

WHAT IS ADVERGAMING AND WHAT IT IS NOT? RECAPPING BEHAVIOURAL THEORIES TO UNDERSTAND ADVERGAMING

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Abstract

Owing to the latest technological advancements, alternative ads based on digital technology have been increasing exponentially compared to traditional ads such as TV and newspaper ads. Advergaming utilizing online video games was recently becoming popular as a new form of advertisement. Although the marketing and communication industries make more use of advergaming every day and despite being a growing marketing platform, there is a lack of research in the marketing literature that examines the underpinning behavioural theories for advergaming implications. Accordingly, this article aims to identify fundamental consumer behaviour theories such as Social Cognitive Theory, Limited Capacity Model, Elaboration Likelihood Model etc. to understand whether advergaming can positively influence players toward a particular brand. This study suggests that eight major theories from the consumer behaviour field are relevant to elaborate players' behaviour in advergaming as well as providing a holistic understanding of this new media.

Keywords: *Advergaming, Marketing, Consumer Behaviour Theories, Industry 4.0*

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ADVERGAME NEDİR VE NE DEĞİLDİR? ADVERGAME'İ ANLAMAK İÇİN DAVRANIŞSAL TEORİLERİN YENİDEN ÖZETLENMESİ

Öz

Son teknolojik gelişmeler sayesinde, dijital teknolojiye dayalı alternatif reklamlar, TV, gazete reklamları gibi diğer geleneksel reklamlara kıyasla katlanarak artmaktadır. Advergaming, çevrimiçi video oyunları üzerine inşa edilmiş yeni bir reklam şekli olarak ortaya çıkmıştır. Advergaming'in pazarlama ve iletişim endüstrisinde her geçen gün daha fazla kullanılmasına ve giderek büyüyen bir pazarlama platformu olmasına rağmen, pazarlama literatüründe advergaming çalışmalarını davranış teorileri kapsamında inceleyen araştırmaların yeterince olmadığı görülmektedir. Buradan hareketle bu araştırma, Sosyal Bilişsel Teori, Sınırlı Kapasite Modeli, Detaylandırma Olabilirlik Modeli vb. temel teorilere odaklanarak, advergence uygulamalarının markalara dair düşünceleri nasıl etkilediğini incelemeyi amaçlamaktadır. Bu kapsamda, sekiz adet teoriye değinen bu araştırma Advergence'in bütünsel bir şekilde anlaşılmasına katkı sunmaktadır.

Anahtar Kelimeler: Advergaming, Pazarlama, Reklamlı Oyun, Tüketici Davranışları Teorileri, Endüstri 4.0

Introduction

There have been many technological advancements over the past half-century. The integration of computer technology into production systems began to take place during the 1980s, which commenced the third industrial revolution. Industry 3.0 is described as rising computer usage accompanied by the need for fast pace communication, which gave rise to the birth of Internet. The Internet has radically changed everything from the way the business operates to how people share their emotions in their happy moments. Taking Industry 3.0 further, in the era of Industry 4.0, machines are becoming wired digitally in addition to operating as autonomous units. Thus, machines do not need human supervision anymore for most of their activities. As a response to this trend, technology-powered marketing practices are becoming more and more widespread, and companies invest more in digital platforms to access the potential consumers of the future.

Games have always been present throughout human history. The first game played in human history dates back to ancient civilizations. The oldest set of dice that was discovered in South-eastern Iran is around 3000 years old, and Egyptians are known to have played board games nearly 5000 years ago (Kumar et al.,

2011). With the digital age, games have been rediscovered as a new platform to leave a mark of a product or a brand on the minds by capturing the attention of players. This development enriched the legacy of gaming and eventually, advergames has appeared as specially designed platforms to promote a company's brands or products. As a relatively new form of advertising, advergames has been defined as online games that incorporate marketing contents (Dobrow, 2004). Advergames refer to computer games that are more than a game, which aims to engage with the consumers of a specific brand.

