

**SUPSI**

# **E-Sports at university: Is there a new frontier of learning?**

Loredana Addimando, lecturer-senior researcher, SUPSI DFA

Masiar Babazadeh, lecturer-researcher, SUPSI DFA

Luca Botturi, professor in Media and Education, SUPSI DFA

# What are e-Sports?

## E-Sports

- Electronic sports, competitive video games
- Based on skills and not on luck
- Solo player or team-based
- Growing phenomenon
- Gathered interest from (real?) sport teams



## A bit of history...

- First e-Sport tournament in 1972 with “Spacewar!”
- In 1980 Atari organizes the “National Space Invaders Championship”
- In 1997 first Quake tournament, prize pot: a Ferrari
- In 2002 the Major League Gaming (MLG) was born
- From 2006 onwards new leagues and e-Sports organizations are born



## Most famous e-Sports nowadays



**FORTNITE**



DOTA 2





## E-Sports teams

- Gaming houses
- Daily training
- Coaches
- Sport psychologists
- Chefs
- Managers
- ...







## Audience in e-Sports

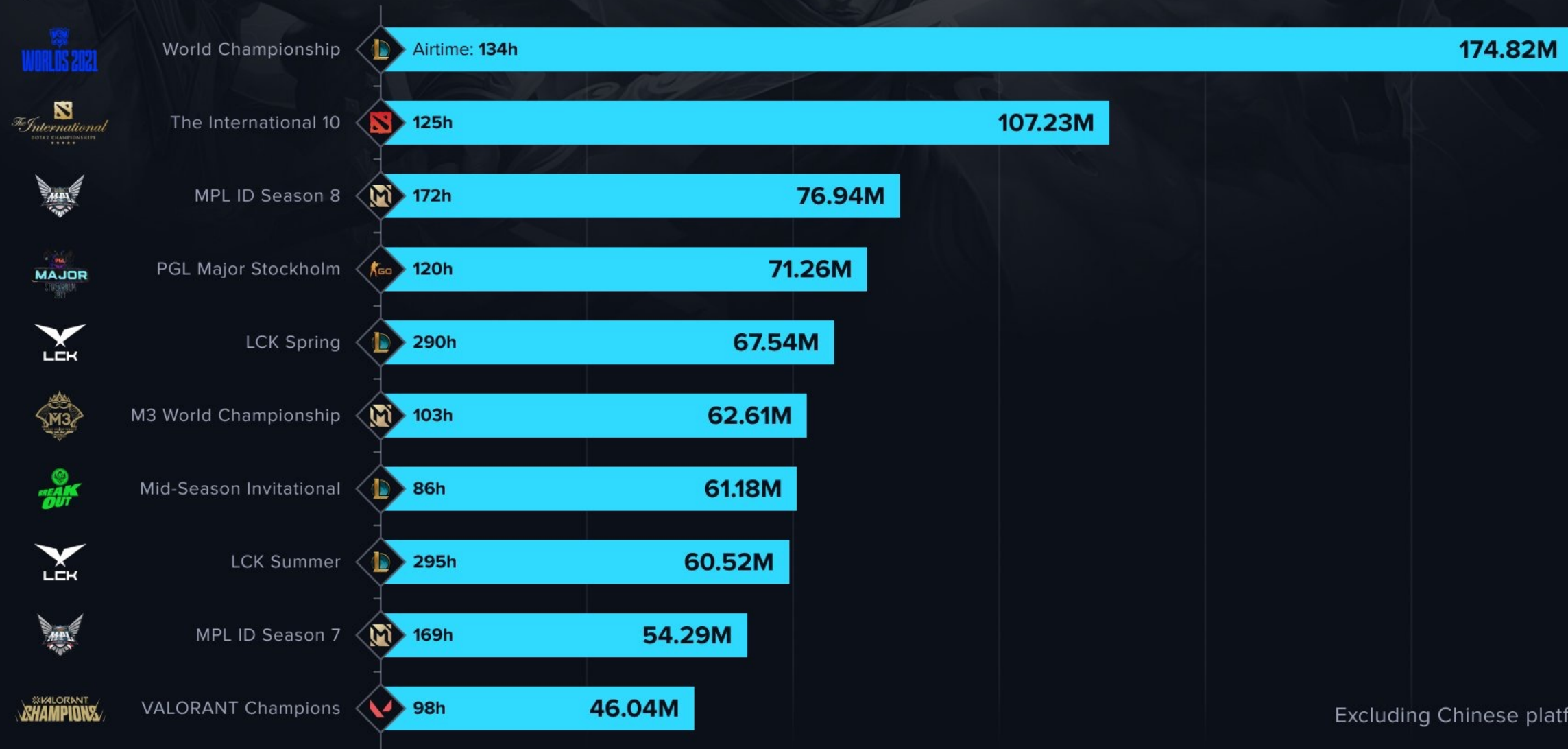
- Numbers grew dramatically in the past few years
- Nowadays nearing traditional sports
- Online & offline audience





