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Article in *Social Behavior and Personality: An International Journal* · January 2007

DOI: 10.2224/sbp.2007.35.2.213

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MATERIALISM AND SOCIAL COMPARISON AMONG ADOLESCENTS

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Materialism and social comparison are important issues, especially in a Chinese context, and especially amongst adolescents. In this paper a theoretical model of the endorsement of materialistic values and social comparison by adolescents was proposed and tested. A survey of secondary school students in Hong Kong revealed normative peer influence and peer communication were positive predictors of social comparison with friends. In addition, motivation for advertisement viewing was a positive predictor of social comparison with media figures. Social comparison with friends and with media figures were both positive predictors of materialism. The implications are discussed, with recommendations for further research.

Keywords: consumer socialization, group and interpersonal processes, cognitive development, materialism, social comparison, adolescents.

The adoption of materialistic values by young people affects the balance between the private and public choices that people make throughout life (Goldberg, Gorn, Peracchio, & Bamossy, 2003). In our opinion, materialism is a negative value because it works against interpersonal relationships and is negatively associated with happiness and subjective well-being (Kasser, 2002).

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The work described in this paper was fully supported by a Faculty Research Grant from the Hong Kong Baptist University (Project No. FRG/04-05/II-45).

Appreciation is due to reviewers including: Russell W. Belk, PhD, University of Utah, DESB, 1645 E. Campus Center Dr., Salt Lake City, Utah, USA, Email: mktrwb@business.utah.edu; Tim Kasser, PhD, Associate Professor of Psychology, Knox College, Campus Box K-83, 2 East South Street, Galesburg, IL 61401-4999, USA, Email: tkasser@knox.edu

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A central issue in studying materialism, especially amongst adolescents, is that of social comparison with friends and media figures. Adolescents need to formulate a new identity and to establish autonomy from their parents. They become more independent in decision making. As a result, adolescents seek personal relationships that give value to their perspectives and ensure that their feelings are understood.

Studying materialism and social comparison in a Chinese culture involves a context quite different from that of Western culture. As hierarchy is legitimate and conformity to group norms is acceptable in Confucian tradition (Wong & Ahuvia, 1998), social comparison of goods as a means to locate an individual's position in the social hierarchy is therefore encouraged. Hu (1944) analyzed the Chinese concept of face into *lien* (or moral face) that represents one's moral character, and *mianzi* (or social face) that describes status and success. The value of *mianzi* (or social face) will encourage the owning of symbolic goods to improve personal visibility within the social hierarchy (Wong & Ahuvia). The collective characteristic of Chinese culture encourages the use of material possessions to identify associates for establishing long-term social relations. Both of these contribute to the establishment of a materialistic value orientation.

The specific objectives of this study were to ascertain the extent to which adolescents in Hong Kong endorse materialistic values, to ascertain whether materialism changes with age during adolescence, and to examine the influences of interpersonal communication and media exposure on adolescents' engagement in social comparison and their endorsement of materialistic values.

CONCEPTUAL FOUNDATION

MATERIALISM

Materialism has been conceptualized as a personality trait encompassing possessiveness, envy and lack of generosity (Belk, 1985). Others see materialism as a chronic focus on lower needs for material comfort and physical safety over higher order needs (Inglehart, 1993). In this study, *materialism* was defined as *a set of attitudes which regard possessions as symbols of success, where possessions occupy a central part of life, and which include holding the belief that more possessions lead to more happiness.*

A model to predict materialism was constructed based on John's (1999) model of the consumer socialization of children, Kasser, Ryan, Couchman, and Sheldon's (2004) model of materialistic value orientation, and the concept of social comparison. According to the model of Kasser et al., consumers (including adolescents) develop a materialistic value orientation through experiences that induce feelings of insecurity, and from exposure to materialistic models and values. When the psychological needs of individuals are not met, they tend

to move toward materialism as a type of compensatory strategy to lessen the distressing effects of insecurity. Individuals also learn to adopt materialistic values through social learning from family members, peers, and the materialistic messages that are frequently found in television programs and their commercial messages (Kasser et al., 2004). The model of Kasser et al. focuses on the individual's internal status. This study attempted to replace the insecurity and exposure to materialism in that model with variables related to social comparison. This is because social comparison is a communication variable that measures the active mental processing of incoming messages about materialistic values. Figure 1 shows the proposed theoretical framework.

