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Frantisek Sudzina
Aarhus University, Denmark, sudzina@business.aau.dk

Liana Razmerita
Copenhagen Business School, Denmark, lr.isv@cbs.dk

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Escapist Motives for Playing On-Line Games: *Preliminary Results from an Exploratory Survey*

Frantisek Sudzina

Aarhus University, Denmark

fransu@asb.dk

Liana Razmerita

Copenhagen Business School, Denmark

lr.isv@cbs.dk

Abstract
Social games have become popular along with the tremendous growth of social networking sites, esp. Facebook. There is a gap in literature on what motivates people to play Facebook games. This paper studies social games usage behavior of students. We focus on escapist reasons, based on Warmelink, Harteveld and Mayer's framework (2009) of escapist motives, which identifies four main motives for playing on-line games: mundane breaking, stress relieving, pleasure seeking, and imagination conjuring. In the paper, we report preliminary findings from an exploratory questionnaire survey. Besides importance of escapist motives for playing Facebook and other on-line games, we investigate how they are linked to demographic data such as: age, gender, place of origin, along with other social interactions patterns and social network usage behavior, current gaming status and an estimate of gaming time. According to our study, only 10% of respondents, who have started to play Facebook games, continued to play them. The most important motives for playing games is mundane breaking, the second reason is pleasure seeking, the third is stress relieving, and the least important is imagination conjuring.

Keywords: Facebook, On-Line Gaming, Escapism, Empirical Research

1 Introduction

Many people play or have played some kind of on-line game at least once in their lifetime. Social games or social network games such as „Farmville", „MafiaWars", „Dawns of Dragons" are distributed primarily through social networking websites. These games use social connections and they feature multiplayer and asynchronous gameplay mechanics (Shin, Shin, 2011). Games on social networking sites and/or on

mobile devices are called social games and they can be classified according to (Chen, 2009) as follows:

- Multiplayer games that utilize the social graph, i.e. a player's social connections, as part of the game. (*Parking Wars, PackRat)*
- Games in which the main gameplay involves socializing or social activities like chatting, trading, or flirting. (*YoVille, Pet Society)*
- Turn-based games that are played within a social context or with friends. (*Texas Hold'em Poker, Scrabble)*
- Competitive casual games that include friends-only leaderboards. (*Who Has the Biggest Brain?, Word Challenge)*

This paper focuses on the student usage behavior and perception of Facebook games based on a survey conducted in two countries - Denmark and Slovakia. Despite the huge popularity of games among the digital natives, so far there is little research conducted on Facebook games. A topic search for *Zynga*, a Facebook game provider, retrieved only two articles in Web of Science journals (Helft, 2011; Piskorski, 2011). A topic search for *Facebook* and *games* conducted in February 2012 retrieved twelve articles in Web of Science journals (Muscanell, Guadagno, 2012; Hill, Andrews, 2011; Herzfeld, 2011; O'Keeffe, Clarke-Pearson, 2011; Skoric, Kwan, 2011; Squicciarini, Shehab, Wede, 2010; O'Gorman, 2010; Bernstein et al., 2010; Kaplan, Haenlein, 2010; Buckman, 2009; Kaplan, Haenlein, 2009; Zhao, Grasmuck, Martin, 2008).

The literature pinpoints to the fact that security and privacy concerns influence the long term playability of social network games (Fogel, Nehmad, 2009). In previous research (Sudzina, Razmerita, Kirchner, 2011), the prevalence of social interactions and activities in Facebook games and how this affects social relationships between game players have been analyzed. Other recent articles analyze the role of emotional intelligence trait in gamer‟s preferences for play and frequency of gaming (Herodotou, Kambouri, Winters, 2011) and they found out a correlation between lower scores on emotional intelligence associated with more frequent game use. Factors that positively and negatively influence the individual acceptance of social network games integrating both cognitive and affective attitudes are analyzed by (Shin and Shin, 2011).

The aim of the paper is to investigate to what degree do escapist reasons motivate young people, especially students, to play games based on data collected using a questionnaire. The questionnaire investigates students‟ usage of Facebook games and of other on-line games separately. This paper focuses on motives for playing Facebook and other on-line games based on Warmelink, Harteveld and Mayer's (2009) framework of escapist motives for multiplayer games in general. Moreover, the paper provides an estimate of what percentage of people, who played Facebook and other on-line games, continued to play them.