# Most watched esports tournaments of 2021

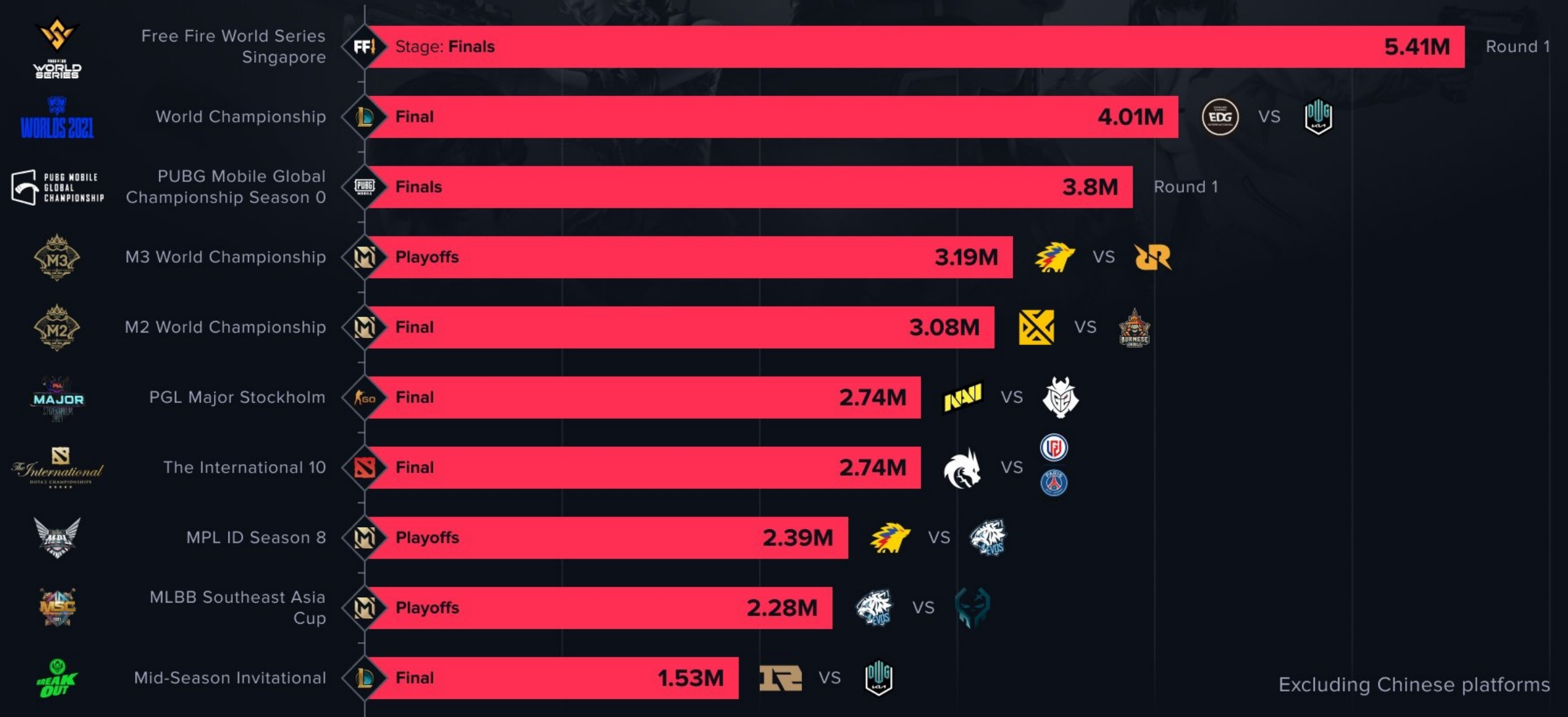
By Hours Watched



Excluding Chinese platforms

# Most popular esports tournaments of 2021

By Peak Viewers



Excluding Chinese platforms

## Top prize pools for e-Sports tournaments in 2021

Game	Tournament Name	Prize Pool
Dota 2	The International 10 (TI10)	\$40,018,195
PUBG	Global Invitational.S 2021	\$7,056,789
Overwatch	The Overwatch League 2021 Playoffs	\$3,200,000
Rainbow Six Siege	The Six Invitational 2021	\$3,000,000
League of Legends	Worlds 2021	\$2,225,000
Counter Strike: Global Offensive	The PGL Stockholm CS:GO Major	\$2,000,000

