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# The tie effect on information dissemination: the spread of a commercial rumor in Hong Kong

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## Abstract

The ability to acquire information has been considered a crucial factor facilitating instrumental actions, such as job search and organizational innovation. Previous social network studies tend to treat the characteristics of social ties through which information is acquired as causes that may affect instrumental outcomes. However, little research has directly examined the spread of information via social ties and the tie effect on information dissemination. Using telephone survey data collected after the outbreak of an extensive commercial rumor in Hong Kong, the present paper investigates the characteristics of social ties through which the information is spread and the tie effect on information dissemination. Results show that while mass media, particularly television, serves as a major channel of information flow, social ties are also widely used. Individuals tend to share information with strong ties, or people with whom they perceive to have good relations. However, information transmitted via kin ties tends to arrive at the respondent faster than via nonkin ties or other communication channels. Implications of the findings are discussed. © 2002 Elsevier Science B.V. All rights reserved.

*Keywords:* Commercial rumor; Information dissemination; Tie effect

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## 1. Introduction

Information is generally conceived as a valuable but scarce resource in market economies. The acquisition of timely and accurate information is argued to facilitate various market outcomes, such as job mobility and organizational performance (Burt, 1992; Granovetter, 1974; Powell et al., 1996). Information for instrumental purposes has been found to be more efficiently and effectively transmitted through personal routes rather than impersonal ones (Katz, 1957). Thus the instrumental role of interpersonal ties, through which valuable information presumably travels, has caught extensive research attention.

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Since Granovetter's landmark study of interpersonal ties and job search (Granovetter, 1973), subsequent research on social ties and instrumental actions have generally taken two approaches. The first approach, termed "the network approach", focuses on the configuration of available social ties, whereas the second one, "the contact approach", emphasizes the characteristics of activated ties (Lai et al., 1998). Both approaches treat information dissemination as an implicit mechanism by which social ties affect the outcome. The association between social ties and the outcome would then be used to reflect the tie effect on information flow. The impact of social ties on information dissemination is seldom examined directly.

Information embedded in social ties can be obtained in two major ways. First, information can be actively sought. For example, an individual who wants to accomplish a particular action but lacks the necessary information to do so may ask around to find the person who possesses it. The information holder, being contacted, would then disseminate the requested information. Second, information may be passively received. In this case, information is transmitted in regular, routine social interactions without an intention to achieve a pre-determined purpose (Lin, 1999). For example, although an individual has not asked for it, the information about a job opening might be casually revealed during a dinner conversation among several friends. The dissemination of information is thus non-purposive.

Previous research on the information function of social ties has been primarily contextualized in situations where a purposive action needs to be taken, for example, searching for a job. The routine flow of information within or between networks has been largely neglected, except in some earlier studies on news diffusion (e.g. Erickson et al., 1978; Greenberg, 1964; Rogers and Bhowmik, 1970–1971).

In view of existing research gaps, the present paper examines the effect of social ties on the spread of information. The transmission of information will be treated as an end in itself, instead of a hidden mechanism implied in the relationship between social ties and outcomes. Specifically, it investigates how a rumor about the closing down of a major cake shop chain, which has caused a mass hysteria in Hong Kong in 1997, was spread through interpersonal networks. Emphasis will be put on (1) the extent to which the information is transmitted through interpersonal ties; (2) the characteristics of social ties through which information travels; and (3) the tie effect on information dissemination. In addition, interpersonal relations have been relatively under-researched in Hong Kong. By studying the role of social ties in information flow, the present study will also contribute to the understanding of interpersonal relations in Hong Kong.

## **2. Social ties and information dissemination**

The importance of interpersonal ties in the transmission of information was first documented in communication research. Interpersonal ties have been found to be conduits of news messages (Greenberg and Dervin, 1970; Robinson and Levy, 1986), political information (Lazarsfeld et al., 1948), news about new consumer products (Katz and Lazarsfeld, 1955), and crisis information (Erickson et al., 1978; Greenberg, 1964). Interpersonal networks would also influence individual behavior associated with the information. Empirical evidence shows that the consensus of the group to which a person belongs would better

predict his/her voting behavior than attendance to campaign speeches or messages (Lazarsfeld et al., 1948). Further, interpersonal communication tend to be more influential in getting housewives to change their marketing habits than media advertising communications (Katz and Lazarsfeld, 1955).

Several studies have sought to identify the characteristics of social ties activated in the information transmission process. The two-step model of communication, proposed by Lazarsfeld et al. (1948), argues that individuals who are centrally-located in a social network, or ‘opinion leaders’, would serve as efficient agents in transmitting messages from the media to the mass, thereby influencing the members’ behavior. In his study of Kennedy assassination, Greenberg (1964) finds that individuals who occupy a central location in a social network are more likely than others to receive and spread news, because the former can easily reach others for personal discussion and themselves be reached. Later research suggests a communication model of multiple steps (Katz, 1987; Weimann, 1982). “Centrals”, who maintain strong ties with group members, are found to be active and efficient in transmitting information within the group, whereas the dissemination of news between groups tends to be activated by “marginals”, who are less socially integrated and weakly tied to the group.

Adopting a relational perspective, Rogers and Bhowmik (1970–1971) argue that communication is likely to take place between homophilous ties or social ties of similar socioeconomic characteristics, and that homophilous ties would facilitate effective communication, in terms of accuracy of information and speed. The study of the spread of information following a disaster by Erickson et al. (1978) give empirical support to this argument. Nevertheless, communication might also travel via heterophilous or socially dissimilar ties. Erickson et al. (1978) observe that communication among heterophilous ties at the workplace tends to be directed upward in status. Those in the highest status occupations are more often informed by those of medium status than by others of high status. Moreover, because of their bridging function, heterophilous ties might generate effective communication across different social groups, especially when ego shares inconsistent status with source and/or receiver (Rogers and Bhowmik, 1970–1971).

The instrumental functions of social ties are much illuminated by the later developments in social network analysis. One important piece of work is, perhaps, study of job search by Granovetter (1974). Observing the job search patterns among a group of professional, technical, and managerial workers in Boston, Granovetter (1974) finds that personal contact is the predominant job search method and that respondents who obtain jobs through personal contact are likely to have better search outcomes. Personal contact refers to “some individual known personally to the respondent, with whom he originally became acquainted in some context unrelated to a search for job information, from whom he has found out about his new job, or who recommended him to someone who then contacted him” (p. 11). Further, job seekers tend to obtain information via weak ties than strong ties. Granovetter (1973) contends that weak ties facilitate the connection of different social groups or act as local bridges, which are more likely than strong ties to possess non-redundant information. In other words, weak ties would be more efficient channels for disseminating new, useful information than strong ties. In addition to job information, weak ties are also found to facilitate diffusion of new ideas and organizational innovation (Granovetter, 1982; Hansen, 1999).

Building upon the weak-tie argument of Granovetter (1973, 1982), Burt (1992) examines the structural location of social ties in a network. He argues that network bridges, which connect two or more otherwise disconnected social clusters, would facilitate the flow of information across these social clusters. Access to network bridges might thus bring information benefits. While network bridges can be strong or weak ties to ego, weak ties are more likely than strong ties to be bridges.

While the weak-tie argument has received empirical support (Granovetter, 1973; Lin et al., 1981a,b), there is also evidence showing no effect of weak ties (Bridges and Villemez, 1986; Marsden and Hurlbert, 1988; Montgomery, 1992). The information benefits of weak ties may be contingent upon the larger social network one is situated in and the nature of information being transmitted. Lin et al. (1981a,b) argue for the ceiling effect of social networks that the advantage of weak ties may be restricted by the network's ability to reach useful resources. The hierarchical structure of social positions can be conceived as a pyramid, with a wide bottom layer of low-status positions and a narrow top stratum of high-status positions (Lin, 1982). Because of the homophily principle, individuals in low social status would be more likely to be embedded in resource-poor networks (Campbell et al., 1986). However, due to the same homophily principle, weak ties would enable greater access to better resources when the initial position of the individual is lower (Lin and Dumin, 1986). As weak ties tend to help reach dissimilar others, the further top in the hierarchy one is located, the probability of reaching someone at a lower-status position via weak ties would be greater.