The paper is structured in the following way: The second section describes the research methodology used to collect data along with the models that have been tested. The third section provides the results of the tested models and the discussion of the results. The fourth section contains conclusions and directions for future research.

2 Data and Methodology

Data for this paper were collected using a questionnaire. A pilot study for testing the questionnaire was conducted in December 2010. The pilot sample consisted of 18 respondents. The pilot questionnaire did not include the place of origin question because it has been administered only to students in a Danish course. Following the pilot study, as there were no problems with question formulation observed, we carried out the survey in February 2011. The total number of respondents is 154, of which 57 are students of School of Business and Social Sciences, Aarhus University, 41 respondents from Copenhagen Business School, and 56 respondents of the Faculty of Business Economics, University of Economics Bratislava. Although students participated on a voluntary basis, all approached students filled in the questionnaire; so there was no self-selection. Motives for playing Facebook and other on-line games were investigated using the following framework based on (Warmelink, Harteveld and Mayer, 2009):

- They helped me to „take a break“ from daily activities
- They helped me to vent pain, stress, or frustration
- They helped me to feel good
- They allowed me to experience an alternative reality

Respondents were asked to rate these statements on a Likert scale 1-7 where 1 meant strongly disagree and 7 meant strongly agree. There was no word anchoring for the remaining values. Average evaluations are in Table 8.

Descriptive characteristics included age (Table 1), gender (Table 2), place of origin (Table 3), number of their Facebook connections (friends in Facebook terminology, in Table 4), the amount of time respondents are on Facebook and the amount of time they keep the Facebook site open (Table 5), their current gaming status (i.e. whether they still play, stopped playing, or never played, Table 6), and the amount of time the respondents play games (Table 7). These characteristics are exploratory, not based on any previous theory, and they should be understood as such.

There were two Slovak students and one student from outside Europe, who did not have a Facebook account; their non-responses are classified as non-applicable in Tables 4-7.

The number of Facebook connections, the amount of time respondents spend on Facebook, the amount of time they keep the Facebook site open, and the amount of time they play(ed) games are coded from 1 to 11, 5, 5, and 5 respectively. These are the values that will be used in ANOVA models provided in the next section.

The distribution of respondents‟ age is provided in Table 1. All thirty of them, who were 26 or older, studied in Denmark. It is relatively common to take one or several years off in Denmark, usually after the high school or between the bachelor and the master level education; it is relatively common to have children during university studies in Denmark as well. Slovak students take maximum one year off, and it is rather unusual to have children during university studies. These factors may explain the higher age of the oldest respondents in Denmark.

Age	Count
19	2
20	21
21	30
22	20
23	31
24	11
25	9
26	5
27	6
28	5
29	2
30	4
31	2
32	1
33	1
34	2
35	1
36	0
37	0
38	1
Total	154

Table 1: Distribution of Age

The distribution of respondents‟ gender is provided in Table 2. There was one 30 year old student, who did not provide information on the gender. It is possible to hypothesize that he or she did not want to be identified afterwards as there were only four 30 year old students in the particular class at Aarhus University.

Gender	Count
Male	54
Female	99
No answer	1
Total	154

Table 2: Distribution of Gender

The place of origin for Denmark‟s respondents was originally divided into Zealand, Jutland, Fyn, rest of Denmark, rest of Scandinavia, rest of Europe, and outside Europe. In order to increase the strength of the statistical test, the first five categories were merged into one - Scandinavia. All respondents surveyed in Slovakia and were from Slovakia. The distribution of respondents‟ place of origin is provided in Table 3.

Place of origin	Count
Scandinavia	42
Slovakia	56
Rest of Europe	36
Outside Europe	21
Total	154

Table 3: Distribution of Place of Origin

The distribution of respondents‟ number of connection (i.e. of friends in the Facebook terminology) is provided in Table 4.