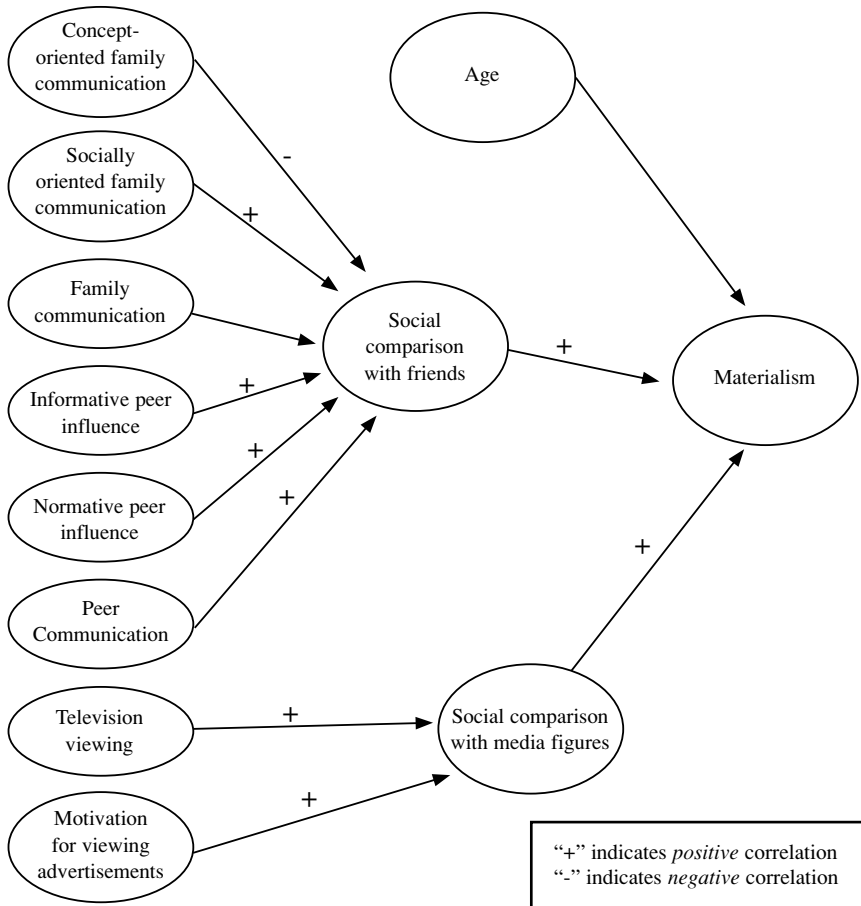


Figure 1: Theoretical framework

Integrating Piaget's (1970) theory of cognitive development and Selman's (1980) theory of social development, John (1999) proposed a model in which consumer socialization is viewed as a developmental process that proceeds through different stages as children mature into adult consumers. John's model specifies qualitative differences between different age groups in their understanding of the value of possessions, but does not specify whether materialism increases with age. A recent study failed to find an association between materialism and age in a sample of American adolescents (Kasser, 2005). In this study, therefore, we hypothesized that:

H1: Age has no effect on materialism during adolescence.

FAMILY COMMUNICATION

Studies have shown that the family environment affects the endorsement of materialistic values. Parental styles and practices that do not fully meet children's needs are associated with materialism (Kasser, Ryan, Zax, & Sameroff, 1995; Williams, Cox, Hedberg, & Deci, 2000). Children in families that use socially oriented communication patterns, which stress harmony among family members and the avoidance of conflict, demonstrate higher levels of materialism (Moschis & Moore, 1979). Children in families that use concept-oriented communication patterns, which encourage independent thinking, demonstrate lower levels of materialism (Moore & Moschis, 1981). Adolescents who communicate less frequently with their parents about consumption have been found to be more materialistic (Moore & Moschis). Those who communicate frequently with their peers (Moschis & Churchill, 1978) and those who are more susceptible to peer influence are also known to be more materialistic (Achenreiner, 1997).

