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Development of materialistic values among children and adolescents

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Abstract

Purpose - Materialism among the younger generation has become a hot topic among parents, educators, marketers and policy makers, especially in Macao, a city that the influx of tourists and the expanding gaming facilities bring the potential threat of materialism and the erosion of traditional family values. This study aims at developing a model using age, sex, social comparison of consumption with friends, attention to advertising, and self-esteem to predict young people's materialistic values.

Design/methodology/approach - A probability sampling of 667 elementary and secondary school students aged 8 to 17 in Macao was conducted.

Findings - Results show that social comparison of consumption with friends was the most important factor in predicting respondents' endorsement of materialistic values, followed by self-esteem.

Research implications - Parents and educators should be aware of young people's engagement in social comparison of consumption. They shall discourage children and adolescents to compare possessions with friends. Regulating young consumers' exposure to advertising would not be successful in discouraging materialism.

Original/value - This is the first study that examines materialistic values of both children and adolescents using the same scale and survey methodology in Chinese society. Also, this is the first study reported on materialism in Macao.

Limitations - All the constructs are measured by self-reporting. Some respondents may give socially desirable answers.

Keywords: Materialism; Social Comparison; Consumer Psychology; Macao; Survey

Paper type Research paper

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Introduction

A television commercial for personal loan service featured a father picking up his son from an elementary school. Because of the father's lowly outfit, the child turned away from him. The commercial suggested that the father borrowed money from the advertiser and dressed up. The boy returned to the father's embrace. This commercial received much public complaints and the advertising regulating authority warned the advertiser for conveying materialistic values to children (Chan, 2010).

Materialism among the younger generation has become a hot topic among parents, educators, marketers and policy makers. Because of the enormous purchasing power of the young consumers and their influences in family purchase decisions, the youth market is important to advertisers. One of the perceived undesirable consequences of advertising was the communication of materialistic values to children and youth (John, 1999). Materialism was considered as a negative value that associated with possessiveness, jealousy, and greed (Belk, 1983). Materialism also has a negative impact on adolescents' subjective well being (Manolis and Roberts, 2012). While marketing professionals are keen to promote products and services to the youth, parents, educators and policy makers are concerned with protecting young consumers from obsession with possessions, as well as the risk of over-spending and incurrence of debt.

Macau, a former Portuguese colony, is now the world's biggest gaming market. Casinos' gross revenue in 2012 claimed up to a record high of US$ 4.87 billion (Chan, 2013). Situated an hour away by ferry of Hong Kong, Macau is the only place in China where Casino gambling is legal (Chan, 2003). The gaming and tourism sector continued to prosper, propelling 19 percent of Macao's GDP to reach US$ 9.88 billion in the first quarter of 2012, with a real growth of 18 percent comparing to the

same period in the previous year (Statistics and Census Service, 2012).

The recent blooming of the gaming industry in Macao has created much concern about its potential threat on the psychological well-being of its residences (van Schalkwyk *et al.*, 2006). A qualitative study found that the gaming industry was perceived to have negative impact on family functioning. Informants perceived that the younger generation was encouraged to involve in hedonistic spending and a drive toward individual needs and materialism. Informants worried that some young people forfeited further education and opted to work in casinos offering attractive salaries (van Schalkwyk *et al.*, 2006).

The influx of tourists and the expanding gaming facilities bring the potential threat of materialism and the erosion of traditional family values. A survey of 1,060 young people aged 13 to 29 showed that over half of them agreed that money can buy happiness and disagreed that money is not the most important thing in the world (Sheng Kung Hui Problem Gambling Counseling Services, 2008). Based on a previous study of materialism among children in Hong Kong (Chan, 2003; Chan, 2005) and a previous study of materialism among young people in Hong Kong (Chan and Prendergast, 2008), a basic thesis is proposed in the present study that interpersonal communication influences social comparison while media consumption influences attention to advertising. And both social comparison of possessions and attention to advertising, will in turn, influence materialistic values. A survey was conducted to test this theoretical model.

Materialism is a key consequence of living in the Chinese urban cities, such as Macao, as wealth is highly visible, shopping malls are abundant, and materialistic values are prevalent in the mass media (Chan and Prendergast, 2008).

Theoretical framework

According to Kasser *et al*.'s (2004) model, consumers (including children and adolescents) develop 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. Kasser *et al*.'s (2004) model focuses on the individual's internal status. In the current study, we attempt to replace the feelings of insecurity and exposure to materialistic models in that model with variables related to social comparison of consumption and attention to advertising. This is because social comparison of consumption and attention to advertising are variables that measure the active mental processing of incoming messages about materialistic values. The proposed theoretical model is developed and is shown in Figure 1.