No. Connections	Count
Up to 100	9
101-200	43
201-300	32
301-400	29
401-500	14
501-600	10
601-700	3
701-800	2
801-900	4
901-1000	1
More than 1000	4
Not applicable	3
Total	151

Table 4: Distribution of Number of Facebook Connections

Table 5 contains answers to the question “How much time do you spend on Facebook (including watching posted videos on YouTube or playing Facebook games) on a regular workday?” (abbreviated as active time on Facebook) and answers to the question “How much time do you keep the Facebook site open – i.e. including time both when you look at the content and when you do something else and do not even see the Facebook content?” (abbreviated as overall time on Facebook).

Time	Active Use	Overall Use
Less than 30 minutes	30	29
30 minutes - 1 hour	60	24
1 - 3 hours	48	58
3 - 8 hours	12	32
More than 8 hours	1	7
No answer	0	1
Not applicable	3	3
Total	154	154

Table 5: The Amount of Active and Overall Time Spent on Facebook on a Regular Workday

Table 6 contains answers to the question "Do you play Facebook games?" (labeled as Facebook Games in the table) and answers to the question "Do you play any other on-line games (apart from Facebook)?" (labeled as Other On-Line Games in the table). Respondents, who still play or have stopped playing, were asked to respond to additional questions, such as about importance of escapist motives for playing games and the amount of time they spend or spent playing games on a regular workday. These answers will be labeled as the current gaming status in the ANOVA models in the next section.

Answer	Facebook Games	Other On-Line Games
Yes, I do	9	24
I did but I do not anymore	82	40
I never did	60	90
Not applicable	3	0
Total	154	154

Table 6: Current Gaming Status

Table 7 contains answers to the question "How much time do you usually spend playing Facebook games on a regular workday?" (labeled as Facebook Games in the table) and answers to the question "How much time do you usually spend playing on-line games on a regular workday?" (labeled as Other On-Line Games in the table). Some of the respondents, who stopped playing, decided not to provide the amount of time they used to spend playing games on a regular workday. Most of them did not evaluate escapist motives either.

Time	Facebook Games	Other On-Line Games
Less than 30 minutes	54	42
30 minutes - 1 hour	13	6
1 - 3 hours	2	9
3 - 8 hours	0	1
More than 8 hours	1	0
No answer	21	6
Not applicable	63	90
Total	154	154

Table 7: The Amount of Time Spent Playing Games on a Regular Workday

We collected some additional data, e.g. on type of people they are connected to. The exploratory framework contained classmates from primary school, classmates from secondary/high school, classmates from college and/or university, acquaintances who lived or live close to their place, acquaintance, whom they met during an exchange program, at a summer course, a training, a language course, colleagues from office, friends, relatives, and others. Eventually, we decided not to use these answers because adding another 9 independent variables to 8 (for Facebook games) or 5 (for other on-line games) independent variables would more than double the number of independent variables and decrease the power of ANOVA.

ANOVA will be used to analyze motives for playing on-line games. Tukey-Kramer multiple-comparison test will be used to identify significant differences between groups.

The models for Facebook games will include the following independent variables: age, gender, place of origin, number of Facebook connections, the amount of time the respondents are on Facebook, the amount of time they keep the Facebook site open, their current gaming status, and the amount of time they play(ed) Facebook games.

The models for other on-line games will include the following independent variables: age, gender, place of origin, their current gaming status, and the amount of time they play(ed) other on-line games.

Although the number of non-responses in Table 7 may suggest that it would be a good idea to test also models omitting the amount of time devoted to playing games, it is not the case. Majority of respondents, who did not provide the amount of time devoted to playing games, did not evaluate importance of motives either.

With regards to the independent variables, gender, place of origin, and the current gaming status were used as factors, and age, the number of Facebook connections, the amount of time the respondents are on Facebook, the amount of time they keep the Facebook site open, and the amount of time they play(ed) Facebook games we used as covariates.

The significance level $\alpha = 0.05$ is used in the paper. P-values lower than 0.05 will be marked with an asterisk in ANOVA tables. But also some higher p-values will be commented.