Due to advancements in high technology in the Industry 4.0 era, games utilizing digital platforms will inevitably become more popular than ever. However, studies focusing on advergames are very limited compared to research held on similar topics such as social media advertising. Addressing this gap, this conceptual study aims to search the literature on advergame and provide new insights into the underpinning theories for future advergames studies. Thus, some of the major theories that are relevant to consumer behaviour are examined and listed in this study to help marketers to understand consumer behaviour initiated by advergames. This paper has been organized into two parts. The first part deals with the evolution of video game advertising and attempts to make a clear distinction between advergames and other kinds of ads in video games. The second part discusses behavioural theories that have been widely used in the literature to investigate the effect of advergames on consumer behaviours.

2. What is Advergames? What is it, and is it not?

Since the first video game entitled 'Spacewar' was developed by Massachusetts Institute of Technology (MIT) researchers in the 1960s (Pohl, 1963), digital games have become widespread, and they have attracted millions of people at different ages. Going hand in hand with this trend advertising in digital games has rocketed up, transforming games into an important medium to promote brand-related messages to large numbers of people around the world (Yeu et al., 2013). The first known advertisement in a digital game appeared in a game called 'Adventureland'. The purpose of this advertising was to promote the game's next version named 'Pirate Adventure' (Pohl, 1963).

The increasing worldwide popularity of gaming has caught advertisers' attention, who aim to find new ways to utilize video games. In this respect, advertisers insert and integrate brand identifiers such as the brand logo in existing games, which is a very similar approach to traditional product placement in movies and TV shows (Yang et al., 2006). Also, advertisers utilize social media

gaming to promote products or brands by inserting brands in digital games on social media sites. As the concept investigated in this study, advertisers can also design advergaming in which the brand is at the core of the game itself (Youn & Lee, 2004). Thus, three different types of advertisements takes place in digital games (Terlutter & Capella, 2013).

In-game ad is an integration of brand and products into a digital game aiming to leave a mental mark on the mind of users while playing the game by showing up messages, virtual boards, and brand logos directly and subliminally. Similar to product placements in TV and cinema productions, game developers offer advertising slots to advertisers to insert brands, products, or messages in video games. Thus, in-game ad is not built to enhance playing experience, and ads can vary from Obama ads in a car race game to Coca Cola ads in an American football game. In other words, ads from multiple advertisers can appear in the same game on background billboards, which raises some concerns about whether different brand ads can mitigate or compound ad effectiveness (Terlutter & Capella, 2013). Hence, to attain a cohesive player experience, in-game advertisers should make sure that displayed brands do not have opposing images, nor are they irritating for consumers.

Another online game ad strategy is to incorporate brands into digital games. These video games are played on social media sites such as Facebook. Due to the interactive nature of social media sites, games played via social media are distinct from in-game ads and advergaming. According to Yee (2006), social network gaming offers competitive play and/or teamwork as well as interaction with friends existing on the same networking platform. Designed by Electronic Arts, 'Sims Social' gained substantial popularity after its release in 2011 and had picked up nearly 5 million users just in 1 week. Enabling its players to become friends, lovers, enemies, and acquaintances, Sims Social lets their fans to create their own homes and interact with their Facebook friends. It also features several real-world brands with 'Dunkin' Donuts' was among one of the first brands having ads in 'Sims Social' (Duncan, 2011; Lynley, 2011).

Advergaming are often designed with a strategy to change consumer's habits and behaviours. As a part of 'Got Milk' campaign of California Milk Processor Board, 'Get the Glass' video game was launched in 2007 to encourage the consumption of cow's milk in the United States. 'Red Bull Formula Face', a game created by Red Bull energy drink company in September 2011 which is the first online car racing game with a face- and mimic-steering via webcam used face recognition technology (Reputation Defender, 2016). The way players control the

gaming action hands-free, using head movements and facial expressions were found less embarrassing activity than dancing with friends in terms of socialization (Trend Hunter, 2011). So, the theme of the game is a vital success factor of an advergaming.

The main distinction between advergaming and in-game ad is that advergaming are custom made online games to promote products or brands (Youn & Lee, 2004). Thus, brand or product marketing strategies make up the core of the game development stage. Advergaming serve for two primary purposes: First, they create an environment where consumers ‘play with the brand’, which helps them to build positive feelings and associations about the game, which in turn are transferred to the promoted brand. In this way, advertisers aim to increase the positive attitudes of consumers toward the brand. Second, advergaming often ask players to register and share their game scores or the game itself with friends, making advergaming an important tool to collect data about the present and potential consumers. By utilizing consumer data, advertising efforts can be tailored to the individual level, leading to consumer satisfaction and brand loyalty (Youn & Lee, 2005; Steel, 2013; Wottrich, Verlegh & Smit, 2017).