Definitions of materialism

Scholars conceptualized materialism as personality traits, personal values, or societal values. The consumption-based orientation to happiness-seeking that is commonly labeled materialism has generally been seen as a Western personality trait that has achieved an elevated place in industrial and post-industrial life (e.g., Campbell, 1987; McCracken, 1988; McKendrick *et al*., 1985; Williams, 1982). Richins considered materialism as a system of personal values (e.g. Fournier and Richins, 1991; Richins and Dawson, 1992). In her conceptualization, materialism represents a mind-set or a set of attitudes regarding the relative importance of acquisition and possession of objects in one's life. Inglehart (1990) considered materialism as a chronic focus on lower order needs for material comfort and physical safety over higher order needs such as self-expression, belonging,

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aesthetic satisfaction, and quality of life. In the current study, we endorse Richins and Dawson's (1992) conceptualization and consider materialism as a personal value and choice between tangible and intangible life goals.

Research on interpersonal and media predictors

Research has demonstrated that both peer communication and media exposure increase adolescents' materialism in France (Benmoyal-Bouzaglo and Moschis, 2010). Several studies have shown that family communication about consumption and advertising would increase young people's defenses against advertising, and mitigate advertising-induced materialism (Moschis and Churchill, 1978; Moschis and Moore, 1982). Empirical studies of U.S. adolescents found that respondents who communicate less frequently with parents about consumption are more materialistic (Moore and Moschis, 1981). It was found that teenagers who experienced disruptive family events were more likely to be materialistic (Weaver et al., 2011). This relationship was explained by perceived family stress, which shows that family communication is an important factor for explaining adolescents' materialism. A survey of adolescents and young adults in Hong Kong found that communication with parents has positive impact with social comparison of consumption (Chan and Prendergast, 2008). Social comparison can work in two ways. People can engage in upward comparison of consumption and aspired to have more or nicer material possessions. They can also engage in downward comparison, seeing themselves better off than others, and gain self-esteem. A qualitative study among Hong Kong adolescents found that participants often engaged in upward social comparison of material possessions and rarely engaged in downward social comparison (Chan, 2010). Peer communication reflects the

level of interaction with friends. Young people who communicate frequently with peers may be exhibiting a strong need for peer approval. A survey of adolescents and young adults in Hong Kong found that communication with friends about consumption has positive impact with social comparison of consumption (Chan and Prendergast, 2008). Chaplin and John (2010) found that supportive parents and friends who provide emotional support to adolescents enhance their self-esteem. Parental and peer supports reduce the sense of insecurity. As a result, adolescents do not need to rely on material goods to boost self-esteem (Chaplin and John, 2010).

According to the Kasser *et al*. (2004) model, materialistic values are frequently found in popular culture, the media, and advertisements. People who are exposed to materialistic models are more likely than those who are not to take on materialistic values through modeling (Bandura, 1971) and internalization (Ryan and Connell, 1989). Research has showed that media exposure influence strongly on materialism among adolescents ages 15-19 in mainland China (Gu and Hung, 2009) and young adults ages 18-32 in US and French (Moschis *et al.*, 2011). Advertisements encourage consumption by using images of attractive and/or famous product users, demonstrating social reward through using products, and associating products with wealthy lifestyles (Kasser *et al*., 2004). Attitude toward advertising was related positively to materialism (Chan, 2003). In a survey of materialism among children in Hong Kong, respondents who perceived the manipulative power of advertising strongly were more materialistic. The finding indicates that perceiving advertising has the manipulative power does not help to develop a defensive shield for the respondents. Respondents admit the manipulative power of advertising and yield to its influence (Chan, 2003).

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Research on intrapersonal and demographic predictors

Self-esteem is an indicator of self-confidence. As children and adolescents develop materialistic value orientation through experiences that induce feelings of insecurity, those who are low in self-esteem will have higher sense of insecurity (Kasser *et al*., 2004). As a result, they will be more likely to develop materialistic value orientations.

Chan's (2003) study did not find gender difference in materialistic values. Hong Kong girls are equally materialistic as boys. Previous conclusion of boys being more materialistic comes mainly from study of adolescents. It indicates that in early childhood, there is no such gender difference, at least in the Chinese context in Hong Kong.