3 Results and Discussion

Escapism is applicable for defining why some people play computer games (Warmelink et al, 2009). The concept of escapism assumes two comparable contexts for our normal daily life: work, studies and activities that escape it such reading a book, watching movies or playing games. Evaluations of escapist motives (mundane breaking, stress relieving, pleasure seeking, and imagination conjuring) for playing Facebook and other on-line games on a Likert scale 1-7 are provided in Table 8. A higher value implies a higher importance of a particular motive.

Motive for Playing Games	Facebook Games	Other On-Line Games
They helped me to „take a break“ from daily activities	4.81	4.97
They helped me to vent pain, stress, or frustration	2.89	3.59
They helped me to feel good	3.32	3.93
They allowed me to experience an alternative reality	2.67	2.77

Table 8: Motives for Playing Games

Although the average motive evaluations for Facebook and other on-line games differ slightly, they rank in the same order. The most important motive is mundane breaking, the second is pleasure seeking, the third is stress relieving, and the least important is imagination conjuring.

Table 9 provides ANOVA results for mundane breaking as a motive for playing Facebook games. Although all p-values are higher than 0.05, it may be expected that a more precise estimation of the time spent playing Facebook games might decrease the related p-value under 0.05. The correlation between importance of mundane breaking and the time spent playing Facebook games is positive.

With regards to the place of origin (the second most significant independent variable), the largest difference is between respondents from Slovakia and the rest of Europe (excluding Scandinavia). Respondents from Slovakia rated this motive the highest. It is possible to hypothesize that the place of origin would be statistically significant if the survey was conducted in multiple European countries, the coding was country-specific, and the sample was larger.

Source Term	DF	Sum of Squares	Mean Square	F-ratio	P-value
Age	1	2.002004	2.002004	0.74	0.392715
Gender	1	3.414158	3.414158	1.26	0.265435
Place of origin	3	17.31730	5.772433	2.14	0.105346
No. FB connections	1	0.026994	0.026994	0.01	0.920691
Active time on FB	1	1.610965	1.610965	0.60	0.442973
Overall time on FB	1	5.262430	5.262430	1.95	0.168033
Time playing FB games	1	10.06406	10.06406	3.73	0.058464
Current gaming status	1	0.555861	0.555861	0.21	0.651689
S	57	153.8485	2.699097		
Total (Adjusted)	67	202.2353			
Total	68				

Table 9: Analysis of Variance for Mundane Breaking as a Motive for Playing Facebook Games

Table 10 provides ANOVA results for stress relieving as a motive for playing Facebook games. The only statistically significant factor is the current gaming status. Respondents, who still play, rated importance of this motive higher than respondents, who already stopped playing.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.795314	0.795314	0.28	0.601660
Gender	1	1.175067	1.175067	0.41	0.525979
Place of origin	3	10.92123	3.640411	1.26	0.296284
No. FB connections	1	0.006766	0.006766	0.00	0.961553
Active time on FB	1	5.015469	5.015469	1.74	0.192694
Overall time on FB	1	0.692715	0.692715	0.24	0.626076
Time playing FB games	1	2.083579	2.083579	0.72	0.399068
Current gaming status	1	22.48636	22.48636	7.79	0.007131*
S	57	164.5101	2.886142		
Total (Adjusted)	67	224.2794			
Total	68				

Table 10: Analysis of Variance for Stress Relieving as a Motive for Playing Facebook Games

Table 11 provides ANOVA results for pleasure seeking as a motive for playing Facebook games. The only statistically significant factor is the place of origin. According to the Tukey-Kramer multiple-comparison test, there is a significant difference between Scandinavia and Slovakia. Respondents from Slovakia rated this motive the highest.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.046243	0.046243	0.02	0.882183
Gender	1	0.145132	0.145132	0.07	0.792938
Place of origin	3	29.45494	9.818313	4.71	0.005283*
No. FB connections	1	5.006332	5.006332	2.40	0.126927
Active time on FB	1	2.065980	2.065980	0.99	0.323920
Overall time on FB	1	2.376641	2.376641	1.14	0.290364
Time playing FB games	1	4.412461	4.412461	2.11	0.151379
Current gaming status	1	1.970807	1.970807	0.94	0.335229
S	57	118.9367	2.086609		
Total (Adjusted)	67	176.8824			
Total	68				

Table 11: Analysis of Variance for Pleasure Seeking as a Motive for Playing Facebook Games

Table 12 provides ANOVA results for imagination conjuring as a motive for playing Facebook games. The only statistically significant factor is the number of Facebook connections. There is a positive correlation between the imagination conjuring motive and the number of Facebook connections.