## Are E-Sports "real" sports?





## What pros earn

- Monthly salary: \$4,000 / \$5,000 (average)
- Annual winnings from tournaments: \$8,500 (median)
- Streaming: \$1,500 (average)
- Fan donations
- Subscriptions
- Advertisement
- Sponsorships



## Most payed E-Sports players

• 1.	Johan Sundstein	\$7,183,837.80	Dota 2
• 2.	Jesse Vainikka	\$6,475,948.78	Dota 2
• 3.	Anathan Pham	\$6,004,411.96	Dota 2
• 4.	Sébastien Debs	\$5,773,909.40	Dota 2
• 5.	Topias Taavitsainen	\$5,690,417.57	Dota 2
• 6.	Kuro Takhasomi	\$5,221,264.15	Dota 2
• 7.	Amer Al-Barkawi	\$4,824,201.68	Dota 2
• 8.	Ivan Ivanov	\$4,605,276.16	Dota 2
• 9.	Lasse Urpalainen	\$4,515,649.04	Dota 2
• 10.	Maroun Merhej	\$4,219,570.69	Dota 2







## The liaison between e-Sports and learning

- E-Sports have emerged as a potential learning activity
  - When new teammates play a competitive video game, they engage in cooperative and communicative action while they enjoy the game
  - Research has shown that e-Sports can promote learning and recreation
    - But it has not investigated the effects of commercial video games on subsequent learning performance







Loughborough College  
**LYCANS**



## E-Sport as a learning environment

- Research has proven how extra-curricular activities may boost students success
- To these regards, *learning* how to play and improve one's skill is a spontaneous process that has to be taken step by step
  - This pattern has much to do with a learning pattern
- Our interest is to study the elements in games of this type that are able to support motivation to learn
  - Such as what motivational elements come into play when a player takes time to learn skills
  - Form of collaborative learning?

## Research questions

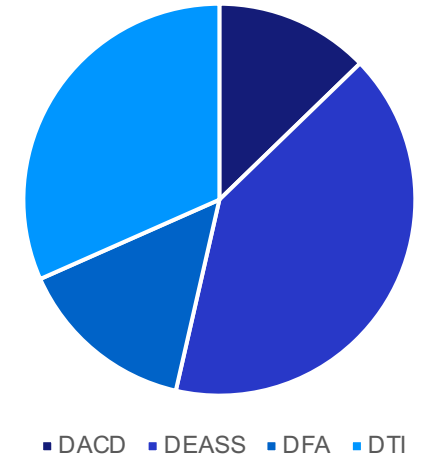
- Are students who know the potential of e-Sports more likely to practice it within learning contexts?
- Are females less interested than males in e-Sports?
  
- Specifically, the research hypotheses of the study were:
  - H1: Positive correlation between familiarity with e-Sports, attitudes and agreement in using e-Sport in the university setting
  - H2: Females would report lower scores on all domains of interest
  - H3: Competitive and causal gamers would be more interested in the use of e-Sports in educational settings and would report better attitudes than non-gamer participants



## Sample and tools

- 449 students from four departments of SUPSI (DACD, DTI, DFA, DEASS)
- 53% males
- 85% of the students were attending a bachelor course
- Data were collected
  - Starting from 15 April 2021 to end on 15 June 2021
  - Anonymously
  - On a voluntary base.
- The research protocol was set with different sections: (1) demographic information, (2) general gaming habits and (3) attitudes and expectation towards e-Sports
- A semantic differential scale was used to assess student attitudes towards e-Sports

SAMPLE AT SUPSI (449)