3. Literature Review

3.1 Methodology

This study adopted a literature review approach to investigate underpinning theories for consumer behaviour in advergaming. A comprehensive online search was conducted for the keyword “advergame(s), advergaming” at scholar google and other online libraries. Therefore, the theories mentioned in this study were synthesized through a deliberate search process, which leads to eight major theories that have been widely used in advergaming research namely, the Persuasion Knowledge Model, the Limited-Capacity Model, the Social Cognitive Theory (SCT), the Congruity Theory and Spreading Activation Theory of Human Memory (SATHM), the Involvement Theory, the Elaboration Likelihood Model (ELM), the Reactance Theory, and the Flow Theory. When these theories are addressed within the manuscript, research gaps were tried to be highlighted. When theories are interrelated and address similar points, these theories were needed to be revisited when discussing another theory to provide a holistic understanding to the readers.

3.2 Persuasion Knowledge Model

The persuasion knowledge model was first coined by Friestad and Wright (1994) and it assumes that individuals develop an understanding of marketers' tactics, intentions, and persuasive attempts, over time. Then they use their accumulated knowledge to deal with advertisers' efforts. When a person matures, thanks to increasing self-defence mechanisms to ad exposure, he or she builds a sceptic and rational approach to cope with advertisers' actions (An & Stern, 2011). In this respect, children seem more vulnerable to advergaming as they do not have a clear vision and experience to differentiate persuasive content from the game. Children younger than four or five are not capable of distinguishing programming from ads, and only at around 12 or later, children can develop self-defence mechanisms to advertisers' persuasive attempts (Wilcox et al., 2004).

Considering the rising obesity and numerous food advergaming aiming children, advergaming needs the special attention of policymakers (Mehta et al., 2012). Yet, advergaming regulation is still in its infancy. In contrast to television advertising where governments limit the duration or number of ads (Marketing Türkiye, 2018), in advergaming, it is hard to establish such limits due to the difficulty of controlling a wide variety of online sources (Moore & Rideout, 2007).

3.3. Limited-capacity model

Limited Capacity Model (LCM) postulates that humans have a limited cognitive capacity for information processing. In a video game, what the players see on the screen and the game controls compete for the limited capacity existent in working memory (Grodal, 2000). The LCM of attention postulates that attentional capacity at any time is divided into two parts, namely, spare capacity and capacity used for the primary task (Kahneman, 1973). Because of the limited capacity of human brain, the capacity that is reserved for the primary task cannot be used to accomplish the secondary task.

Advergaming consist of two parts. The first part is the function, including the rules, theme, characters, and controls of the game, which makes up the essence of the game. The second part relates to marketing objectives such as developing consumer engagement, increasing brand recall, etc. Based on LCM, players give most of their attention, in other words, their capacity to the primary task, which is to conform with the rules of the advergaming. Thus, understanding objectives and learning how to use the keyboard to control the game character or object are dealt with the primary capacity (An & Stern, 2011). As a result, little capacity is left for

the secondary task that constitutes the primary purpose of advergames, which is promoting a particular brand. This problem raises the idea of inserting ad breaks in advergames so that players can allocate their primary capacity to the displayed ads during the game. However, an ad break acts as a cue helping players to develop an awareness of the promotional nature of the advergame. This awareness may lead them to ignore and discount promotional messages. Without an ad break, players are not warned that the ad will start or has started, and players' limited attention to the ad content will not be distorted. Further, thanks to repetitive exposure of the brand information over time, brand recall and positive consumer evaluation can be attained. In support of this, ad breaks were found to mitigate advertising effectiveness with player's decreasing memory and desire of the advertised product in an experiment including 112 children (An & Stern, 2011).

