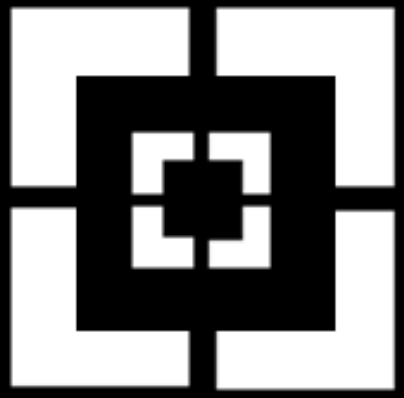
Business Intelligence in World of Warcraft

Thomas Debeauvais

Advancement to candidacy

Context

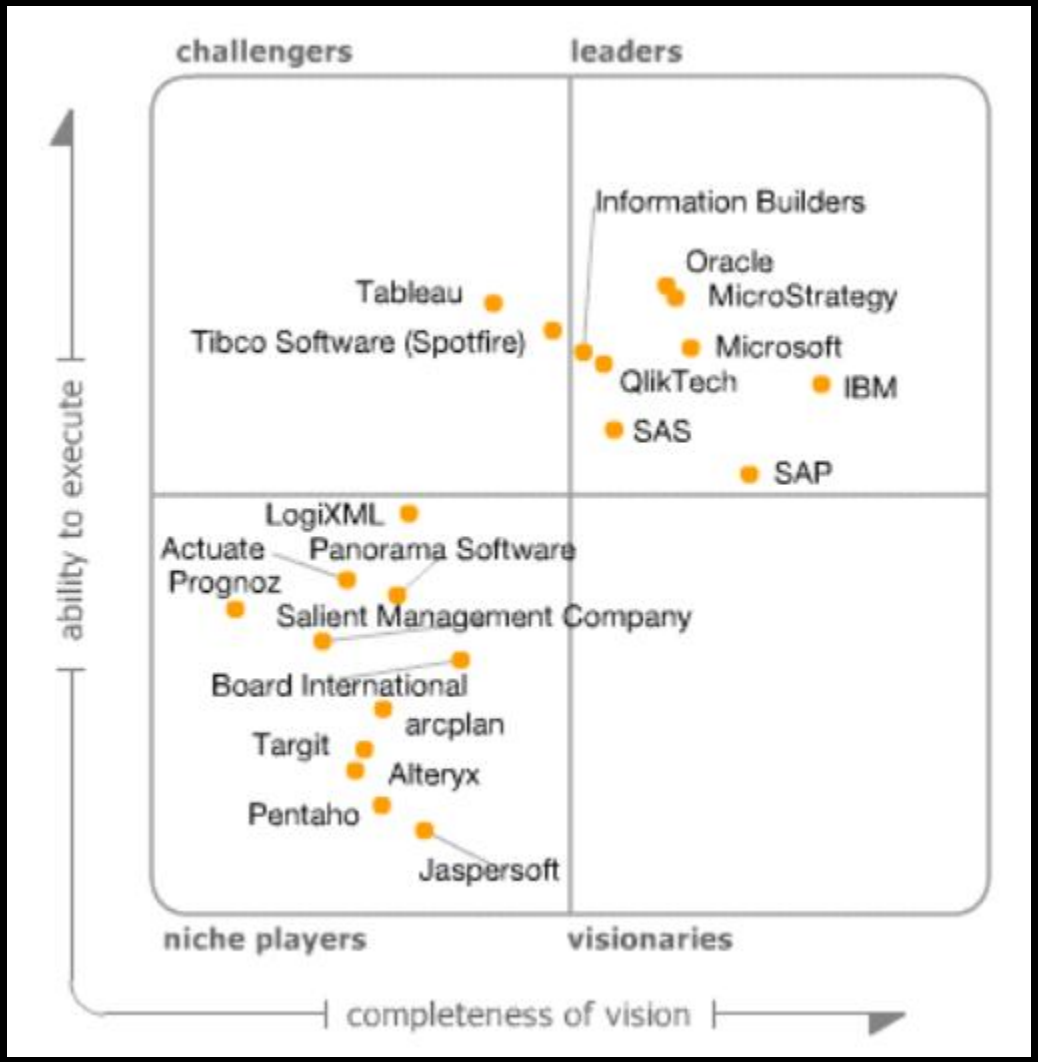


Methods

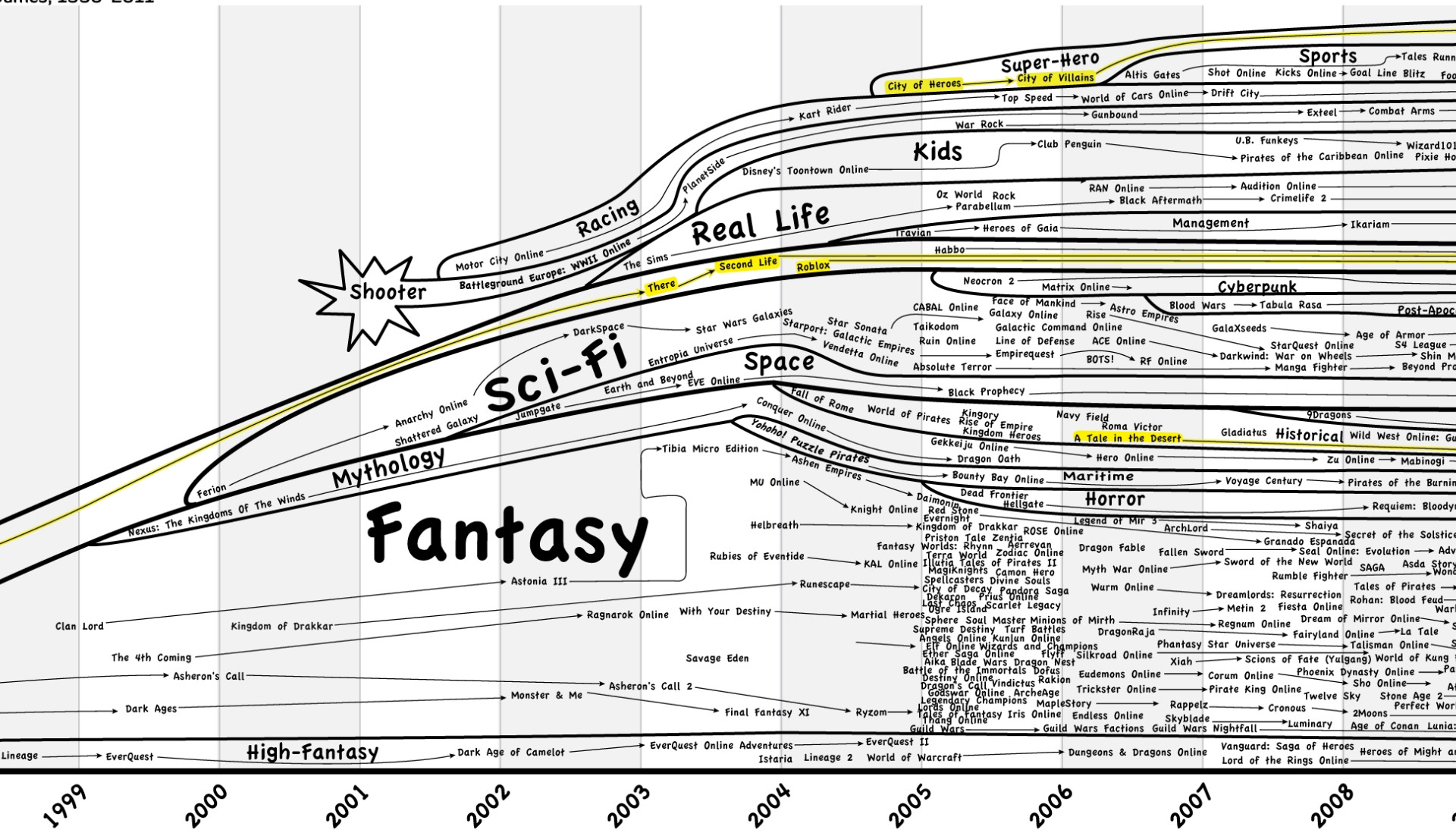
Data overview

Retention

Real-Money Transactions



Source: Gartner 2012



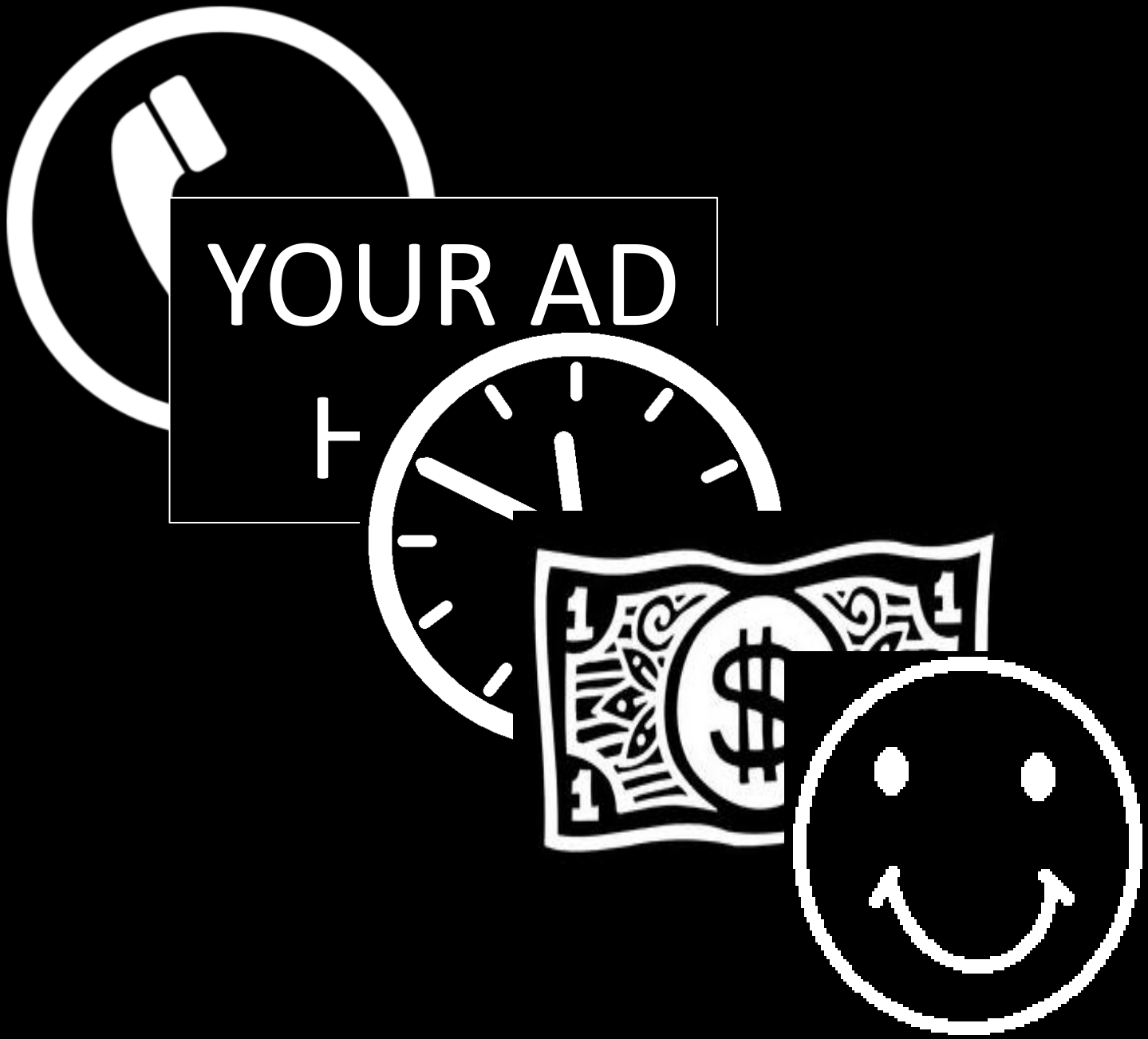
Source: Namaste

2012 MMO Games Market Report

This 33-page PDF report comprises the results of analysis of Newzoo's primary consumer research, as well as benchmarking and validation with actuals and secondary research available to Newzoo. This report focuses completely on the MMO Games Market. Including number of players, paying players, F2P vs. P2P and money spent. Subscribers to Newzoo's complete database perform custom analysis through the Newzoo Data Explorer, covering more than 200 topics per country. This year, we have included our initial findings on Turkey and Poland.

The MMO report contains key information that can be used for presentations, or to support strategic decision making and the development of realistic business plans.

