Motivational Factors of Australian Mobile Gamers

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ABSTRACT

Mobile games are a fast growing industry, overtaking all other video game platforms with year on year increases in revenue. Many studies have been conducted to explore the motivations of why video games players play their selected games. However very little research has focused on mobile gamers. In addition, Australian studies on the topic are sparse. This paper aimed to discover what motivates a mobile gamer from the perspective of the initial motivational factors attracting them to a mobile game, and the motivational factors that provide interest to continue playing and thereby increase game longevity. A survey was conducted online for Australian participants, which attracted 123 respondents. The survey was formulated by focusing on the 12 key subcomponents as motivational factors of the Gamer Motivational Profile v2 model devised by Quantic Foundry. It was discovered that mobile gamers are a completely different breed of gamer in contrast to the general video gamer. Strategy and challenge which are subcomponents of mastery proved popular among all mobile gamers, while destruction and excitement, subcomponents of action, were often the least motivating factors of all. With the newly discovered data, perhaps mobile game developers can pursue the correct avenues of game design when catering to their target audience.

CCS CONCEPTS

• **General and reference~Surveys and overviews** • **Human-centered computing~Smartphones** • Human-centered computing~Ubiquitous and mobile computing design and evaluation methods

KEYWORDS

Mobile Games, Motivations, Smartphones, Game Design

1 Introduction

Mobile gaming is playing an increasingly important role in the overall entertainment industry. Since the opening of the Apple and Android stores in 2008, the industry has expanded rapidly. As of 2019, mobile games contributed 45% of the global gaming market with 65.5 billion U.S. dollars spending [1]. Mobile games are digital games that are played either on a smartphone or tablet, and they range from simple puzzle games that can be played for minutes at a time, to complex real-time strategy games requiring many hours of investment to see good progress. The general public sees mobile gaming as a casual way to play video games [2, 3], however recently this has shifted. Larger game publishers and developers have become increasingly interested in this market and have made strides to enter the mobile gaming field, with games from huge core franchises such as *Fallout Shelter* [4], *Elder Scrolls Blades* [5], *Call of Duty Mobile* [6] and *Diablo Immortal* [7].

In order for academics, game publishers and developers to understand the mobile gamer, research must discover what factors motivate these individuals. While motivation of video game players has been explored in the past [8, 9, 10, 11, 12, 13], very little research has been conducted regarding motivation in mobile games. There is currently research dedicated to the motivations based on specific games, such as developer Niantic's [14] *Pokémon Go* [15] or certain game categories like freemium and content sharing games [16, 17, 18].

The research reported in this study aimed to determine the motivational factors of mobile gamers from two important perspectives. Firstly, the players' perceptions on what motivational factors initially provoke desire to play a mobile game and secondly the players' perceptions on what motivational factors keep them playing said mobile games. These motivational factors within a game should be considered by game publishers and developers as they first enter or continue business within the mobile game industry.

2 Related Research

2.1 Mobile Games

The mobile gaming industry evolved in 2008 with the release of the Apple and Google mobile application stores, with mobile games representing eight of Apple Store's top ten bestsellers in 2010 [19]. As time went on, mobile device features started to become similar to that of consoles and personal computers but in a handheld form [17]. Smartphones have an advantage over handheld consoles in that they are ubiquitous, and often on person. According to Newzoo [1], in the span of a decade, mobile gaming has grown from the smallest to the largest video game segment and is forecasted to generate over 90 billion U.S. dollars in 2022.

Mobile games are simply any game that is played on a mobile device such as a smartphone or a tablet. These mobile games are usually perceived as a casual gaming activity rather than what is often referred to as core or hardcore gaming [2, 3]. In those studies, casual gaming is defined as simple, easy-to-play, within small gaming sessions. On the other hand, hard core gaming involves countless hours playing a game to achieve mastery and completion. Mobile games usually (but not always) have casual game design to allow for flexibility around life on the go [20]. With a different game design paradigm, mobile gamer motivation may well differ to the general gamer.