The type and nature of the advergame may also impact the extent of capacity allocation to the primary and secondary tasks. A recent study conducted by Vashisht and Royne (2016), found that the speed of the advergame could determine the degree of players' brain capacity use in the game. For a gamer playing a high-speed advergame, the spare capacity which is needed to process ad stimuli is less than for a low-speed advergame. As a low-speed game requires less attentional capacity the remaining ability to process the ad content is increased. Thus, high-speed games induce higher brand recall than their low-speed counterpart.

3.4. Social cognitive theory (SCT)

Echoed by Bandura (1977), SCT assumes that human behaviour is developed through triadic, dynamic, and reciprocal interactions of environment, behaviour and personal factors. In other words, behaviour is dependent on the prior observed and learned conditions. Advergames create an artificial environment in which the players must respond to given conditions. Based on their reactions, their game performance is evaluated, and they are given a game score. If they complete the desired targets, they are rewarded (Lieberman 2006, Cicchirillo & Lin, 2011). For instance, the game may offer them a special discount which can be used in the nearest shopping mall, or his/her success in the game can be shared on the brand's social media fan page. On the contrary, unsuccessful performance may end up starting again from the already succeeded levels of the game over and over or falling back in the players' ranking list.

Reward/no reward feature of advergames seems to be useful for showing consumers the proper way to interact with brands in real life. According to

Skinner's (1938) theory of operant conditioning, learning occurs through rewards and punishments as a response to behaviour. Individuals build up an association between a particular behaviour and its consequence and interpret this information to conclude whether the behaviour is appropriate or not. By learning from personal negative and positive experiences, consumers become able to decide on the right behaviour.

Based on SCT, one can argue that advergaming could be used to help consumers to learn by facilitating operant conditioning. When players actively join an advergaming act in a particular manner during the game, they learn from their successes and failures. This learning process helps players to learn and develop appropriate attitudes toward similar scenarios when they encounter in the real-life (Lieberman, 2006). On the contrary, modelled behaviour that results in punishment in an advergaming will discourage players from acting that way. Hence, through advergaming, advertisers could motivate players to avoid unwanted behaviours in real life by illustrating negative outcomes in the artificial world (Cicchirillo & Lin, 2011).

Advergaming can be used by social marketers to solve health, environmental, and social problems. Obesity has become a widespread problem of the modern world with some scientific evidence deciphering that children with obesity problems do not lose their weight quickly when they mature. Yet, adolescents' immersion of digital media offers the opportunity to game designers and policymakers to improve healthy diets. Advergaming can encourage the consumption of healthy foods and beverages, which can lead to healthy lives (Pempek & Calvert, 2009). However, the majority of the food advergaming overwhelmingly promotes foods that are low in nutritional value (Moore & Rideout, 2007). Culp et al. (2010) analyzed 247 games on popular websites visited by children and noted that almost all the marketed foods contained a high level of sugars, signaling the need for government regulations in food advergaming. In this sense, policymakers can support healthy eating by promoting advergaming targeting obese teenagers.

3.5 Congruity Theory and Spreading Activation Theory of Human Memory (SATHM)

As firstly being coined by Osgood and Tannenbaum (1955), congruity theory dictates that congruent information creates cognitive consistency and produces a positive effect. On the other hand, incongruent information results in cognitive inconsistency which is likely to generate negative attitudes toward

subjects or objects. In its theoretical evolution, the congruity theory has been used to describe a variety of marketing settings such as the celebrity and product congruence (Misra & Beatty, 1990) and self-concept and country personality congruity (Aktan & Chao, 2016) and self-image store image congruence (Kim, 2004) and so on.

Congruity between the content of the game played and the product category of the brand placement was examined for the first time for in-game advertising by Lee and Faber (2007) who proposed that highly incongruent brands are better recalled compared to highly or moderately congruent brands. In their study Lee and Faber (2007) stated that for a well-known novel brand when the information shown in the game is incongruent with brand's perceptions, people struggle to make sense of this information, which in turn increases their extensive cognitive elaboration, as a result, increasing brand recall. However, the involvement levels of the players may moderate the player's response to the incongruent information (Vashisht & Pillai, 2017). For instance, when players are low involved with the product category under consideration, they are likely to be reluctant to understand the incompatibility between the game content and brand, thus they just stop playing.