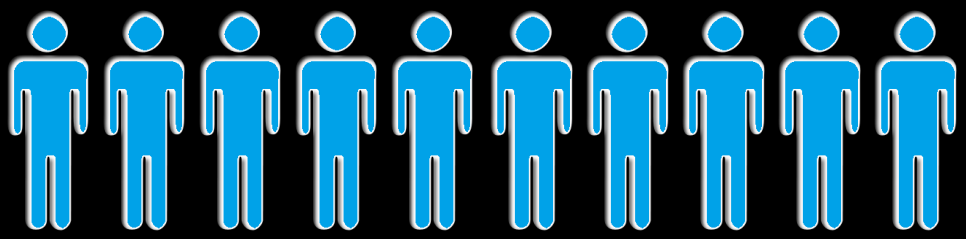
Source: NewZoo


YOUR AD

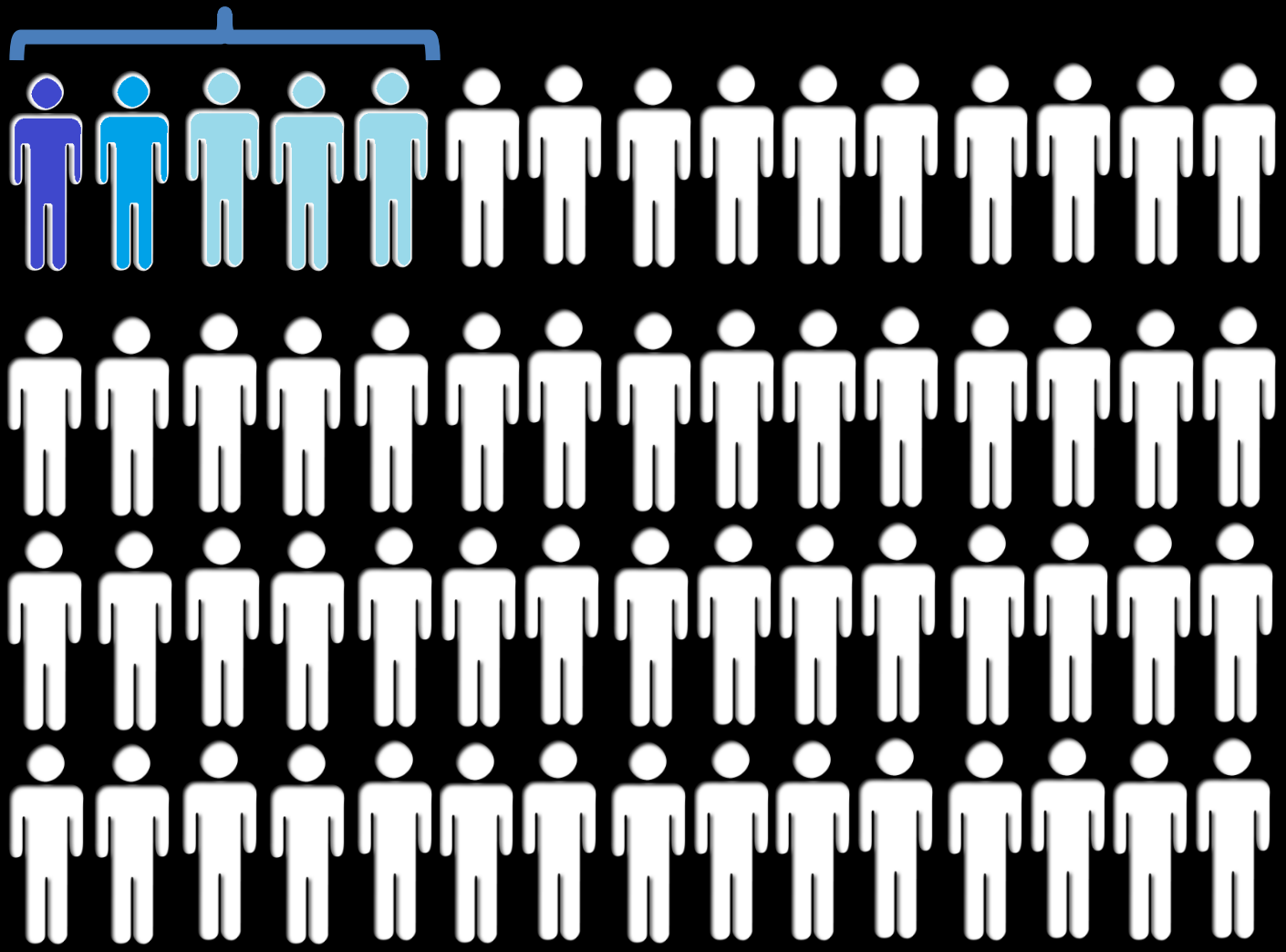
Source: Huffington Post

Source: ravesofourlives.com

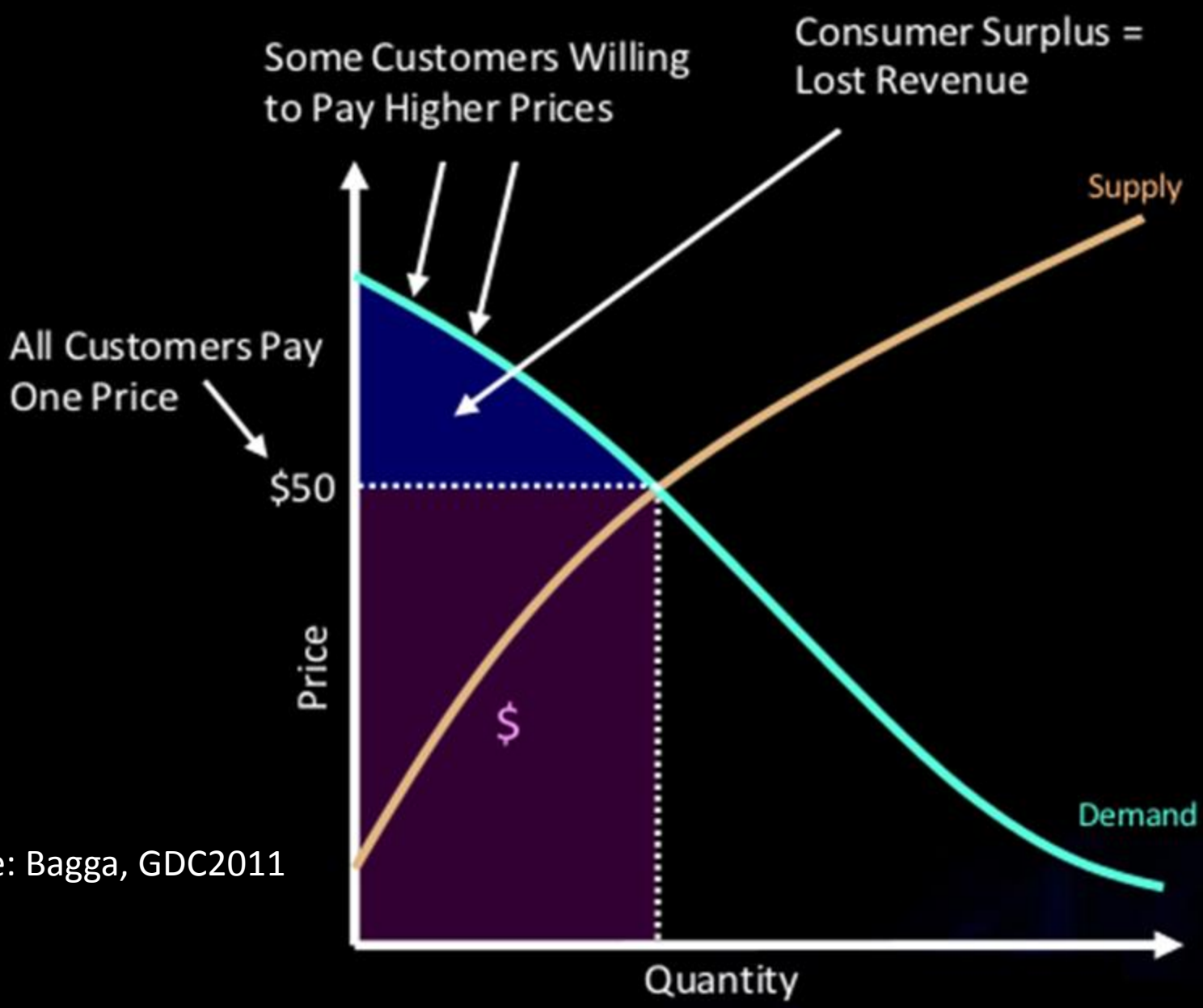
Source: Field of Dreams



$10/month



$0 - $10k/month



Source: Bagga, GDC2011

Consumable | Headgear | Armor | **Weapon** | Accessory | Box | Classic

Asura
Price: 250
Quantity: 1
Required Level: 1
Class: Ninja

Dagger Of Counter
Price: 250
Quantity: 1
Required Level: 1
Class: Mage and Soul Linker Class

Sage's Diary
Price: 250
Quantity: 1
Required Level: 1
Class: Priest, Sage and Tawkwon Class

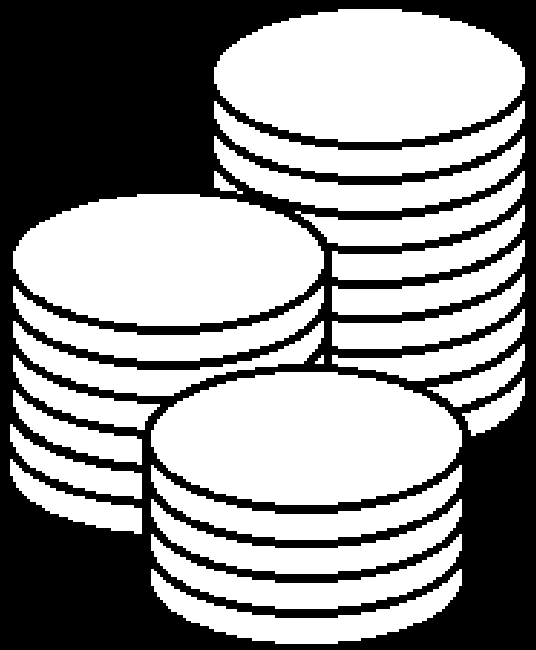
Pole Axe
Price: 250
Quantity: 1
Required Level: 1
Class: Swordman Class

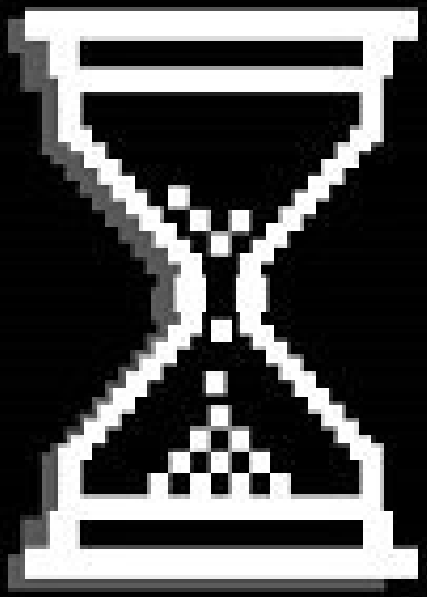
Light Epsilon
Price: 250
Quantity: 1
Required Level: 1
Class: Swordman and Merchant Classes

Executioner
Price: 250
Quantity: 1
Required Level: 1
Class: Swordman

Cutlas
Price: 250
Quantity: 1
Required Level: 1
Class: Swordman, Merchant, Thief Classes

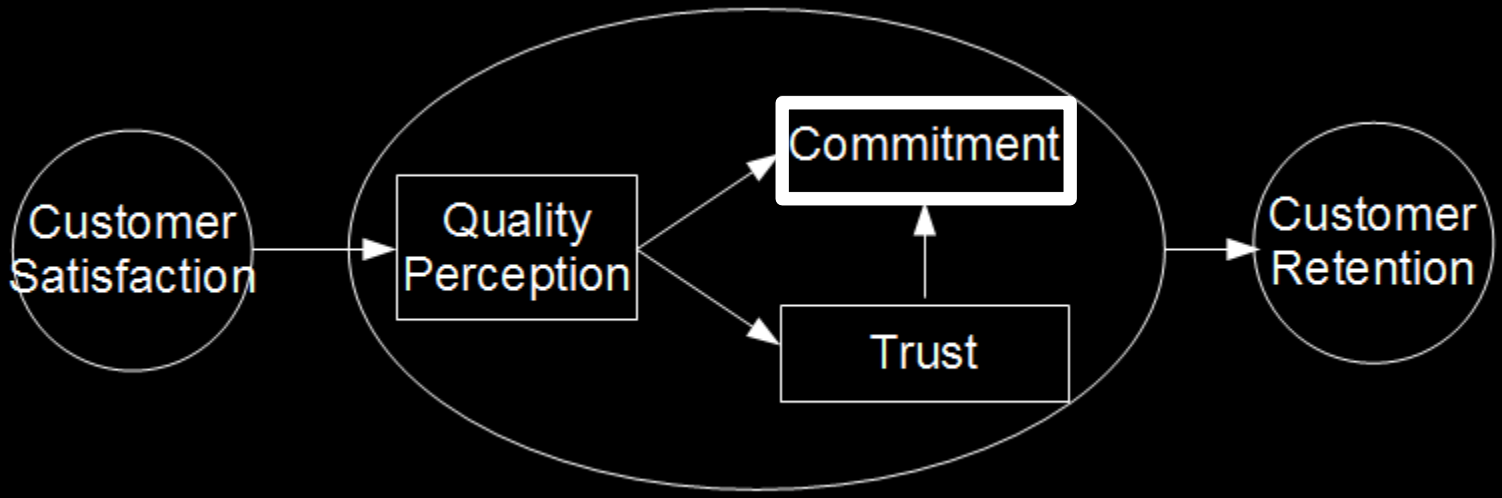
Moonlight Sword
Price: 250
Quantity: 1
Required Level: 1
Class: All Classes Except Acolyte, Taekwon and Gunslinger





Which demographic,
social,
and game-related factors
are related
to retention?
to RMT?

Churn



Hennig-Thureau and Klee, 1997

PlayOn Project Survey

Progress: 0%

General Demographics

Gender

- ○ Male
- ○ Female

Email

We'll contact you with a brief survey each month to see if you've created new characters. Your email will not be shared with any third parties.

Age

About how many hours a week do you spend in WoW?

What's your marital status?

- ○ Single / Divorced
- ○ Engaged / Married / Partnered

Do you have children?

- ○ Yes, and at least one lives with me
- ○ Yes, but none that live with me
- ○ No

What's your job status?

- ○ Full-Time Working
- ○ Full-Time Student
- ○ Part-Time Working and/or Studying
- ○ Home-Maker
- ○ Unemployed
- ○ Retired

If you are currently employed, which occupational category best describes your job?
(Skip if not currently employed)

-- Select One --

If none quite fit, describe briefly here:

Which country do you current live

Demographic

Gender
Age
Region

Social

Playing with siblings
Playing with …
Made friends in the game

Game-related

Achievement

Socializing

Immersion

	Game Play Motivations Please rate how important each of the following game-play elements is to you when you play online games in general (i.e., not just for WoW).
Leveling up as quickly as possible	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Optimizing your character as much as possible	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Acquiring rare items	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Competing with other players	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Becoming powerful	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Chatting with other players	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Helping other players	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Grouping with other players	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Being part of a guild	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Keeping in touch with your friends	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Exploring the world just for the sake of exploring it	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Creating a background story and history for your character	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Making your character as unique as possible	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Learning about the stories and lore of the world	Not At All Important ○ ○ ○ ○ ○ Extremely Important
Feeling immersed in the world	Not At All Important ○ ○ ○ ○ ○ Extremely Important