SOCIAL COMPARISON

According to social comparison theory (Festinger, 1954), people have a drive to evaluate themselves by comparison with others when objective means are not available. Festinger's social comparison theory hypothesized that comparison occurs within groups and in other face-to-face situations. Richins (1991) suggests that social comparison occurs with models in advertisements. Individuals can decide to compare themselves with others who are worse off (downward comparison) to bolster their self-esteem, with others who are better off (upward comparison), or with idealized media images (Schiffman & Kanuk, 2004). People who engage in social comparison with remote referents such as idealized media images create inflated and unrealistically high expectations of their models' standards of living.

Through communication adolescents learn what consumption values and products are acceptable in the eyes of their significant others. This information serves as a base for social norms about consumption values. Parents who engage

in socially oriented communication may encourage their children to evaluate their consumer behaviors on the basis of the perceived effects on others, which results in social comparison with friends. In this study, social comparison was modeled as being composed of two dimensions: one reflects comparison with peers; the other reflects comparison with idealized images from the mass media and from advertising messages. Because socially oriented family communication stresses conformity to the expectations of others, we offered the following hypothesis:

H2: Socially oriented family communication is positively related to social comparison with friends.

Because concept-oriented family communication stresses the development of one's own view of the world, we offered the following hypothesis:

H3: Concept-orientated family communication is negatively related to social comparison with friends.

As families may adopt socially oriented and concept-oriented communication to different extents, we did not propose any hypothesis about the effect of family communication as a whole on social comparison.

Peer communication reflects the level of interaction with friends. Adolescents who communicate frequently with peers may be exhibiting a strong need for peer approval. Therefore we offered the following hypothesis:

H4: Peer communication is positively related to social comparison with friends.

Susceptibility to peer influence reflects a willingness to comply with the wishes of others (normative influence) and a willingness to accept and internalize information from others (informative influence). It also reflects a person's need to identify or enhance one's image with significant others through material possessions (Bearden, Netemeyer, & Teel, 1989). Therefore we offered H5 and H6:

H5: Susceptibility to informative peer influence is positively related to social comparison with friends.

H6: Susceptibility to normative peer influence is positively related to social comparison with friends.

According to the cultivation theory of Gerbner and his colleagues, repeated television viewing shapes viewers' attitudes to be more consistent with the world presented in television programs (Gerbner, Gross, Morgan, & Signorielli, 1986). As television often portrays an idealized picture of celebrities and their lives, it will encourage viewers to compare their lives with such idealized images. Empirical data shows that television exposure is positively correlated with materialism among children and adolescents, including Asian children (Chan, 2003; Cheung & Chan, 1996; Kwak, Zinkhan, & DeLorme, 2002). Hence, we hypothesized that:

H7: The more adolescents watch television the more they will be likely to engage in social comparison with media figures.

Another pervasive source of materialistic models is advertising messages. Advertisements encourage consumption by using images of attractive and/or famous product users, demonstrating social rewards through using products, and associating products with wealthy lifestyles (Kasser et al., 2004). The motives for advertisement viewing have two dimensions: seeking information about products, and seeking images or talking points. We therefore suggested the following hypothesis:

H8: Adolescents who are highly motivated to view advertisements will be more likely to engage in social comparison with media figures.

People who engage in upward social comparison with others have inflated expectations of their models' standards of living. The large gap between the ideal and the actual standard of living triggers the desire for material possessions (Sirgy, 1998). Hence, we offered the following two hypotheses:

H9: Social comparison with friends will be positively related to materialism.

H10: Social comparison with media figures will be positively related to materialism.