The influence of age on materialism was controversial in the research literature. In a previous study of materialism among children aged 6 to 13 in Hong Kong, materialistic value orientations decreased with age. The youngest children were the most materialistic (Chan, 2003). Similar to Baker and Gentry's (1996) finding, the youngest children were more likely to compare with friends to see who got more toys. Endorsement of materialistic values was found to decrease with age among adolescents aged 13 to 18 in Singapore (La Ferle and Chan, 2008). However, from another study of materialism among adolescents in urban China, aged was found to have positive impact on materialism. Older adolescents tended to be more materialistic than younger adolescents (Chan *et al*., 2006). An experimental study in U.S. found that materialism rises from children aged 8 to 9 to pre-adolescents aged 12 to 13, and materialism decreases from pre-adolescents to adolescents aged 16-18 (Chaplin and John, 2007). Results found a strong negative link between self-

esteem and materialism. Pre-adolescent respondents aged 12 to 13 were found to have lower self-esteem than respondents aged 8 to 9 and respondents aged 16 to 18. The literature reviews conclude that the change of materialism with age is inconsistent.

Research objectives

Based on the previous studies and theoretical framework, the current study has the following research objectives:

1. to examine the influence of age on materialistic values among children and adolescents;

2. to examine the influences of social comparison on respondents' materialistic values;

3. to examine the influences of media and advertising consumption on respondents' materialistic values; and

4. to examine the influence of self-esteem on materialistic values.

Method

A sample survey was conducted during the period of May to June 2008. To track the change in materialism and other variables by age, we select three school grades. We decided that students at least of grade 4 should be covered as they would be more likely to fully understand the questionnaires, and also more likely to be aware of their own opinions. The three grades selected are grade 4 (age round 8 to 9), grade 7 (age around 12 to 13), grade 11 (age around 16 to 17).

Sampling

A systematic random sampling of schools where the children and young people are studying was designed. A list of all elementary and secondary schools in Macao was downloaded from the official website of the Education and Youth Affairs Bureau in April 2008. The list forms the sampling frame. Altogether there are 124 schools. We excluded schools offering special education or vocational education. A systematic random sampling of eight secondary schools and six elementary schools was selected. The principal investigator and/or the research assistant made at least three contacts with the school principals and invited them for participation in the study. Schools refused to participate after these contacts were replaced by another school appearing next on the list. The questionnaires together with a covering letter specifying the purpose of the study were mailed to the sampled schools. The sampled elementary school, were requested to deliver the questionnaires randomly to one class of grade 4 students to complete. The sampled secondary schools were requested to deliver the questionnaires randomly to one class of form 1 and one class of form 5 students to complete. Not all sampled schools had form 5 students. Altogether 14 schools participated in the survey.

Participants

Altogether 707 completed questionnaires were collected. Forty respondents aged over 20 were excluded as they were considered outside the scope of adolescence. As a result, 40 questionnaires were not included. The final sample size was 667. The mean age of the sample was 13.5 years. Table 1 summarizes the sample profile in terms of age, sex, school grade, whether he or she receives regular allowance from family, and estimated level of family income.

There was nearly an equal distribution of males and females in the sample. A total of 70 percent of the sample were secondary school students and 30 percent were elementary school students. Of the respondents, a majority of respondents (78 percent) had regular allowance and 22 percent did not receive regular allowance. Altogether 68 percent of the sample reported that they did not know whether their family income was higher or lower than other families in Macao. Twenty percent of the respondents perceived their family income was relatively lower than other families in Macao, while 12 percent of them perceived their family income was higher relative to other families in Macao.

[TABLE 1 ABOUT HERE]

Procedure

The questionnaires were distributed at a normal class session and the corresponding teachers helped to collect the completed questionnaires. The questionnaires were self-administered by the respondents. Participation in the study was voluntary and no incentives were given to the schools or to the respondents. It was not a common research practice in Macao to obtain informed consent from the parents. In the current case, the school principals vetted the questionnaire and made decision on participating in the study. The questionnaires were mailed back to the investigators or picked up by the research assistant.