At this point, SATHM (Anderson, 1983) can be visited to explain how brand information is processed in memory. According to the SATHM, information is encoded in cognitive units called nodes and through associated pathways between the nodes. In the context of advertising, the ad stimuli activate the brand node, and that activation spreads through the paths to surrounding nodes that have the most robust relationship with the brand node. Hence, when the consumers' involvement with the product category is low, the ad stimuli and information are not fully transmitted through the associated pathways between the nodes. Players' involvement with advergaming will not be discussed further here, because the next section aims to shed light on the implication of involvement theory in the context of advergaming.

Regardless of the involvement levels of the consumers with the brand, it is still of great importance for advertisers to ascertain that if a newly launched advergaming can utilize consumers' mostly used paths that are associated with the brand node. For instance, an advergaming associating Oreo cookies with milk is likely to be useful because cookies and milk are complementary products for most people. In contrast, when Oreo cookies and marbles are used together consumers may find it difficult to remember this pairing (Gross, 2010). Therefore, thematically incongruent advergaming result in weaker memory relative to

thematically congruent games, which is against the findings of Lee and Faber (2007) who reported that highly incongruent brands are better recalled in in-game advertising. This conflicting result may be attributed to different engagement levels of consumers with advergaming and online video games having in-game advertising. Therefore, there is a need for more research investigating the notion of congruity in advergaming examining consumers' involvement levels.

3.6 Involvement Theory and Advergaming

Consumers' involvement with products is a vastly studied topic among researchers. The media has been regarded as a platform influencing consumers' attitudes toward products and services to a great extent. It is widely accepted that the more consumers are involved with a product category, the more time and effort they spend on evaluating any message regarding the product category. On the contrary, for the products which do not require consumers' high involvement, consumers tend to take quick purchase decisions reflecting routine decision making. For instance, products such as ice-cream and candy are likely to be purchased impulsively, without additional effort spent to a great extent on the evaluation of alternative brands.

Other than the product category, involvement in a media program such as a television or radio show can also affect consumer attitudes. Hence understanding to what degree involvement can change the brand attitude appears to be necessary, not only for advertisers utilizing traditional media but also for marketers using online media (Lloyd & Clancy, 1991). Previous studies measured the significance of consumers' involvement and reflected two opposing views. First, the more the consumers are involved with a broadcast in a digital or traditional media, the less likely they pay attention to the content of the advertisements, and commercials are perceived as intrusive and irritating; hence those ads are less likely lead to a positive brand attitude. On the contrary, it is argued that programs with high consumer involvement levels produce engaged viewers who ultimately display a more favorable attitude towards the commercial content within the program. Thus, the power of ads in creating a positive attitude goes hand in hand with the degree of consumers' affinity to the program and their involvement levels (Lloyd & Clancy, 1991).

Although the studies regarding consumer's involvement with advertising are rooted back to the seminal work of Krugman (1965), the involvement theory has lacked in research about advergaming. A quick Google Scholar search of keywords of 'advergame' and 'involvement theory' generates only a few results,

which stresses that consumers' involvement with advergimes and brands needs more attention of researchers since the players' involvement has the potential to disrupt or enhance the effectiveness of the ads within the game. Therefore, the effectiveness of advergimes with comparison to other digital media advertisements needs to be focused on in future research. In a study on two different media, namely radio and television found that in case of high involvement level with the broadcast there is no significant difference in the cognitive impact of radio compared to TV commercials. Whilst, when the involvement levels were low, TV commercials were noted to have a significantly higher impact in terms of brand recognition and so on (Buchholz & Smith, 1991). The same logic can roll out to the digital media environment, and one can argue that advergimes are more effective compared to other internet-based ads or vice versa. Yet, this is beyond the scope of this section which aims to discuss the implications of involvement theory in advergimes setting.

According to Lee and Faber (2007), players' involvement level and the way the brand is placed (subtle or prominent) in online advergimes were found to determine the degree of brand recognition. For the games with high player's involvement, whether the brand is placed prominently or subtly did not appear to have any effect on brand recognition (Lee & Faber, 2007). Nevertheless, for low involved players, prominent brand placing seemed positively affect brand attitude because given the limited mental resources respondents may not be able to process subtle brand placement in advergimes. However, a more recent study noted that brand prominence did not mitigate the effect of game involvement on the cognitive and affective responses of the brand, with highly involved players of advergimes being more likely to demonstrate more positive brand attitudes (Van Reijmersdal, Rozendaal & Buijzen, 2012).