METHOD

SAMPLE AND PROCEDURE

Materialism and social comparison amongst adolescents were examined through a survey conducted in Hong Kong in October 2004. The target population was secondary school students in forms 1 to 7 (equivalent to grades 7 to 12 and undergraduate year 1 in the U.S. education system). The sample was a quota design with equal numbers of students from each grade. The questionnaires were self-administered by the respondents, and altogether 281 completed questionnaires were collected. The overall response rate was 89%. Fifty-two percent of the respondents were male and 48% were female. All respondents were aged from 11 to 20 (mean 15.7). Fifty-five of the respondents claimed to live in households with a monthly household income of HK\$10,000 to HK\$30,000 (equivalent to an annual household income of about US\$15,000 to US\$45,000). The sample thus contained a lower proportion of well-off families than the Hong Kong population. Twenty-four percent of adolescents in the sample had claimed monthly household incomes above HK\$30,000, while there are 29% of such households in the population (Census and Statistics Department, 2005).

MEASURES

Nearly all of the constructs were measured by multiple items, with the

exception of respondents' reported social comparison with media figures. That construct was measured by responses on a 5-point scale to the item "How often do you pay attention to your favorite actors and singers to see what they buy?"

Materialism was measured using Richins and Dawson's (1992) Material Values Scale. A shortened 6-item version suggested by Richins (2004) was used. The interitem reliability (Cronbach's alpha) was 0.76. Factor analysis of the six items generated a one-factor solution that accounted for 46% of the variance in materialism. A forced three-factor solution accounted for 75% of the variance. The rotated component matrix confirmed the utility of the three subscales.

Socially oriented family communication about consumption was measured using five items from Moschis, Moore, and Smith's (1984) scale. Concept-oriented family communication about consumption was also measured using another five items from Moschis, Moore, and Smith's scale. The interitem reliability scores for socially oriented and concept-oriented family communication were 0.69 and 0.60 respectively.

Communication with parents/peers about consumption was measured by asking the respondents to rate three items on 5-point scales. These items were adapted from Moschis and Moore's (1982) study. The interitem reliability scores for family and peer communication were 0.74 and 0.65 respectively.

Informative peer influence and normative peer influence were both measured by asking respondents to rate three items. These items were from a study by Mangleburg and Bristol (1998). The interitem reliability scores for informative and normative peer influence were 0.67 and 0.73 respectively.

Motivation for viewing advertisements was measured by asking respondents to rate seven statements on 5-point scales. These statements were selected from the Moschis and Moore (1982) study. The interitem reliability was 0.75. Factor analysis generated a one-factor solution that accounted for 40% of the total variance in advertisement viewing.

Social comparison with friends was measured by asking respondents to rate two statements: "I pay attention to what my close friends buy," and "I pay attention to friends who are richer than me, and see what they buy". These two items were developed from the statement "I tend to pay attention to what others are wearing" in Lennox and Wolfe's (1984) scale of attention to social comparison information. The interitem reliability was 0.62. Television viewing was measured by calculating the average number of hours spent watching television per week.

One of the authors translated the questionnaire from English to Chinese and it was back-translated by a research assistant to check for translation accuracy. The questionnaire was pretested and revised for clarity and accuracy by personally interviewing six adolescents.

RESULTS

DESCRIPTIVE ANALYSIS

On average, the respondents watched television for 2.5 hours each weekday and 3.5 hours per day on weekends. The mean hours of television viewing was 19.5 hours per week. Television viewing did not differ by age group. On average, the respondents received allowances of HK\$224 (equivalent to US\$28) a week. Descriptive statistics on the measured variables are summarized in Table 1. Paired *t*-tests indicated that the level of concept-oriented family communication reported by the respondents was higher than that of socially-oriented communication ($t = 6.8$, $df = 280$, $p < 0.001$). The respondents more frequently communicated about consumption with their peers than with their parents ($t = 10.7$, $df = 280$, $p < 0.001$). They also reported higher levels of informative peer influence than normative peer influence ($t = 9.8$, $df = 280$, $p < 0.001$). Social comparison with friends was higher than social comparison with media figures ($t = 10.6$, $df = 280$, $p < 0.001$).