2.2 Gaming Motivations

Gaming motivations determine the factors that individuals desire in games. Studies have looked internally at gamers and externally at the games themselves to determine the motivational factors. For example, Self-Determination Theory (SDT) is a theoretical framework concerned with the motivations of people [21] and has been analysed in relation to video games on many occasions [22, 23, 24]. SDT is concerned with factors internal to one's self; looking at what humans inherently require and whether the game can meet those needs. The model revolves around the three personal goals of well-being:

1. Competence: to control the outcome and experience mastery;
2. Relatedness: the importance of interacting with others; and
3. Autonomy: to remain in control, following one's own values and beliefs.

External to self, gaming motivational models are focused on the game design, and what it can offer to the player. One of the most prolific and highly cited game and motivation authors, Nick Yee, created one such empirical model and has refined it over many years together with Nicolas Ducheneaut within their company, Quantic Foundry, in to the Gamer Motivational Profile v2 model currently present on their website [12]. This model is concerned with factors intrinsic to the game design that players are motivated by.

In 2006, Yee proposed the first iteration of the model of three overarching components: achievement, social and immersion; and ten subcomponents: advancement, mechanics, competition, socializing, relationships, teamwork, discovery, roleplaying, customization, and escapism [11, 12]. In 2012, the model was reassessed and it was found that the underlying components did not provide a direct means to assess the three higher factors [25]. The authors used this assessment to improve Yee's original model. After much testing and analysis within Quantic Foundry, they reported on the model which had sampled and analysed over 250,000 participants [13]. This gamer motivational model has six overarching components with two sub-components each. They can be described as:

1. **Immersion:** The desire for interesting narratives, settings, and customization options.
    - **Fantasy:** The desire to become someone else, somewhere else.
    - **Story:** The importance of an elaborate storyline and interesting characters.
2. **Creativity:** The appeal of experimenting with game worlds, designs and customizations.
    - **Design:** The appeal of expression and deep customization.
    - **Discovery:** The desire to explore, tinker, and experiment with the game world.

3. **Action:** The desire to jump in the fray and be surrounded by dramatic visuals and effects.
    - **Destruction:** The enjoyment of chaos, mayhem, guns, and explosives.
    - **Excitement:** The enjoyment of games that are fast-paced, intense, and provide an adrenaline rush.
4. **Social:** The enjoyment of interacting with other players, via collaboration or competition.
    - **Competition:** The enjoyment of competition with other players (duels or matches).
    - **Community:** The enjoyment of interacting and collaborating with other players.
5. **Mastery:** The desire of challenging gaming experiences with strategic depth and complexity.
    - **Challenge:** The preference for games of skill and enjoyment of overcoming difficult challenges.
    - **Strategy:** The enjoyment of games that require careful decision-making and strategic thinking.
6. **Achievement:** The drive to accrue power, rare items, and collectibles.
    - **Completion:** The desire to complete every goal, get every collectible, and discover hidden things.
    - **Power:** The importance of becoming powerful within the context of the game world.

Yee [26] revealed in a presentation, select pieces of data from the usually paid for research reports that had now sampled over 400,000 participants. For example, males under 30 years of age care more about community than females; the appeal of the design peaks in youth; completion is the most stable motivation amongst all demographics; and destruction is the most appealing for under 18 year olds, with a plateau two decades later.

Outside Yee's own scope, Westwood & Griffiths [27] indicated that over time, players' motivations for playing games would change. The longer the player played a game, the more likely their change of motivations from exploration and discovery to challenge and competition would occur. Achterbosch et al. [8] examined the motivations of players in massively multiplayer online games and found that griefers, players that cause grief upon others, were more likely to be motivated by competition and completion, while those subjected to these toxic behaviours were more likely to be motivated by the factors of immersion and escapism.

While some studies do uncover motivations of mobile gamers, they have not been focused on this outcome. For example, in related studies, mobile gamers were identified as players that enjoyed novelty and aesthetics over challenge, and that perceived ease of use was the most important factor when playing a mobile game [28]. A study related to the game *Pokémon Go* [14], found social motivations to be particularly effective in increasing game time, and individuals that were motivated by immersive factors played less than those that were not [15]. Additionally, one study identified that the story element in mobile gaming has been found to be of low importance to individuals that play mobile games [16].