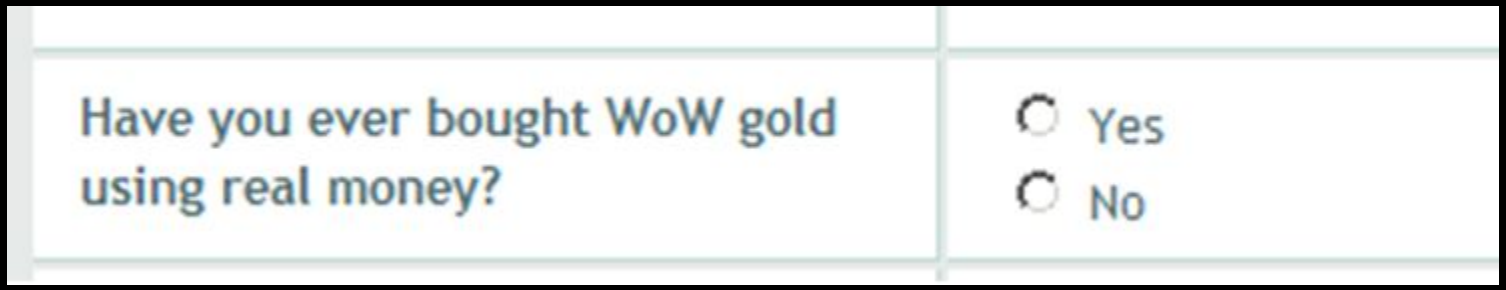
Achievement

Socializing

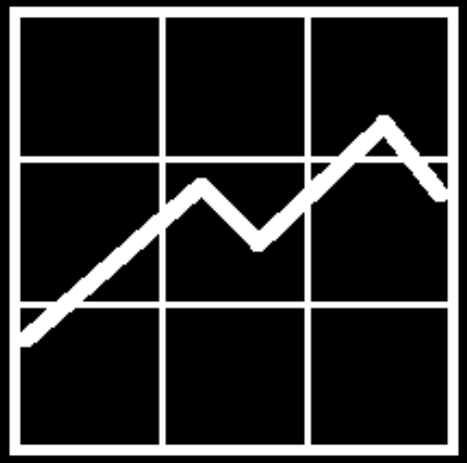
Immersion

Game-related

Weekly play time
Number of years played
Breaks


Have you ever bought WoW gold using real money?
Yes
No

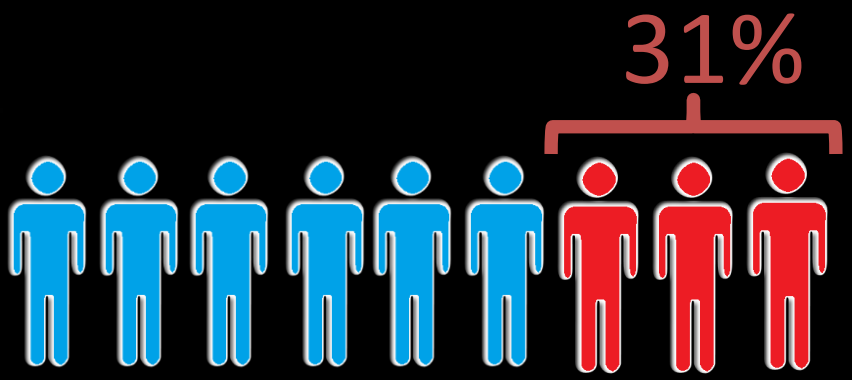
Which demographic,
social,
and game-related factors
are related
to retention?
to RMT?



