

An Assessment of Contagion on Social Networking Sites

Iis P. Tussyadiah

School of Tourism & Hospitality Management
Temple University, USA
iist@temple.edu

Abstract

Social network influence has been recognized as an important determinant for consumer behaviour. Through a web-based survey using restaurant consumption as a research context, this study explores social influence resulting from two distinct social reference processes: communication and comparison. The relationship between social interactions and social influence is moderated by opinion leadership and attitude towards status consumption, which are conceptualized to represent consumers' competitiveness. Consumers' status consumption contributes negatively to recommendation-based consumption, but positively to competition-based consumption. In other words, the more competitive the consumers are, the less they tend to follow others' recommendation, the more they consume products and services to establish or maintain their status in the social network. Several managerial implications are provided.

Keywords: territoriality; mobility; location-based media; mobile technology.

1 Introduction

The development of social network platforms on the internet has brought a tremendous impact to the facilitation of global social interconnections. The so-called social media offers unparalleled constant connectivity for their users, allowing them to share, collaborate and establish an online community. Consumers are using these media to share information, exchange opinions and recommendations, and display certain consumption behaviour. In that, they disseminate positive and negative word-of-mouth on various products and services (De Bruyn & Lilien, 2008), influencing the behaviour of many others. Discussions and sentiments about products and services are found extensively on consumer opinion platforms, blogs and microblogs, online communities, and social networking sites (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Jansen, Zhang, Sobel, & Chowdury, 2009; Zhang, Lee, & Zhao, 2010). Consequently, online social network has the ability to significantly impact reputation, sales, and even survival of product and service providers (Kietzmann, Hermkens, McCarthy & Silvestre, 2011).

Indeed, social network influence has been recognized as an important factor in shaping consumer behaviour. Word-of-mouth (WOM) communication, which is an informal person-to-person communication among non-commercial communicators and receivers about products and services, is believed to be a powerful tool for advertising and promotion (Hennig-Thurau & Walsh, 2004; Harrison-Walker, 2001; Westbrook, 1987). Consequently, marketing concepts based upon referral within

social network, such as electronic word-of-mouth (eWOM) marketing, relationship marketing, and viral marketing (De Bruyn & Lilien, 2008; Ferguson, 2008; Helm, 2010), have been considered a relevant marketing strategy in the social media era, particularly for service and experience providers such as tourism and hospitality. The approach to these marketing concepts suggests that marketers can leverage the power of interpersonal networks to promote their products and services by transforming the communication networks into influence networks (i.e., using social network for referral marketing).

These marketing concepts are based on social network theories emphasizing information seeking, sharing and adoption behaviour among members of online communities. Most studies on social influence through online social networks presume consumers' need of information and referral to make informed decisions or to validate certain consumption behaviour. Hence, research focus has been on whether or not information seekers are willing to follow others' recommendations based on the characteristics of information, information providers, and social ties between information seekers and providers (Brown & Reingen, 1987; Steffes & Burgee, 2009). Lacking, though, is research on social influence resulting from communication among peers in online social networks beyond referral, but through the processes of social comparison (i.e., often labelled as peer influence or social contagion), which is an important characteristic of social life. As social influence through comparison implies different marketing strategies for product and service providers, it is important to conceptualize this social media phenomenon further.

Social comparison, which is the act of comparing one's features to those of others and vice versa (Buunk & Mussweiler, 2001), has been a research interest in various social context, including health and wellbeing as well as productivity and career performance, since the conceptualization of social comparison theory by Festinger (1954). It is suggested that when making decisions, people might be comparing their choices with others and are sensitive to the social comparison cues (Bearden & Rose 1990), including social reactions to their choices. However, studies on social comparison in terms of consumption behaviour through online social networks are still scant. Among the notable few studies on social comparison online are the works of Loewenstein (1991) as well as Wu and Lee (2008). Identifying the reference shifts from physical to virtual social contexts, Wu and Lee (2008) uncovered that consumers have stronger purchase intention when social comparison is present.