As mobile gaming is inherently different to gaming on other platforms, this study aimed to test the mobile gamer's perceptions against Quantic Foundry's most recent motivational model. This paper targeted mobile gamers in Australia and tested their perceptions against Quantic Foundry's motivational models' subcomponents, both from the players' perception of the initial attraction, and the reason for continued play.

3 Methodology

Using the twelve subcomponents from Quantic Foundry's motivational model as a basis for the design, a survey was built and deployed to gather quantitative data. The data was then imported into statistical analysis software to output results for analysis and discussion.

3.1 Survey Design

The survey began with base demographics of the participants' age and gender. The survey questions then focused on twelve motivational factors based on the Gamer Motivational Profile v2 by Quantic Foundry [12]. These questions asked participants to identify on a scale of 1 to 5 (with 1 being 'Strongly Disagree' to 5 being 'Strongly Agree') which motivational factors influenced their decision to a) begin playing a mobile game, and to b) keep playing a mobile game. The survey and research were approved by Federation University's Human Research Ethics Committee (project number A19-062).

3.2 Participants and Sample Size

Australian mobile gamers were invited to participate in the survey in June to July of 2019, via video gaming forums, Facebook groups, Federation University noticeboards, newsletters, and Facebook groups. The invitation provided them with a link to a university server hosting a plain language statement that described the survey as well as privacy and confidentiality information before proceeding to the survey.

An Australian demographic was chosen as the research team had access to multiple recruitment avenues within Australia, and mobile gaming studies in Australia were relatively sparse compared to other countries. Overall the survey was available for participation during an eight-week period, in which 123 people completed the survey.

3.3 Data Collection and Analysis

When participants completed the survey, the data was saved and imported into *IBM SPSS Statistics* [29] software for analysis. Analysis included descriptives, frequency and mean calculations, as well as cross-tabulations between demographics and motivational factors. The survey software did not record participants' personal details or time of submission, which allowed the participants to remain completely anonymous.

4 Results and Discussion

The results of the demographics are discussed below in the following section. Further on, the results and analysis of the twelve motivational factors are discussed.

4.1 Demographics

The demographics recorded for the participants were gender and age. A breakdown of gender and age are shown below (Table 1).

Table 1 – Age and Gender

	Frequency		*Age*		
Gender	*n*	*%*	*Min*	*Max*	*Mean*
Male	87	70.7%	18	65	32.5
Female	32	26.0%	19	66	35.7
Other	4	3.3%	18	32	26
Overall	*123*	*100%*	*18*	*66*	*33.1*

Of the 123 respondents that completed the survey, a little over 70% identified as male and 26% as female. Two respondents stated that they were neither male nor female, and two preferred not to answer. Although there is an almost equal distribution of males to female gamers in studies from Australia [30] and the United States [31, 32], the demographics reported here fall in line with similar gaming studies, where male participation outweighs the females [10, 11, 16].

The age of participants ranged from 18 to 66, with an overall mean of 33.1 years old. Females were on average slightly older than males. The age is representative of gamers, as recent demographic surveys such as conducted by the Interactive Games & Entertainment Association [30] and the Entertainment Software Association [31] identify the average age of video gamers as in their early thirties.

4.2 Motivational Factors

The twelve motivational factors and their descriptions based on the Gamer Motivational Profile v2 by Quantic Foundry [12] were supplied to respondents and they were asked to identify on a scale of 1 to 5 which motivational factors influenced their decision to begin playing a mobile game (labelled 'initial draw' in tables), and which factors influenced their decision to keep playing a mobile game (labelled 'continued play' in tables). The rankings of each factor were summarised by their mean score (Table 2). Likert numbers were supplemented with conditional colouring placed on the table cells to give quick visual indicators; the deeper the green the more the average participant values this factor, white indicates neutrality, and the deeper the red the less the average participant values this factor. This colour coding applies throughout this paper.