Strong ties may sometimes be better channels for information than weak ties. In a network study of new-product development projects in a large electronics company, Hansen (1999) finds that weak interunit ties help a project team search for useful knowledge but impede the transfer of complex knowledge from one unit to another. The latter action tends to require a strong tie between the two parties concerned. Moreover, the aforementioned study of Weimann (1982) shows that the information via strong ties rather than weak ties is likely to travel at higher speed and is attributed with greater credibility. Thus strong ties seem to serve as better transmitting agents for urgent or important but not-yet-verified information.

The willingness to disseminate information may also influence the tie effect on information flow (Hansen, 1999). Lin (1986) delineates the different roles of strong and weak ties. Weak ties tend to be useful in gaining access to resources that are not presently possessed, whereas strong ties in preserving or maintaining existing resources. Following this line of reasoning, when a certain piece of information is highly relevant to the preservation of a group's interest, one would be more willing to release such information to members within the group than across the groups. In other words, strong ties may be more effective in transmitting information that would help maintain a member's or the entire group's interests.

Nevertheless, structural positions stratified by such variables as gender, age, ethnicity, paid employment, educational attainment, income, and family responsibilities may shape the formation of interpersonal ties and one's ability to gain valuable information (Blau, 1977; Fischer, 1982; Marsden, 1987; Moore, 1990). Younger and employed individuals have been shown to have a wider social network than their older and unemployed counterparts (Marsden, 1987; Moore, 1990). Thus the former would have a better chance than the latter to get information via social ties. Compared to men, women are found to have fewer ties to

nonkin and more ties to kin, while men include more coworkers in their networks (Moore, 1990). Married individuals are likely to have more ties to kin and neighbors and fewer ties to others than do unmarried ones (Fischer, 1982). However, women, older individuals, and the unemployed may suffer from this structural disadvantage. Fischer (1982) notes that in urban settings, relationships tend to be based less on kinship but more on shared work roles and shared involvement in secular associations. As many valuable resources in urban cities are located outside one's primary social group, relations with friends and acquaintances gain importance. A social network of predominately kin ties would thus be rather restrictive in its ability to reach external resources.

In addition, Greenberg (1964) observes that individuals with higher occupational status are more likely than individuals in lower-status occupations to hear the news of the Kennedy assassination first from personal sources. Workers in high-status jobs are informed by more people and at a greater speed about the North Bay explosion than those in low-status jobs (Erickson et al., 1978). Erickson et al. (1978) argue that higher-status workers might be embedded in denser social networks than lower-status counterparts, thus enabling the former to get the news faster. Due to their advantageous structural position, high-status individuals are also likely to have numerous and wide ranging contacts. This contention is later formalized in Lin's theory of social resources (Lin, 1982), which postulates that high social positions offer opportunities to establish ties with those who have better personal and social resources. Resource-rich social ties would presumably be better able to provide information and influence for instrumental actions.

While the information benefits of social ties have been argued for in previous studies, the direct examination of the tie effect on information dissemination is relatively scant. The present study aims to examine the flow of information through social ties. Social ties not only are able to carry valuable information, but may also influence the individual's behavior when he/she acts on the information (Katz and Lazarsfeld, 1955; Lazarsfeld et al., 1948). Due to data limitations, the present study cannot afford an examination of the behavioral outcome of information transmission. Nonetheless, our data do allow a reasonable investigation of how social ties might affect the spread of information. To better understand the relationship between social ties and information flow, it is necessary to specify the kind of information being transmitted via social ties. The spread of a commercial rumor in Hong Kong serves as the context of the present study. The details of the commercial rumor is described in the following section.

### **3. The incident**

The cake shop chain about which the rumor was spread used to be one of the subsidiaries of the Yaohan International Group based in Tokyo, Japan. The Yaohan International Group also owned Yaohan Department Stores. In 1997, the mother company in Japan declared bankruptcy and closed down all the Yaohan Department Stores, including those in Hong Kong. Prior to the bankruptcy announcement, the Group sold the cake shop to Yaohan International Catering Group, which was later renamed as Hong Kong Catering Management Limited. The new owner was financially independent of the Yaohan International Group (Sing Tao Daily, 1997a).

The rumor about the closing down of the cake shop chain broke out in the morning of 24 November 1997. It reportedly came from people who were working there and those who had seen other workers receiving “pink slips” (Sing Tao Daily, 1997b). Just within hours, thousands of people heard the news and rushed to every chain shop in Hong Kong, trying to redeem their cake vouchers. The news had caught such widespread attention because of the extensive use of cake vouchers, from this particular cake shop as well as others in Hong Kong. These vouchers are sold at discounted prices to consumers, who may exchange them for pastries at a later time. Each voucher can usually be exchanged for a dozen of pastries. It is a very common practice among Hong Kong people to purchase these vouchers for their own use or as gifts for relatives and friends when they announce to the latter about their upcoming wedding.

The rumor was taken to be true, because it happened not too long after all Yaohan Department Stores in Hong Kong owned by the Yaohan International Group were closed down. When the Yaohan Department Stores were closed down, many customers who were holding the store’s gift vouchers were unable to redeem anything or get compensated from the Yaohan International Group. Having this previous experience and mistaking the new owner of the chain as part of the Yaohan International Group, many people in Hong Kong believed that their cake vouchers would also end up to be useless papers if they did not redeem their cake vouchers before the shops were formally declared closed.

To prevent economic losses, thousands of Hong Kong people, upon hearing the news, brought all their vouchers (ranging from one to dozens) and rushed to the shops. Just wanting to use their vouchers, they pushed and squeezed into the shops and got whatever cakes or pastries left. When all the cakes and pastries in the shops were taken, many people would even wait for hours outside the shops for new batches to come out (Sing Tao Daily, 1997a,b). To calm down this mass hysteria, the Yaohan International Catering Group (the new name was not registered then) immediately made public announcements to clear the rumor in that evening. However, there were still people coming to the shops to redeem their vouchers the next day (Sing Tao Daily, 1997b).

There are four notable features about the information disseminated in the above incident. First, the rumor about the closing down of the cake shop chain, if turned out to be true, would cause various degrees of economic losses for voucher holders. The rumor thus represents a piece of important information which allows consumers to preserve his/her market gains, though small in this case. Presumably, the sooner one gets the information, the better he/she would be able to preserve the gains. Second, while the information had instrumental value, it was not substantiated with facts at the time of transmission. Since acting on the news (redeeming cake vouchers within the shortest possible time) would cost the individual time and effort, the (perceived) credibility of the information is important. Third, many people heard about the rumor even before news announcements on television and radio. Apparently, they had obtained the news through personal channels. Fourth, people might not have actively sought such information. Instead, they were likely to be informed (regardless of the source). The active search for information usually takes place when a person wants to achieve a purposive action. In order to have a better chance to obtain necessary information to accomplish that action, he/she would often go beyond his/her routine network, because information within the same network is likely to be redundant and limited (Burt, 1992; Granovetter, 1973; Lin, 1982). However, in the present case, the purposive action

(i.e. redeeming cake vouchers) was planned only after the information arrived (i.e. hearing the rumor). The transmission of information was likely an end in itself. Thus, the news, if being spread through interpersonal ties, was likely to have traveled via routine networks, because there was no need for the information holder to make an effort to spread the news outside his/her network.