Demographic

76%

24%



Social

75%

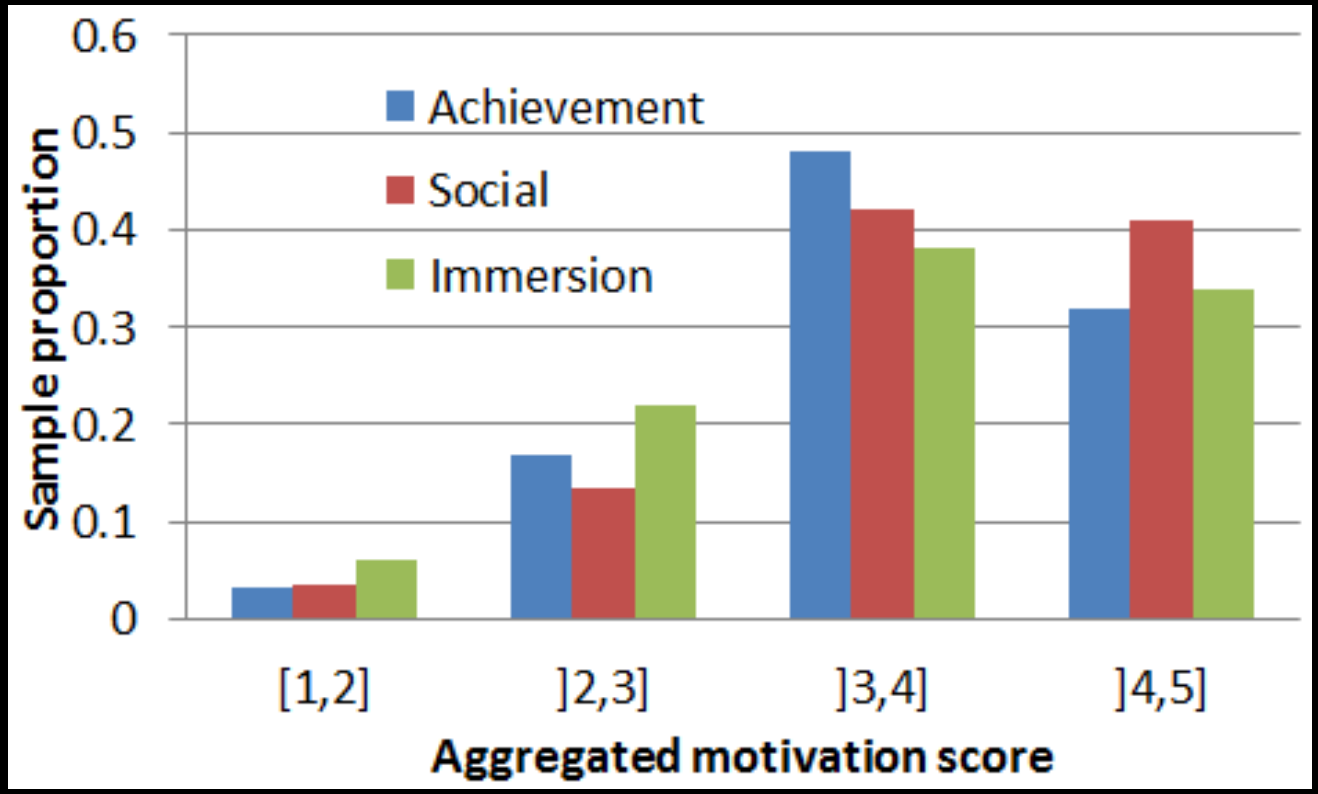
25%

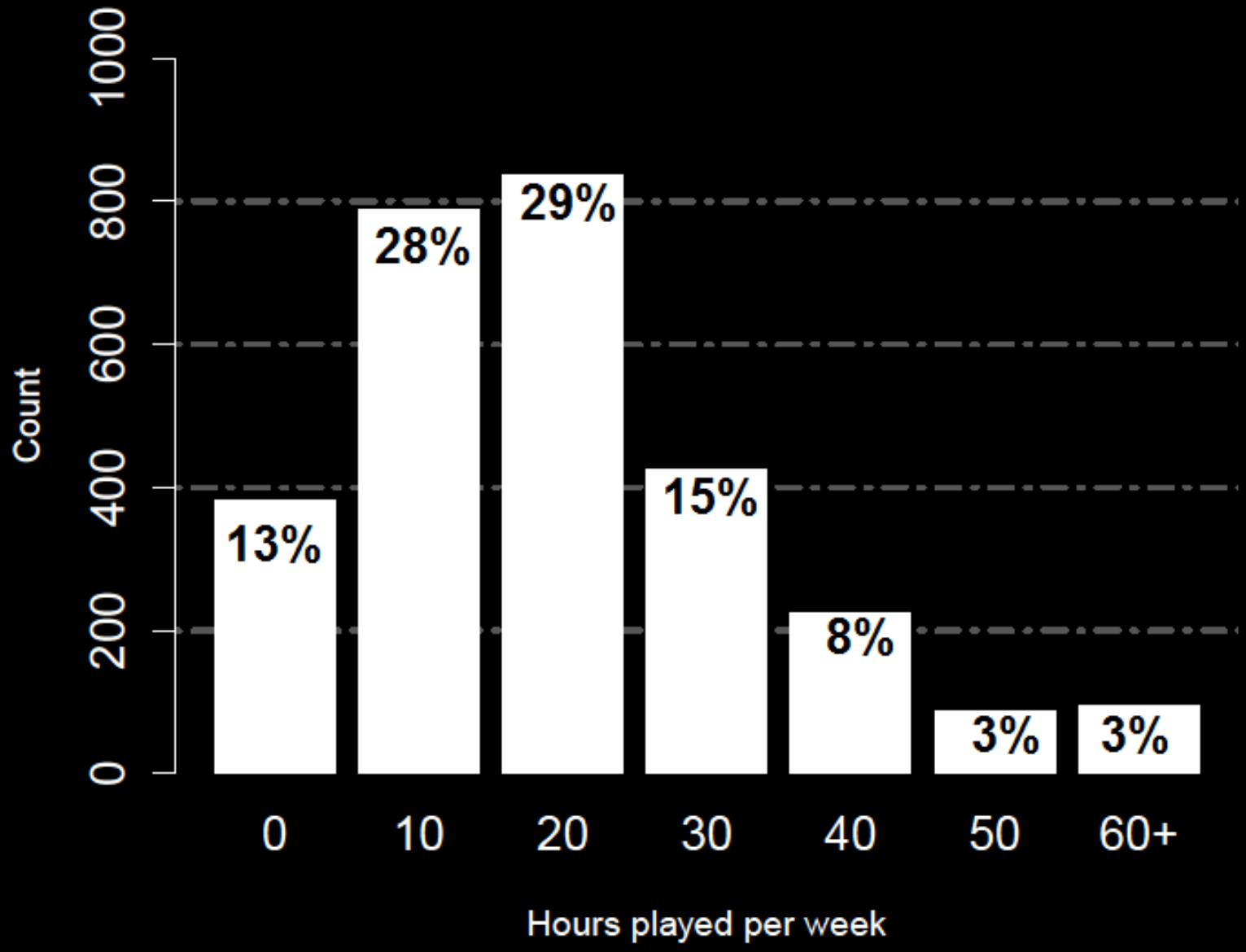
Social

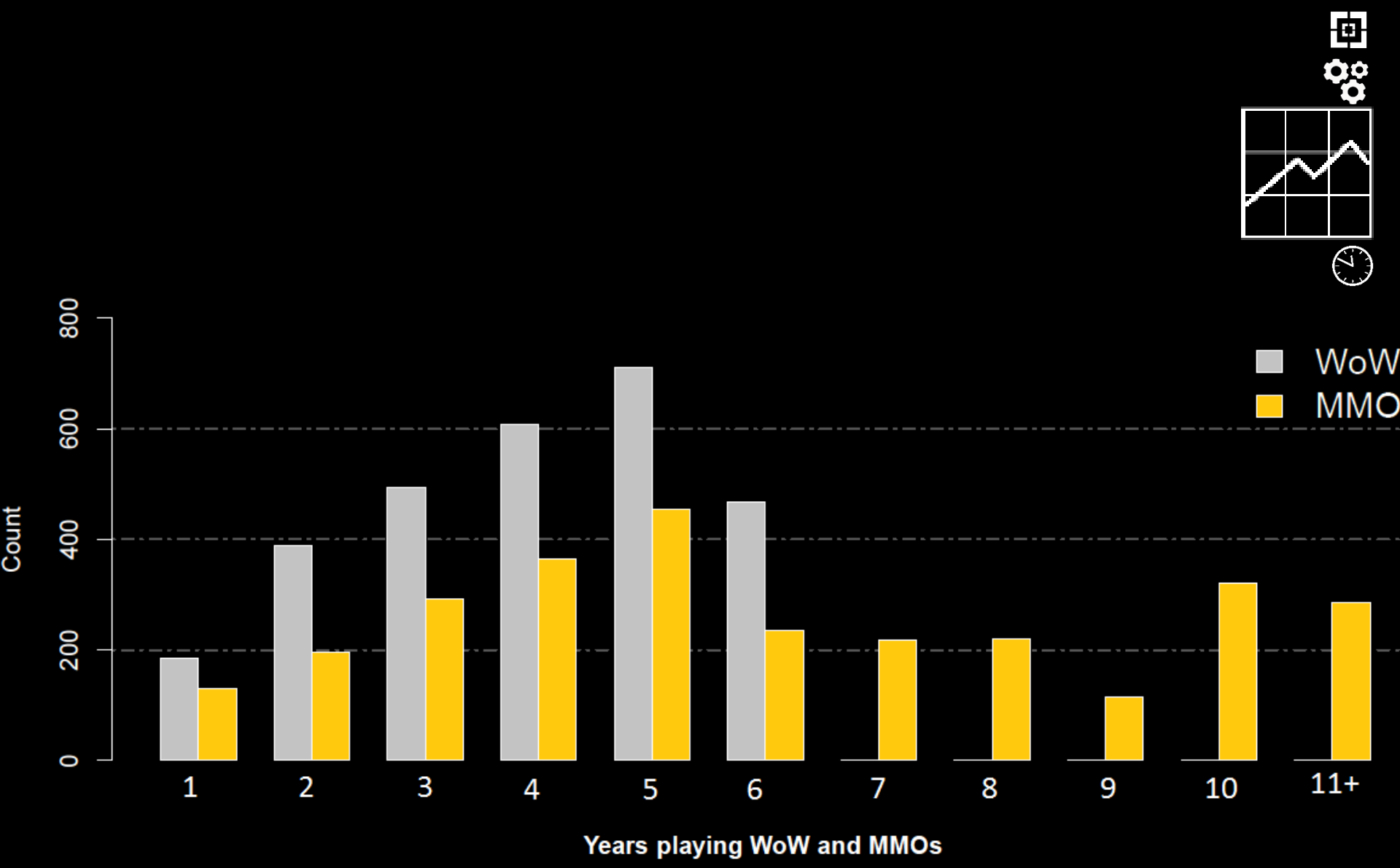
54%

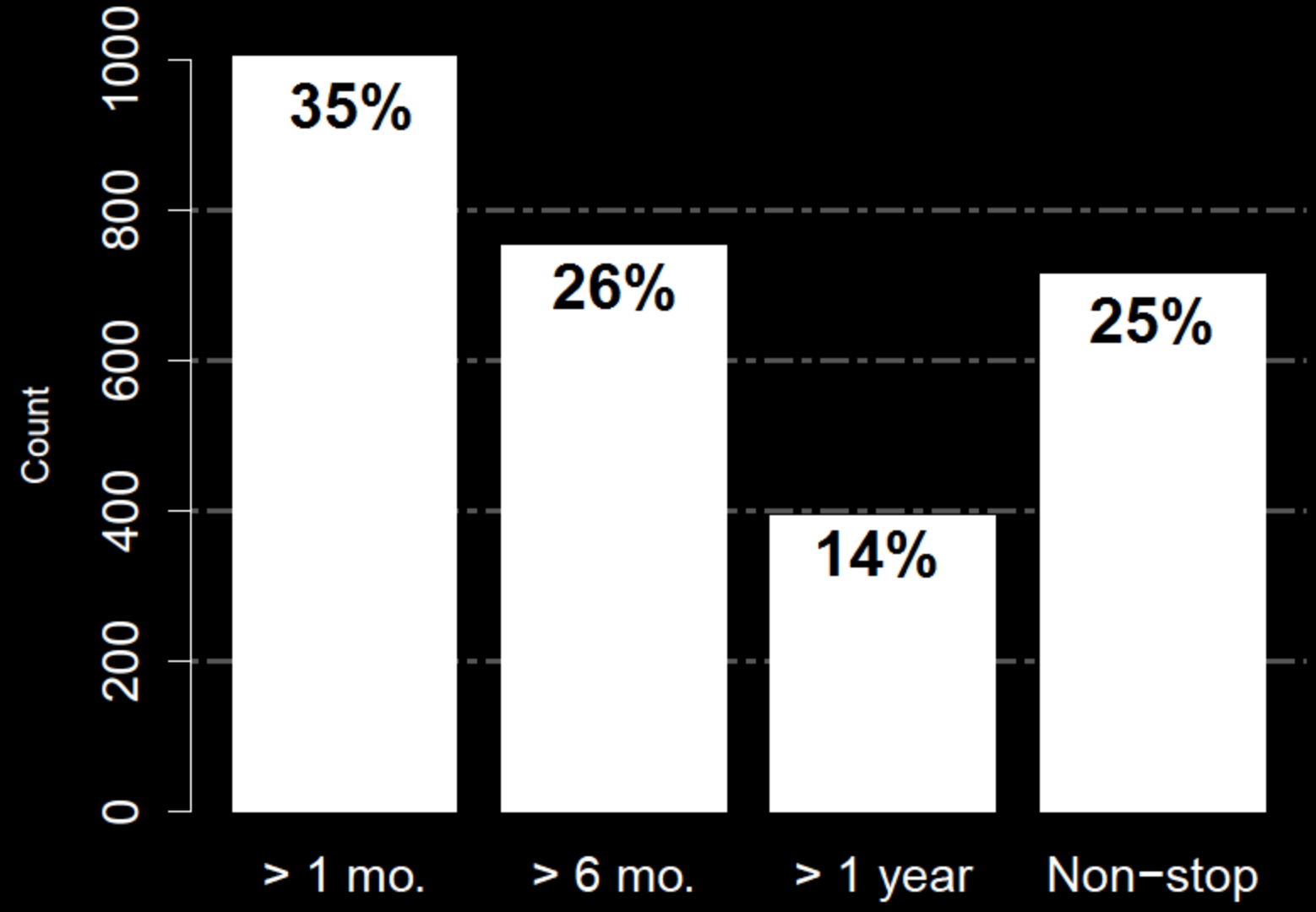
46%

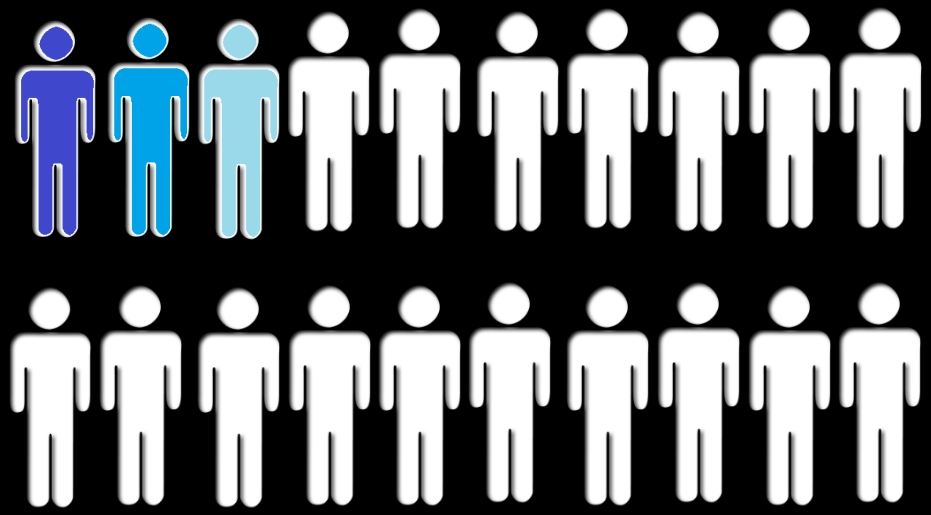
Game-related




Count
0
200
400
600
800
1000
13%
28%
29%
15%
8%
3%
3%
0
10
20
30
40
50
60+
Hours played per week


Count
0
200
400
600
800
WoW
MMO
1
2
3
4
5
6
7
8
9
10
11+
Years playing WoW and MMOs


Count
0
200
400
600
800
1000
35%
26%
14%
25%
> 1 mo.
> 6 mo.
> 1 year
Non−stop
Break duration

