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## **SHIFTING MEDIA USES AND GRATIFICATIONS AMONG SINGAPOREAN TEENS AND UNIVERSITY STUDENTS: A FUTURE RIPE FOR MOBILE APPLICATIONS**

*Carrie La Ferle - Steven M. Edwards*

### *Abstract*

*An exploratory study examining the various opportunities and challenges facing advertisers wanting to reach the teen and young adult segments of the future was undertaken in Singapore. Media patterns from traditional channels to the Internet and mobile phones were assessed to provide a context for the study. Beyond frequency of use, actual online and mobile phone activities were assessed. In the case of mobile phones, everything from talking on the phone and text messaging to receiving advertisements were examined. Implications for advertisers are discussed.*

Currently there are approximately 1.67 billion Internet users globally which account for almost 24.7% of the world's population (internetworldstats.com 2009). Internet penetration in the US is estimated at approximately 73.9% but only 66.7% in Singapore (internetworldstats.com 2009). Yet, mobile marketing is where most growth has occurred in Europe and Asia and in fact these regions are considered more developed regarding wireless internet access than the United States (Anonymous, 2007; Friedman, 2007). Although US penetration of mobile phones is predicted to reach near 100% by 2013 (www.newmediatrendwatch.com), the International Telecommunication Union 2008 report shows that mobile phone penetration was roughly 86% in the US, but was 138% in Singapore. More recent figures from SNL Kagan (2010) suggest that the number of US mobile phones is indeed growing, sitting at almost 92% at the end of 2009. Slow speed, poor content, and high costs have been attributed to the slower American adoption rates (Kauffman - Techatassanasoontorn, 2005; Muk, 2007), but explosive growth in mobile applications and smartphones has attracted a new set of users. In fact a recent study by Parks Associates (2009) projects mobile advertising revenues in North America to grow from \$208 million in 2009 to \$1.5 billion by 2013. In addition, new web enabled devices

such as netbooks, the iPad, and the Kindle are changing the way users consume information and seek entertainment. And, while research cited by Parks Associates (2009) suggests that 38% of respondents did not want to receive ads on their mobile phone, and 37% remained neutral to the idea, teens and university students were more receptive to ad-supported mobile content. Therefore, it is important to understand emerging media trends in reaching these mobile minded consumers.

The current study provides a picture of teen and university students' uses of media, and more specifically investigates young consumers' relationships with Internet and mobile phone applications as well as m-commerce advertising. Mobile phones, with their ability for personalized and on the go communications, present many opportunities previously unavailable through other media channels and these will only continue to grow as mobile applications expand (Klassen, 2008; Peters - Amato - Hollenbeck, 2007; Ting, 2008). According to Spero and Stone (2004), the text messaging market in the UK is very popular with 70% of UK teenagers preferring text messaging to voice mail and 20% of the 13 to 16 year-olds using cell phones only for text messaging. These numbers are very high in comparison with the slower adoption of text messaging in several other developed countries, including the United States (Agar, 2003). Therefore, the research further examines potential differences in cell phone use versus text messaging uses to help understand why cell phone advertising may or may not currently be effective.

Examining the role of new and traditional media in the lives' of young consumers should provide insights regarding how advertisers can more effectively reach these technology savvy consumers. Specifically, in understanding the frequency of use across media options message placement decisions can be more effective. Similarly, by learning the motivations for media use more personally relevant online content and mobile applications can be developed as well as more effective overall messaging efforts.

## Teens and University Students

Given the term "Generation Y" in a 1993 *Ad Age* article, young people today are also known as *Millennials*, and are the focus of much interest in the world of ad-

vertising. Thought to consist of those born from the mid 1970's to early 2000, the cohort spans around 25 years. Yet many studies consider "young people" a homogeneous group that is full of technologically savvy, Facebook joining, YouTube posting savants. These consumers have been found to be fast to embrace cell phones, personal digital assistants and other handheld devices (Sultan - Rohm, 2008). Katz (1996) even characterized young people as the personification of the digital world. More than 98% of 16-29 year old Australians own a cell phone (O'Doherty - Rao - Mackay, 2007) and nine out of 10 teens text (Melville, 2008), and they seem to share a preference for messaging over email (Patheiger, 2009).