#### 4. Research hypotheses

In light of previous research and the nature of the commercial rumor, the following hypotheses are formulated.

1. Social positions are related to the use of social ties in the spread of information. Social positions have been argued to influence the composition of social networks (Blau, 1977; Erickson et al., 1978; Fischer, 1982; Marsden, 1987; Moore, 1990), that may subsequently affect the activation of social ties for actions (Lai et al., 1998). Particularly, individuals who have wider and resource-rich social networks tend to be male, younger, employed, and occupy high social status. Therefore, in the present study, men, individuals who are younger, better-educated, and employed are hypothesized to be more likely to be informed by a personal source and to have a greater number of informants than their counterparts. The former may also be more likely than the latter to be informed by nonkin ties.
2. Since the closing down of the cake shop would possibly bring financial loss to individuals who own cake vouchers of that shop, the rumor would be more relevant to these individuals. However, the knowledge about whether or not one has cake vouchers is relatively trivial and personal. It is very likely that family members would have such knowledge. Therefore, cake voucher holders would be more likely than non-holders to be informed, particularly by kin ties.
3. Greenberg (1964) suggested that individuals who are better informed may also be more active in spreading the news, because the fact that they are easily reached by other people may make them easily accessible to others as well. Thus it is hypothesized that individuals who are told by others about the rumor would be more likely to spread the news.
4. The homophily principle suggests that individuals tend to establish ties with similar others, in terms of socioeconomic positions and ascribed traits (Homans, 1950; Lin, 1982). Thus one would expect the social ties via which the information is transmitted may exhibit great similarities in terms of socioeconomic characteristics.
5. The rumor, though not substantiated by facts at the time of dissemination, represents a resource that would preserve individual gains. Further, in-group members' interests tend to take precedence over out-group members' (Lin, 1986). For individuals to be identified as in-group members, they usually exhibit strong emotional intensity towards one another (Homans, 1950). Thus the information, if being spread through personal channels, is more likely to travel via strong ties than weak ties.
6. Since the information is instrumental in preserving in-group members' interests, individuals would be motivated to spread the news to people who share great emotional

intimacy with them. Thus individuals who obtain information from strong ties tend to hear the news sooner than from weak ties.

7. Kin ties, particularly close kin, are hypothesized to be more efficient agents than nonkin ties in transmitting information. Despite the fact that kin relations tend to be loosened in modern, urbanized settings (Fischer, 1982), previous studies showed that ties with close kin and members of the nuclear family (spouse/partner, parents, children) remain important, and that exchanges among close kin are diffuse (Freeman and Ruan, 1997; Wellman and Wortley, 1990), particularly in societies where traditional culture emphasizes close kin relations, such as the Chinese societies (Chao, 1983; Hsu, 1985).

The above hypotheses will be subject to empirical tests with data from a telephone survey.

## 5. Data and method

Data were collected from a telephone survey conducted on 2–8 December 1997, about a week after the incident. Target respondents were Hong Kong Cantonese-speaking adults who were aged 18 or above at the time of the survey. Respondents were chosen in two stages. Households were first selected by systematic sampling of residential telephone numbers from the Chinese version of the 1997 telephone directory. Upon connection with the selected household, the Kish method was used to randomly choose one eligible individual as respondent for the survey. A total of 1011 respondents were successfully interviewed, yielding a response rate of 31.70%. The cooperation rate (proportion of completions among contacted eligibles) is 43.6%. The response rate is less than desirable. An examination of the non-contacts reveals that about 25% of eligible households/respondents could not be contacted during the interviewing period. One reason is the random rule imposed on the selection of respondents, which might have made it difficult to reach individuals who worked in a particular time pattern, such as shift work.

More than half of the respondents (55%) were women. The median age was 40 years old. A majority of the sample were married (62%) and local-born (68.2%). About one-fourth of the respondents have attained an education of secondary six<sup>1</sup> or above. More than half of the respondents were employed. The median household income was HK\$ 22,500.<sup>2</sup> Compared to data from the 1996 By-Census (1996 Population By-Census Office, 1997), the current sample tends to slightly over-represent women, locals, and individuals from higher socioeconomic groups. Nevertheless, the selected sample does not deviate too much from the population and thus, maintains a certain degree of representativeness (Table 1).

Respondents were asked if they had heard of the incident at the time of the survey. If they did, they would have to report when and where they heard the news. Information sources include being informed by people, various types of mass media channels (e.g. television

<sup>1</sup> The secondary school system in Hong Kong consists of seven levels or forms. The first three levels (Forms 1–3), somewhat equivalent to junior high-school in the U.S. school system, are part of the nine-year mandatory education in Hong Kong, together with the six years of primary schooling. Completing the next two levels (Forms 4–5) would qualify one to obtain a secondary school diploma. The last two levels (Forms 6–7) are university preparatory courses. Students who want to proceed to university education are required to sit for an examination upon finishing Form 7.

<sup>2</sup> US\$ = HK\$7.8



Table 1  
Socioeconomic characteristics of the sample: 1011 Hong Kong Chinese adults aged 18 or above

Socioeconomic characteristics	Value	1996 by-census <sup>a</sup>
Sex (%) ( <i>N</i> = 1003) <sup>b</sup>		
Men	45.30	50.00
Women	54.70	50.00
Median age ( <i>N</i> = 955)	40.00	34.00
Marital status (%) ( <i>N</i> = 988)		
Never married	33.40	31.51 <sup>c</sup>
Married	62.00	60.65
Divorced/separated	1.40	1.92
Widowed	3.10	5.93
Birthplace (%) ( <i>N</i> = 954)		
Local-born	68.20	60.00
Immigrant: arrived before 1945	3.00	
Immigrant: arrived during 1945–1978	20.10	
Immigrant: arrived during 1979–1989	5.50	
Immigrant: arrived during 1990–1997	3.10	
Education (%) ( <i>N</i> = 981)		
No formal education	11.40	9.50 <sup>c</sup>
Primary 1–6	17.90	22.60
Secondary 1–3	14.80	18.90
Secondary 4–5	29.60	27.70
Secondary 6–7	7.50	6.10
University or above	18.80	15.20
Employed status (%) ( <i>N</i> = 980)		
Employed	54.10	49.90
Student	9.20	22.16
Housewife	19.60	11.76
Retired	12.90	10.52
Unemployed	4.30	5.66
Median household income (HK\$) ( <i>N</i> = 587)	22500	17500
District (%) ( <i>N</i> = 971)		
Hong Kong	21.80	21.15
Kowloon	32.60	32.03
The new territories	45.50	46.83

<sup>a</sup> 1996 Population By-Census Office (1997).

<sup>b</sup> Number of valid cases.

<sup>c</sup> Based on population aged 15 or above.

and radio), and telecommunication means (e.g. Internet and pager). An individual might have obtained the news through multiple sources. As long as he/she mentioned personal source, he/she was considered having used social ties. The extent of use of social ties is indicated by the relative frequency of respondents being informed by others among all possible information sources.

When respondents indicated that they were informed by a personal source, they were asked about the number of informants and the characteristics of the primary one (i.e. the

person from whom respondents heard the news), including socioeconomic attributes (sex, age, education, marital status, employment status, and resident status), role relationship, and strength of tie with the informant. Respondent would also be asked if he/she passed on the information to other people after hearing the news, regardless of the source. The socioeconomic characteristics of and the relationship with the primary contact are assessed in the same way as those for the primary informant.

