 1.16       | 1.96         | 1.04       |
| <i>At least one a year</i>          | 2.58             | 1.39       | 1.72         | 0.59       |
| <b>Type of practice</b>             |                  |            |              |            |
| <i>Individual</i>                   | 67.06            | 53.65      | 46.48        | 28.97      |
| <i>Team</i>                         | 10.80            | 14.17      | 18.60        | 28.77      |
| <i>Both</i>                         | 22.14            | 32.18      | 34.93        | 42.27      |
| <b>Organized competition</b>        | 13.48            | 18.43      | 24.86        | 37.61      |
| <b>Type of sport*</b>               |                  |            |              |            |
| <i>Football (soccer)</i>            | 11.23            | 19.59      | 36.63        | 58.92      |
| <i>Cycling</i>                      | 33.50            | 38.58      | 45.27        | 48.22      |
| <i>Swimming</i>                     | 35.34            | 40.12      | 42.51        | 44.10      |
| <i>Trekking</i>                     | 31.57            | 29.41      | 32.22        | 27.94      |
| <i>Running, jogging</i>             | 27.05            | 38.10      | 34.60        | 40.04      |
| <i>Chess</i>                        | 7.88             | 9.17       | 15.70        | 18.21      |
| <i>Gymnastics (soft)</i>            | 31.52            | 31.68      | 25.31        | 20.74      |
| <i>Gymnastics (intense)</i>         | 27.28            | 41.16      | 31.24        | 33.75      |
| <i>Body-building, weightlifting</i> | 14.88            | 21.25      | 26.72        | 31.36      |

Note: \* In the survey of the EHD, each individual practising sport at least once a year can choose more than one sport he/she practises more than once a year from a list of 41 sports. The sports reported in this table are among those with the higher proportions of participation with the exception of chess.

Source: Chikish, Carreras and García (2018)

**Table 3: Marginal effects of the intensity of interest in sports videogames for the models of sports practice and frequency**

|                                   | <b>Males</b> | <b>Females</b> |
|-----------------------------------|--------------|----------------|
| <b>Probit (practice = 1)</b>      | 0.0137       | 0.0186         |
| <b>Ordered Probit (Frequency)</b> |              |                |
| <i>Daily</i>                      | 0.0036       | 0.0035*        |
| <i>At least once a week</i>       | -0.0013      | -0.0017*       |
| <i>At least once a month</i>      | -0.0013      | -0.0009*       |
| <i>At least once a quarter</i>    | -0.0004      | -0.0004*       |
| <i>At least one a year</i>        | -0.0005      | -0.0005*       |

Note: \* Significant at a 10% level but not at a 5% level.

**Table 4: Distribution of the main motivations for sports practice or non practice (%)**

|                                     | <b>Non video gamers</b> |                      | <b>Video gamers</b> |                      |
|-------------------------------------|-------------------------|----------------------|---------------------|----------------------|
|                                     | <b>Participants</b>     | <b>&lt;=25 years</b> | <b>Participants</b> | <b>&lt;=25 years</b> |
| <b>Motivation participation</b>     |                         |                      |                     |                      |
| <i>Fun, entertainment</i>           | 28.66                   | 37.87                | 38.60               | 46.66                |
| <i>Fitness</i>                      | 34.24                   | 33.31                | 29.01               | 22.72                |
| <i>Like sport</i>                   | 7.36                    | 10.71                | 11.37               | 15.10                |
| <i>Competition</i>                  | 0.83                    | 1.26                 | 0.99                | 1.96                 |
|                                     |                         |                      |                     |                      |
|                                     | <b>Full sample</b>      | <b>&lt;=25 years</b> | <b>Full sample</b>  | <b>&lt;=25 years</b> |
| <b>Motivation non participation</b> |                         |                      |                     |                      |
| <i>Lack of facilities</i>           | 3.91                    | 9.78                 | 6.38                | 9.34                 |
| <i>Age</i>                          | 15.20                   | 0.69                 | 4.38                | 0.61                 |
| <i>Lack of time</i>                 | 43.33                   | 57.80                | 60.10               | 61.52                |
| <i>Lack of interest</i>             | 17.00                   | 17.15                | 11.05               | 11.74                |

Source: Chikish, Carreras and García (2018)

