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Facebook app downloads show unique 'bandwagon effect'

A study of the download rates of a set of apps for Facebook has shown how they follow an unusual "bandwagon effect".

Apps whose downloads were advertised to the Facebook community gained slowly in popularity, and rates had no evident connection to social pressures.

But at a certain popularity threshold, roughly the same across a wide range of apps, downloads began to skyrocket.

The authors of [the research in PNAS](#) say that in the offline world, no such "switch" is known to exist.

The data were gathered in mid-2007, when the site had 2,720 apps and 50 million users.

At that time, a Facebook user's apps were all visible to their friends, and the friends were notified when a new app was downloaded; Facebook has since stopped the practice.

In research led by Oxford University, Jukka-Pekka Onnela and Felix Reed-Tsochas examined anonymised data about the downloading of all the apps over a 50-day period.

They found that what they term "social influence" plays a role only for some of the apps on a given day.

"The surprising finding is that two qualitatively different behavioural patterns emerged," Dr Onnela told BBC News.

"There appeared to be a threshold of popularity, and users only seemed to be influenced by the choices of others for apps lying above this threshold.

'Tipping point'

Dr Onnela said the interesting thing about the data is that the millions of users were under no external influence, with the behaviour arising spontaneously as people made independent choices based on the evident choices of their friends and other Facebook users.

"Social influence is strongly present in online cultural consumption but, at least in this case, only for a subset of products," he said.

It remains to be seen if a similar threshold behaviour occurs in non-social network or indeed completely offline contexts. Dr Onnela said that the difficulty would be in replicating the rarefied conditions of a hands-off study of millions of "cultural consumers".

"Most 'real-world' studies focus only on the most prevalent products and behaviours," he explained.

"Had we done the same in our study, we would have only observed one behavioural pattern, not two."

"It is without doubt a very massive study," said Bernardo Huberman, a researcher for HP Labs whose recent work has shown the offline effects of tweets on the success of films.

"As to its conclusion, it reminds me of the 'tipping-point'-type transitions discussed by many social psychologists and popularised by Malcolm Gladwell," he told BBC News.

He points out that the paper also demonstrates a finding reflecting his own work, namely that the "present popularity of an item predicting its future popularity", mirroring his own work and, more recently, that of Yahoo researchers.

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