3.7 Elaboration Likelihood Model and Advergaming

As firstly introduced by Cacioppo and Petty (1984), the Elaboration Likelihood Model (ELM) of persuasion postulates that persuasion can occur via two routes, namely, central and peripheral. The central route includes a careful cognitive assessment of arguments and issues of a persuasive message. Revisiting involvement theory, the central route often requires consumers' motivation and high involvement to elaborate the persuasive message. On the other hand, when consumers are not involved with the brand nor are they motivated to decode the persuasive message, they more likely to use the peripheral route to understand the message. Thus, less involved consumers tend to evaluate the ad content through the vividness of the ad content and pleasantness of ads' graphics and sound.

According to mainstream research on the field, audiences are usually not highly involved with the advertisement, which partially explains why the majority of the ads concentrate more on the entertaining and/or colorful content than giving product-related technical information. Based on this fact, promotional elements embedded in advergames are most likely evaluated through the peripheral route. Because, as it was also discussed in the limited capacity model, players allocate their most of their attention to the game-related elements such as the game rules and character control. Thus, the central route is not available to a greater extent to the process presented information in an advergame.

At this point, congruity theory seems to be worth mentioning as it can be argued that the degree of brand and game congruence may determine whether the central or peripheral route will be utilized when players encounter with advertisement stimuli. When there is a high consistency between the theme of the advergame and the brand, ad content embedded within the game will be more likely processed through the central route. In contrast, in the case where the brand and the advergame are incongruent, consumers need to analyze the ad content and use the peripheral route (Vashisht & Sreejesh, 2015). Therefore, to facilitate the use of the central route, marketers are advised to make sure that brand and game congruence is present.

3.8 Reactance Theory

Psychological Reactance Theory (RT) has been vastly used by scholars working on social sciences to understand how individuals react when they feel that their freedom is intruded upon or threatened. According to the theory, when a person conceives that somebody or something violates their personal space or freedom, she/he feels himself/herself being pressured to follow a particular opinion or behaviour (Brehm & Brehm, 1981), as a result, adopting opposite behaviour or opinion.

Parallel with the increase in competition and availability of the different types of media, today's consumers are exposed to ads more frequently than they were exposed a decade ago. Furthermore, all ads have various claims and promises, trying to encourage consumers to choose their brand. Therefore, today's consumers are bombarded with ads and tend to ignore them unless the advertised brand is relevant to their consumption choices. Put it differently, advertising pressure may not result in a positive outcome, but a backlash, therefore overuse of ads may induce consumers to have negative brand evaluations (Ying et al., 2009).

In a study examining the reactant behaviour of players in an advergame setting, Redondo (2012) noted that when there is a more prominent brand placement in an advergame, negative reactions toward the advertised brand is provoked more readily, providing evidence that RT should be of concern to marketers. Another important finding of that study was that the duration of ad exposures and whether the brand placement was subtle or prominent determined the degree of advergame effectiveness. In this respect, when the brand placement is prominent, to avoid players' reactance, brief exposures appear to be more effective on adolescents' brand attitudes. However, for subtler placements, long exposures seem to be a better alternative since they are less likely to result in the reactance behaviour of players.

Although it is not vastly studied, limited studies concentrating on gender-specific differences in provide evidence that the effectiveness of advergaming may depend upon gender. Lewis (2006) showed that females approved far more advertising in movies, television shows than males, indicating that males are more reactant to advertising than females. In essence, female audiences in the study of Lewis agreed more readily with the statement that read "in-game advertising makes video games seem more realistic and immersive" than their male counterparts. In other words, males tend to be less susceptible to ad content since, as noted by Mallinckrodt and Mizerski (2007), boys can recognize commercial intentions of ads more easily than do girls (Redondo, 2012). In this context, advertisers are advised to consider gender-specific differences in advergame design.