Table 2 – Rankings of the motivational factors (n = 123)

Factors influencing initial draw		*Factors influencing continued play*		
Rank	*Mean*	*Rank*	*Mean*	*Change*
1. Strategy	3.93	1. Strategy	3.88	-0.05
2. Challenge	3.72	2. Challenge	3.69	-0.03
3. Discovery	3.38	3. Completion	3.50	+0.67
4. Design	3.21	4. Discovery	3.37	-0.01
5. Story	3.15	5. Story	3.16	+0.01
6. Power	2.85	6. Design	3.14	-0.07
7. Completion	2.83	7. Power	2.96	+0.11
8. Excitement	2.80	8. Community	2.93	+0.14
9. Community	2.79	9. Competition	2.88	+0.14
10. Competition	2.74	10. Excitement	2.81	+0.01
11. Fantasy	2.70	11. Fantasy	2.72	+0.02
12. Destruction	2.51	12. Destruction	2.50	-0.01

Note: 1 = 'Strongly Disagree', 2 = 'Disagree', 3 = 'Neutral', 4 = 'Agree' and 5 = 'Strongly Agree'

As can be seen, strategy and challenge rank high among the respondents, both as an initial draw and a factor that influenced continued play. Strategy is all about planning and making complex decisions over time. This suits the smartphone medium very well, with casual pick up and play dynamics, and time between play sessions to ponder and consider the best course of action. The high ranking of challenge contradicts Merikivi et al. [28] of whom identified mobile gamers enjoyed design related factors over challenge, and also Westwood & Griffiths [27] that discussed how discovery made way for challenge as a gamer enjoyed a game for a longer period of time. Destruction and fantasy were on the bottom of the rankings in both cases. Destruction is about being motivated by chaos, carnage and destructible environments, and although not unheard of in successful mobile games like *Angry Birds* [33] and *Fruit Ninja* [34], smaller screens and lesser hardware are not as suitable as powerful personal computers and consoles for fast paced action.

Interestingly, the story factor ranked higher than expected, as it was assumed many mobile gamers are more casual and have less time to focus on story. This finding is also contrary to previous research [16], so perhaps game developers could invest more development into narrative to engage more users. Also of interest, competition ranked below neutral, descending towards a less important motivational factor. This could be attributed to the monetary systems in place in the majority of mobile games, where players can pay real money to gain advantage. With such systems in place, competition can become unfair. The findings express that mobile gamers are obviously seeking something a bit different for their mobile games and limited play sessions in contrast to general gamers.

Looking at the motivations that changed the most over time, it was discovered that completion jumped from rank seven as an initial factor motivating players to begin a game, to a rank of three when respondents consider long-term factors motivating them to continue playing. It would appear that after some time playing a game, completion of player goals are in sight, and they are motivated by accomplishing these goals. Most other factors barely changed over time in relation to the average respondent.

With the entire samples' motivational factors ranked and established, a cross-tabulation was conducted to compare the mean of each factor in relation to gender (Table 3).

Table 3 – Participant's gender versus their mean value of the motivational factors

	Factors influencing initial draw for each gender		Factors influencing continued play for each gender	
Motivational Factor	Male (n=87)	Female (n=32)	Male (n=87)	Female (n=32)
Challenge	3.61	3.63	3.70	3.56
Community	2.82	2.84	3.03	2.75
Competition	2.83	2.38	2.94	2.53
Completion	2.75	3.16	3.55	3.59
Design	3.26	3.06	3.22	2.94
Destruction	2.68	2.13	2.67	2.09
Discovery	3.47	3.16	3.48	3.09
Excitement	2.99	2.28	3.00	2.31
Fantasy	2.76	2.50	2.72	2.72
Power	2.99	2.47	3.17	2.41
Story	3.16	3.13	3.18	3.09
Strategy	3.90	3.94	3.85	3.84

Note: 1 = 'Strongly Disagree', 2 = 'Disagree', 3 = 'Neutral', 4 = 'Agree' and 5 = 'Strongly Agree'