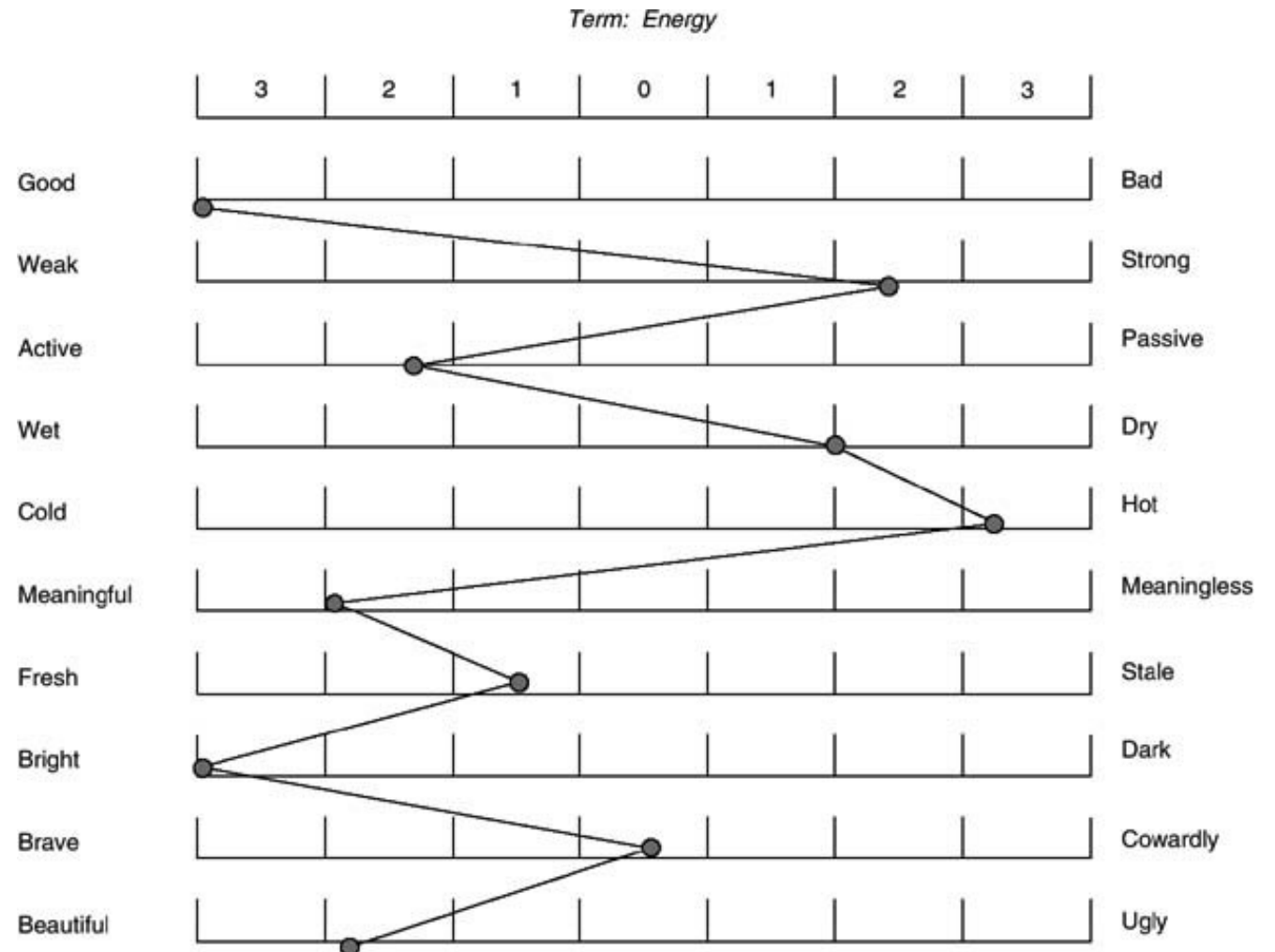
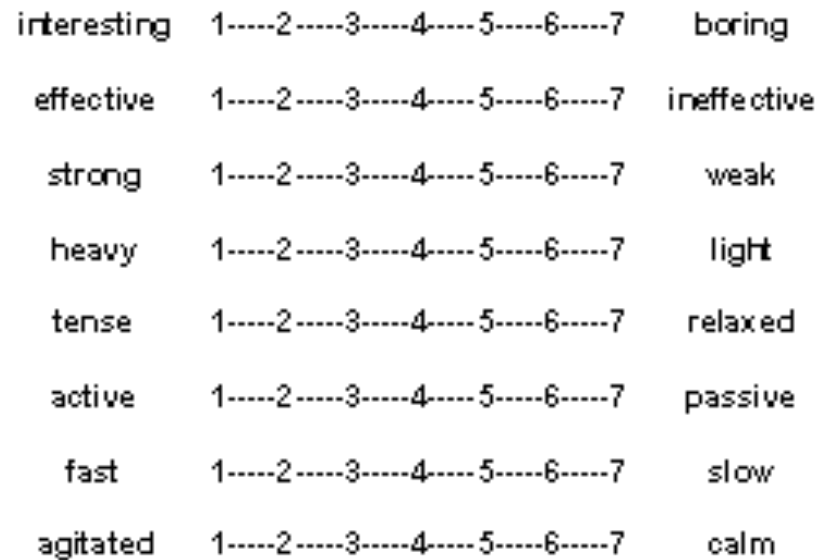
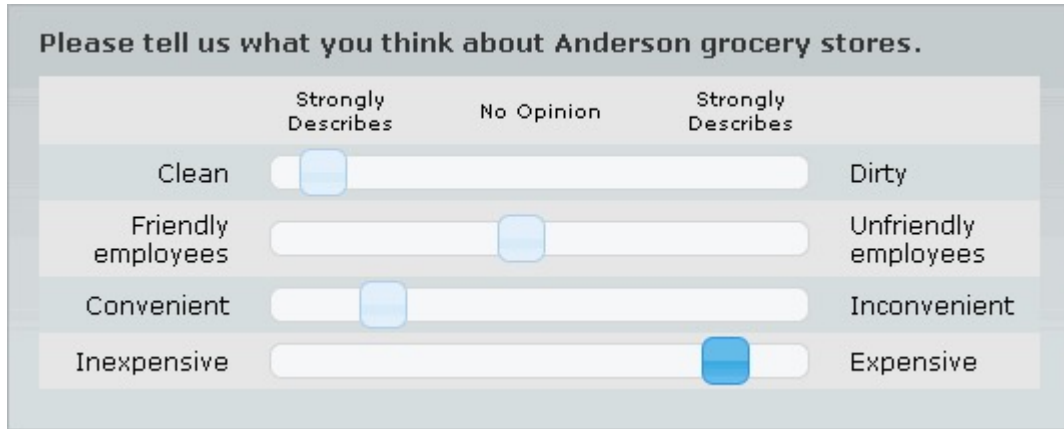