Measures

The original versions of the established scales were in English. Chinese versions that have been tested in a previous study in Hong Kong were adopted in the current study (Chan and Prendergast, 2008). Materialism was measured by using the 10-item Youth

Materialism Scale (Goldberg *et al*., 2003). Respondents were asked to rate these statements on a five-point scale (1 = disagree very much, 5 = agree very much). The Cronbach alpha was 0.74. Communication with parents and friends about consumption was measured by asking respondents to rate three items respectively on five-point scales (1 = never, 5 = nearly every time; Moschis and Moore, 1982). The Cronbach alphas were 0.68 and 0.57 respectively. Social comparison of consumption with friends was measured by asking respondents how often they pay attention to what their close friends (or friends richer than them) were buying on five-point scales (1 = never, 5 = nearly every time; Chan and Prendergast, 2008). In other words, downward social comparison of consumption was not measured explicitly. The Cronbach alpha was 0.58. Attention of advertising was measured by asking respondents to rate one item on five-point scales (1 = never, 5 = nearly every time; Chan and Prendergast, 2008). A short-form version of the Rosenberg Self Esteem Scale was used to measure self-esteem (Blascovich and Tomaka, 1991) by asking respondents to rate four statements on five-point scales (1 = disagree very much, 5 = agree very much). The Cronbach alpha was 0.70. As the consumption experience of younger respondents is limited, the wordings used in the questionnaires for the elementary school students and secondary school students have some minor differences. It is assumed that the statements are measuring the same constructs. For example, in measuring communication with friends about consumption, the statement "I would discuss with friends about matters related to consumption" was used for the secondary school sample. The statement "I would discuss with friends about what to buy for foods and toys" was used for the elementary school sample. Media usage was measured by asking the respondents to estimate the number of hours they spent per day on using four different media including watching Hong Kong's TV program,

watching Macao's TV program, using internet, and reading newspaper. Demographic variables were collected, including sex, age, school grade, receiving regular allowance, and perceived family income relative to other families in Macao.

Results

Table 2 summarizes the descriptive statistics of the key constructs. To test whether there are age differences in materialism among the three age groups, a one-way ANOVA was conducted. The mean materialism scores of the three age groups 8-11, 12-15, 16-20 were 2.64, 2.76, and 2.83 respectively. The ANOVA result was significant, $F(2, 655) = 4.65$, $p = .01$. In other words, the materialism scores of the three age groups differed significantly. Post Hoc Tukey contrasts showed that children ages 8-11 were less materialistic than adolescents ages 16-20 ($M = 2.64$ vs. 2.83, $t(1, 395) = 3.12$, $p < .01$).

<div align="center">[TABLE 2 ABOUT HERE]</div>

In our research model, the dependent variable was the materialistic value orientation. The independent variables included age, sex, perceived family income, self-esteem, communication about consumption with parents and friends, social comparison of consumption with friends, time spent on watching Hong Kong TV and Macao TV, reading newspapers, the Internet, and attention to television advertising.

Table 3 shows the correlation matrix of all variables involved in the regression analysis. Results showed that respondents' endorsement of materialistic values was positively related with communication with parents and friends about consumption, social comparison of consumption with friends, time spent on the Internet, attention to television advertising, age, and self-esteem. In the Pearson correlation

matrix, the highest correlation coefficient was found between social comparison of consumption with friends and communication with friends about consumption (r=0.52). The second highest correlation coefficient was found between communication with friends and communication with parent (r=0.41). The third highest correlation coefficient was found between materialism and social comparison of consumption with friends (r=0.40).

[TABLE 3 ABOUT HERE]

Multiple regression analysis was used to examine the theoretical model. Communication with parents and friends about consumption were used to predict social comparison of consumption with friends; and time spent on watching Hong Kong television, watching Macao television, reading newspapers, and the Internet were used to predict attention to television advertising. After that, four steps were conducted in the regression models. Sex and age were introduced in the first step, social comparison of consumption with friends was added in the second step, attention to television advertising was added in the third step, and self-esteem was used in the fourth step to predict the materialism scores of the respondents. Table 4 shows the summary of the regression analysis.

Communication with parents and communication with friends were used to predict social comparison of consumption with friends, which accounted for 27 percent of the variance. Only communication with friends about consumption was related positively to social comparison of consumption with friends (standardized beta=0.45, p<0.001). Communication with parents about consumption was not related to social comparison of consumption with friends (standardized beta=0.07, p>0.05).

Consumptions of media were used to predict attention to television advertising.

All four variables together accounted for only 3 percent of the variance in attention to television advertising. Two predictors, including time spent on Hong Kong TV and time spent on Macao TV had positive and significant beta values. The other two predictors were not significant. The time spent on watching Hong Kong television was related positively to attention to television advertising (standardized beta=0.13, $p<0.001$). The time spent on watching Macao television was related positively to attention to television advertising (standardized beta=0.09, $p<0.05$). The time spent on reading newspapers was not related to attention to television advertising (standardized beta=-.0.00, $p>0.05$). The time spent on the Internet was not related to attention to television advertising (standardized beta=-0.04, $p>0.05$).