Tie strength has been measured in various ways, such as role relationship (Lin and Dumin, 1986), intimacy (Bian, 1997; Marsden and Campbell, 1984), and frequency of contact (Granovetter, 1973). Previous research has usually classified role relationship into three types: (1) kin; (2) friend; and (3) acquaintance; which are then placed on a continuum of tie strength, ranging from strong to weak (Lin et al., 1981a,b). Studies by Wellman (1990), and Wellman and Wortley (1989, 1990) show that extended kin, such as cousins and aunts, are much weaker ties than friends and that only parents/adult children are stronger ties than friends. Marsden and Campbell (1984) argue that intimacy might be a better indicator of strength of tie than role relationship. As a result, the present study measures tie strength in terms of respondents' perceived quality of the relationship. The four attributes of the variable are "very good", "good", "fair", and "poor". To investigate the relationship between social positions and network composition, and related impact on the spread of information via social ties, role relationship with the informant will also be analyzed. The various types of role relationships include spouse, family member, extended kin, coworker, friend, classmate, neighbor, and other relationship.

The effect of social ties on the flow of information is indicated by the efficiency of social ties in information transmission, which is measured by a dichotomous variable—whether or not respondents heard about the incident on the same day when it occurred. An affirmative answer presumably reflects greater transmission efficiency.

## 6. Extent of use of social ties in the spread of information

More than 90% of the respondents, or 919 respondents, have heard of the incident at the time of the survey. Logistic regression results (Table 2) show that compared to those who have not heard of the rumor, informed respondents tend to be voucher holders, younger, female, and better-educated. To further investigate the use of social ties in the flow of information, the following analyses will focus on informed respondents.

Among the 919 informed respondents, about half of them (52.20%) have heard the news through more than one channel, with a maximum of five. Television is the most popular communication channel. More than 60% of respondents (63.30%) mention television as one of the information channels and about one-fourth (24.16%) of respondents have got the news from television reports only. The next most frequently used channel is personal ties. About 42% of the informed respondents have obtained the news through personal ties ( $N = 387$ ) and about 16% of all informed respondents mention personal ties as the only source (Table 3). Among those respondents who have obtained information through personal ties, they are informed by an average of about three persons.

Table 2  
Logistic regression<sup>a</sup> of knowledge about the event on socioeconomic characteristics

Socioeconomic characteristics	Coefficient
Sex (men = 1)	0.49*
Marital status (married = 1)	1.62
Age (mean)	0.97**
Birthplace (local = 1)	1.29
Education (omitted: secondary 3 or below)	
Secondary 4–7	2.17*
University or above	2.50*
Employment status (employed = 1)	1.00
Cake voucher holder (yes = 1)	3.63***
Constant	4.27***
–2 log likelihood	431.01
Model chi-square (d.f.)	77.36 (8)
Valid N <sup>b</sup>	882

<sup>a</sup> Expected odds ratios are presented.

<sup>b</sup> Listwise deletion is used for missing data.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ .

Further, about 22% (22.1%) of respondents ( $N = 202$ ) spread the news to other people, regardless of the source of information. This percentage is much lower than that for information acquisition. Among those who have obtained news through personal ties, 30% of them ( $N = 117$ ) have passed on the information to other people. On average, three persons are approached by respondents. The sharing of information may be viewed by some respondents as an act of gossip, which is attributed with a certain degree of social undesirability. As a result, respondents might have underreported the extent of information sharing initiated by themselves. It may also be that their friends or family members have already learned about the news by the time respondents spread the information to them.

According to the information source and subsequent spread of news, our informed respondents can be classified into four groups. The first group consists of social isolates, or

Table 3  
Percentage distribution of information sources among respondents who heard the rumor ( $N = 919$ )<sup>a</sup>

Sources of information	Ever mentioned	Reported as the only source
Told by others	42.10	15.78
Newspaper, magazine	23.70	3.48
Television	63.30	24.16
Radio	15.00	1.74
Witness the incident	16.00	3.70
Overheard a conversation	12.30	2.94
Others (e.g. pager, e-mail)	0.90	0.33

<sup>a</sup> Average number of informants: 3.24 persons.

Table 4

Comparison of socioeconomic characteristics among various types of respondents who have used social ties in the spread of information

Socioeconomic characteristics	Social isolate <sup>a</sup> ( <i>N</i> = 446)	Initiator <sup>b</sup> ( <i>N</i> = 86)	Terminal <sup>c</sup> ( <i>N</i> = 270)	Intermediary <sup>d</sup> ( <i>N</i> = 117)
Men (%)	45.25	47.67	44.03	37.93
Married (%)***	67.59	55.29	63.53	43.97
Age (mean)***	46.17	37.67	36.98	33.03
Local (%)***	59.86	68.24	81.96	83.62
Education at university or above (%)*	16.55	18.60	22.05	26.50
Employed (%)***	45.03	65.48	65.27	62.39

<sup>a</sup> Respondents who heard about the incident via non-personal source and did not spread information to others.

<sup>b</sup> Respondents who heard about the incident via non-personal source and spread information to others.

<sup>c</sup> Respondents who heard about the incident via personal ties and did not spread information to others.

<sup>d</sup> Respondents who heard about the incident via personal ties and spread information to others.

\* Group differences are statistically significant at  $P < 0.05$ .

\*\*\* Group differences are statistically significant at  $P < 0.001$ .

respondents who have heard about the incident via non-personal source(s) and did not pass on the information. The second group of respondents are initiators who have heard about the incident via non-personal source(s) and spread the information to other people. Terminals are included in the third group, who were informed by social ties but did not pass on the information. The last group of respondents are intermediaries who have both acquired and spread news through social ties.

A comparison of the socioeconomic characteristics of these four groups of respondents (Table 4) indicates that those who have used social ties in the spread of information (i.e. initiators, terminals, and intermediaries) tend to be women (except initiators), unmarried, younger, local-born residents, better-educated, and employed than those who have not (i.e. social isolates). These characteristics are most outstanding among intermediaries, who have used social ties to both acquire and spread information.

Multivariate analyses are performed to evaluate the main effects of socioeconomic variables on the use of social ties in news diffusion (Table 5). Logistic regression results indicate that, among informed respondents, those who have obtained the news through personal ties tend to be voucher holders, younger, employed, and local-born (column 1). Further, women and employed individuals tend to have more informants than their counterparts (column 2). Compared to their counterparts, women and younger individuals are more likely to pass on the information (column 3). However, older respondents tend to spread the news to more people than the younger ones (column 4). Being informed by a personal source also increases the likelihood of spreading the news.

The above findings concur with previous studies (Blau, 1977; Erickson et al., 1978; Fischer, 1982; Lin, 1982; Marsden, 1987) and support our hypothesis that social positions would affect the access to social ties and the resources embedded in them (market information in this case). Specifically, women and young individuals seem to be better able to occupy network positions that allow them to reach and be reached by other people. Younger individuals have been shown to have wider social networks than their older counterparts

Table 5  
Regression of information flow through social ties on informed respondents' socioeconomic characteristics

Socioeconomic characteristics	Information acquisition		Information dissemination	
	Use of social tie <sup>a</sup>	Number of informant <sup>b</sup>	Use of social tie <sup>a</sup>	Number of contact <sup>b</sup>
Sex (men = 1)	0.77	-1.30 (-0.21)***	0.69*	0.13 (0.03)
Marital status (married = 1)	1.34	-0.19 (-0.03)	0.68 <sup>+</sup>	-0.88 (-0.18) <sup>+</sup>
Age (mean)	0.97***	-0.001 (-0.004)	0.98*	0.06 (0.36)**
Birthplace (local = 1)	1.95***	0.17 (0.02)	0.77	0.22 (0.04)
Education (omitted: secondary 3 or below)				
Secondary 4–7	1.28	0.26 (0.04)	0.91	0.93 (0.19) <sup>+</sup>
University or above	1.23	-0.08 (-0.01)	1.04	0.05 (0.01)
Employment status (employed = 1)	1.40*	0.89 (0.14)*	1.26	0.64 (0.13) <sup>+</sup>
Cake voucher holder (yes = 1)	1.74***	-0.03 (-0.01)	0.81	-0.08 (-0.02)
Source of information (personal source = 1)	-	-	2.03***	-0.17 (-0.03)
Constant	0.69*	3.17***	0.70	0.77
-2 log likelihood	999.79	-	823.37	-
Model chi-square (d.f.)	103.04 (8)	-	53.29 (9)	-
R <sup>2</sup>	-	0.05	-	0.08
Adjusted R <sup>2</sup>	-	0.03	-	0.04
Valid N <sup>c</sup>	808	345	808	187

<sup>a</sup> Expected odds ratios are presented.