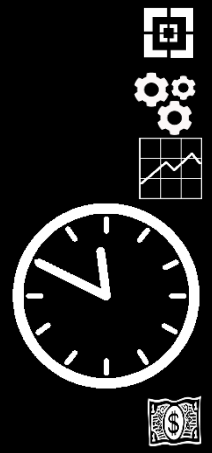


14%

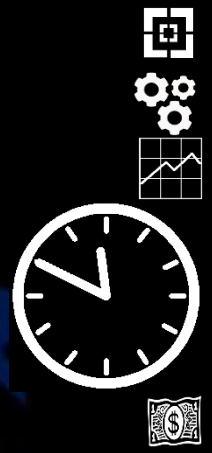
Demographic

Social

Game-related



Demographic



22 h/w
75% stop
3.6 years

26 h/w
85% stop
3.4 years

Demographic

23 h/w

68% stop

3.4 years

23 h/w

81% stop

3.6 years

Social

24 h/w

78% stop

3.9 years

21 h/w

76% stop

3.2 years

Social

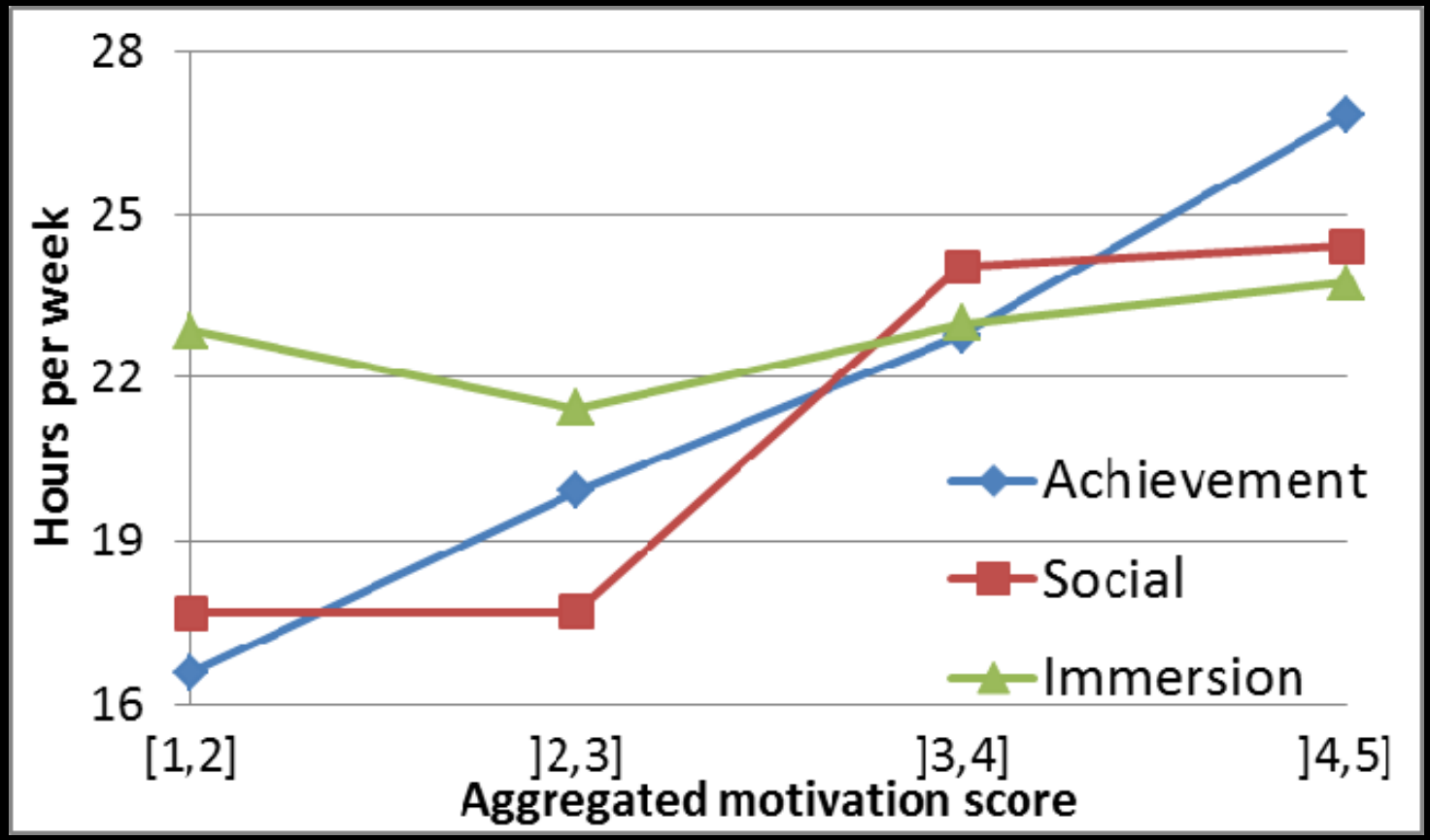
23 h/w
71% stop
3.6 years

19 h/w
75% stop
3.8 years

Social

WORLD OF WARCRAFT
RECRUIT
-A-
FRIEND
EXCLUSIVE MOUNT:
X-53 TOURING ROCKET

Game-related



Demographic

14.6%

14.0%

Demographic

8.5%

17.1%

Social

15.9%

12.6%

Social

13.7%

17.3%

Social

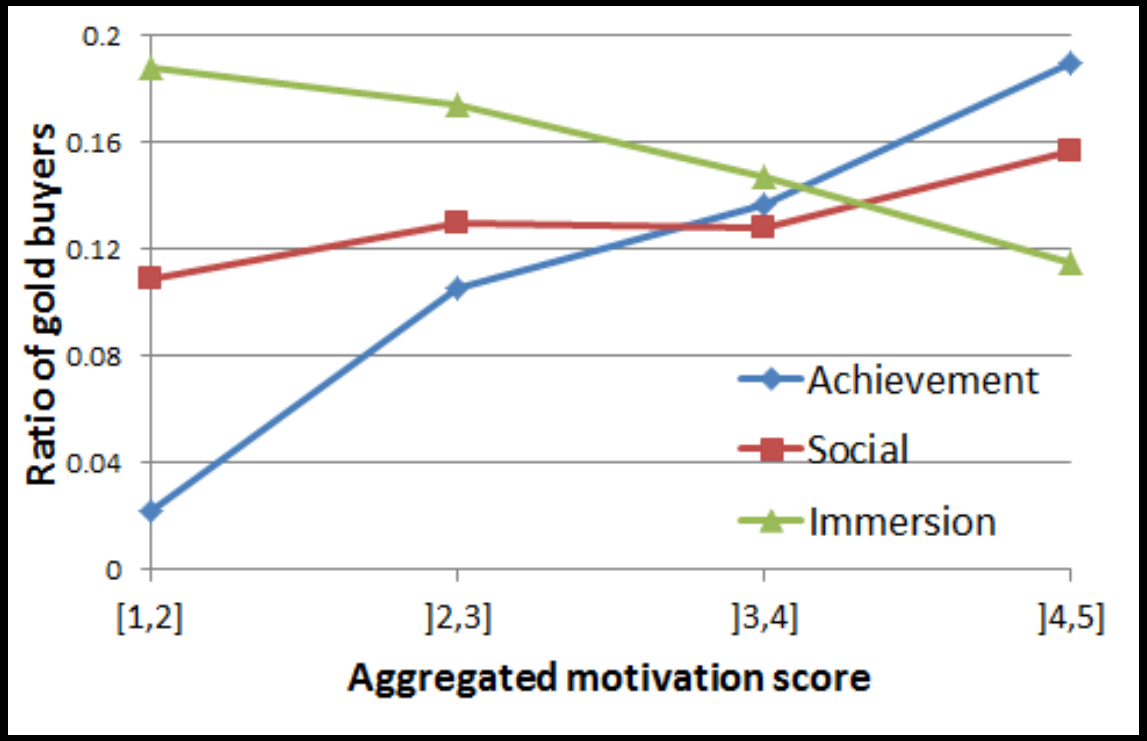
+

= 12.4%

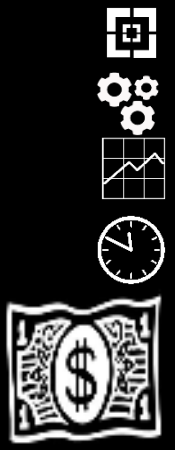
+

= 21.2%

Game-related



Variable	p-value	Odds ratio
Being a man	.000	1.696
Does not play with sibling	.019	1.629
Canceled subscription	.001	1.477
Does not play with spouse	.039	1.449
Achievement	.000	1.383
WoW years	.000	1.283
Non-immersion	.001	1.224
Non-socializing	.067	1.173
Weekly play time	.100	1.006
…		



Demographic

Retention	Gold buying/ RMT

Social

3 hours longer per week

Social

+

= 21%

Game-related

	Retention	Gold buying/ RMT
Achievement		
Socializing		
Immersion		

Thank you

QUESTIONS

Backup slides

Personality Traits

Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly the same age.