Due to the prevalent use of social media, particularly social networking sites (SNS), for day-to-day communication, it is important to explore how interpersonal communication on SNS manifests in social influence. Hence, the goal of this study is to investigate social influence resulting from peer-to-peer interactions on SNS. Specifically, the study aims at: (1) defining social influence from referral and comparison, (2) identifying the relationship between the extent of communication on SNS and the adoption of social influence behaviour, and (3) investigating the role of competitiveness and social status in shaping the relationship between the extent of communication and social influence. The scope of this study is on peer-to-peer

communication (i.e., in-group reference point) in order to focus on the above objectives.

2 Literature Review

2.1 Social Comparison and Contagion

Social comparison theory is the idea that there is a drive within individuals to look to outside images in order to evaluate their own opinions and abilities (Festinger, 1954). According to the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and its extension, theory of planned behaviour (TPB) (Ajzen, 1985), subjective norms, the influence of people on one's social environment, is believed to be an important construct that influences his/her intention to adopt a certain behaviour. Leenders (2002) argues that people are appropriately taking into account the opinions and behaviours displayed by others, combined with the considerations of other constraints and opportunities, to establish their own opinion and behaviour. He labelled this process 'social contagion' (Leenders, 2002). Also, based on their study on telecommuting behaviours, Wilton, Páez and Scott (2011) identify that when presented with a choice people refer to the experiences of others to make informed decisions.

When comparing themselves with others, people tend to select a person or group to serve as a point of comparison or as a reference group (Khan & Khan 2005, Schiffman & Kanuk 2000). Leenders (2002) identifies two distinct processes that lead to social contagion: (1) *communication*, when people use others with whom they are directly tied as their frame of reference, and (2) *comparison*, when people use others they feel similar to as their frame of reference (Leenders, 2002). *Communication* implies direct contacts between people and their influencers. On the other hand, according to Burt (1987), *comparison* is triggered when people are in competition with one another. In this sense, when people compete with one another, they use each other as reference frame through indirect communication (e.g., displayed behaviour).

Therefore, it can be hypothesized in this study that the extent of engagement in SNS, which results in direct and indirect communication, will lead to two different types of social contagion: referral-based and competition-based influence. A person who is well connected with others on SNS will refer to their friends for (a) recommendations to follow and (b) displayed behaviours to compare her/himself to. The more a person is engaged in SNS, the more she/he is exposed to recommendations from others and likely to follow them. In the case of social competition, a high level of engagement in SNS means more access to displayed behaviours of others and leads to the consumption behaviour that will likely put her/him ahead of others on SNS. The following hypotheses are suggested:

Hypothesis 1a: There is a direct positive relationship between the level of engagement on social networking sites and the level of referral-based social influence.

Hypothesis 1b: There is a direct positive relationship between the level of engagement on social networking sites and the level of competition-based social influence.

2.2 Competition and Status Consumption

A few scholars have addressed the question as to when a social actor is most strongly influenced by their peers; most have pointed out competition as the important mechanism of social influence (Bothner, 2003; Burt, 1987). Indeed, Burt (1982; 1987) argues that social actors compete and, thus, monitor and affect each other's choices. The effect of social comparison exists due to the fact that people are concerned or care about reactions of others/reference groups (Bearden & Rose, 1990). The theory of self-concept (Grubb & Grathwohl, 1967), which is stated to be the result of consumers' interactions with their peers, indicates that consumers value consumption that results in recognition and reinforces reactions from the social network so as to strengthen the conception about themselves. Consumer behaviour literature refers to these attitudes as conformism vs. snobbism (Amaldoss & Jain, 2005; Corneo & Jeanne, 1997). Conformism in consumer behaviour typically refers to consumption behaviour that follows conventional standards, leaning towards social acceptance. On the other hand, snobbism refers to consumption behaviour as a way of establishing superiority within social networks.

Based on their study among members of SNS, Iyengar, Han and Gupta (2009) identified that consumers with different attitude toward of social status react differently on friends' online purchase. They high-status consumers are well connected, but react negatively to friends' purchase. On the other hand, low-status consumers are not influenced by it. Mid-status consumers react positively towards friends' influence and exhibit the behaviour of "keeping up with Joneses" (Iyengar, Han & Gupta, 2009). High-status consumers are often characterized with conspicuous consumption (Amaldoss & Jain, 2005; Corneo & Jeanne, 1997), where display of consumption behaviour is seen as a means of attaining and maintaining social status.