## Perception of *eSports* as sport

$$\text{Int\_sport} = w_1 \text{Int\_Practice} + w_2 \text{Int\_Attendance} + w_3 \text{Int\_Audience} + w_4 \text{Int\_Information} + w_5 \text{Int\_Videogames} + u$$

Table 7

Estimates of the weight (%) of the interest in the different activities related to sport in the interest of sports in general by gender [males (M) and females (F)]

|                     | Not including videogames |       |        | Including videogames |        |        |        |
|---------------------|--------------------------|-------|--------|----------------------|--------|--------|--------|
|                     | M                        | F     | Total  | M                    | F      | Total  | M<=18  |
| <b>Whole sample</b> |                          |       |        |                      |        |        |        |
| Practice            | 52.03                    | 71.41 | 62.75  | 53.65                | 69.83  | 62.84  | 85.90  |
| Live attendance     | -10.95                   | -7.81 | -10.64 | -1.54                | 2.44   | 0.18*  | -5.00  |
| Audio visual        | 44.79                    | 38.22 | 42.34  | 41.73                | 35.20  | 38.79  | 15.44  |
| Information         | 14.14                    | -1.82 | 5.57   | 16.55                | 6.64   | 11.07  | 1.07*  |
| Videogames          |                          |       |        | -10.38               | -14.11 | -12.89 | 2.59   |
| <b>Videogamers</b>  |                          |       |        |                      |        |        |        |
|                     | M                        | F     | Total  | M                    | F      | Total  | M<=18  |
| Practice            | 59.84                    | 73.18 | 65.56  | 60.15                | 73.27  | 65.89  | 82.85  |
| Live attendance     | -6.25                    | -0.02 | -4.02  | -5.28                | 1.52*  | -2.51  | -2.92* |
| Audio visual        | 33.97                    | 32.85 | 33.97  | 34.13                | 33.19  | 34.23  | 18.84  |
| Information         | 12.44                    | -6.01 | 4.49   | 12.93                | -4.07  | 5.66   | -4.37* |
| Videogames          |                          |       |        | -1.95                | -3.90  | -3.27  | 5.62   |

Note: \* p-value>0.05, otherwise p-value<0.05

# Research about *eSports* in sports (and) economics

Source: Chikish, Carreras and García (2018)

## *Current research*

### *Consumer behaviour perspective*

Experiential perspective of *eSports* (co-creation) (Seo, 2013)

*eSports* as a leisure activity but with professionalized pursuits (Seo, 2016)

Development of competences (social, educational, problem solution, ...)

### *Marketing perspective*

Motivations behind participation in *eSports* activities (Lee, 2011)

Comparison of *eSports* and traditional sports motivations (Pizzo et al., 2018)

### *eSports as a human laboratory*

Testing contests as efficient mechanisms for eliciting effort  
(Coates and Parshakov, 2016)

Country-level factors in sports success (*eSports* evidence)  
(Parshakov & Zavartieva, 2015, 2018)

Effect of team diversity in performance (Parshakov et al., 2018)

## *Future research*

### *Organization of competition*

Franchise vs. Promotion/relegation (at place at different times)  
US (2018 season), Europe (2019 season)

### *Betting in eSports*

eSportsbook wagering (betting on the outcome)  
Fantasy *eSports* (possibility of creation your own virtual team)  
Using in-game items (skins) (88% of total *eSports* wagering)

### *Cheating in eSports contests*

Three main categories of cheating practices in sport: sabotage, doping and match-fixing (Preston and Szymanski, 2003)  
Specific features of *eSports*: unregulated skins gambling market, computerized environment, and video games are programming codes.

## Summary of conclusions

- The way socio-demographic characteristics are affecting the participation and the interest in *eSports* is not homogeneous (two-part model) and differs depending on gender.
- Different approaches provide evidence of the complementarity of *eSports* and traditional sports.
- Practising sports and watching or listening to sports events using audiovisual media are the two main activities associated to the general interest in sports.
- The interest in playing sports video games has not a significant effect for the whole population but it has a positive and significant effect when considering the subsample of males aged 18 years or less.
- The availability of detailed data on individual/team performance allows researchers to use *eSports* setting to study questions related not only to sports economics but also to labour and behavioural economics.
- *eSports* has specific features – computerized nature of the competitions and heavy embeddedness of betting market in the industry – that deserve special attention of researchers.