<sup>b</sup> Include respondents who have used social ties to acquire or spread information. Figures outside parentheses are unstandardized regression coefficients where those inside parentheses are standardized ones.

<sup>c</sup> Listwise deletion is used for missing data.

<sup>+</sup>  $P < 0.10$ .

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ .

(Marsden, 1987; Moore, 1990), which may explain the greater likelihood among the former of receiving and spreading news through social ties. However, among information dispatchers, older individuals tend to reach more contacts than younger ones. The different motivation of news diffusion among the young and the old may account for the result. Young people might have spread the news just for the sake of sharing information, that is, gossip. Old people, in contrast, might want to preserve the economic interests of their family and friends by transmitting the supposedly critical information. As a result, they would spread to as many people who are likely to possess cake vouchers as possible. This speculation is partially supported by the slight positive association between respondent's age and primary contact's ownership of cake voucher (analysis not shown).

Due to their family responsibilities, women have been found to have fewer work and nonkin ties that would presumably offer better resources (information and influence) for purposive actions (Fischer, 1982; Moore, 1990). Unexpectedly, women seem to be better informed than men in our sample. Our female respondents in our sample thus seem to occupy better structural positions that allow them to enjoy the information benefits of social ties. It may also be due to the different gender roles played by men and women, that generate

different configurations of social networks (Moore, 1990). Access to different social ties may in turn, facilitate access to different types of information. The rumor involves consumer information, which may be more relevant to women than men as the former tend to share greater responsibilities with shopping for the household than the latter (Chu and Leung, 1995). As a result, people would be more motivated to spread the news to women than to men. Further, sharing non-instrumental information (e.g. rumor) may be viewed as an expressive act that would reinforce group cohesion (Eder and Enke, 1991). Women may play a more active role than men in this regard.

Employment tends to increase the chance of getting news from a personal source. Other than better structural position, this finding may also be due to the physical factor. The news broke out during the office hours of a normal working day. The workplace, being a good aggregate of people, would facilitate news diffusion. In fact, 41.5% of respondents were at the workplace when they heard the news and about 60% of those at the workplace were informed by a workplace tie. However, employed individuals are not more likely to spread the news than unemployed ones. They might have heard the news together with other coworkers, thus reducing the need/motivation for them to pass on the information.

Moreover, local-born respondents are more likely than non-locals to get information through social ties, suggesting that the former may be located in better-informed social networks. Descriptive analysis (shown below) indicates that more than 80% of respondents share the same birthplace with the informant. In other words, locals might have been informed by another local.

Consistent with our expectation, relevance of information is an important factor in the use of social ties in information flow. People tend to spread news to others to whom they think the information bears relevance (Koenig, 1985). The rumor in our study is presumably most relevant to individuals who own cake vouchers. Voucher holders are thus more likely than non-voucher holders to be informed by a personal source. The positive association between having a personal source of information and subsequent dissemination also confirms our hypothesis.

## **7. Socioeconomic characteristics of the primary informant and contact**

Among all informants, the first person who have told respondents about the news (or primary informant) tend to be a woman, married, local-born, and employed (Table 6). The primary informant is also rather well-educated. More than half of the primary informants (56.9%) have attained secondary school education or above. The median age of all primary informants is 33 years. Similar characteristics are observed among the primary contacts.

One notable finding is that respondents tend to have poor knowledge about their informant's and contact's socioeconomic background, particularly birthplace and education. Except for the informant's sex, about 5–25% of respondents report no knowledge about their informant's employment status, age, marital status, birthplace, and education. The percentages are slightly less for the primary contact, ranging from 3 to 14%. The relationship between respondent and informant, and that between respondent and contact may account for the findings. Receiving information is a passive action while disseminating information is an active one. Individuals might have lesser control in choosing from whom they accept

Table 6  
Socioeconomic characteristics of informant and contact<sup>a</sup>

Socioeconomic characteristics	Informant ( <i>N</i> = 387)	Contact ( <i>N</i> = 202)
Sex (%)		
Men	28.60	35.00
Women	71.40	65.00
Age		
Median age	33.00	35.00
Do not know (%)	9.30	6.44
Marital status		
Never married	28.80	30.30
Married	61.50	61.70
Divorced/separated	0.00	1.00
Widowed	0.00	1.50
Do not know	9.70	5.50
Birthplace (%)		
Local-born	68.20	70.00
Non-local-born	10.00	21.00
Do not know	21.80	9.00
Education (%)		
No formal education	1.60	4.00
Primary 1–6	9.50	12.60
Secondary 1–3	7.40	15.60
Secondary 4–5	31.90	31.20
Secondary 6–7	9.20	8.00
University or above	15.80	14.60
Do not know	24.50	14.10
Employed status (%)		
Employed	66.70	57.90
Student	7.00	10.40
Housewife	18.30	21.30
Retired	2.30	5.90
Unemployed	0.80	2.00
Do not know	4.90	2.50

<sup>a</sup> Include only informed respondents who heard or spread the rumor via personal ties.

the offer of information than choosing a target for spreading information. Thus information may have come from weaker ties, about whom one has less knowledge. However, exchange of “casual” information is an act and a result of personal liking (Eder and Enke, 1991). Because of the implicitly stronger tie with the contact than with the informant, respondents thus have better knowledge about their contact. The strength-of-tie issue will be examined in the next section.

Comparisons of the socioeconomic characteristics between respondent and informant, and those between respondent and contact, show a high degree of similarities (Table 7). For both informant and contact, the highest correspondence is found in birthplace and employment status. About half of our respondents share four or more similar characteristics

Table 7

Comparison<sup>a</sup> of socioeconomic characteristics among respondent (R), informant (I), and contact (C)

Characteristics	Informant	Contact
Sex		
Same	66.70	60.70
R: male, I/C: female	9.80	23.50
R: female, I/C: male	23.50	15.80
Age <sup>b</sup>		
Same	59.70	57.50
R < I/C	26.70	18.80
R > I/C	13.60	23.80
Marital status <sup>c</sup>		
Same	70.00	65.60
R: married, I/C: unmarried	9.90	8.50
R: unmarried, I/C: married	20.10	25.90
Education <sup>d</sup>		
Same	56.50	53.20
R < I/C	24.90	28.70
R > I/C	18.60	18.10
Employment status <sup>e</sup>		
Same	80.80	71.30
R: employed, I/C: unemployed	7.20	11.40
R: unemployed, I/C: employed	11.90	11.30
Birthplace <sup>f</sup>		
Same	82.80	78.90
R: local, I/C: non-local	8.30	10.60
R: non-local, I/C: local	9.00	10.60
Number of similarities		
0	1.00	3.40
1	9.00	6.90
2	14.70	17.70
3	22.50	21.70
4	22.20	15.30
5	20.90	24.10
6	9.60	10.80
Mean number of similarities	3.57	3.54

<sup>a</sup> Include only respondents who heard the rumor via personal ties and who could report characteristics of their informants and contacts. Pairwise deletion is used for missing data.

<sup>b</sup> The four age groups are: (1) 17 or below; (2) 18–35; (3) 36–60; (4) above 60.