It can be summarized from the literature that the attitude toward status consumption will moderate the influence of the displayed behaviour of others. To confirm the findings from Iyengar, Han, and Gupta (2009), it is hypothesized that attitude toward status consumption negatively moderates the relationship between engagement on SNS and the level of referral-based influence. Additionally, since competition signifies the attainment and maintenance of social status, it is hypothesized that attitude toward status consumption positively moderates the relationship between the level of engagement on SNS and competition-based influence. The following hypotheses are suggested:

Hypothesis 2a: Consumers' attitude toward status consumption negatively moderates the relationship between the level engagement on social networking sites and the level of referral-based social influence.

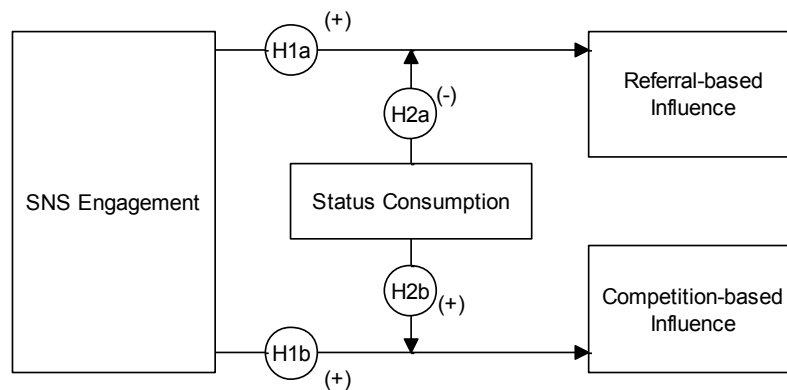
Hypothesis 2b: Consumers' attitude toward status consumption positively moderates the relationship between the level engagement on social networking sites and the level of competition-based social influence.

3 Methodology

3.1 Research Design

The theoretical framework of this study is illustrated in Fig. 1. The goal of this study is to identify the relationships between the level of engagement on SNS and the level of referral-based and competition-based social influence and to identify the moderating effects of status consumption. This framework was tested in the context of online interactions among members of SNS and its influence on restaurant selection and experience.

Fig 1. Foundation of the Study



Established constructs from literature were used to represent items measuring SNS engagement (Tang, 2011) based on the dimensions of communication and social connection on SNS participation level (Parent, Plangger & Bal, 2011). To measure status consumption, the dimensions of social prestige and conformity to consumption trend (Zhou, Teng & Poon, 2008) were adapted. These two dimensions load into one factor (labelled Status consumption) with Cronbach's Alpha of .946. Items measuring referral-based and competition-based influence were developed following an extensive literature review, focus group discussions, and expert evaluation. Items were presented in 7-point Likert-type scale with Agree–Disagree anchor statements.

Table 1. Measurement Items

Constructs – Items	Internal Consistency (Cronbach's Alpha)
Engagement on SNS (Mean: 4.23; S.D.: 1.59)	.942
I share my experiences regularly on SNS	
My friends and I comment on each other regularly on SNS	
My friends and I converse regularly on SNS	
My friends and I are well connected on SNS	
Status Consumption (Mean: 3.26; S.D.: 1.33)	.946
I select restaurants...	
...that signify my trendy image.	
...that symbolize my social status.	
...that are associated with the symbol of prestige.	
...that represent the latest lifestyle.	
...that make me have good impression on others.	
...that make me feel good in my social group.	
Referral-based Influence (Mean: 4.84; S.D.: 1.29)	.886
I would try a new restaurant if my friends posted on SNS that they have been there.	
I would try a new restaurant if my friends positively raved about it on SNS.	
I would frequent a particular restaurant if my friends posted on SNS that they do so.	
Competition-based Influence (Mean: 2.77; S.D.: 1.50)	.914
I would try new restaurants to be able to post new and exciting updates ahead of my friends on SNS.	
I would dine out more often if my friends posted on SNS that they do so.	
I would try new restaurants to keep up with my friends on SNS.	

3.2 Data Collection and Analysis

A web-based survey was administered for data collection. The survey questions consist of four sections. In Section One, respondents were asked about their typical use of SNS, which include the types of SNS applications, devices used and venues for using SNS. In Section Two, respondents were asked about their network engagement using SNS and the state of opinion leadership. In Section Three, respondents were asked to state their behaviour toward restaurant selection that count for conspicuous

consumption and state their behaviour toward network influence on restaurant selection. Lastly, several demographic control variables were collected.