However, such characterization oversimplifies the reality of the teen existence. Teens use media in a number of ways to meet their individual needs. For example, young Korean consumers were recently found to engage in an average of 44 hours of media activity in one typical 24 hour day (warc.com 2008), indicating their simultaneous engagement with a number of different media formats. A quick search of the current literature on young people's use of media shows that tweens think Twitter is for old people (Conner, 2009), the popularity of television wanes with age (Patheiger, 2009), and the stereotype that MySpace is for high school, but Facebook is for college is not so clear cut (Boyd, 2007). All of this highlights that millennials are figuring out ways to engage with media in a way that best meets their individual desires. In fact, Herrmann (2008) reporting on a Nielsen study of more than 5,500 teens and tweens concludes that just as there are differences between the way adults and youth consume media, there are also differences between teens and tweens.

Patheiger (2009) describes the 49 million 8-18 year olds in the US (tweens and teens) as all loving music, clothing, movies and television, and embracing technology. However, he also notes that teens are transitioning into adulthood and operate more independently in their decision making than do tweens who are transitioning from childhood. Taking such developmental distinctions further, Arnett (2000) coined the term *emerging adulthood* for those between the ages of 18 and 25. Arnett claims that for many young people who choose to postpone marriage and having children and obtain more education, these years are a time of exploration and change and are distinct from either the teen years and young adulthood. While acknowledging that not all young people experience such opportunities, the trends in highly industrialized countries cannot be denied and

therefore suggest the opportunity for further study as it pertains to the use of emerging technology.

As an example, using a small sample of students from the US and the UK, Grinter and Palen (2002) explored the instant messaging (IM) habits of teens in high school and university students. Differences between the high school and college teens' instant messaging behavior were explained by factors related to needs related to time and socializing. Time issues concerned the degree to which home and scholastic obligations influence IM use. High school teens conformed to expectations of domestic obligations (e.g., chores) which restricted IM usage, but also used IM to get around domestic constraints about when it was permissible to talk with friends. University students' also used IM to fulfill time and social needs, but differently. IM was used by university students to maximize the efficiency of schoolwork and school meetings, provide daily updates to friends, and maintain family connections from a distance. So while both groups were actively using instant messaging, they used the technology in different ways and with different motivations.

Another study reported by Richman (2009) compared the internet activities of US teens (ages 13-17) to university students (ages 18-24). The findings show that Facebook, Google and YouTube are the top three sites visited by both male and female teens. However, male teens indicated YouTube (41%), Facebook (34%), and Google (30%) as their favorite websites, compared to Facebook (47%), Google (33%), and YouTube (27%) for female teens. In contrast, male and female university students had more overall in common yet also varied in their specific preferences. Both male and female university students reported their favorite website as Facebook (56% and 77%, respectively). For male university students though, ESPN (a sports network) was the next most popular website (33%), followed by Google (26%). For female university students, Google was the second most popular website (23%), followed by Yahoo! (17%). What these statistics indicate are that even when this group of millennials all report use of the internet; they do so in different ways. Teens and university students, and even males and females in each group seek different gratifications online. Such gratifications may become even more diverse when applying the same arguments detailed above to the use of mobile phones.

## Media Use Consumption and Motivations

Acknowledging the explosive way the Internet and now mobile phones have changed the media landscape and advertising practices, we must not forget that traditional forms of media have not vanished. In fact, a recent study by companies of the WPP group found that brand awareness and trust of a brand are still best conveyed through mainstream media - TV, print and radio (McClellan, 2007). According to the study's results, relative low penetration of new media across the masses suggests that these new channels have a ways to go before they replace traditional media for many brand advertising goals.

