



# When are influentials equally influenceable? The strength of strong ties in new product adoption



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## ABSTRACT

We study the relationship between opinion leadership and susceptibility to social influence in new product adoption and how this relationship varies with tie strength in social networks. Data analysis based on a sociometric survey indicates that opinion leaders are less sensitive to informational influence than non-leaders. Furthermore, individuals with moderate levels of leadership are more susceptible to normative influence than individuals with high or low levels of leadership. We also find evidence of the moderating effect of tie strength. While opinion leaders are less susceptible to informational influence from weak-tie peers, they are equally sensitive to informational influence from strong-tie peers as non-leaders. More interestingly, the inverse-U relationship between self-reported leadership and normative influence holds for strong ties, whereas this pattern between sociometric leadership and normative influence holds for weak ties. These findings have implications for better understanding how social influence operates over social networks in new product adoption.

## 1. Introduction

Customer-to-customer interactions have been driven by the latest information and communication technologies (Libai et al., 2010), including the trend of social networking services such as instant messaging, online communities and social networking sites. This trend has led to changes in new product adoption: when making adoption decisions, consumers are more likely to rely on opinions from others in their personal or professional networks rather than from the traditional marketing mass media (Hinz, Skiera, Barrot, & Becker, 2011; Narayan, Rao, & Saunders, 2011; Risselada, Verhoef, & Bijmolt, 2014; Trusov, Bucklin, & Pauwels, 2009). Social influence has become an important topic in new product diffusion research (Godes, 2011).

The main approach being used to leverage social influence in new product adoption is to identify opinion leaders who have disproportionate social influence on others, and target them as seeding points to speed up new product adoption (Goldenberg, Han, Lehmann, & Hong, 2009; Hinz et al., 2011; Iyengar, Van den Bulte, & Valente, 2011). Much effort has been devoted to studying the influence of opinion leaders on others, while less is known about the role of their susceptibility in contributing to different influence mechanisms emanating from

information transfer or from normative pressure (Aral, 2011; Godes, 2011). Considering the effect of opinion leadership on one's susceptibility to social influence could be an interesting twist on extant work in new product adoption research.

Furthermore, although opinion leaders generally adopt earlier, they are not necessarily the innovators (the first people or organizations to adopt an innovation) (Rogers, 2003). To effectively leverage social influence, it is not only necessary for marketing managers to identify opinion leaders and target them as seeding points, but also to understand how to influence opinion leaders if they are not the earliest adopters. Therefore, this study empirically investigates the relationship between opinion leadership (i.e., individual influence) and susceptibility to influence in new product adoption.

In addition, the social network acts as the conduit through which a new product propagates (Peres, Muller, & Mahajan, 2010). The structural condition of networks may accentuate or dampen social influence in the adoption of new products, but few studies have investigated the network characteristics under which social influence is strongest (Aral & Walker, 2014). We explore this by testing the moderating effect of tie strength in social networks, as the “strength” (i.e., the importance or intensity of influencing people to the individual) is an important

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factor that affects the amount of influence that an individual experiences from others (Latané, 1981). Incorporating social network analysis into diffusion research can provide a better understanding of how the structure of connections affects the adoption process.

Our study extends recent research on social influence in new product adoption by empirically addressing two research questions. First, does opinion leadership affect the degree to which an individual is susceptible to social influence? Second, does the relationship between opinion leadership and susceptibility to social influence vary with tie strength in social networks? We investigate these questions in the context of new consumer electronics. In particular, this study makes a fine-grained distinction between two types of social influence mechanisms (i.e., informational and normative influence), and two types of opinion leadership (i.e., self-reported and sociometric leadership). This study sheds light on the interaction of opinion leadership and susceptibility to social influence in diffusion research and also provides a better understanding of how social influence operates over social networks in new product adoption.

The present study contributes to existing social influence and diffusion research in several ways. First, this study presents important results on the relationship between opinion leadership and susceptibility to social influence in the adoption process by differentiating between mechanisms involving informational social influence and normative social influence. Second, our findings extend recent insights into how social influence operates over social networks by analyzing the moderating role of tie strength and suggests that not all relationships are created equal regarding susceptibility to social influence in social networks. Our findings also have implications for marketing practice. Our study provides marketers with insights that opinion leaders will be equally susceptible to social influence as non-leaders, under certain network conditions. Marketers may benefit from understanding the specific reactions of different network groups and using the opportunities that they present to leverage social influence in new product adoption. This will assist marketing managers to leverage social influence in new product adoption and eventually increase the effectiveness of network marketing.