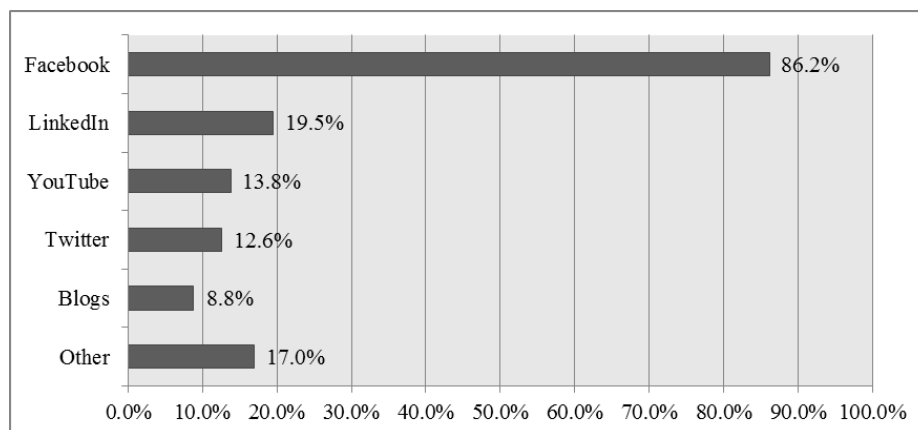
An invitation to participate in the online survey was sent in August 2011 to 5,000 Americans randomly selected from a tourism email list. All recipients requested travel information about the US Midwestern states over the past 3 years. An incentive to win a \$100 or one of two \$50 or one of two \$25 dining certificates from *restaurant.com* was provided. Following three reminders, 232 responses were collected (4.6% response rate). A total of 158 complete responses were included in the analysis. To measure the hypothesized relationships and the moderating effect of status consumption, regression analysis was performed.

4 Result and Discussion

The majority of respondents (74.4%) were female. In terms of age, respondents were slightly older, with 73.9% of them older than 45 years (33.3% 45-54 years old, 24.8% 55-64 years old, and 15.7% over 65 years). The rest of respondents were 35-44 years old (15.7%) and 25-34 years old (10.5%). Most respondents were highly educated, with 49% attended or graduated college and 32% had a graduate/advanced degree. Around 97% of respondents resided in the US during data collection.

As illustrated in Fig. 2, respondents reported an overwhelming majority of *Facebook* use (86.2%). Following are the use of *LinkedIn* (19.5%), *YouTube* (13.8%), *Twitter* (12.6%), and personal blogs (8.8%). Respondents also reported the use of other SNS such as *Tumblr*, *Foursquare* (on mobile devices), and email. In terms of devices used for communicating on SNS, 98.1% respondents used personal computers (including laptops). Some respondents used mobile phones (36.1%) and a small number of respondents (10.8%) used tablet PCs, such as iPad, to access SNS.

Fig 2. The Types of SNS Used by Respondents



The majority of respondents stated that they dine out frequently. About 30% respondents dine out 2-3 times a week, 28.5% once a week, and 28% 2-3 times a month. Only about 13% respondents stated they dine out once a month or less. Most respondents are highly engaged in SNS (Mean: 4.23; S.D.: 1.59), but exhibit a low degree of status consumption (Mean: 3.26; S.D.: 1.33).

4.1 Referral-based Influence

Based on the composite mean of the referral-based construct (Mean: 4.23; S.D.: 1.59), it was identified that, influenced by their friends' recommendation, respondents tend to be willing to consume the same thing as their friends (e.g., visiting the same restaurants). Further, based on the results of regression analysis (see Table 2), the level of engagement on SNS positively affect the level of referral-based influence (*Hypothesis 1a* supported). The base model (Model 1) indicates a statistically significant relationship with 28.1% variance in the referral-based influence explained by model. Model 2 represents the direct effect of engagement as well as the moderating effect of status consumption on the relationship between engagement and referral-based influence. The results show that the negative moderating effect of status consumption is not statistically significant (*Hypothesis 2a* not supported). It can be suggested that consumers who are highly connected with their peers on SNS are most likely to exhibit consumption behaviour based on recommendations from their friends.