## Students profiling

- Profiling in term of use of gaming and e-Sports in their life (Likert scale)
- “Q1. How familiar you are with the concept of e-Sports?”
- “Q2. How much time do you spend playing video games?”
- “Q3. How much time do you invest watching other people play video games?”
- “Q4. How do you currently play video games?”
  - “not a gamer”
  - “Casual gamer” i.e., playing games for social reasons and fun
  - “Competitive” i.e., playing games to measure and improve your skills



# Measuring attitudes: semantic differential examples



## Semantic differential in our sample

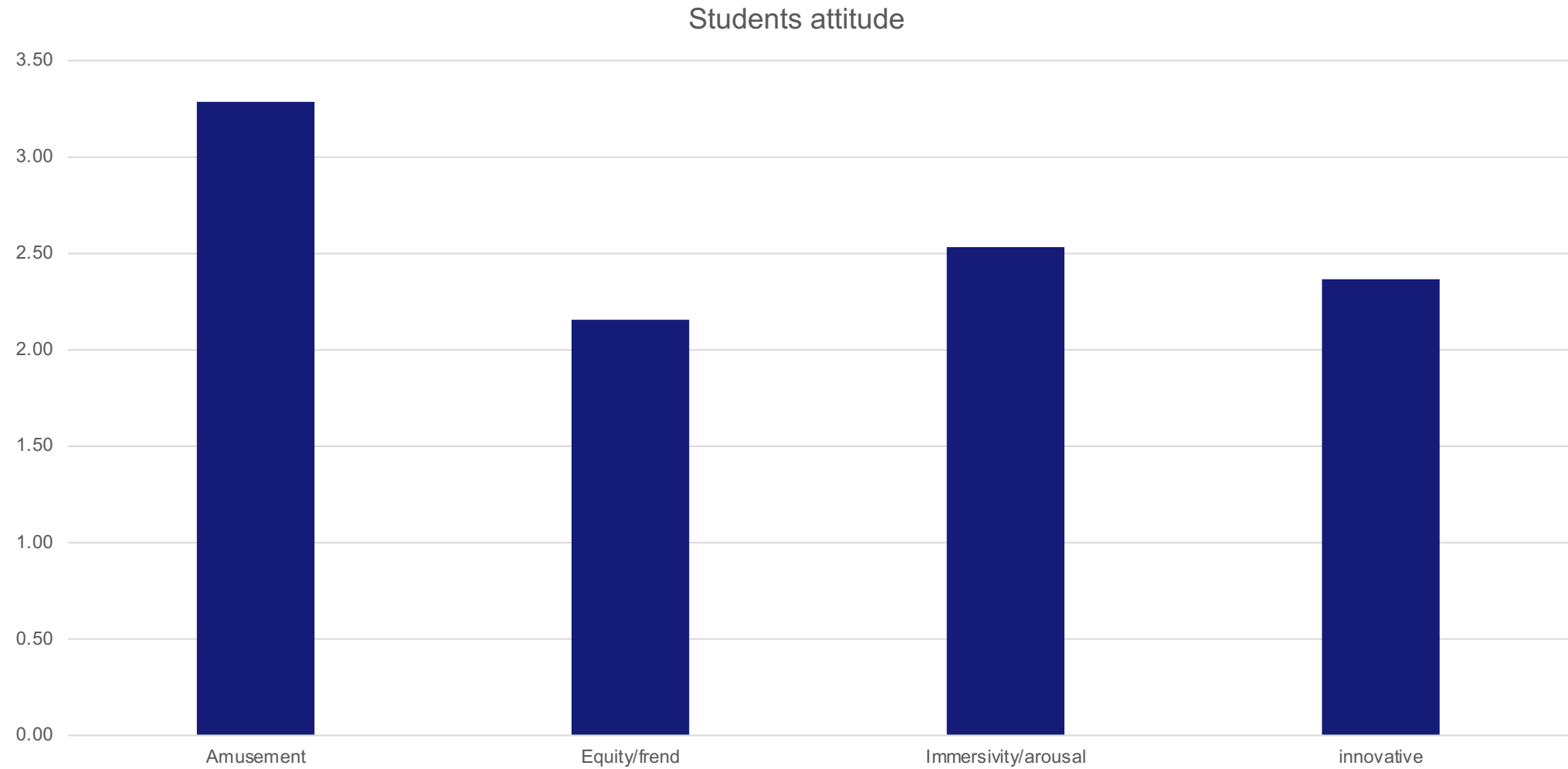
<b>Semantic Differential Scale (SDS) chosen polarities</b>	
<b>Slow</b>	<b>Fast</b>
<b>Carefree</b>	<b>Serious</b>
<b>Easy</b>	<b>Hard</b>
<b>Boring</b>	<b>Stimulating</b>
<b>Passive</b>	<b>Active</b>
<b>Good</b>	<b>Bad</b>
<b>Masculine</b>	<b>Feminine</b>
<b>Relaxed</b>	<b>Tense</b>
<b>Naive</b>	<b>Sophisticated</b>
<b>Economical</b>	<b>Expensive</b>
<b>Imaginative</b>	<b>Realistic</b>
<b>Closed</b>	<b>Open</b>
<b>Hostile</b>	<b>Friendly</b>
<b>Unfair</b>	<b>Fair</b>
<b>Traditional</b>	<b>Innovative</b>
<b>Hidden</b>	<b>Exposed</b>
<b>Old</b>	<b>Young</b>