<sup>c</sup> The two marital statuses are: (1) married; (2) unmarried.

<sup>d</sup> The six educational levels are: (1) no formal schooling; (2) primary 1–6; (3) secondary 1–3; (4) secondary 4–5; (5) secondary 6–7; (6) university or above.

<sup>e</sup> The two employment statuses are: (1) employed; (2) unemployed; including housewives, retirees, students, and unemployed respondents.

<sup>f</sup> The two categories of birthplace are: (1) local-born; (2) non-local-born.



with their informant. The same proportion applies to the contact. The mean numbers of similarities for informant and contact are 3.57 and 3.54, respectively. The finding is thus consistent with previous research (Erickson et al., 1978; Rogers and Bhowmik, 1970–1971) and our hypothesis that information tends to flow between homophilous ties. However, respondents seem to share greater similarities with their informant than with their contact. In every comparison, the percentage of homophily is greater for respondent–informant pairs than that for respondent–contact ones. This may be due to the different role relationships with informant and contact—an issue to be discussed below.

When information flows through heterophilous ties, women tend to have heard the news from a man, younger individuals from an older counterpart, unmarried persons from a married one, less-educated individuals from a better-educated person, and unemployed persons from an employed counterpart. Upon receiving the information (from whatever source), women, older, unmarried, and less-educated individuals are likely to pass it onto a man, a younger person, a married individual, and a better-educated contact, respectively.

To better understand the chain of information flow, the socioeconomic characteristics of respondents, primary informant, and primary contact are examined simultaneously. The analysis focuses on respondents who have both acquired and spread information through social ties. Findings show further support to the homophily hypothesis (Table 8). More than 45% of the three-node personal information chains (i.e. informant, respondent, and contact) are linked by individuals of the same sex (45.20%). A similar proportion is observed for marital status (46.60%). About 75% of news diffusion episodes have taken place among persons sharing the same birthplace and more than 60% among individuals of the same

Table 8  
Socioeconomic characteristics of informant (I), respondent (R), and contact (C) in the personal chain of information flow<sup>a</sup>

Pattern	Percent <sup>b</sup>
<b>Sex</b>	
I: male, R: male, C: male	8.00
I: female, R: female, C: female	37.20
I: male, R: male, C: female	11.50
I: female, R: female, C: male	15.00
I: male, R: female, C: female	8.80
I: female, R: male, C: male	5.30
I: male, R: female, C: male	1.80
I: female, R: male, C: female	12.40
<b>Age</b>	
I = R = C	36.50
I = R < C	22.90
I = R > C	6.30
I < R = C	10.40
I > R = C	8.30
I < R < C	1.00
I > R > C	2.10
I < R > C	7.30
I > R < C	5.20

Table 8 (Continued)

Pattern	Percent <sup>b</sup>
<b>Marital status</b>	
I: married, R: married, C: married	28.20
I: unmarried, R: unmarried, C: unmarried	18.40
I: married, R: married, C: unmarried	4.90
I: unmarried, R: unmarried, C: married	16.50
I: married, R: unmarried, C: unmarried	12.30
I: unmarried, R: married, C: married	8.70
I: married, R: unmarried, C: married	12.60
I: unmarried, R: married, C: unmarried	1.00
<b>Birthplace</b>	
I: local, R: local, C: local	72.30
I: non-local, R: non-local, C: non-local	2.40
I: local, R: local, C: non-local	9.60
I: non-local, R: non-local, C: local	3.60
I: local, R: non-local, C: non-local	4.80
I: non-local, R: local, C: local	1.20
I: local, R: non-local, C: local	2.40
I: non-local, R: local, C: non-local	3.60
<b>Education</b>	
I = R = C	43.00
I = R < C	3.80
I = R > C	13.90
I < R = C	7.60
I > R = C	5.10
I < R < C	0.00
I < R > C	15.20
I > R < C	7.60
I > R > C	3.80
<b>Employment status</b>	
I: employed, R: employed, C: employed	44.00
I: unemployed, R: unemployed, C: unemployed	17.40
I: employed, R: employed, C: unemployed	15.60
I: unemployed, R: unemployed, C: employed	7.30
I: employed, R: unemployed, C: unemployed	6.40
I: unemployed, R: employed, C: employed	2.80
I: employed, R: unemployed, C: employed	4.60
I: unemployed, R: employed, C: unemployed	1.80
<b>Number of similarities among informant, respondent, and contact</b>	
0	6.80
1	23.10
2	22.20
3	22.20
4	11.10
5	12.00
6	2.60
Mean	2.54

<sup>a</sup> Include only respondents who use personal ties to both obtain and spread information ( $N = 117$ ).<sup>b</sup> Pairwise deletion is used for missing data.

employment status. The proportions for homophily in age and education are 36.50 and 43.00%, respectively. The relatively low percentages for age and education may be due to the greater variations in these two measures than those in other variables. About 50% of the information chains share three or more similar characteristics, at an average of 2.54.

In all comparisons but marital status, the proportions of respondents sharing similar characteristics with the informant are greater than those with the contact. The relationships with the informant and contact may account for this pattern. Since a large proportion of respondents heard the news at the workplace, they might have received the information from nonkin ties. On the other hand, after receiving the information, respondents might have spread it to kin ties, social networks into which respondents were born. Formation of nonkin ties is likely to be an voluntary act based on personal liking, which is facilitated by sharing similar characteristics and/or life experiences. Kin ties, on the other hand, tend to be formed beyond individual's choice. Variations in their socioeconomic composition would thus be greater than those for nonkin ties. Below, the relationships among respondent, informant, and contact are examined in further details.

## 8. Relationships among respondent, informant, and contact

The relationships among respondent, informant, and contact are analyzed in terms of two aspects: role relationship and the strength of tie. Findings (Table 9) indicate that a majority of respondents (74.2%) tend to have heard the news from nonkin. Upon hearing the news (from whatever source), respondents would then spread it to slightly more nonkin than kin (55 versus 45%, respectively). Friends and coworkers are the two most prevalent types of ties between informant and respondent. This may be due to the location of respondents when

Table 9  
Role relationships among respondents, informant, and contact

Role relationship (%)	Respondent vs. informant ( <i>N</i> = 383 <sup>a</sup> )	Respondent vs. contact ( <i>N</i> = 200 <sup>b</sup> )	Informant vs. contact ( <i>N</i> = 115 <sup>c</sup> )
Kin	25.80	45.00	11.30
Spouse	3.10	12.00	0.90
Parent/parent-in-law	3.90	17.50	0.00
Child	5.50	5.50	3.40
Sibling/sibling-in-law	8.10	8.50	2.60
Other relative	5.20	1.50	4.30
Nonkin	74.20	55.00	31.30
Workplace tie	27.40	27.00	11.30
Friend	35.30	17.00	13.00
Classmate	5.00	6.50	3.50
Other	6.50	4.50	3.50
Stranger	–	–	57.40

<sup>a</sup> Include only respondents who heard the rumor via personal ties.

<sup>b</sup> Include only respondents who spread the rumor via personal ties.

<sup>c</sup> Include respondents who both heard and spread the rumor via personal ties.

the news was spread. About 42% of respondents were at the workplace when being told about the news and among whom, more than 90% were informed by nonkin ties, particularly coworkers (analysis not shown). Due to their physical location, respondents also tend to spread the information to workplace ties.

When the news come from kin ties, close kin (spouse, parent/parent-in-law, children, sibling/sibling-in-law) are likely to be the informant. Similar pattern is observed in the relationship between respondent and his/her contact person. This suggests that Hong Kong Chinese may have limited routine interaction with their extended kin, a phenomenon also observed in western urbanized societies (Freeman and Ruan, 1997; Wellman and Wortley, 1990).