Table 2. Regression Models for Referral-based Influence (N = 158)

	Model 1	Model 2
R ²	.281	.284
F (Sig.)	60.312 (.000)	30.362 (.000)
Independent Variables (Beta (Sig.))		
Engagement	.530 (.000)	.529 (.000)
Engagement* Status Consumption		-.052 (.442)

4.2 Competition-based Influence

Based on the composite mean, it was identified that respondents tend not to receive competition-based influence (Mean: 2.77; S.D.: 1.50). Only a few respondents stated they would consume more (i.e., visit more restaurants or dine out more often) in order to compete with their friends. Table 3 represents the results of regression analysis for competition-based influence. The level of engagement on SNS positively affects the level of competition-based influence (*Hypothesis 1b* supported). The base model (Model 1) indicates a statistically significant relationship with the variance explained of 21.2%.

Table 3. Regression Models for Competition-based Influence (N = 158)

	Model 1	Model 2
R ²	.212	.557
F (Sig.)	41.380 (.000)	24.405 (.000)
Independent Variables (Beta (Sig.))		
Engagement	.480 (.000)	.466 (.000)
Engagement* Status Consumption		.173 (.013)

Model 2 represents the moderating effect of status consumption on the relationship between engagement and competition-based influence. This model has a better fit with the variance explained of 55.7%. The results show a positive moderating effect of status consumption (*Hypothesis 2b* supported). It can be concluded that interpersonal communication and engagement on SNS prompts social influence due to the process of social comparison. This effect is magnified among consumers, who put a high value on status consumption.

5 Conclusion and Implication

This study explores social influence by way of social competition and comparison enabled by the facilitation of global interpersonal communications and connectivity on social media. Specifically, this study investigates how consumers' engagement in SNS and the level of connectedness with their peers lead to two types of social influence: referral-based influence (i.e., consumption behaviour based on friends' recommendations on past behaviour) and competition-based influence (i.e., consumption behaviour to stay ahead of friends). The results from the analysis supported these two hypothesized relationships, confirming that social media provide not only potentials for electronic word-of-mouth in terms of referrals and recommendation, but also clues for social comparison (e.g., displayed consumption behaviour) that spurs competition.

This study further confirms that displayed consumption behaviours online would generate two effects: similar consumption by those who follow recommendations and consumption by those competing with the information providers. Consequently, marketers can capitalize on this opportunity by creating a competitive arena where consumers have more opportunity to display their consumption behaviour online through platform development for instant updates for ease of sharing. In doing so, marketers can encourage consumers to be the leaders in their online social networks.

Furthermore, this study also investigates the moderating effect of consumers' attitude toward social status on the relationships between engagement on SNS and social influence. The moderating effect on competition-based influence is supported,

confirming that the consumers' competitiveness positively magnify the tendency for competition-based influence. In that, when consumers tend to consume products and services to signify their social status online, they use their peers' displayed consumption behaviour as reference frame for them to compete. However, the negative moderating effect of status consumption on referral-based influence is not supported. The cause for this issue might be the low number of respondents or the nature of restaurant consumption, not differentiating between luxury and conventional brands, as a base for competition. Also,

The scope of this study context poses a limitation to the interpretation of the research findings. This study focuses on restaurant visitation as consumption stimuli due to the simplicity of the situation to test the hypothesized model. As the study focuses on social influence resulting from communication and comparison processes only, other factors that might influence visitation behaviour, such as those associated with consumption situation, restaurant quality, etc., are excluded from the analysis. Future study should include these factors to control for the unidentified forces of social influence in this study. Furthermore, future research should be directed to other types of consumption situation, particularly destination choice, to retest the applicability of the measurement items and confirm the hypothesized model.