## 2. Theoretical background and hypotheses

### 2.1. Social influence

Social influence has been recognized as one of the significant determinants of individuals' behavior in sociology, social psychology, economics and consumer research (Bearden, Netemeyer, & Teel, 1989; Deutsch & Gerard, 1955; Park & Lessig, 1977). Social influence often occurs when a potential adopter changes his or her belief, attitude, or behavior toward a new product as a result of interaction with other adopters' knowledge, attitudes or behaviors (Van den Bulte & Stremersch, 2004). Diffusion of innovation is driven by all kinds of social influences including various social interdependencies (Peres et al., 2010). Deutsch and Gerard (1955) distinguish between informational social influence and normative social influence. Informational social influence is an individual's tendency to obtain information from others as evidence of reality, whereas normative social influence is referred to as the desire of an individual to conform to the expectations of others (Bearden et al., 1989; Burnkrant & Cousineau, 1975; Deutsch & Gerard, 1955; Park & Lessig, 1977). Although these mechanisms are conceptually distinct, in many circumstances, more than one mechanism may be at work in new product adoption.

### 2.2. Opinion leadership

In the diffusion of innovation theory, opinion leadership is defined as the degree to which an individual frequently influences other individuals' attitudes or behaviors (Rogers, 2003). Self-reported and sociometric techniques are most widely used to identify opinion leaders in

diffusion research. The self-reported method asks respondents to report the degree to which they perceive themselves to be opinion leaders, whereas the sociometric technique identifies opinion leaders through asking respondents to report from whom they acquire advice or information about a given product (Rogers, 2003; Rogers & Cartano, 1962). The first method depends on respondents accurately assessing and reporting their self-image regarding opinion leadership, whereas the latter is based largely on social network analysis (Rogers, 2003; Valente & Pumpuang, 2007).

Previous research on the diffusion of innovation has confirmed the validity of both self-reported and sociometric techniques as measures of opinion leadership (e.g., Rogers, 2003; Rogers & Cartano, 1962). However, a recent study by Iyengar et al. (2011) suggests that the sociometric and self-reported measures of opinion leadership may capture different constructs, because the two types of opinion leadership measurement are related to different kinds of adoption behaviors. In addition, based on both mobile phone call records and online survey data, Risselada, Verhoef, and Bijmolt (2015) find that the sociometric measure (degree centrality) indicates opinion leadership, whereas the self-reported measure only signifies leadership for strong ties. To fully explore the relationship between opinion leadership and susceptibility to social influence and corroborate the novel findings by Iyengar et al. (2011) and Risselada et al. (2015), this study uses both self-reported and sociometric techniques to assess opinion leadership.

### 2.3. New product adoption in social networks

Social network analysis has been widely explored in a wide range of social and behavioral research disciplines (Borgatti, Mehra, Brass, & Labianca, 2009). The primary goal of social network analysis is to explain how social structures or connections among customers facilitate or constrain information transfer and behavior change (Centola, 2010). Incorporating social network analysis into diffusion research can provide a better understanding of how the structure of connections affects the adoption process.

An important question in understanding the role of social influence in new product adoption is how social network structures affect individual influence and susceptibility (Aral & Walker, 2012, 2014). Social impact theory implies that the importance or intensity of influencing people to the individual (i.e., the strength) will affect the amount of influence that an individual experiences from others (Latané, 1981). The statement of the strength in social impact theory is akin to tie strength—one of the important structural relationship characteristics—in social networks. Tie strength is conceptualized as “a combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterize the tie” (Granovetter, 1973, p. 1361).

There are two competing arguments about the impact of tie strength on new product diffusion in previous literature. On the one hand, Granovetter (1983, p. 209) suggests that “weak ties provide people with access to information and resources beyond those available in their own social circles”. This hypothesis takes the spread of behavior as a simple contagion, such that a single contact with the “infected” individual will be enough to spread the behavior. On the other hand, behavioral researchers argue that, unlike viruses, people usually require more reassurance before being convinced to adopt a new product. Thus, in such situations, strong tie relationships, although including redundant ties, may provide social reinforcement for adoption (Centola & Macy, 2007; Krackhardt, 1992). Taken together, if diffusion were simply transmitting new information, weak ties would be effective. However, when it comes to behavioral contagion such as adopting a new product, strong ties providing social reinforcement and trust usually act as drivers for such change.

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