

RESEARCH FOR THE WORLD

Playing location-based games could be good for your mental health

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Dr Zhi (Aaron) Cheng

is Assistant Professor of Information Systems and Innovation in the Department of Management at LSE. He studies the economics of digitisation for the sustainability of business and society, integrating theories of information systems, economics, marketing, and management with evidence from experimentation, econometrics, machine learning, and observational data.

Gaming is often portrayed as a sedentary activity, but location-based games like Pokémon Go encourage outdoor activity and socialisation, and could alleviate mild depression in users, finds new research by **Aaron Cheng**.

In the Summer of 2016, Dr Aaron Cheng, then a doctoral student (now Assistant Professor in LSE's Department of Management), organised a dinner with some friends. He planned to regale them with stories of a recent trip to Greece, but the gathering was dominated by excited chatter about a new game taking the world by storm.

Pokémon Go, a popular augmented reality (AR) mobile game, was in the process of being rolled out across the globe. In the game, players use GPS on their mobile devices to locate, capture, train and battle virtual creatures known as Pokémon. These creatures appear through the game app in the player's real-world geographical location, and gamers are encouraged to travel around their local areas to find new creatures.

Many of Dr Cheng's friends were keen enthusiasts of the game. Not much of a player himself, Dr Cheng noticed an increase in his friends' happiness levels during this time. "I contrasted my feelings about my life and their feelings about their lives during this period and they seemed happier. This struck me as an intriguing phenomenon but one that I could only relate to on an anecdotal level, so I decided to research the effect of location-based games on mental health," he says.



One user describes the summer Pokémon Go came out as 'one of the happiest times of my life'. ”

Can playing Pokémon Go help alleviate stress and anxiety?

Using the introduction of Pokémon Go as a case study, Dr Cheng and colleagues exploited the staggered release of the game over 50 weeks of 2016 into 166 regions in 12 English-speaking countries. This resembled a natural experiment and enabled the researchers to compare local depression levels in areas where the game was available with areas where it was yet to be released.

Dr Cheng measured local depression levels using publicly available Google Trends data of the Google Misery Index to capture the internet search intensity of depression related terms such as “stress” and “anxiety”. To expand the list of terms, Dr Cheng asked a large sample of people what terms they would search online if they felt depressed. To validate the accuracy of the measures, he also mapped the search measures to mental health incidences using administrative data from the US Centre for Disease Control and Global Health Exchange.

He found the release of Pokémon Go was associated with a significant short-term decrease in depression-related internet searches, suggesting location-based mobile gaming may decrease the prevalence of local rates of depression.

In a paper documenting this study, Dr Cheng argues that [playing location-based games may alleviate mild depression](#) in users as they encourage outdoor physical activity, face-to-face socialisation and exposure to nature. These factors have been suggested as good for mental health in public health literature. Dr Cheng is keen to stress that the findings only relate to those suffering from non-clinical forms of depression and not those suffering with chronic or severe depressive disorders.



Due to their ease of use, relatively low cost and high accessibility, location-based games could be attractive subsidy targets for policymakers. ”

Location-based games are easy to use, relatively low cost and have high accessibility

Researching the factors that could help alleviate depression is an area Dr Cheng feels passionately about. “When I first thought about doing this study, I did some reading on mental health. One study revealed that [over two-thirds of PhD students feel at least mildly depressed](#). Seeing some of my fellow students go through hard periods, I felt compelled to research and understand the mechanisms that might be able to help. It was important for me to connect my research with real-world problems and hopefully, through this, be able to help others,” he says.

He also points out the implications of this study: due to their ease of use, relatively low cost and high accessibility, location-based games could be attractive subsidy targets for policymakers.

Indeed, in the aftermath of the study's publication in the *Journal of Management Information Systems*, the findings have been widely discussed on online forums and communities, such as Reddit, where Pokémon Go players relate to the mental health benefits of the game and share how it's helped them personally. For example, one user describes the summer Pokémon Go came out as "one of the happiest times of my life" and another describes it as a "giant social event."

Dr Cheng notes: "Since the game came out in the summer of 2016, we have seen turbulence in national politics, then the pandemic and the war in Ukraine. For some users, that summer was indeed a happy time to reminisce about. It's great to see people talking about my research findings and resonating with them."

And it's not just Pokémon Go that can have this beneficial impact on users. Dr Cheng's findings can be generalised to other location-based games that encourage outdoor activity, face-to-face socialisation and exposure to nature. Games like StreetHunt and Strollhunt which gamify city exploration are popular examples.

This isn't to say that such games don't have any drawbacks, and a common criticism of mobile games is that they can be addictive. Dr Cheng agrees that location-based games, like any other games, can have this impact on a subset of players but that, on a regional level, they have been found to improve local trends in mental health. He highlights several mechanisms that game companies can employ to ward against addiction, such as the use of warnings advising against further use after a cut-off time.

Going forwards, Dr Cheng plans to undertake more in-depth research on the relationship between technology and health. With augmented reality and the idea of a metaverse gaining prominence, studies like Dr Cheng's may give some insight into how we can study people's behaviour in a completely immersive virtual world in the future. ■

[Location-Based Mobile Gaming and Local Depression Trends: a study of Pokémon Go](#) is by Zhi (Aaron) Cheng, Brad N Greenwood and Paul A Pavlou.

Dr Aaron Cheng was speaking to Charlotte Kelloway, Media Relations Manager at LSE.

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