It is possible to assume that the more connections one has within a Facebook game, the better the feeling from the alternative reality becomes. The number of Facebook connections is probably not the real factor but rather a (quite precise) proxy for the number of (active) connections within a game.

Similarly as for the mundane breaking motive, it may be expected that a more precise estimation of the time spent playing Facebook games might decrease the related p-value under 0.05. The correlation between the imagination conjuring motive and the time spent playing Facebook games is positive.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.173707	0.173707	0.05	0.819591
Gender	1	1.250724	1.250724	0.38	0.541133
Place of origin	3	15.93317	5.311057	1.61	0.198379
No. FB connections	1	25.27917	25.27917	7.64	0.007708*
Active time on FB	1	1.447017	1.447017	0.44	0.511094
Overall time on FB	1	5.111453	5.111453	1.55	0.219045
Time playing FB games	1	10.17403	10.17403	3.08	0.084959
Current gaming status	1	1.612620	1.612620	0.49	0.487954
S	56	185.2621	3.308251		
Total (Adjusted)	66	231.1642			
Total	67				

Table 12: Analysis of Variance for Imagination Conjuring as a Motive for Playing Facebook Games

Table 13 provides ANOVA results for mundane breaking as a motive for playing other on-line games. The only statistically significant factor is the current gaming status. Respondents, who still play, rated importance of this motive higher than respondents, who already stopped playing.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	4.980890	4.980890	1.74	0.193008
Gender	1	0.237202	0.237202	0.08	0.774458
Place of origin	3	1.760948	0.586983	0.21	0.892052
Time playing other on-line games	1	2.354465	2.354465	0.82	0.368511
Current gaming status	1	16.35402	16.35402	5.73	0.020756*
S	47	134.2207	2.855760		
Total (Adjusted)	54	167.9273			
Total	55				

Table 13: Analysis of Variance for Mundane Breaking as a Motive for Playing Other On-Line Games

Table 14 provides ANOVA results for stress relieving as a motive for playing other on-line games. The most significant factor is the current gaming status. Respondents, who still play, rated importance of this motive higher than respondents, who already stopped playing.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.469411	0.469411	0.13	0.716199
Gender	1	3.933662	3.933662	1.12	0.295121
Place of origin	3	3.662014	1.220671	0.35	0.790848
Time playing other on-line games	1	1.569601	1.569601	0.45	0.506898
Current gaming status	1	14.18306	14.18306	4.04	0.050146
S	47	164.9308	3.509166		
Total (Adjusted)	54	198.4364			
Total	55				

Table 14: Analysis of Variance for Stress Relieving as a Motive for Playing Other On-Line Games

Table 15 provides ANOVA results for pleasure seeking as a motive for playing other on-line games. The only statistically significant factor is the current gaming status. Respondents, who still play, rated importance of this motive higher than respondents, who already stopped playing.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.864972	0.864972	0.33	0.565874
Gender	1	2.404499	2.404499	0.93	0.339980
Place of origin	3	8.253720	2.751240	1.06	0.373705
Time playing other on-line games	1	0.158473	0.158473	0.06	0.805595
Current gaming status	1	15.93613	15.93613	6.16	0.016766*
S	46	118.9691	2.586286		
Total (Adjusted)	53	145.9259			
Total	54				

Table 15: Analysis of Variance for Pleasure Seeking as a Motive for Playing Other On-Line Games

Table 16 provides ANOVA results for imagination conjuring as a motive for playing other on-line games. It was not possible to establish any even remotely significant link between the motive and any of the investigated independent variables.