The respondents' mean score on the materialistic values scale was 3.2 and the standard deviation was 0.7.

TABLE 1
SUMMARY OF DESCRIPTIVE STATISTICS

Construct	<i>M</i>	<i>SD</i>	Skewness
Concept-oriented family communication	3.0	0.6	-0.2
Socially oriented family communication	2.6	0.6	-0.0
Family communication	2.5	0.8	0.1
Informative peer influence	3.2	0.7	-0.2
Normative peer influence	2.8	0.8	-0.1
Peer communication	3.2	0.7	-0.4
Television viewing (hours per week)	19.6	11.2	0.7
Motivation for viewing advertisements	2.9	0.6	-0.0
Social comparison with friends	2.8	0.8	0.0
Social comparison with media figures	2.2	1.0	0.5
Materialism	3.1	0.7	0.3
Allowance per week (HK\$)	224.3	180.6	1.3

Means of ratings on a 5-point scale except as noted.

TESTING THE THEORETICAL MODEL

Path analysis was used to test the theoretical model shown in Figure 1. There were four regression models. In the first model, socially oriented and concept-oriented family communication patterns, level of family and peer communication about consumption, and informative and normative peer influence were used

TABLE 2
PEARSON CORRELATION OF VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 Materialism												
2 Concept-oriented family communication	0.02		-0.02	-0.08	0.29**	0.36**	0.33**	0.15*	0.36**	0.20**	0.37**	0.24**
3 Socially-oriented family communication			0.08	0.35**	0.03	0.02	0.22**	-0.11	0.17**	0.11	0.12*	-0.02
4 Family communication				0.42**	0.02	0.15*	0.06	0.19**	0.08	-0.16**	0.18**	0.12*
5 Informative peer influence					-0.13*	-0.00	0.06	0.08	0.06	-0.26**	0.08	0.08
6 Normative peer influence						0.48**	0.48**	0.02	0.39**	0.24**	0.43**	0.27**
7 Peer communication							0.30**	0.08	0.53**	0.13*	0.49**	0.39**
8 TV viewing								0.10	0.38**	0.22**	0.54**	0.24**
9 Motivation for viewing ads									0.09	-0.03	0.07	0.13*
10 Age group										0.08	0.34**	0.40**
11 Social comparison with friends											0.20**	0.11
12 Social comparison with media figures												0.40**

*Significant at the $p < 0.05$ (** $p < 0.01$) level

to predict social comparison with friends. In the second model, television viewing and motivation for viewing advertisements were used to predict social comparison with media figures. In the third model, social comparison with friends and social comparison with media figures were used to predict the materialism scores of the respondents. In the fourth model, age was added to the third model to predict the materialism scores. Table 3 shows the results of the multiple regression analysis.

TABLE 3
SUMMARY OF THE REGRESSION RESULTS FOR THE VARIABLES PREDICTING THE MATERIALISM SCORES OF ADOLESCENTS

Model/predictors	Standardized beta	<i>t</i> statistic for beta = 0
Model 1		
Concept-oriented family communication	0.00	0.0
Socially oriented family communication	0.10	1.9
Family communication	0.02	0.3
Informative peer influence	0.05	0.9
Normative peer influence	0.33	6.2***
Peer communication	0.43	7.9***
Model 2		
Television viewing	0.09	1.7
Motivation for viewing advertisements	0.40	7.4***
Model 3		
Social comparison with friends	0.31	5.1***
Social comparison with media figures	0.12	2.0*
Model 4		
Social comparison with friends	0.29	4.7***
Social comparison with media figures	0.12	2.0*
Age	0.10	1.8

* Significant at the $p < 0.05$ (** $p < 0.01$, *** $p < 0.001$) level

$R^2 = 0.44$ for Model 1 ($p < 0.001$); $R^2 = 0.18$ for Model 2 ($p < 0.001$);