In the first step of multiple regression, one percent of the total variation of the dependent variable of materialistic scores could be explained by the age and sex. Sex was not significant predictor of materialism. Older respondents were more materialistic. In the second step when social comparison with friends was added, a significant R square value of 0.14 was obtained. Fourteen percent of the total variation of the materialistic scores could be explained by the three predictors. After controlling for age and sex, social comparison of consumption with friends had related positively to materialism. Age became unrelated to materialism. In the third step when attention to television advertising was used to predict materialism, the R square change is 0.00. Attention to television advertising was not related to materialism. In the last step of the regression analysis, self-esteem was added to predict materialism. The five variables together accounted for 16 percent of the variance in materialism. Both social comparison with friends and self-esteem had significant beta values. Social comparison of consumption with friends had related positively to materialism (standardized beta=0.36, $p<0.001$). Self-esteem had

related positively to materialism (standardized beta=0.09, p<0.05).

[TABLE 4 ABOUT HERE]

Figure 1 shows the path diagram of the multiple regression analysis. 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 communication with friends via social comparison of consumption with friends had the highest total effect (0.16=0.45*0.36). The figure was arrived by multiplying the standardized beta coefficient of communication with friends in predicting social comparison of consumption with friends (i.e. 0.45) and the standardized beta coefficient of social comparison of consumption with friends in predicting materialism (i.e. 0.36). The path with the second largest total effect was the direct effect of self-esteem on materialism (i.e. 0.09). The materialism scores were higher for those who often communicated about consumption with friends and those who more often engaged in social comparison of consumption with friends. The materialism scores were also higher for respondents with a higher self-esteem.

[FIGURE 1 ABOUT HERE]

Discussion

The present study is the first study that examines materialistic values among children and adolescents using the same scale and same survey methodology. It is also the first reported study of materialism in Macao. Contrary to Chaplin and John's (2007) study, results indicated that materialism among adolescents aged 16 to 20 were significantly higher than children aged 8 to 11. Materialism increases in age among children and adolescents. This result was different from Chaplin and

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John's (2007) study that materialism was highest among respondents in the age group of 12-13. Chaplin and John (2007) attributed the high materialistic value orientation among children age 12-13 to the drop in self-esteem during that stage. Our data found that there was no significant difference in self-esteem among the three age groups of respondents aged 8-11, 12-15, and 16-20, $F(2, 655) = 0.78$, *n.s.* The difference in results may be due to the difference in research method, as laboratory experiment was used in Chaplin and John's (2007) study, whereas survey methodology was used in the current study. In addition, the three age groups in the present study were ages 8-11, 12-15, and 16-20, which was different from the three age groups of 8-9, 12-13, and 16-18 in Chaplin and John's (2007) study.

To restate our basic thesis, we predict that interpersonal communication influences social comparison of consumption with friends while media communication influences attention to television advertising. And both social comparison of consumption with friends and attention to television advertising, in turn, influence materialistic values. Results indicated that communications with parents had a positive but weak influence on social comparison. Parents are consumers and they can also engage in social comparison behaviors. Research indicates that opinion leaders often demonstrate materialistic orientations by encouraging others to consume (Fitzmaurice and Comegys, 2006). The Chinese culture puts much emphasis on social face and social comparison of consumption with friends is encouraged (Wong and Ahuvia, 1998). The presence of the effects of all interpersonal communication sources on social comparison of consumption among respondents shows that social comparison of consumption can be a

phenomenon strongly embedded in the Chinese culture. As a result, all kind of interpersonal communication will reinforce the comparison behaviors.

Peer communication was positively correlated with social comparison of consumption with friends. Indeed, consistent with our overall hypothesizing, it was more positively correlated with social comparison of consumption with friends than communication with parents. The level of peer communication reflects the frequency of peer interaction. Respondents who frequently communicate about consumption with friends are more likely to engage in social comparison of consumption. This may be because much of their communication is about possessions and brands, even among children and adolescents.

The findings indicate that, of all the predictors of social comparison of consumption with friends, communication with friends about consumption was the strongest. This shows that respondents who frequently communicate about 'in' products, market trends, consumption, and advertisements were more likely to engage in social comparison of consumption. This indicates that the sharing of consumption experiences will trigger the desire to check out whether their friends may have or may not have these possessions or brands.

Exposure to Hong Kong television and Macao television had positive correlation with attention to television advertising. However, exposure to newspapers and the Internet had no positive correlation with attention to television advertising. There may be two reasons for it. First, the time spent on newspaper was the lowest among the four media selected. The limited time spent on the media may result in negligible impact on personal values. Second, as attention to television advertising was measured and not all types of advertisements, it was reasonable to find that respondents spending more time on the television programs

pay more attention to advertisements in that medium than respondents spending less time on the television programs.