In addition, respondents tend to cut across two different social circles when spreading the information. About 60% of the informant–contact pairs are strangers. A further analysis (not shown) of the relationships among respondent, informant, and contact shows that when the transmission process involves two different social networks, 41.30% of the respondents bridge two different circles of nonkin ties, especially those between workplace ties and other nonkin. Another one-third of the respondents (36.50%) spread news from nonkin (14.30% involve workplace ties and 22.20% other nonkin) to kin.

Regarding the strength of tie, about 60% of the ties with informant (57.60%) and three-fourths of the ties with contact (74.10%) can be classified as strong ties as respondents perceive very good or good relations with them (Table 10). The finding is also observed when information flows within and between networks are considered separately. Generally, better relationship with contact than with informant might explain earlier findings that

Table 10  
Perceived quality of relationships between respondent and informant, and between respondent and contact

Perceived quality of relationship	Informant	Contact
All <sup>a</sup>		
Very good	33.70	51.70
Good	23.90	22.40
Fair	41.10	25.90
Poor	1.30	0.00
Information flow within network <sup>b</sup>		
Very good	42.90	53.10
Good	28.60	18.40
Fair	28.60	28.60
Poor	0.00	0.00
Information flow between networks <sup>c</sup>		
Very good	34.40	50.80
Good	28.10	21.50
Fair	34.40	27.70
Poor	3.10	0.00

<sup>a</sup> Include respondents who heard or spread the rumor via personal ties.

<sup>b</sup> Include respondents who both heard and spread the rumor via personal ties. Both informant and contact knew each other.

<sup>c</sup> Include respondents who both heard and spread the rumor via personal ties. Both informant and contact were strangers to each other.

respondents have better knowledge about the socioeconomic background of and greater tie-homophily with their contact.

Regression analyses are performed to assess the effects of social positions on the use of various types of social ties in the spread of information. The activation of kin, workplace ties, or nonkin in information acquisition and transmission is examined by multinomial logistic regression technique. Due to the multicollinearity problem, employment status is deleted from the logistic model for the informant. Ordinary least-squares regression is employed to evaluate the association between respondents' socioeconomic characteristics, and the strength of tie with the informant and contact.

Findings for the informant (Table 11) show that men and women are equally likely to have received the information from kin. However, compared to women, men tend to hear the news from workplace ties. Better-educated respondents are also more likely than less-educated ones to be told by coworkers. The greater prevalence of workplace ties as information sources among men and better-educated individuals may be due to their positional advantage at the workplace, that enables them to have a wider network of information. The effects of sex and education may also partially reflect the influence of employment, which is removed from

Table 11

Regression analysis<sup>a</sup> of the relationship with primary informant (role relationship and strength of tie) on respondent's socioeconomic characteristics

Independent variable	Role relationship <sup>b</sup>		Strength of tie <sup>c</sup>
	Kin vs. other nonkin	Work vs. other nonkin	
Sex (men = 1)	1.12	2.12**	0.07 (0.04)
Marital status (married = 1)	2.32*	1.70	0.27 (0.15)*
Age (mean)	0.97	0.99	-0.007 (-0.11)
Birthplace (local = 1)	1.78	1.83	0.02 (0.01)
Education (omitted: secondary 3 or below)			
Secondary 4–7	0.80	2.64*	0.17 (0.09)
University or above	1.15	4.13**	0.19 (0.09)
Employment status (employed = 1)	– <sup>d</sup>	– <sup>d</sup>	-0.40 (-0.22)***
Cake voucher holder (yes = 1)	1.14	0.92	0.12 (0.07)
Constant	-0.59	-2.22	3.05***
-2 log likelihood	605.13	–	
Model chi-square (d.f.)	38.98 (14)		–
R <sup>2</sup>	–	–	0.06
Valid N <sup>e</sup>	345		338

<sup>a</sup> Includes only respondents who heard the rumor via personal ties.

<sup>b</sup> Expected odds ratios are presented.

<sup>c</sup> The strength of tie is measured in terms of the quality of relationship, which is reversely coded: (1) poor; (2) fair; (3) good; and (4) very good. Figures outside parentheses are unstandardized regression coefficients whereas those inside are standardized ones.

<sup>d</sup> The variable is not included in the equation due to the multicollinearity problem.

<sup>e</sup> Listwise deletion is used for missing data.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ .

the equation due to the multicollinearity problem. Men and better-educated respondents in our sample are more likely than women and less-educated ones to be employed (analysis not shown). By definition, unemployed individuals would not be able to hear news from people at the workplace.

Married individuals have a greater probability than unmarried ones of getting the information from kin. Married individuals have been found to have more kin ties in their networks than their unmarried counterparts (Fischer, 1982), and thus the former would have a better chance of being informed by kin ties.

Inconsistent with our hypothesis, cake voucher holders are no more likely than non-holders to get news from kin. One possible explanation is that while the rumor deals with important market information, it is also a kind of casual talk. Information exchange, in the forms of casual talk and gossip, has been shown to clarify group norms and enhance group solidarity among adolescents (Eder and Enke, 1991). Thus informants might spread the news to whoever they consider members in the group.

Regarding the strength of tie with informant, married and unemployed individuals tend to be informed by strong ties. Since married respondents are likely to have a kin informant and a vast majority of kin informants (93.90%) are considered strong ties, it is not surprising to find

Table 12  
Regression analysis<sup>a</sup> of the relationship with primary contact (role relationship and strength of tie) on respondent's socioeconomic characteristics

Independent variable	Role relationship <sup>b</sup>		Strength of tie <sup>c</sup>
	Kin vs. other nonkin	Work vs. other nonkin	
Sex (men = 1)	0.43*	0.56	0.02 (0.01)
Marital status (married = 1)	1.81	0.95	-0.09 (-0.05)
Age (mean)	1.01	1.06	0.001 (0.01)
Birthplace (local = 1)	1.06	0.91	-0.04 (-0.02)
Education (omitted: secondary 3 or below)			
Secondary 4–7	0.84	1.96	0.14 (0.09)
University or above	1.00	1.91	0.08 (0.04)
Employment status (employed = 1)	1.73	83.28***	-0.43 (-0.26)***
Cake voucher holder (yes = 1)	0.62	0.69	0.05 (0.03)
Constant	0.34	-5.54**	3.53***
-2 log likelihood	304.25	-	
Model chi-square (d.f.)	60.37 (16)	-	
R <sup>2</sup>	-	-	0.07
Valid N <sup>d</sup>	186	187	

<sup>a</sup> Includes only respondents who spread the rumor via personal ties.

<sup>b</sup> Expected odds ratios are presented.

<sup>c</sup> The strength of tie is measured in terms of the quality of relationship, which is reversely coded: (1) poor; (2) fair; (3) good; and (4) very good. Figures outside parentheses are unstandardized regression coefficients whereas those inside are standardized ones.

<sup>d</sup> Listwise deletion is used for missing data.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

\*\*\*  $P < 0.001$ .

that married respondents have received news from strong ties. Further, a large proportion of the unemployed respondents are housewives, who may have fewer opportunities to establish routine ties outside the kinship network (Moore, 1990). As a result, unemployed respondents may have to rely on kin for information, who are likely to have a strong-tie relationship with respondents.

Turning our attention to the primary contact (Table 12), we find that women are more likely than men to spread information to kin and that employed persons tend to tell another coworker about the news. Moreover, employment and strength of tie with contact are negatively associated. That is, employed individuals would inform someone with whom they have a less close relationship. These patterns of findings are consistent with those for primary informant. In sum, the two sets of results (for informant and contact) give further support to our hypotheses that social positions may affect the formation of interpersonal ties and their subsequent activation (Lai et al., 1998).