References

- Ajzen, I. (1985). The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50: 179-211.
- Amaldoss, W. & Jain, S. (2005). Reference groups and product line decisions: An experimental investigation of limited editions and product proliferation. *Management Science* 56 (4): 621-644.
- Bearden, W.O. & Rose, R.L. (1990). Attention to social comparison information: An individual difference factor affecting consumer conformity. *Journal of Consumer Research* 16: 461-471.
- Bothner, M.S. (2003). Competition and social influence: The diffusion of the sixth generation processor in the global computer industry. *American Journal of Sociology* 108(6): 1175-1210.
- Brown, J. J. & Reingen, P. H. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research* 14: 350-62.
- Burt, R.S. (1982). *Toward a Structural Theory of Action: Network Models of Social Structure, Perception, and Action*. New York: Academic Press.
- Burt, R.S. (1987). Social contagion and innovation: Cohesion versus structural equivalence. *American Journal of Sociology* 92: 1287-335.
- Buunk, B. P. & Mussweiler, T. (2001). New directions in social comparison research. *European Journal of Social Psychology* 31: 467-475.
- Corneo, G. & Jeanne, O. (1994). *Conspicuous Consumption and the Existence of Upward Sloping Demand Curves*. Discussion Paper Serie A 461. University of Bonn, Germany
- De Bruyn, A. & Lilien, G. (2008). A multi-stage model of word-of-mouth influence. *International Journal of Research in Marketing* 25: 151-163.
- Ferguson, R. (2008). Word of mouth and viral marketing: taking the temperature of the hottest trends in marketing. *Journal of Consumer Marketing* 25(3): 179 – 182.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations* 7: 117-140.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

- Grubb, E. L. & Grathwohl, H. L. (1967). Consumer self-concept, symbolism and market behaviour: A theoretical approach. *Journal of Marketing* 31(4): 22-27.
- Harrison-Walker, L. J., (2001). The measurement of word-of-mouth communication and an investigation of service quality and customer commitment as potential antecedents. *Journal of Service Research* 4(1): 60-75.
- Helm, S. (2010). Viral marketing – Establishing customer relationships by „word-of-mouth.“ *Electronic Markets* 10(3): 158-161.
- Hennig-Thurau, T., Gwinner, K.P., Walsh, G. & Gremler, D.D. (2004), Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet? *Journal of Interactive Marketing* 18 (1): 38-52.
- Hennig-Thurau, T. & Walsh, G. (2004). Electronic word-of-mouth: Consequences of and motives for reading customer articulations on the internet. *International Journal of Electronic Commerce* 8 (2): 51-74.
- Iyengar, R., Han, S., & Gupta, S. (2009). Do Friends Influence Purchases in a Social Network? *Harvard Business School Working Paper* 09-123.
- Jansen, B. J., Zhang, M., Sobel, K., & Chowdhury, A. (2009). Twitter power: Tweets as electronic word of mouth. *Journal of the American Society for Information Science and Technology* 60(11): 2169-2188.
- Khan, G. & Khan, N. (2005). Susceptibility to informational social influence on purchase decisions of designer label apparel: The mediating role of gender. *The Business Review* 4(1): 32-36.
- Kietzmann, J. H., Hermkens, K., McCarthy I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons* 54:241-251.
- Leenders, R. T. A. J. (2002). Modeling social influence through network autocorrelation: Constructing the weight matrix. *Social Networks* 24: 21-47.
- Loewenstein, G. F. (1988). Frames of mind in inter-temporal choice. *Management Science* 34(2): 200-214.
- Parent, M., Plangger, K., & Bal, A. (2011). The new WTP: Willingness to participate. *Business Horizons* 54(3): 219-229.
- Steffes, E. M. & Burgee, L. E. (2009). Social ties and online word of mouth. *Internet Research* 19(1): 42 – 59.
- Tang, J. C. (2011). Consumer Engagement in Mobile Social Networking Activities. Unpublished Master's Project. Temple University, USA.
- Westbrook, R. A. (1987). Product/consumption-based affective responses and postpurchase processes. *Journal of Marketing Research* 24: 258-270.
- Wilton, R.D., Páez, A., & Scott, D. M. (2011). Why do you care what other people think? A qualitative investigation of social contact and telecommuting. *Transportation Research Part A: Policy and Practice* 55(4): 269-282.
- Wu, L.-L. & Lee, L. (2008). Online social comparison: Implications derived from Web 2.0. Proceedings of the 12th Pacific Asia Conference on Information Systems. Suzhou: July 3-7, 2008.
- Zhou, L, Teng, L., & Poon, P.S. (2008). Susceptibility to global consumer culture: A three-dimensional scale. *Psychology & Marketing* 25(4): 336–351.