Age and sex had no influence on materialism. Examination of the residual plots of age indicated that there was no non-linear pattern. After adding the variables of social comparison with friends, attention to television advertising, and self-esteem, age became unrelated to materialism. Examination of the correlation matrix in Table 2 found that age was positively related with social comparison as well as communication with friends about consumption. Both social comparison and communication with friends were positively related with materialism. The evidence supported that materialism was more a result of social learning than a result of cognitive development. Our evidence did not support that materialism increase or decrease with age for children and adolescents when other factors are controlled. Sex had no influence on materialism either. The results show that both sexes endorsed materialistic values to similar extents.

Social comparison of consumption with friends had a positive correlation with materialism. Respondents who frequently compare their consumption with the consumption of friends come to believe that more money will lead to personal success and happiness, and that they are more aspired to enjoy a life with lots of material possessions. It can also be interpreted as that those who place a high importance on material possessions are keen to engage in social comparison of consumption. The measurement of social comparison in this study included upward comparison only. So, the findings support the idea that upward social comparison of consumption encourages materialistic aspirations.

Attention to television advertising had no positive correlation with materialism. It indicates that those who pay more attention to television advertising are not

more likely being affected by them in the endorsement of materialistic values. As we did not include two variables on attitudes toward advertising and motivation of viewing advertisements for the regression analysis, the influence from attention to television advertising on materialism alone was limited. The results indicate that mere attention to advertisements was insufficient to develop impact on materialistic values. Active form of advertising consumption and lenient towards advertising consumption measured by variables such as positive attitudes toward advertising and motivation of viewing advertisements will measure the engagement in high level of interaction and mental processing of advertising messages. As a result, we expect that attitudes toward advertising and motivation of viewing advertisements will have positive impact on materialism values. Further research is needed to test this hypothesis. In some countries, there are public opinion that advertising exposure to children and adolescents should be limited. The evidence in this study indicates that limiting young people's exposure to advertising may not be an effective strategy in discouraging materialism.

Contradictory to Chaplin and John's (2007) study, self-esteem was found to have a positive impact on materialism. There are two possible explanations. First, children and adolescents who have high self-esteem consider themselves worth of more possessions, and therefore are more aspired to have more money and good things in life. Second, as the model is not a casual relationship, we can interpret the results as those who are more materialistic perceive higher self-esteem. In other words, those who perceive material possessions as source of happiness and success in life are more likely to feel good about themselves. This is consistent with a study on youth in Hong Kong that they feel proud of themselves after consumption (Ming Pao Daily News, 2004).

Limitation and further studies

The data collected in the study relied on self-reporting. It is possible that materialism is perceived as a negative personality trait and respondents will give socially desirable answers. Further study is needed to compare materialism amongst adolescents and young adults to examine whether there is a significant change in materialism with important life events, such as entering the work force or forming a new family. Further research is also needed to explore the source of social comparison, including whether typical consumers or media celebrities are being used for upward social comparison. Finally, to what extend advertising images and commercial-oriented messages are consumed for social comparison should be explored using qualitative or quantitative methodologies.

Conclusion

To conclude, the current study supported a model to predict the development of materialistic consumption values among children and adolescents by employing marketing communications and social influence factors. A relatively small set of variables were able to predict 16 percent of the variance of materialism values. Social influences from friends and self-esteem had positive impact on respondents' endorsement of materialistic values. Interpersonal influence demonstrated a stronger effect in predicting materialism than attention to television advertising. Media influence was not stronger than interpersonal influence in the combined dataset. This is probably because an inactive consumption of advertising of "attention to television advertising" was adopted in the theoretical model. In the future, variables indicating more active processing of advertising such as attitudes toward advertising or

motivation of viewing advertisements should be adopted in the prediction of materialism among children and adolescents.

Marketing implications

Socially responsible marketers should employ peer influence and opinion leaders in the creation of positive word-of-mouths about the brands. Using images of how the products or the brands are consumed in a social setting will increase the likelihood of the brand being accepted.

