

Undergraduate Thesis Prospectus

Bitcoin and Cryptocurrency
(technical research project in Computer Science)

How Game Companies Exploit User Psychology for Profit
(sociotechnical research project)

by

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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General Research Problem

How can impulsive spending be mitigated?

As access to diverse markets grows for consumers, marketers must distinguish themselves from the growing competition. Marketers constantly try to understand and analyze consumer behavior when the consumer purchases products/services, since this “represents 40.0 and 80.0% of all purchases” (Rodrigues, Lopes, & Varela, 2021). However, with extensive research into purchasing behaviors, marketers created different strategies to manipulate purchases among consumers, thus this leads to impulsive spending. Impulsive spending is making unplanned purchases because of a strong emotional desire or external stimuli within the store environment. Some common examples of this include cheap drinks or snacks next to the checkout line or a promotion on a product. Understanding triggers that lead to impulsive spending is crucial for helping consumers make more informed and responsible purchasing decisions, thus reducing the impact of financial and emotional consequences of the behavior.

Bitcoin and Human Psychology

How can user behavioral and psychological user data be applied to promote responsible spending habits?

I do not have a technical project assignment or an advisor. The project will be done individually. The goals of this project remain unknown; however, my planned starting point will come from my research on Bitcoin in the past. This may include what Bitcoin is, what influences people to purchase Bitcoin and how can behavioral data be used to develop an application to serve the interests of those with a gambling addiction problem. Unfortunately, since this project

is still in its early stage of development and planning, I can not provide any more information, as new constraints or project ideas may happen in the future.

How Game Companies Exploit User Psychology for Profit

How do game companies exploit players' psychological vulnerabilities to maximize in-game purchases?

The business model of video games has evolved from simple arcade games. In the past, arcade machines require a coin to continue playing after the player has lost. This was successful in the past since the internet was still basic and computers were not mainstream to the consumer yet. Later, as computers became more common, massively multiplayer online (MMO) games became popular. MMOs were free-to-play (F2P) but had in-game purchases that could be made to either speed up progression or for cosmetic purposes (Dillon & Cohen, 2013). The most popular model now is to either offer the base game for free or require a one-time purchase upfront and add transactions after the fact. These post transactions can include downloadable content (DLCs) or microtransactions. The main sources of microtransactions are loot boxes/gacha, which offer a chance to acquire the advertised product, and battle passes, which players continually play to gain rewards. To persuade players to purchase these transactions, game companies may use tactics such as limited-time events or offer deals on the current package. Considering this current business model, how have game companies used these tactics to advance their agendas?

One important participant group is those who have spent money in-game. Among this group, there are many schools of thought. One such thought is to support game developers that develop fun and unique games. Nathan explained his reasoning for buying microtransactions by

stating that “If, the game itself, at base level, is really fun and enjoyable, ... the developers are good people, then I might be tempted to ... buy something” (Gibson et al., 2023). However, some purchases are made because of the fear of missing out (FOMO). Eleanor asserts that “I’ve been more inclined to buy like, loot boxes, for example, in Overwatch during events when they have uh skins that you can only get during the event” (Gibson et al., 2023). Having access to unique items can make a player feel unique compared to other players who were unable to acquire them. Euphoria and excitement can also play a role in spending money. As stated by Charlie, he said “It’s gambling. It’s the same joy” (Gibson et al., 2023). This reveals that having a gambling-like system can influence players to spend by promising a rush of excitement but is soon overshadowed by the greater chances of losing the gamble. Charlie later stated that “... that dose of joy doesn’t last long (Gibson et al., 2023). Lastly, it is sometimes ignorance that can cause a player to purchase microtransactions. George, who was six years old, spent about \$16,000 in in-game purchases. When his mother explained the situation to George, he said “Well, I’ll pay you back mom” (Lewak, 2020). George was unaware of the financial damage he caused because he was too young to grasp the concept of money. His mother further showed this by saying “My son didn’t understand that the money was real. How could he? He’s playing a cartoon game in a world that he knows is not real. Why would the money be real to him? That would require a big cognitive leap” (Lewak, 2020).

Meanwhile, some participants try to regulate microtransactions. One important association is the Entertainment Software Rating Board (ESRB). ESRB is mainly in charge of assigning age ratings to games through the labels in the game. However, they are trying to inform consumers that the video game contains in-game purchases by adding a section called *In-Game Purchases (Includes Random Items)* on their label. By doing this, ESRB hopes

“consumers can make more informed decisions when purchasing or downloading a game, instead of finding out after the fact,” and to “avoid confusing consumers who may not be familiar with what a loot box is” (ESRB, 2020). According to Xiao (2020), this is not as effective since it does not “inform consumers ... how much they cost, if they affect gameplay or are merely cosmetic.” The Federal Trade Commission (FTC) is a government agency that expressed interest in loot boxes, as they can negatively affect commerce. They discussed “self-industry regulatory” (Fair, 2020) policies and aimed to differentiate “blurred advertisement” into categories such as entertainment, education, and harmful to children (Henderson, 2023). Given manipulative tactics are used by game companies, especially towards children, the FTC wants to ensure their agenda to protect consumers from these deceptive tactics. Common Sense Media is an advocacy group that wants to “build a digital world that works better for all kids” by advocating for legislation and holding tech companies accountable for their actions (Common Sense Media, n.d.). They argue that a lack of online information about in-game purchases makes it difficult for parents and children to make an informed purchasing decision.

There are some participant groups in favor of microtransactions. Electronic Arts (EA) is a video game company that is a major proponent of loot boxes. They argue that their loot boxes have “surprise mechanics” and that using these mechanics in their games is “quite ethical and quite fun and enjoyable to people” (Diaz, 2019). Blizzard Entertainment, on the other hand, has decided to remove loot boxes, and instead, use the battle pass model. The battle pass offers free items, but most of the items are locked behind a paid, premium battle pass. They believe that the battle pass model enables players “more control about how they interact with the game and how they acquire new content” (Holt, 2022). Another trade association that tries to advance microtransactions is the Entertainment Software Association (ESA). They assert that “loot boxes

are always optional,” and “parents can utilize the parental controls available on video games consoles ... to limit or restrict children” (Pierre-Louis, 2019). ESA makes it clear that the purchases are choice-dependent and that there are resources available to prevent the situation from escalating.

There has been research done on how psychological disorders can escalate spending, how game companies manipulate time to promote spending, and what measures should be taken to reduce spending. Dreier (et al., 2017) found that adolescents with Internet Gaming Disorder are more likely to purchase in-game items as a coping mechanism. Shibuya (et al., 2019) show that certain game mechanics can cause players to spend more money. Common mechanics include time-limited events, loot boxes/gacha, or offering a large incentive at the start of the game. This increases playtime and can be addictive, thus increasing the likelihood of the player spending money. King and Delfabbro (2018) suggest the areas of concern are loot boxes and accessibility of monetary transactions. Specifically, they mentioned that loot boxes use many tricks to manipulate the player, such as audio and visual designs, limited offers, and offering competitive advantages. Additionally, they offer some measures to protect consumers through the use of notifications, refunds, and age restrictions.

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