Separating respondents that identified as males from females somewhat changes the outcomes. Among both genders, strategy and challenge still rank high, and destruction stills ranks low, but some new insights can be learned. Competition, destruction, discovery, excitement and power were rated lower by females than males. Literature indicates that male gamers in general prefer destruction and competition as a game element [35], and although males did rate these higher than females, they were still ranked quite low in relation to all twelve motivational factors. This indicates that these factors do not have a strong presence in mobile games or perhaps are not well suited to the medium. Schell [35] also suggests that male gamers prefer challenges, which is contradictory to these findings; both genders ranked challenge very high and with an almost equal weighting. Males initially ranked completion much lower than females, but over time their ranking largely increased to be in-line with females. Once again, completion becomes an important motivation to players as they get further in the game, but initially it is more of a drawcard to females than males who seem to be thinking ahead from the beginning.

Finally, a cross-tabulation was conducted to compare the rankings of each factor in relation to the respondents' age (Table 4).

Table 4 - Participant's age versus their mean value of the motivational factors

	Factors influencing initial draw for each age group			Factors influencing continued play for each age group		
Motivational Factor	18-29 (n=51)	30-39 (n=39)	40+ (n=32)	18-29 (n=51)	30-39 (n=39)	40+ (n=32)
Challenge	3.57	3.92	3.50	3.57	3.97	3.66
Community	2.76	3.13	2.50	2.96	3.15	2.69
Competition	2.82	3.08	2.28	2.98	3.23	2.38
Completion	2.88	2.72	2.97	3.82	3.46	3.16
Design	3.45	3.36	2.75	3.43	3.18	2.72
Destruction	2.88	2.46	2.06	2.82	2.38	2.19
Discovery	3.53	3.67	2.91	3.53	3.49	3.06
Excitement	3.10	2.59	2.28	3.16	2.59	2.63
Fantasy	3.04	2.64	2.31	3.06	2.64	2.38
Power	3.12	2.90	2.47	3.24	2.95	2.63
Story	3.41	3.28	2.66	3.47	3.23	2.69
Strategy	3.92	4.23	3.72	3.63	4.15	3.59

Note: 1 = 'Strongly Disagree', 2 = 'Disagree', 3 = 'Neutral', 4 = 'Agree' and 5 = 'Strongly Agree'

There is a clear shift in motivational preferences from one age group to another. Strategy and challenge remained as the number one drawcard for all age groups when considering game factors influencing initial draw. Previously, Yee [26] identified that the completion motivational factor was the most stable among all ages, and with a sample of 400,000 game players, it must be accurate. However, with the focus on mobile games and gamers only, completion appears much more important to the younger audience. On average, the under 30s ranked completion as the number one reason to continue playing mobile games. It went from a mean of 2.88 (or neutral to uninterested), to 3.82, the highest motivating factor. Completion also rose for the other age groups over time, but not as dramatically, with the oldest group (40 and older) almost neutral in their perceptions towards completion.

It was interesting to discover that the younger the player was, the more highly they valued design, destruction, excitement, fantasy, power and story. Two of these, design and destruction, have previously been identified as plateauing out after youth [26], which can also be seen here. The older age group, at 40 years of age or older, on average were only motivated by two game factors, strategy and challenge. They appear to enjoy planning out moves in their own time against challenging conditions. Completion and discovery for this group remained somewhat neutral on average, compared to the younger and mid group that shown strong motivations towards them. Perhaps as we get older we have less time or patience for these game designs, especially on the mobile platform.

5 Conclusion

During analysis, it was discovered that mobile gamers are a completely different breed of gamer in contrast to the general video gamer. Strategy and challenge, which are subcomponents of mastery, proved popular among all mobile gamers. In fact, the 40 and over age group on average, identified them as the only motivating factors. Completion was also rated high, especially in relation to extending a game's appeal over time. Story in games proved more popular than expected, and designers could definitely consider better narratives in mobile games. Destruction and excitement, subcomponents of action, were often the least motivating factors among all demographics, although the under 30s valued them visibly higher than the other age groups, as did males over females. The under 30s were motivated (and therefore interested) by many more game design factors than ages of 30 and over. With the newly discovered data, perhaps mobile game developers can pursue better avenues of game design when catering to their target audience.

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