Extraverted	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Critical	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Dependable	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Anxious	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Open to New Experiences	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Reserved	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Sympathetic	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Disorganized	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate
Calm	Extremely Inaccurate ○ ○ ○ ○ ○ Extremely Accurate

I get "stuck" on certain words or thoughts	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree
I check things over and over	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree
I do not like touching something that someone else has touched	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree
I wash my hands a lot	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree
I put books or things away in a certain order or until they are "just right"	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree
I get angry if other people mess up my desk or things	Strongly Disagree ○ ○ ○ ○ ○ Strongly Agree

GLM - preparation

- Remove respondents with missing value
- Categories must be binary (logit function)
  - Eg guild status
- Merge some variables
  - Eg college vs non-college
  - /!\ bias
- Leave out variables with too many outcomes
  - Eg country, languages

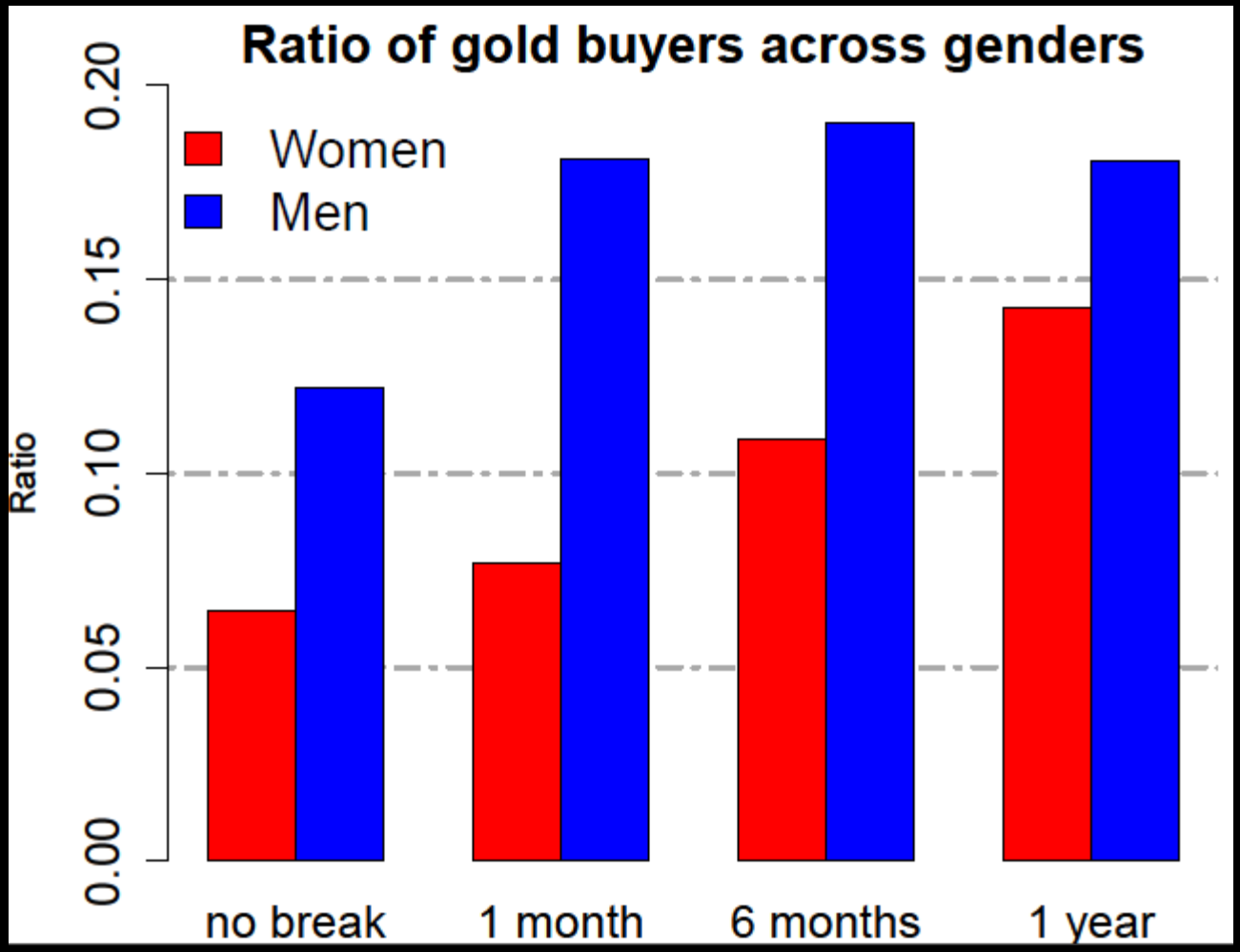
GLM - screening

- Pick a **predictor** for buying gold: gender
- Pick another variable, eg age
  - T-test: women are older than men
  - T-test: gold buyers are older
  - Hence age is a **confounder**
- Pick another variable, eg weekly play time
  - T-test: women play as much as men per week
  - Correlation: The longer you play, the more likely to buy gold
  - Hence weekly play time adds **precision**

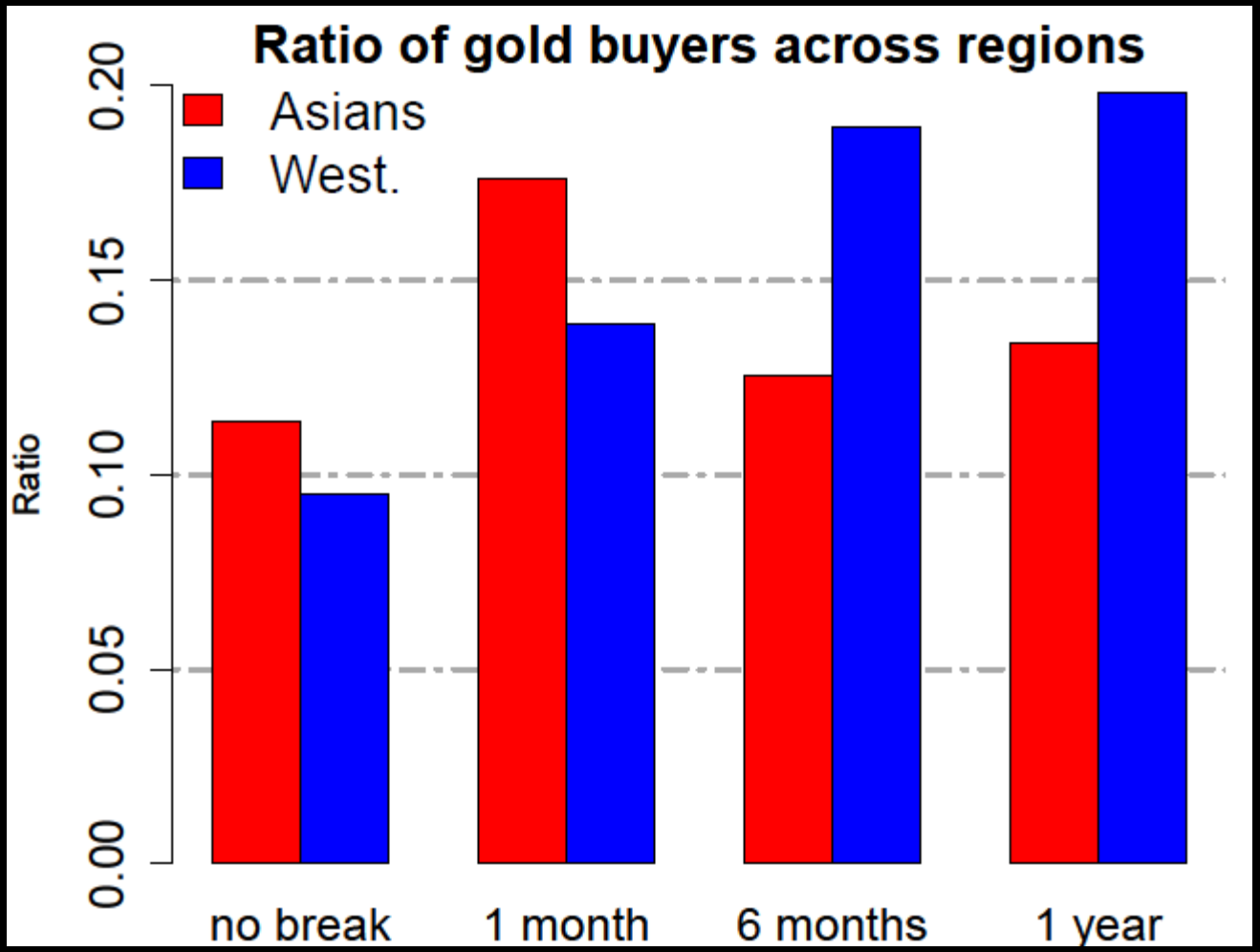
GLM - building the model

- Insignificant variables kept out ($p>0.1$)
  - Eg taking a break and coming back
- In the end: 17 variables left
- Using R's glm command