Source Term	DF	Sum of Squares	Mean Square	F-Ratio	P-value
Age	1	0.530296	0.530296	0.15	0.700642
Gender	1	0.706265	0.706265	0.20	0.657361
Place of origin	3	2.387610	0.795870	0.22	0.878799
Time playing other on-line games	1	5.895216	5.895216	1.66	0.203542
Current gaming status	1	1.308208	1.308208	0.37	0.546425
S	46	162.9910	3.543283		
Total (Adjusted)	53	178.1481			
Total	54				

Table 16: Analysis of Variance for Imagination Conjuring as a Motive for Playing Other On-Line Games

To sum up, there is a relationship between the current gaming status and several investigated motives. This was not a longitudinal study, so it is necessary to be careful in interpreting the finding. It is not possible to deduce if it is people, who considered the particular motive to be less important even before, are more likely to quit playing on-line games or it is when the evaluation of the particular motive decreases that people quit playing on-line games.

Place of origin requires also a careful interpretation. It should be considered a proxy for a set of cultural and other factors rather than an underlying factor.

It is interesting that the number of Facebook connections was significant in any of the models. First of all, the number was self-reported and is the least reliable answer in the questionnaire. Secondly, the number was divided into intervals 100-connections-wide. Thirdly, it is probably only a proxy for number of (active) connections within a particular game.

A surprising result is that gender was not found to be a significant factor in any of the models. Its lowest p-value was 0.193 in the ANOVA model for mundane breaking as a motive for playing other on-line games. Looking into recently published literature, it is

possible that there could a difference but the research needs to include also personality characteristics as analyzed by Muscanell and Guadagno (2012).

4 Conclusion

This survey has pinpointed the fact that only about 10% of respondents, who have started to play Facebook games, continued to play them, while about 40% of respondents, who started to play other on-line games, continued playing them. So despite their popularity, according to our study Facebook games are failing to maintain interest for students. It is possible to hypothesize that this could be linked to graphics (Facebook games tend to provide inferior graphics), simplicity of games, constraints of playing (including broadcasted live feeds to friends) and constraints of time for students. But investigation of reasons why users stay playing games has not been the focus of this paper.

The primary scope of the paper was investigation of escapist motives as defined by Warmelink, Harteveld and Mayer (2009). Although the average importance of these reasons for playing social games in Facebook and other on-line games differs slightly, they rank in the same order. The most important motives is mundane breaking, the second reason is pleasure seeking, the third is stress relieving, and the least important is imagination conjuring.

There is a difference in the evaluation of several motives (namely, stress relieving in the case of Facebook games, and mundane breaking, stress relieving, and pleasure seeking in the case of other on-line games) between respondents who still play and who stopped playing. There is no difference between genders. More research is needed to investigate whether it is people, who always considered the particular motive to be less important, are more likely to stop playing on-line games or it is when the evaluation of the particular motive decreases that people stop playing on-line games. This will probably require a longitudinal study setting.

With regards to Facebook games, importance of pleasure seeking (and probably also of mundane breaking) depends on the place of origin and it is more important in Slovakia in comparing with Scandinavia. Place of origin should be considered only as a proxy for further elements of behavioral analysis such as culture or social factors. Future research should focus on uncovering real factors that cause different perception of importance among respondents from various countries.

In the future research, it may prove useful to use an on-line questionnaire because it allows to collect a precise number of Facebook connections. This would make the collected data more reliable and would bring granularity to 1. It may also make sense to focus on particular games and ask respondents to report on the number of (active) connections within a particular game. Active connections are the ones that make the virtual reality more lively, more fun, and allow to level up faster. The definition of an active connection needs to be well thought through. But the general idea is that the active connection is a connection that plays the particular game several times a week. It is possible to expect that the number of active connections within a particular Facebook game will be more significant than the overall number of Facebook connections.

Although time spent by playing Facebook games was not significant in any of the models, its p-value was between 0.05 and 0.10 in models for mundane breaking and imagination conjuring. But it is necessary to look into granularity of observations. Only 3 of 70 respondents, who reported their gaming time on a regular workday, played for more than at least one hour a day, 13 played between 30 and 60 minutes a day, while 54 played for up to 30 minutes a day and were therefore coded the same. In the future, it would be useful to split the current interval of 0 to 30 minutes, so there will be multiple smaller rather than one large group. But it needs to be done with the granularity allowing to collect reliable data from typical users who do not measure their average daily gaming time.

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