## Results of exploratory Factor Analysis

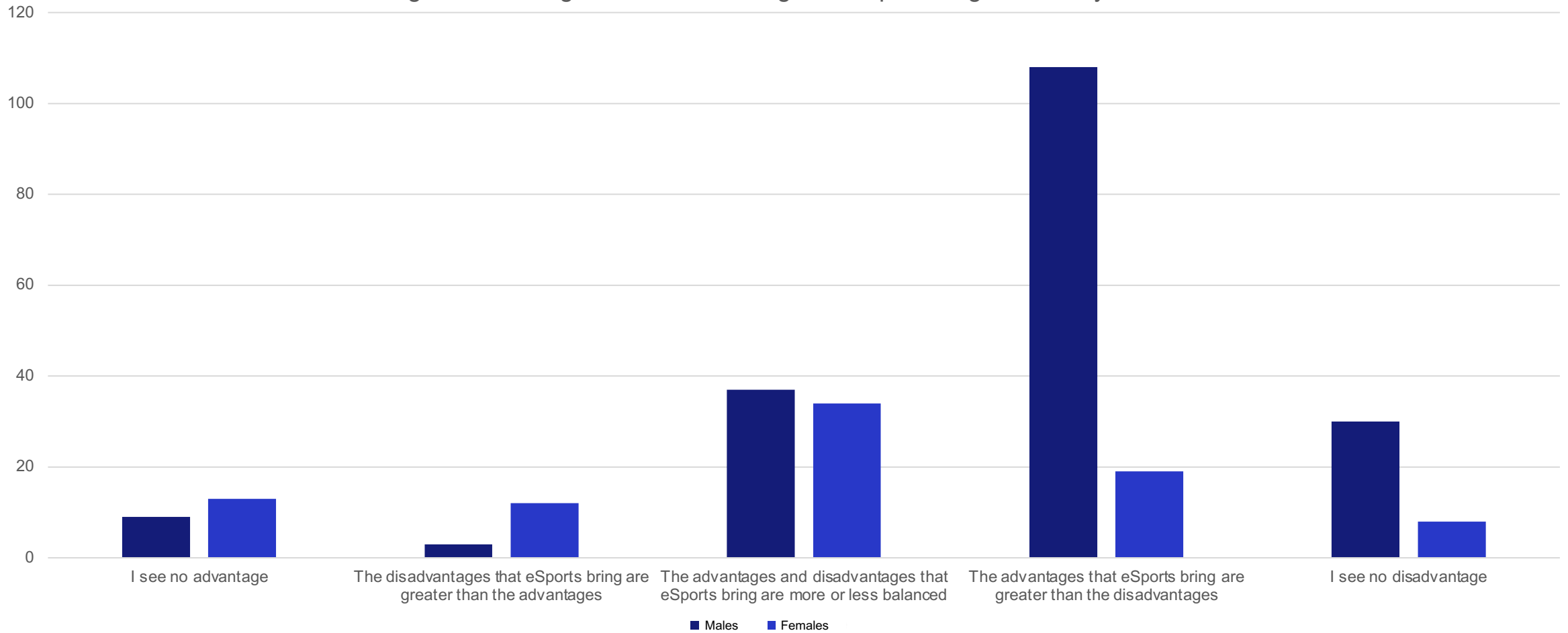
Factor structure and item loadings				
	Amusement	Equity	Immersiveness	Innovativity
Carefree - Serious.	0.78			
Easy - Difficult.	0.77			
Relaxed - Tense.	0.67			
Naive - Sophisticated.	0.55			
Economic - Expensive.	0.517			
Good - Bad.		0.772		
Unfair - Fair.		0.736		
Hostile - Friendly.		0.649		
Boring - Stimulating.			0.666	
Slow - Fast.			0.636	
Closed - Open.			0.62	
Passive - Active.			0.612	
Traditional - Innovative.				0.751
Old - Young.				0.726
Imaginative - Realistic.				0.44