Social implications

The research findings have the following actions for parents, educators, policy makers, and marketers:

- As social comparison of consumption has a strong direct effect on endorsement of materialistic values, parents and educators should discourage children and adolescents to compare consumption patterns and possessions with their friends. Parents and educators shall encourage children and adolescents to observe their personal taste and preference in making purchase decisions. Parents and educators should help children and adolescents to differentiate between "needs" and "wants". Parents and educators should discuss with children and adolescents how to cope with their own status of material possessions.
- Parents and educators should assist young people in handling normative peer influence on consumption. Young people should be taught about respect for their own purchase decisions as well as that of others.
- The government should start an education program for Macao children and

adolescents to develop a healthy attitude toward money, money management, and acquisition of material possessions.

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Table 1. Sample profile (N=667)

	Frequency	%
Sex		
Female	344*	52
Male	321	48
Age		
8	1	0.2
9	15	2
10	98	15
11	62	9
12	47	7
13	115	18
14	61	9
15	39	6
16	49	7
17	69	11
18	70	11
19	25	4
20	8	1
School grade		
Elementary 4 (grade 4)	198	30
Secondary form 1 (grade 7)	276	41
Secondary form 5 (grade 11)	193	29
Receiving regular allowance from family		
No	148	22
Yes	516	78
Perceived family income relative to other families in Macao		
Less	133	20
More	78	12
Don't know	452	68

* does not add up to 667 due to missing response

Table 2. Descriptive statistics of materialistic values, self-esteem, communication about consumption, social comparison with friends, and attention to TV advertising

	Mean	S.D.
Materialism	**2.8**	**0.6**
I would be happier if I had more money to buy more things for myself	3.4	1.2
I have fun just thinking all the things I own	3.3	1.1
The only kind of job I want when I grow up is one that gets me a lot of money	3.3	1.2
I would love to be able to buy things that cost a lot of money	3.0	1.2
I really enjoy going shopping	2.8	1.2
When you grow up, the more money you have, the happier you are	2.8	1.2
I really like to get along with friends that have a lot of possessions	2.5	1.1
I'd rather spend time buying things, than doing almost anything else	2.2	1.1
I like to buy things my friends have	2.2	1.0
I'd rather not share my snacks with others if it means I'll have less for myself	2.0	1.0
Communication with parents	**2.3**	**0.8**
I discuss about spending with my parents	2.7	1.1
I discuss about ads with my parents	2.2	1.0
I discuss "in" stuff with my parents	2.1	1.0
Communication with friends	**2.8**	**0.7**
I discuss "in" stuff with my friends	3.1	1.0
I discuss about spending with my friends	2.9	1.0
I discuss about ads with my friends	2.5	0.9
Social comparison with friends	**2.4**	**0.8**
I pay attention to what my close friends buy	2.9	1.0
I pay attention to friends who are richer than me, and see what they buy	2.0	0.9
Attention to TV advertising	**2.9**	**1.0**
Self-esteem	**3.2**	**0.7**
I think I am a valuable person	3.5	1.0
On the whole, I am satisfied with myself	3.3	1.0
I am able to do things as well as most other people	3.3	0.9
I feel that I have a number of good qualities	2.9	0.9

Notes: Row percentages do not add to 100% due to rounding. All variables are measured on a 5-point scale with 5 indicating positive direction and 1 indicating negative direction.