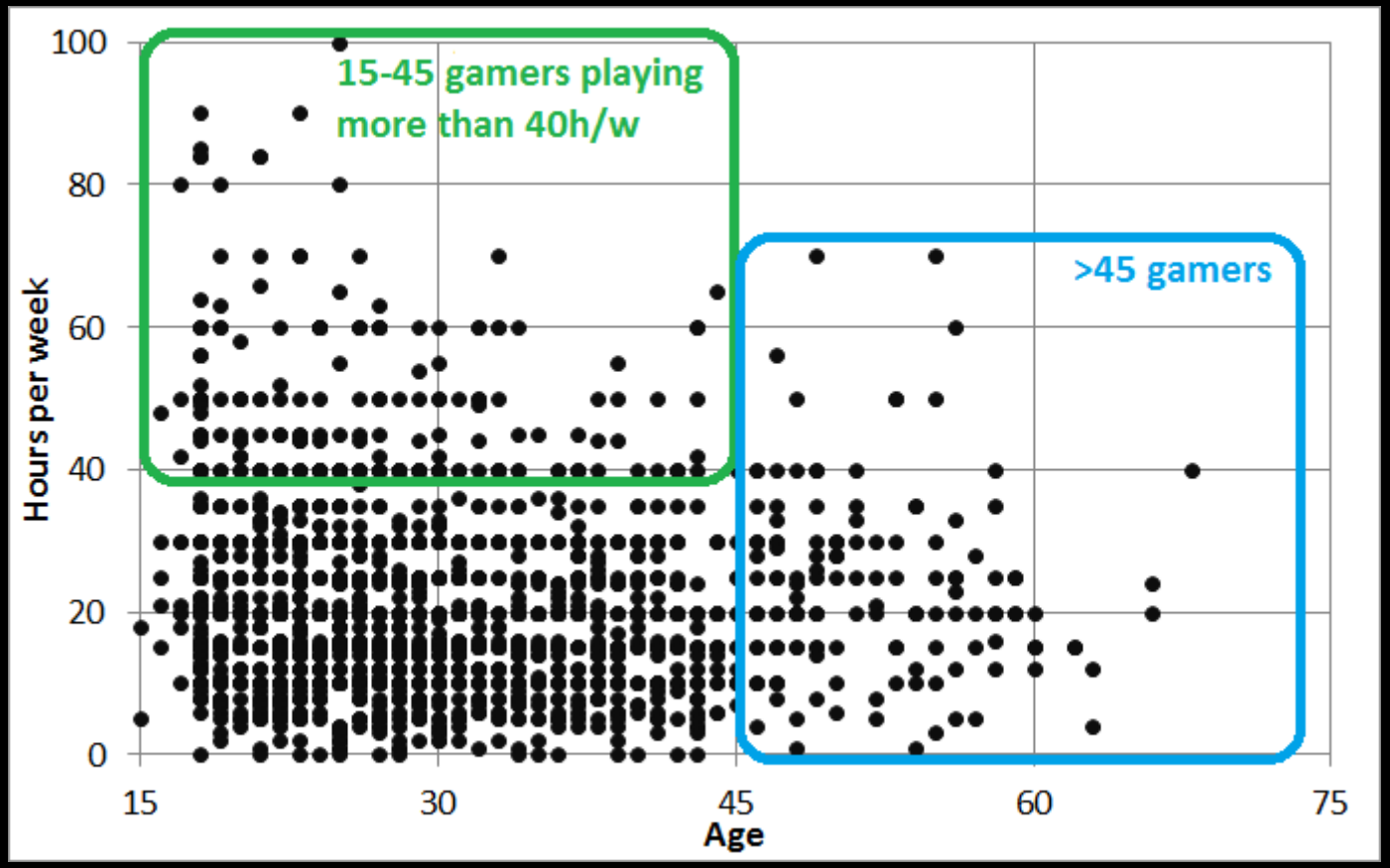
Gold, gender, and breaks



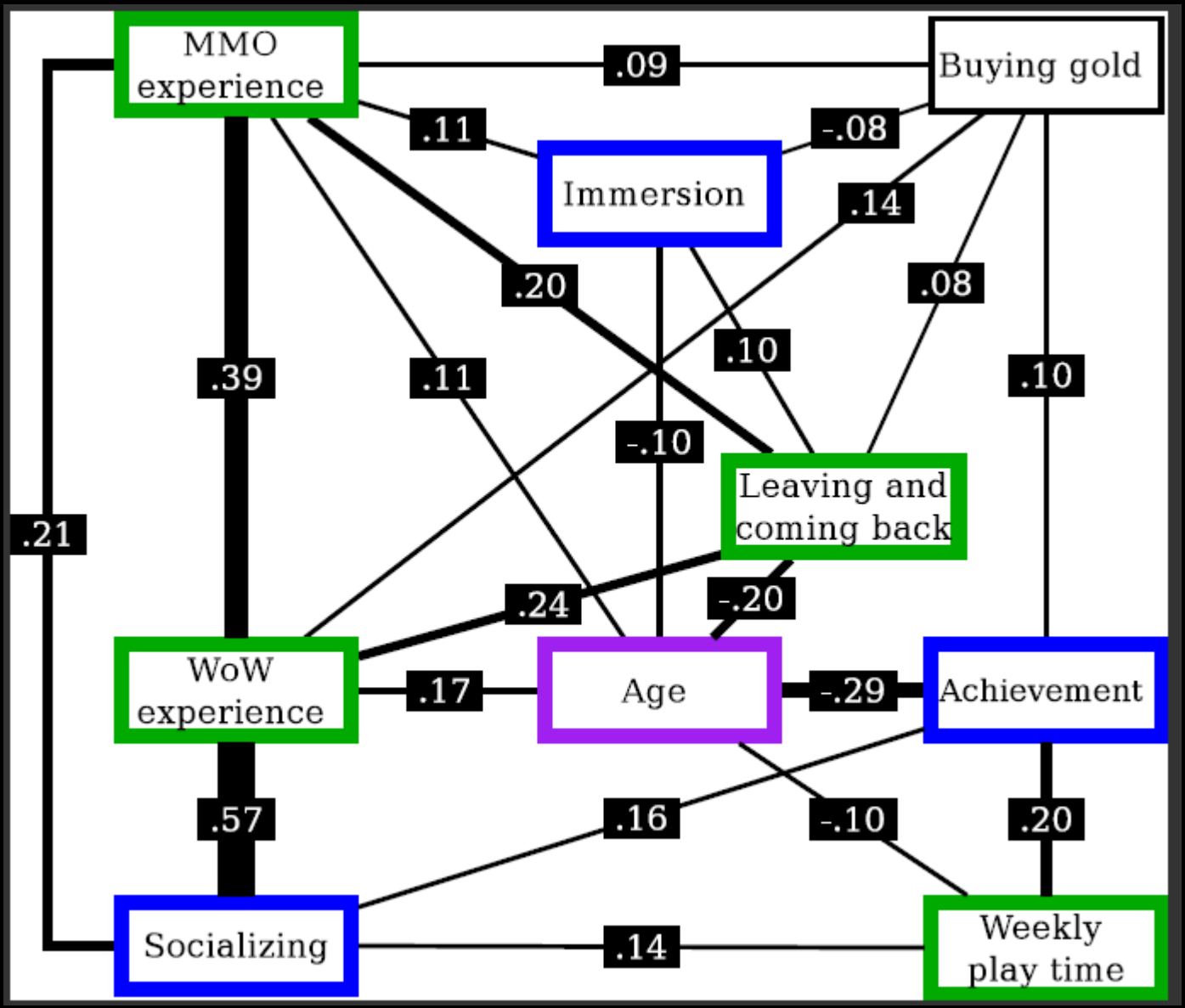
Gold, region, and breaks



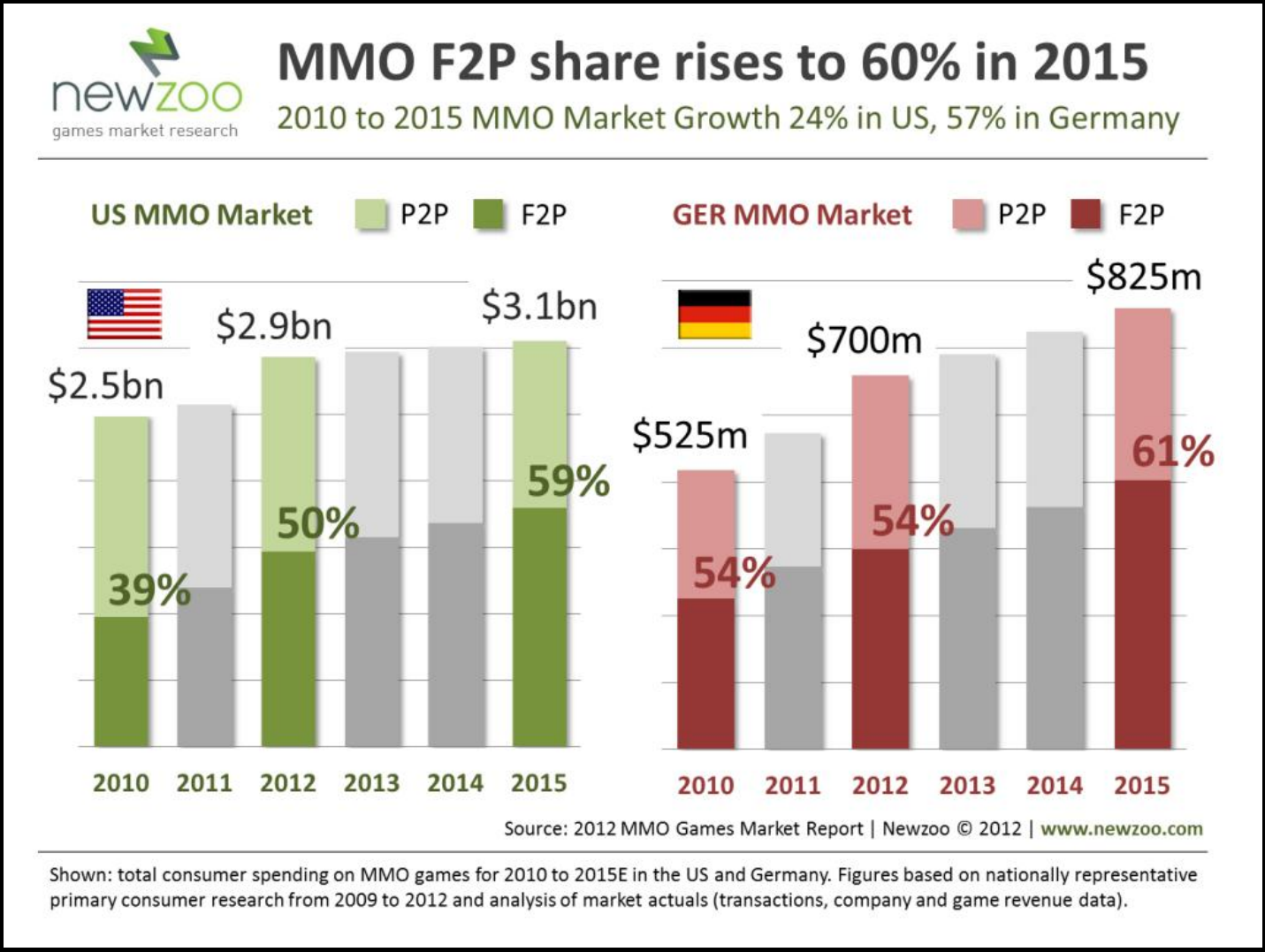
Senior gamers



Partial correlation network



MMO market size



Literature on player satisfaction

- Impact of customer satisfaction and relationship quality on customer retention, H-T and Klee
- Factors influencing user trust in online games, Gao
- Emerging trends in games-as-a-service, Bagga

Player modeling/types

- Hearts, clubs, diamonds, spades: players who suit MUDs, Bartle
- How to model and augment player satisfaction: A review, Yannakakis
- Nick Yee
- Communities of Play, Pearce
- Twenty-first century game design, Bateman
- Social learning in MMOG: an activity theorietical perspective, Ang & Zaphiris

RMT

- Human-currency interaction: learning from virtual currency use in china