Note: only item reporting factor loading  $\lambda > .40$  were reported

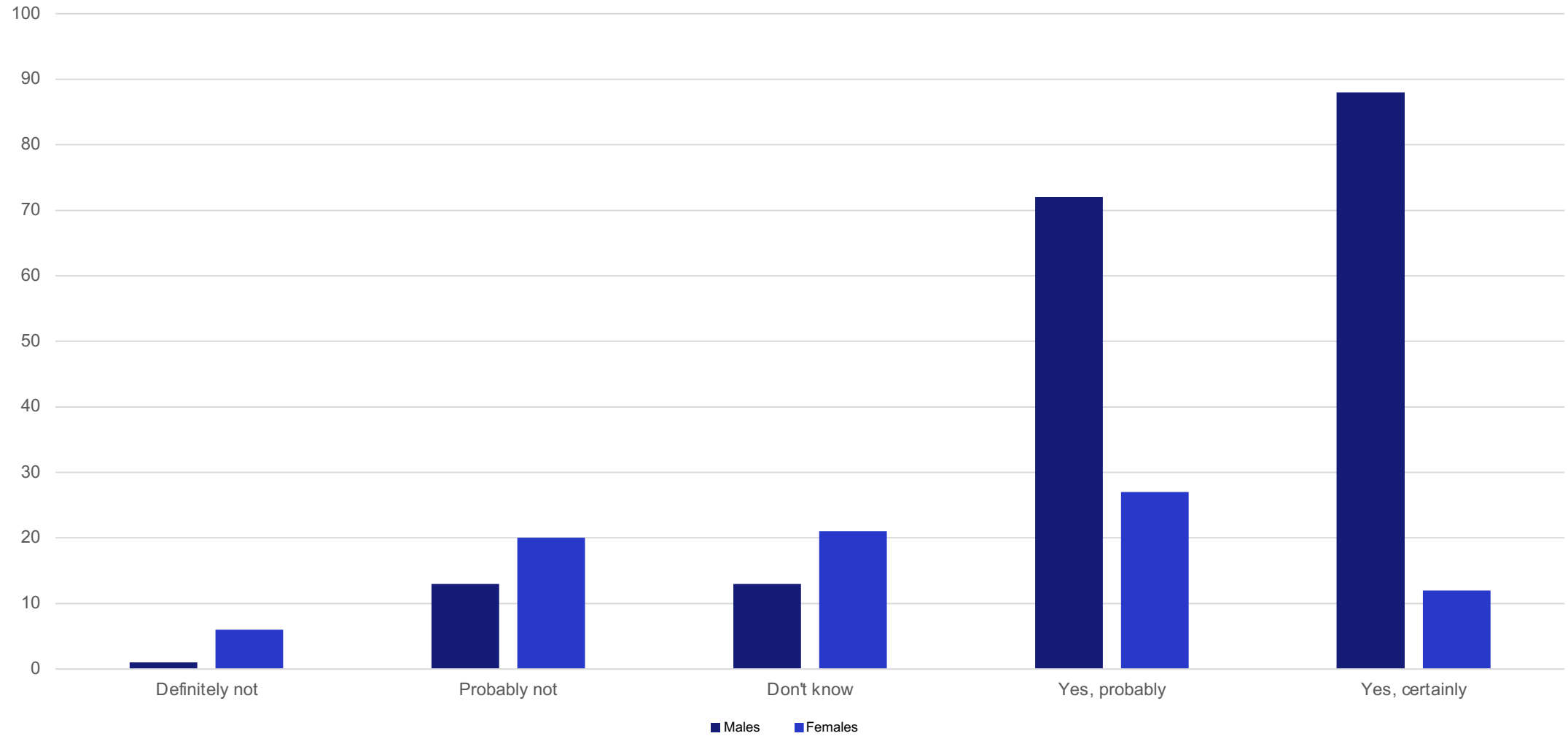




Considering the advantages and disadvantages of esports in general do you think that



Would you support Supsi organizing esports in a formal way?



**Table 3**

**Zero order correlational analysis between SDS and gaming habits**

	1	2	3	4	5	6	7	8
<b>1. How familiar you are with the concept of "eSports"</b>	1							
<b>2. how much time do you spend playing video games? (weekly)</b>	.594**	1						
<b>3. Amusement</b>	.572**	.481**	1					
<b>4. Equity</b>	.292**	.285**	.110*	1				
<b>5. Immersivity</b>	.459**	.346**	.300**	.431**	1			
<b>6. Innovation</b>	.282**	.215**	.401**	.203**	.220**	1		
<b>7. how much time do you invest watching other people play video games? (weekly)</b>	.418**	.567**	.346**	.145**	.202**	.102	1	
<b>8. Would you support a SUPSI that formally organizes and promotes eSports?</b>	.514**	.470**	.342**	.332**	.409**	.160**	.343**	1

**Table 4**

**Analysis of variance between male and female subgroups (N=449)**

	Male		Female		F	p
	M	SD	M	SD		
<b>1. Amusement</b>	29.41	6.69	22.29	5.58	10.35	< .001
<b>2. Equity</b>	20.05	5.42	17.55	5.48	4.21	< .001
<b>3. Immersivity</b>	29.98	5.51	26.13	6.56	5.96	< .001
<b>4. Innovation</b>	16.39	3.05	15.17	3.55	3.45	.001
<b>5. How familiar you are with the concept of "eSports"</b>	2.41	0.81	0.93	0.92	17.16	< .001
<b>6. how much time do you spend playing video games? (weekly)</b>	3,64	1.66	1.54	0.83	13.63	< .001
<b>7. how much time do you invest watching other people play video games? (weekly)</b>	2,44	1.39	1.37	0.81	8.09	< .001