Table 3. Correlation matrix

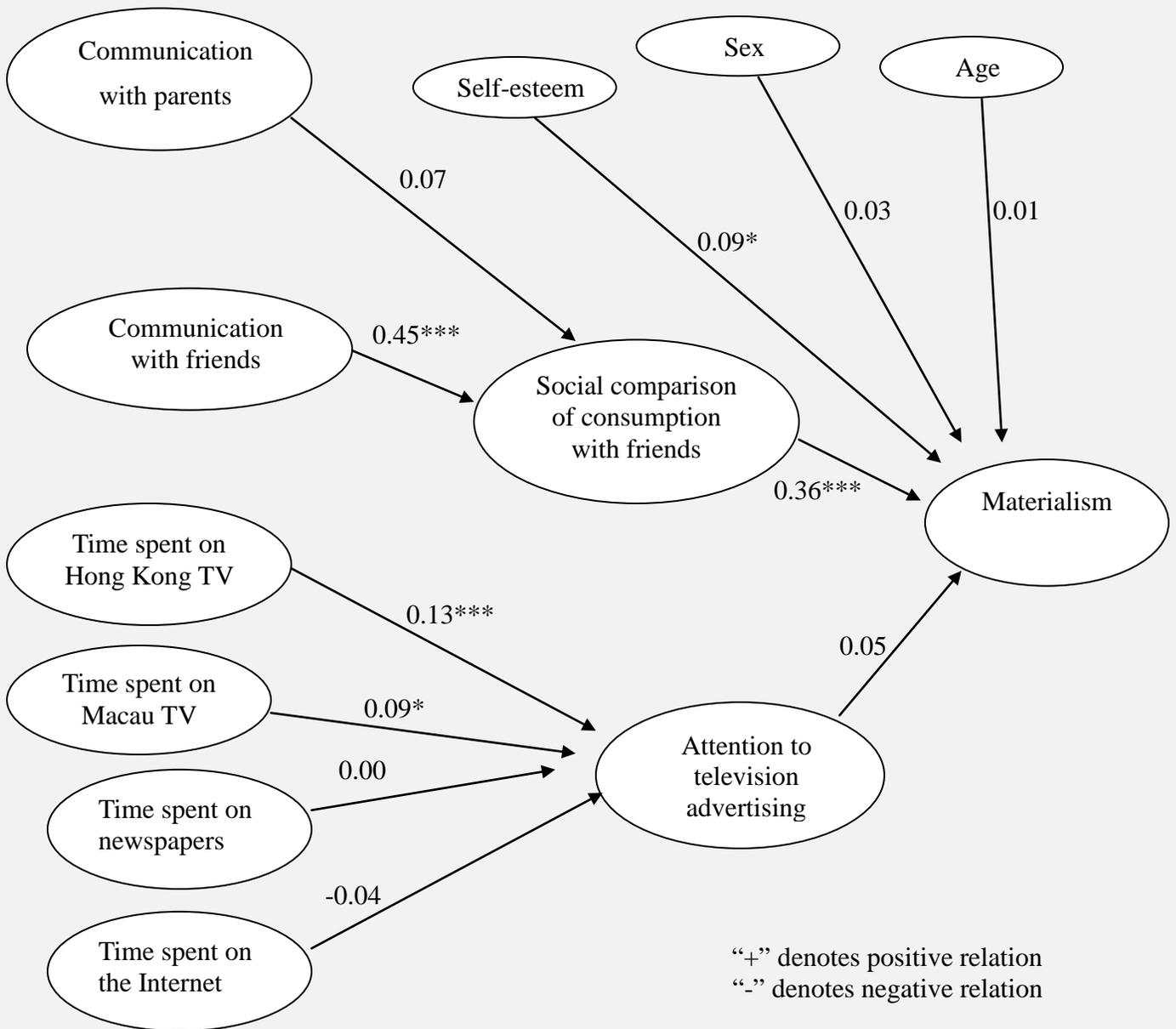|	1	2	3	4	5	6	7	8	9	10	11
1. Youth Materialism Scale											
2. Communication with parent	.13**										
3. Communication with friends	.30***	.41***									
4. Number of hours spent on watching Hong Kong TV	.07	.03	.07								
5. Number of hours spent on watching Macau TV	-.04	.08	.03	.09*							
6. Number of hours spent on reading newspaper	-.01	.17***	.16***	.02	.22***						
7. Number of hours spent on the Internet	.09*	-.08*	.07	.20***	.15***	.07					
8. Social comparison of consumption with friends	.40***	.26***	.52***	-.03	-.11**	.09*	.01				
9. Attention to television advertising	.11**	.24***	.27***	.13**	.10*	.02	.01	.15***			
10. Age	.11**	-.11**	.14***	-.21***	-.20***	.04	.05	.29***	-.10**		
11. Sex (1=M;2=F)	.01	.10**	.05	.03	.02	.06	-.11**	-.01	-.02	.05	
12. Self-esteem	.13**	.13**	.15***	-.01	-.01	.06	-.00	.13**	.06	-.01	-.10*

Note: *p<0.05; **p<0.01; ***p<0.001.

Table 4. Summary of the multiple regression analysis predicting respondents' materialism scores

Step/predictors	Step 1 β	t	Step 2 β	t	Step 3 β	t	Step 4 β	t
Sex (0=male;1=female)	0.00	0.04	0.02	0.46	0.02	0.46	0.03	0.68
Age	0.11**	2.82	-0.00	-0.06	0.01	0.19	0.01	0.29
Social comparison of consumption with friends			0.38***	10.02	0.37***	9.51	0.36***	9.16
Attention to television advertising					0.06	1.53	0.05	1.46
Self-esteem							0.09*	2.42
R^2	0.01		0.14		0.15		0.16	
Change in R^2	0.01*		0.13***		0.00		0.01*	

Note: *$p<0.05$; **$p<0.01$; ***$p<0.001$.

Figure 1. Results of path analysis

Note: *p<0.05; ***p<0.001.