$R^2 = 0.14$ for Model 3 ($p < 0.001$); $R^2 = 0.15$ for Model 4 ($p < 0.001$)

In the first regression model, the six variables accounted for 43% of the variance in social comparison with friends. Socially oriented family communication, concept-oriented family communication, and family communication were not significant predictors. To assess the degree of multicollinearity of the predictors in model 1, the tolerance values and the variance inflation factors (VIF) of the predicting values were compiled (Hair, Anderson, Tatham, & Black, 1995). All tolerance values were above 0.6 and were greater than the threshold of 0.1. All VIF values were between 1.2 and 1.7. Therefore, the degree of multicollinearity was not high. A stepwise regression was also performed with

model 1. The three variables that entered the model were peer communication, normative peer influence, and socially oriented family communication (in this order). The standardized beta values for these three predictors were 0.45 (significant at the 0.001 level), 0.35 (significant at 0.001), and 0.10 (significant at 0.05) respectively. Comparing the stepwise regression model and model 1, the standardized betas were of the same sign and order of magnitude. The two models had the same R^2 of 0.44. This suggests that the partial regression coefficients were not affected by the correlation between the predictors. According to the partial regression coefficients, family communication patterns were not related to social comparison with friends. As a result, H2 and H3 were rejected. Peer communication was positively related to social comparison with friends. Those respondents who frequently engaged in communication about consumption with friends were more likely to compare possessions with their friends. As a result, H4 was not rejected. Informative peer influence was not significant, but normative peer influence had a positive and significant beta value. Respondents who reported higher levels of normative peer influence were more likely to engage in social comparison with friends. As a result, H5 was rejected and H6 was not rejected.

In the second regression model, the two variables together accounted for 17% of the variance in social comparison with media figures. Motivation for viewing advertisements had a positive and significant beta value, whereas television viewing was not significant. The results indicate that respondents who had higher motivation for viewing advertisements were more likely to engage in social comparison with media figures. As a result, H8 was not rejected. Television viewing was not related to social comparison with media figures. As a result, H7 was rejected.

In the third regression model, the two social comparison variables accounted for 14% of the variance in materialism. Both social comparison with friends and social comparison with media figures had significant beta values. Respondents who frequently compared possessions with friends and media figures were more materialistic. As a result, H9 and H10 were not rejected.

In the fourth regression model, the addition of age accounted for 1% more of the variance in materialism. The additional R^2 was not significant at the 0.05 level. Age did not show significant predictive power for materialism. As a result, H1 was not rejected.

As the R^2 for all four models was significant at the 0.05 level, the model shown in Figure 1 was not rejected. The total effect of a particular path can be compiled by multiplying the corresponding standardized beta coefficients. According to the total effects compiled, the effect of peer communication via social comparison with friends had the highest total effect (0.12), followed by the effect of normative peer influence via social comparison with friends

(0.10). The materialism scores were higher for those who frequently engaged in peer communication about consumption and social comparison with friends, and those who reported higher levels of normative peer influence and social comparison with friends.

DISCUSSION

This study attempted to examine the influence of interpersonal communication and media consumption on social comparison and the endorsement of materialistic values.

Contrary to what had been hypothesized, the level of family communication and the patterns of family communication about consumption were not related to social comparison with friends. This may suggest that family communication about consumption is concerned more with consumer education than with the social consequences of consumption. Parents may not put emphasis on adolescents' evaluation of the consumption of others.

As hypothesized, peer communication was positively correlated with social comparison with friends. The level of peer communication reflects the frequency of peer interaction. Adolescents who communicate frequently about consumption with friends are more likely to engage in social comparison with friends. This may be because much of their communication with peers is about possessions and brands (Chan, 2005).

The findings indicate that normative peer influence was related to social comparison with friends while informative peer influence was not. This shows that adolescents engage in peer communication to ensure that they comply with the wishes of others. Adolescents who gathered consumer information from friends, however, may or may not have then engaged in social comparison.