<b>8. Would you support a SUPSI that formally organizes and promotes eSports?</b>	2.19	1.07	1.03	1.39	7.51	< .001

Note: M=mean, SD=standard deviation,



## Conclusion

- The three hypotheses were confirmed
- The analysis of needs has allowed us to understand what the specific needs are within a certain university environment. If we want e-Sports to be part of a training program or an educational project, we need to:
  - Probe on whether people are willing to use them
    - We have seen that people, on average, are well disposed to participate in gaming activities for academic learning purposes. Especially males see many benefits in this type of activity
  - On the contrary, the knowledge of the world of e-Sports is not yet so widespread, and students are not yet so familiar with this phenomenon, especially in the female group
  - In order for e-Sports to be profitably put at the service of educational offerings, it must essentially be designed in a fun and immersive way

## Contacts

Scuola universitaria professionale della Svizzera italiana (SUPSI)  
Dipartimento formazione e apprendimento  
**Laboratorio tecnologie e media in educazione**

Locarno

Loredana Addimando  
[loredana.addimando@supsi.ch](mailto:loredana.addimando@supsi.ch)

Masiar Babazadeh  
[masiar.babazadeh@supsi.ch](mailto:masiar.babazadeh@supsi.ch)

Luca Botturi  
[luca.botturi@supsi.ch](mailto:luca.botturi@supsi.ch)

**SUPSI**

# **E-Sports at university: Is there a new frontier of learning?**

Loredana Addimando, lecturer-senior researcher, SUPSI DFA

Masiar Babazadeh, lecturer-researcher, SUPSI DFA

Luca Botturi, professor in Media and Education, SUPSI DFA