3.9 The Flow Theory

Another prominent theory in psychology science which is referred by some of advergames studies is called the Flow Theory. According to the theory, 'in the flow' state or 'in the zone', individuals are fully absorbed in their displayed behaviour, hence do not recognize that the time is flying by. Therefore 'in the flow' state, individuals are very pleased and satisfied with what they do and are passionately engaged in this behaviour. As a result, the flow experience often leads to productivity and creativity (Csikszentmihalyi, 1988).

The advergames offering flow experience tends to be more persuasive than are the games with subtle experience, and 'in the zone' state can be accomplished through the advergames' ability to produce enjoyment, absorption, and the intrinsic interest of the players (Rodriguez-Sanchez et al., 2008). Yet, for an optimal experience, a balance must be sought between the degree of skills

required for the game and how challenging the behaviour is. In fact, the optimal experience is not easy to be attained, and some advergaming end up in suboptimal solutions. In suboptimal advergaming, the game can be more challenging than the player can handle, inducing the player feel anxious and angry toward the game, or the game can be less challenging than he originally thought of, which leads to boredom (Waiguny et al., 2012). In both cases, players are not fully contented with the game, thus do not reach the flow state.

The significance of the Flow Theory lays in its potential in assessing the persuasiveness of the ads' content. When the players are not in the flow state, they are less inclined to pay attention to the advergaming. On the contrary, in the case that the game can generate a flow state, the players fully concentrate on the game, thus being more susceptible to the persuasive messages of the advergaming.

4. Discussion

In order to handle complex behaviour of digitally immersed consumers of Industry 4.0 era, deep-rooted theories in consumer behaviour need to be re-examined. By adopting a literature review approach this study suggests that eight behavioural theories are widely used by marketing scholars to explore consumer behaviors in advergaming. In other words, this article focuses on mostly used theories such as Social Cognitive Theory, Limited Capacity Model, Elaboration Likelihood Model etc. to understand whether advergaming can positively influence players toward a particular brand.

This study stresses one more time that social theories can be revisited to investigate individuals' behaviour in advergaming. For instance, the persuasion knowledge model can explain why individuals have different experiences when they receive persuasive marketing content in advergaming. Also, the Limited-Capacity Model is useful to acknowledge that high-speed games may activate higher brand recall than their low-speed counterparts. The Social Cognitive Theory (SCT) explains how advergaming can be helpful for policymakers to support healthy behaviors. The congruity theory and spreading activation theory of human memory (SATHM) explains the relationship between the involvement level of players with the product category and ad stimuli and information transmitted through the associated pathways between the nodes. The Involvement Theory can clarify how commercials in advergaming show a higher or lower impact in terms of brand recognition according to the involvement levels. The Elaboration Likelihood Model (ELM) can show the importance of facilitating the use of the central route to ensure the congruence between brand and advergaming.

Also, the Reactance theory appears to be relevant to explain the nature of the reactant behaviours of individuals during games and what details should be paid attention to mitigate players' discomfort in advergame design. Finally, the Flow Theory should also be considered to inspect the success potential of advergames and to evaluate the persuasiveness of the advertising content.

5. Conclusion

The rapid developments in digital technology and the introduction of Industry 4.0, as argued by many researchers and opinion leaders, have been transforming the way the companies promote their brands. In this respect, advergaming stands as an alternative and more interactive way for companies to create consumers' engagement with their brand. The shift from physical games to digital ones is going to accelerate, and advergames will become much more popular due to enhanced game quality and player engagement supported by artificial intelligence and virtual reality technologies.

Development of contemporary gaming consoles and other electronic devices with better hardware and software is an important sign regarding the potential of advergaming. Thus, marketing communication practitioners and academics must understand the behavioural theories those underlying in advergaming studies to be able to design and analyse an advergame theme.

Given that Industry 4.0 will proliferate technological advancements, games will continue to keep their significant role in society. Innovative consumer offerings that integrate entertaining aspects of games with the blessings of modern technology will become the critical success factors of future businesses. From this point of view, new advertising strategies that heavily rely on digital technologies will be increasingly adopted by future advertisers. Therefore, offering games appears to be an excellent alternative to develop strong ties between the brand and future consumers.

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