Contrary to what was hypothesized, television exposure had no correlation with social comparison with media figures. The media figures in the study were confined to movie stars and popular singers. We think this finding can be explained by the fact that movie actors and popular singers do not appear solely in television programs. So, television may not be the main source of image information about media celebrities.

Motivation for viewing advertisements had a positive correlation with social comparison with media figures. Advertisements in Hong Kong often use movie stars and popular singers as celebrity endorsers. Young people admire the image and trendy look of these celebrities (Chan, 2005). This indicates that advertisements are used by adolescents for information about desirable images. This result is consistent with that of Richins' (1991) study showing that young females often compared their physical attractiveness with models in advertisements.

As hypothesized, social comparison with friends and with media figures had a positive correlation with materialism. Adolescents who compare their own possessions with the possessions of friends and media celebrities come to believe that possessions are related to success and happiness, and that possessions occupy a central position in life. The measurement of social comparison with friends in this study did not include downward comparison. But the findings support the idea that upward social comparison encourages materialistic aspirations.

Social comparison with friends was a better predictor of materialism than was social comparison with media figures. This may be because friends are more accessible and their consumption patterns are more concrete and easier to observe.

In this study, age was not a significant predictor of materialism. This result is consistent with Kasser's (2005) finding that adolescents' materialism did not increase with age. As all the respondents in this study were students, we were not able to test whether working adolescents would be more materialistic than adolescents who are still studying.

Despite the use of a nonprobability sample, this research has generated useful insights for future researchers to build on. For instance, future research could compare materialism among adolescents and adults to examine whether there is a significant change in attitude as important life events occur, such as entering the workforce or forming a new family.

CONCLUSIONS

The results of this study show the extent to which Hong Kong adolescents endorse materialistic values, and provide empirical support for the proposed theoretical influence model. The results show that peer communication, normative peer influence, motivation to view advertisements, social comparison with friends and social comparison with media figures all promote materialism. If materialism is considered to be a negative value, the results suggest that to discourage materialism among adolescents, possible strategies include discouraging peer communication, yielding to peer influence, and upward social comparison.

REFERENCES

- Achenreiner, G. B. (1997). Materialism values and susceptibility to influence in children. In M. Brucks & G. MacInnis (Eds.), *Advances in consumer research* (vol. 24, pp. 82-88). Provo, UT: Association for Consumer Research.
- Bearden, W. O., Netemeyer, R. G., & Teel, J. E. (1989). Measurement of consumer susceptibility to interpersonal influence scale. In M. E. Goldberg (Ed.), *Advances in consumer research* (vol. 17, pp. 770-776). Provo, UT: Association for Consumer Research.

