

## On-line social networks: study on twitter in Israel

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### Abstract:

Online social networks are the core of several popular internet websites. Since the social networks influence their members and their means of expressing opinions, they are an interesting subject to study. The presence of online social networks in our daily lives affects how ideas and information are disseminated, and they are therefore a source of great interest in the fields of communications and marketing, as well as the academic field.

*Twitter* is the fastest growing social network in the world and has a massive base of users. At first glance, however, it would appear that *Twitter's* worldwide presence does not have an Israeli parallel; not in scope and impact, at least.

The aim of this study is to characterize *Twitter* in Israel from the point of view of Social Network Analysis. On the one hand, we will study the extent and use of *Twitter* by the Israeli public, and on the other hand, we will map the network of connections between *Twitter* users in order to identify its characteristics as a social network. The findings of this study will be compared with the findings of similar studies around the world. It is the researcher's hypothesis that *Twitter* in Israel is in the initial phase of its development, and has yet to achieve the status of a significant social network in the Israeli landscape.

*Twitter* is unique in its 140-character limit per message feature, and its ability to receive and send updates via mobile phone text messages (SMS), as well as via computers. Another of *Twitter's* distinct features is the division of its users into "followers" and "following": each user can have an unlimited number of other users who have requested to receive his messages ("tweets"), i.e., "followers". At the same time, any one user can opt to follow other users, i.e., "following".

*Twitter* also enables websites and developers to connect to it. *Twitter* offers an application interface (API) for retrieving data on the identity and activity of its members, without

affecting the activity itself. In order to connect to this interface, a computer system which filters all messages that do not originate from Israel was built. Data relevant to this study were retrieved and compiled in tables within a database. Questions regarding the method of use were answered using Descriptive Statistics. Questions regarding social relations were answered using matrix calculations and graphic analysis conducted through dedicated software.

This study included 890 Israeli *Twitter* users who maintain 9,402 connections. Its findings suggest that *Twitter* users in Israel are predominantly urban (from Tel Aviv and Jerusalem), and write mostly in English. The preferred time to write is between noon and midnight. Israeli *Twitter* users frequently use mobile phones. The social network is dense, with a maximum distance between two users of 9, and an average distance of 3.7. The average number of connections per user is 21. However, mutual relations constitute only 18% of the total connections. Within the social network seven sub-groups (connected components) were identified; two of these are particularly significant. The study has also identified key users, both within the sub-networks (clusters) and throughout.

From data collected in this study, it seems that an Israeli *Twitter* user's profile is not dissimilar to his foreign counterparts. Israeli *Twitter* users are educated and have a high income level, and are thus not members of the youngest age group of internet users. Moreover, they are early adopters (consumers who adopt a new product in relatively early stages of its life-cycle).

This study confirms the researcher's hypothesis, that the *Twitter* network in Israel is not widespread. Moreover, it has found that it is concentrated within a specified, highly defined public, and exhibits some level of homophily. Its key users are bloggers, while celebrities are noticeably absent. The researcher's hypothesis, that the *Twitter* network in Israel is in its early stages of development, is strengthened by these findings.

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