## 9. Social ties and efficiency of information transmission

To examine the tie effect on information flow, the timing of information acquisition is regressed on respondents' socioeconomic characteristics, and the use and characteristics of social ties with the primary informant. Three sets of variables are constructed to capture the impact of social ties on transmission efficiency: (1) a dummy variable (personal source versus other means); (2) a trichotomy (strong ties versus weak ties versus non-personal source); and (3) a four-category variable (kin versus workplace tie versus other nonkin versus non-personal source). Results are presented in Table 13.

Equation (1) shows that after controlling for the respondent's socioeconomic characteristics, the effect of social ties on the timing of information acquisition only achieves marginal significance ( $P < 0.10$ ). In other words, news tend to reach individuals slightly sooner through personal channels than other means. In equation (2), social ties are further differentiated into strong (relations rated as very good or good) and weak (relations rated as fair or poor) ties. However, tie strength does not significantly affect the speed of information transmission. That is, news travel no faster via strong or weak ties than non-personal channels.

Conforming to our expectation, kin ties seem to facilitate information transmission (equation (3)). Respondents tend to hear the news sooner via kin ties than non-personal channels. There is no significant difference in transmission efficiency between nonkin ties (workplace ties and other nonkin) and non-personal means. When the ownership of cake vouchers is taken into account, the positive association between kin ties and information transmission efficiency is reduced to marginal statistical significance (equation (4)). That respondents get quick information from kin may be partly because their kin know they have cake vouchers. To help them avoid economic losses or preserve gains, their kin would inform them at the earliest possible time.

In all four equations, when relevant variables are controlled for, older individuals tend to have learned about the news faster than their younger counterparts. Those respondents who have a job also tend to get the news sooner than their unemployed counterparts, although the difference is marginally significant.

Table 13  
 Logistic regression<sup>a</sup> of speed of information transmission on the use of social ties and socioeconomic characteristics

Socioeconomic characteristics	Equation			
	(1)	(2)	(3)	(4)
Sex (men = 1)	0.76	0.73	0.75	0.77
Marital status (married = 1)	0.70	0.71	0.68	0.64 <sup>+</sup>
Age (mean)	1.03**	1.03**	1.03**	1.03**
Birthplace (local = 1)	0.75	0.72	0.75	0.74
Education (omitted: secondary or below)				
Secondary 4–7	0.98	1.02	0.99	0.96
University or above	0.93	0.95	0.94	0.91
Employment status (employed = 1)	1.46 <sup>+</sup>	1.49 <sup>+</sup>	1.53 <sup>+</sup>	1.53 <sup>+</sup>
Personal source (vs. other means)	1.47 <sup>+</sup>	–	–	–
Perceived quality of relationship with informant (omitted: non-personal channels)				
Very good/good	–	1.48	–	–
Fair/poor	–	1.49	–	–
Role relationship with informant (omitted: non-personal channels)				
Kin tie	–	–	2.07*	1.93 <sup>+</sup>
Workplace tie	–	–	1.26	1.23
Other nonkin tie	–	–	1.26	1.20
Cake voucher holder (yes = 1)	–	–	–	1.37
Constant	1.97	2.49	2.91	2.73
–2 log likelihood	677.18	671.15	675.71	671.80
Model chi-square (d.f.)	19.84 (8)	20.46 (9)	21.30 (10)	23.81 (11)
Valid N <sup>b</sup>	791	785	791	787

<sup>a</sup> Includes only informed respondents. Respondents who heard the rumor on the same day it broke out are coded as “1” and the otherwise as “0”. Expected odds ratios are presented.

<sup>b</sup> Listwise deletion is used for missing data.

<sup>+</sup>  $P < 0.10$ .

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

## 10. Discussion and conclusion

The present paper has examined the patterns of information exchange via social ties in Hong Kong and the tie effect on transmission efficiency. Findings show that while mass media, particularly television, serves as a popular channel of information flow, social ties also play an important role. Social positions are found to influence the probability of getting and spreading news through social ties. Further, Individuals tend to share information with similar others and with people whom they perceive to have good relations. Information transmitted via kin ties is likely to arrive at the respondent relatively sooner than via nonkin ties or other communication channels.

Three implications can be derived from the above findings. First, kin tend to be more efficient channels of information than nonkin. It suggests that Hong Kong Chinese may structure their social ties hierarchically such that kin’s interests take priority over nonkin’s. This



finding corresponds with the conventional perception that Chinese societies are family-oriented societies (Chao, 1983; Hsu, 1985). However, Lau (1981) argues that the socioeconomic structures of the Hong Kong society may also contribute to such phenomenon. Lau finds that Hong Kong is characterized by a large proportion of immigrants in the population, a lack of institutionalized social services, and the predominance of volatile small family firms. The immigrant orientation, the need for interdependence among family members, and high risks of business failures have given rise to the primacy of familial interests. While Lau's observation of the Hong Kong society was taken in the early 1980s, his depiction, to a certain extent, remains valid 20 years later, in today's Hong Kong. As the same structural factors are still viable, the tendency to place family interests above the interests of other social groups and society at large is likely to remain active among Hong Kong Chinese.

Second, previous studies have argued for the role of weak ties in diffusing market information. Weak ties tend to be local bridges to different social circles and presumably possess heterogeneous and more useful resources (Burt, 1992; Granovetter, 1973; Lin, 1982; Montgomery, 1992). However, strong ties are found to serve as network bridges in the present study, which involves information pertaining to the interest of a group and/or its individual members. This finding accords with Bian's job search study in urban Tianjin. Bian (1997) finds that strong ties, measured in terms of intimacy, are more often used than weak ties in job search, and that the former tend to serve as network bridges to reach a contact who may have influence over the recruiter. The use of strong ties may be a cultural trait among Chinese, including Hong Kong Chinese. Alternatively, rumor or gossip involves sharing one's feelings and evaluation, and may thus be better transmitted via strong ties (Eder and Enke, 1991; Lin, 1982). Further, weak ties and strong ties may play different roles in providing information benefits. Weak ties, when approached, are likely to provide diverse and useful information. Strong ties, on the other hand, would take the initiative to provide information that helps preserve one's interest. It may also be that strong ties tend to be activated in routine information exchange while weak ties are used in purposive information search. Another plausible explanation is that in the course of activating a weak tie for purposive action, chains of strong ties may be invoked in order to reach that weak tie.

Nonetheless, the present study has collected data on only three nodes (informant, respondent, and contact) in the personal chain of information flow. The strength of tie with the four other nodes in the information chain (two other informants and two other contacts) is unknown. The data are also limited by the absence of information about all nodes in the entire chain. More detailed data are warranted to investigate the strength of tie and related information function. Further, the study has focused on the flow of only one kind of information, i.e. commercial rumor. Future research may adopt a comparative approach and investigate whether the use of strong ties in information transmission is a unique feature of Chinese societies or a result of the nature of action and information involved.

Third, the present study has highlighted the importance of routine information exchanges in the examination of social ties and market outcomes. As many respondents were told by coworkers while they were at work, it is very likely that the information has been exchanged in routine interactions, possibly in the form of casual talks or gossip-sharing. In fact, previous job search studies have documented that individuals embedded in resource-rich networks, usually measured by network range and composition, tend to have better job search outcomes (Boxman et al., 1991; Montgomery, 1992). Non-searchers are found to have located previous

jobs through social networks. In some non-search cases, individuals obtain information about a job in interactions for purposes unrelated to job search (Granovetter, 1974). Lin (2000) hypothesizes that social capital is activated for instrumental purposes only when one is embedded in resource-poor networks, because less useful information is likely to be exchanged in such networks. Theoretical linkage among the resource configuration of social networks, types of information exchanged within the network, activation of social capital, and instrumental outcomes awaits future research.

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