- Belk, R. W. (1985). Materialism: Trait aspects of living in the material world. *Journal of Consumer Research*, **12** (December), 265-280.
- Census and Statistics Department. (2005). *Main tables of the 2001 population census*. Retrieved from www.info.gov.hk/censtat/eng/hkstat/index1.html
- Chan, K. (2003). Materialism among Chinese children in Hong Kong. *International Journal of Advertising and Marketing to Children*, **4** (4), 47-61.
- Chan, K. (2005). Consumption of prestigious brands and source of influence among young people in Hong Kong. *Media Digest*, September: 14-15 [In Chinese].
- Cheung, C. K., & Chan, C. F. (1996). Television viewing and mean world value in Hong Kong's adolescents. *Social Behavior and Personality*, **24** (4), 351-364.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, **7** (May), 117-140.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1986). Living with television: The dynamics of the cultivation analysis process. In J. Bryant & K. D. Zilmann (Eds.), *Perspectives on media effects* (pp. 17-40). Hillsdale, NJ: Lawrence Erlbaum.
- Goldberg, M. E., Gorn, G. J., Peracchio, L. A., & Bamossy, G. (2003). Understanding materialism among youth. *Journal of Consumer Psychology*, **13** (3), 278-288.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis with readings*. Englewood Cliffs, NJ: Prentice-Hall.
- Hu, H. C. (1944). The Chinese concept of face. *American Anthropologist*, **46**, 45-64.
- Inglehart, R. (1993). *Culture shift in advanced industrial society*. Princeton: Princeton University Press.
- John, D. R. (1999). Consumer socialization of children: A retrospective look at twenty-five years of research. *Journal of Consumer Research*, **26** (December), 183-213.
- Kasser, T. (2002). *The high price of materialism*. Cambridge, Massachusetts: The MIT Press.
- Kasser, T. (2005). Frugality, generosity, and materialism in children and adolescents. In K. A. Moore & L. H. Lippman (Eds.) *What do children need to flourish?: Conceptualizing and measuring indicators of positive development* (pp. 357-373). New York: Springer Science.
- Kasser, T., Ryan, R. M., Couchman, C. E., & Sheldon, K. M. (2004). Materialistic values: Their causes and consequences. In T. Kasser & A. D. Kanner (Eds.), *Psychology and consumer culture*. Washington, DC: American Psychology Association.
- Kasser, T., Ryan R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to late adolescents' materialistic and prosocial values. *Developmental Psychology*, **31**, 907-914.
- Kwak, H., Zinkhan, G. M., & DeLorme, D. E. (2002). Effects of compulsive buying tendencies on attitudes toward advertising: The moderating role of exposure to TV commercials and TV shows. *Journal of Current Issues and Research in Advertising*, **24** (2), 17-32.
- Lennox, R. D., & Wolfe, R. N. (1984). Revision of the self-monitoring scale. *Journal of Personality and Social Psychology*, **46**, 1349-1364.
- Mangleburg, T. F., & Bristol, T. (1998). Socialization and adolescents' skepticism toward advertising. *Journal of Advertising*, **27** (3), 11-21.
- Moore, R. L., & Moschis, G. P. (1981). The role of family communication in consumer learning. *Journal of Communications*, **31** (Autumn), 42-51.
- Moschis, G. P., & Churchill, G. A. Jr. (1978). Consumer socialization: A theoretical and empirical analysis. *Journal of Marketing Research*, **15** (November), 599-609.
- Moschis, G. P., & Moore, R. L. (1979). Family communication and consumer socialization. In L. William & A. William (Eds.), *Advances in consumer research* (vol. 6, pp. 359-363). MI: Association for Consumer Research.
- Moschis, G. P., & Moore, R. L. (1982). A longitudinal study of television advertising effects. *Journal of Consumer Research*, **9** (December), 279-286.

- Moschis, G. P., Moore, R. L., & Smith, R. B. (1984). The impact of family communication on adolescent consumer socialization. In T. Kinnear (Ed.), *Advances in consumer research* (vol. 11, pp. 314-319). Provo, UT: Association for Consumer Research.
- Piaget, J. (1970). The stages of the intellectual development of the child. In P. H. Mussen (Ed.), *Readings in Child Development and Psychology*. New York: Harper and Row.
- Richins, M. L. (1991). Social comparison and the idealized images of advertising. *Journal of Consumer Research*, **18** (June), 71-83.
- Richins, M. L. (2004). The Material Values Scales: Measurement properties and development of a short form. *Journal of Consumer Research*, **31** (1), 209-219.
- Richins, M. L., & Dawson, D. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, **19** (December), 303-316.
- Selman, R. L. (1980). *The growth of interpersonal understanding*. New York: Academic Press.
- Sirgy, M. J. (1998). Materialism and quality of life. *Social Indicators Research*, **43**, 227-260.
- Williams, G. C., Cox, E. M., Hedberg, V. A., & Deci, E. L. (2000). Extrinsic life goals and health risk behaviors in adolescents. *Journal of Applied Social Psychology*, **30**, 1756-1771.
- Wong, N. Y., & Ahuvia, A. C. (1998). Personal taste and family face: Luxury consumption in Confucian and Western societies. *Psychology and Marketing*, **15** (5), 423-441.

