

# Development of Habitual Behaviour in Online Social Gaming: Understanding the Moderating Role of Network Externality

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## ABSTRACT

Game habit and game addiction are distinguished in terms of psychological motivation, meaning, and a player's experience of gaming. The majority of contemporary studies address either the challenges or difficulties of particular habit formation often in the context of disciplined force or negative consequences of game addiction. Game habit does not necessarily imply game addiction. The objective of this study is to investigate the key antecedents of game habit formation using a quantitative study with 341 respondents collected in West Malaysia and analysed via structural equation modeling. The results demonstrate that game habit formation is formed more naturally with automatic control mechanisms, influenced by play intensity, flow experience, and self-efficacy, and the effect of play intensity towards game habit is interacted by network externality.

## KEYWORDS

Flow Experience, Game Habit, Game Intensity, Network Externality, Online Social Game, Self-Efficacy

## INTRODUCTION

The gaming industry is one of those sectors which seems impervious to recession, with annual growth around 9 percent and revenue expected to surpass \$200 billion by 2023 (Peckham, 2020). Unlike most industries which have been negatively impacted by Covid-19, gaming has seen an increase in the number of players, the frequency of use and as a consequence, the amount of revenue generated by in-game advertising (Bashir, 2020; Elliott, 2020). Game play has come to impact all aspects of our lives and influence daily routines as well as personal and social behaviour, with its merits, often viewed in rather polarized context. Gaming can be perceived as either a medium which encourages an unproductive use of time, a behavioral script which can be stored in the memory (Verplanken & Aarts, 1999), considered in the context of a less cognitively demanding task (Wohn et al; 2012), or

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as a medium which develops employability skills such as critical thinking and determination (Sani, 2017). A further dimension to this debate is that of dependancy or addiction to gaming and whether an increased engagement with gaming is not only unproductive but unhealthy. Previous research has examined the role of technological features and social dimensions associated to online gaming (Gan et al; 2017), and the negative impacts of online gaming, such as game addiction (CC. Wang & CH. Wang, 2008; Huang et al; 2019) or internet dependence (Kim et al; 2017) but arguably overlooked the difference between game habit and game addiction. Game habit primarily refers to automated cognitive heuristic behaviour or non-conscious social behaviour formation, in contrast, game addiction is more related to a psychological and pathological investigation (Griffiths, 2018). Game habit, even one which can be perceived as excessive is a personal routine which is not necessarily addictive behaviour. The aim of this study is to address this gap in the literature and provide emerging insight into game habit formation. This quantitative study will investigate the perceptions of Malaysia gamers which will assist academics and practitioners develop better understanding of how players engage with online games and the antecedents which are intrinsically linked to game habit formation.

## LITERATURE REVIEW

Habit is a goal-directed behaviour formed when conducting the same behaviour frequently and consistently in a similar context for the same purposes (Ouellette & Wood, 1998; Carden & Wood, 2018). Consequently, the conscious efforts to plan and initiate goal-directed behavior become redundant (Danner et al; 2008). A significant contribution in the field of habits and attitude-behavior models was made by Bentley & Speckart (1979) who investigated the students' consumption of alcohol and marijuana and concluded that habitual behavior can be instigated without the mediation of intentions, such as deliberation or thought. This work has been replicated across a range of areas, including mass communication (Chiu & Huang, 2015), psychology (Gardner & Rebar, 2019), online gambling (Salonen et al; 2018), physical fitness (Kaushal et al; 2017), media consumption (LaRose, 2017), impulsive buying (Iram & Chacharkar, 2017), and junk food consumption (Hemmingsson, 2018). Similarly, this concept could be applied to social gaming where gamer's continuous interest and enjoyable interaction may encourage excessive playing, then could develop habitual behaviour or even become addictive (Lee et al; 2019). Although game habit and addiction are used interchangeably, there is a difference between the two concepts: '*...healthy excessive enthusiasms add to a person's life whereas addiction takes away from it...*' (Griffiths 2018, p.19). The majority of previous studies on game addiction adopt existing measurement scales from other fields: gambling addiction or exercise addiction (Ng & Wiemer-Hastings, 2005; Smahel et al; 2008; Hussain & Griffiths, 2009) and claim the addictive behaviour based on self-report accounts of excessive use of the internet, such as up to 80 hours per week (Chappell et al; 2006). Although most addictive behaviour shares certain similar characteristics, such as salience, mood modification, tolerance, withdrawal symptoms, conflict and relapse, the way of determining a non-chemical addiction (i.e. social game addiction) is debated in much of the literature. Arguably, the only way to confirm or to disconfirm addictive behaviour is to compare the observed or scaled behaviour against clinical criteria. However, most previous research has failed to do so, perpetuating the skepticism around whether a gamer is really addicted or just an excessive player (Griffiths, 2018). The reality of game addition remains ambiguous in most studies.

Certain research on habit emphasizes its moderating impact on certain associations. Triandis (1980) investigated the association between habit and intention, assuming that when the same behaviour is more frequently executed in the past and increases in habit strength; it is less guided by the intention to perform such behaviour. Habit moderates the relationship between intentional and actual behaviour. Gan et al (2017) investigated the moderating impact of habit on the strength between gratification and continuance intention, concluding that the associated strength will be reduced by habit due to the unconscious mind. Although the moderating role of habits in intention and behaviour relationship offers a promising perspective on assessing the habitual nature of goal-directed behaviour, in fact,

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