However, we also must acknowledge that young consumers have been faster to embrace new technologies (Grant - O'Donohoe, 2007; Sultan - Rohm, 2008; Wee, 1999). Therefore, media consumption habits of young consumers across traditional and new media are important to study (warc.com 2008). Frequency of use is important to understand to create effective message placement strategies, while motivations for use help advertisers to better develop effective messages and even more recently, to create relevant content (Klassen, 2008; Ting, 2008). Overall, media provide teens and university students with a variety of need fulfilling tools that can run the gambit from providing information or entertainment through music or video to social interaction and identity formation. Uses and gratifications theory (Katz - Blumler - Gurevitch, 1974; Leung - Wei, 2000; Lin, 1996) explains that people actively use media to fulfill specific needs. A variety of uses and gratifications across media have been identified in the literature such as information seeking, entertainment, escape, relaxation, social identity, economic goals, and social contact/interpersonal communication (Korgaonkar - Wolin, 1999; Lin, 1996; McGuire, 1974; Rubin, 1984; Stafford - Stafford, 2001; Stafford - Stafford - Schkade, 2004). Many of these uses cross both functional and non-functional motivations as well as traditional and new media channels. Edwards (2007) described specific online motivations when choosing to interact with new media as process motivations that focus on why someone would go online (i.e., researching, communicating, surfing, and shopping) and content motivations (i.e., the specific rewards consumers seek in choosing to remain online), and contrasted these with motivations for processing the information found at specific web sites. This processing motivation is especially relevant to the success of messages across all media, but is especially important to the success of consumer controlled media such

as the internet or mobile phones. Mobile phones have extended the potential uses of media to now include gratifications to people on the go.

Many of these mobile gratifications still include both functional and hedonic uses for the phones, yet consumers of different ages have been found to seek out different ways to satisfy similar goals. Results from an IBIS (2006) research survey of young Australians showed that people aged 13-16 were most likely to purchase ringtones, logos, wallpapers and screen savers; whereas 22-25 year olds were more likely to purchase mobile games.

In looking into this issue further, O'Doherty, Rao and Mackay (2007) examined the perceptions of Australians regarding the use of mobile phones as a communication tool for business, and in their personal lives and found mobile phones generally meeting functional as opposed to hedonic gratifications. Mobile phones are embraced as an essential tool in business and in fact today serve as a developmental marker representing life after entering the workforce. In addition, phones serve to structure and maintain personal relationships as well. However, the authors concluded that Australian consumers see mobile phones as great for communicating, but not well suited for entertainment. They cite adoption of innovative rich media content by users in countries such as Japan, South Korea, Norway and Italy, but found that the Australian respondents claimed that mobile phones were inferior to other channels for the purpose of accessing information, accessing entertainment, and spending leisure time. Partially, these results can be explained by structural differences in lifestyle such as commuting patterns and home internet penetration rates, but beyond these factors O'Doherty, Rao and Mackay (2007) believe that the perceptions of Australians regarding the proper role for mobile phones must change before a greater number of gratifications are sought from the devices. These perceptions of the appropriate use for mobile devices have a direct impact on the opportunity for successful mobile advertising campaigns. Such resistance among potential targets suggests a need to better understand how technology savvy consumers interact with traditional, interactive, and mobile media.

When it comes to understanding the potential of mobile marketing, Asian youth are particularly interesting as a barometer of future adoption (Friedman, 2007). According to the recent *Young Asians* survey by Synovate, 8-24 year old Asian consumers across 11 countries were found to spend almost 10 hours with media per day (WARC.com). The Internet, mobile phones and TV were among the most

central channels for these young people. Mobile phones in particular are considered to be the ever present 4<sup>th</sup> screen after television, movies and computers. However, a recent study showed that 48% of teens would give up cable TV before their internet access or mobile phone (Patheiger, 2009).

Regardless of the current state of mobile content adoption, more use is likely and more advertising is forecasted (Parks Associates, 2009). The question remains as to how the future generation of mobile consumers will adopt the technology and the extent to which structural variables such as home and scholastic obligations of teens and university students and their access to alternative media impact the gratifications fulfilled with mobile phones.

To investigate these topics, the following research questions were proposed:

1. How does time spent across media options differ between teens and university students?
2. What is the Internet used for today by young consumers in contrast to mobile phones?
3. How frequently is text messaging used and why?
4. Are advertisers reaching the teen and young adult mobile phone market?

Following the lead of Grinter and Palen's (2002) study of instant messaging in teen life, we selected Singaporean teens and university students as respondents in the current study. Grinter and Palen (2002) examined participants living in regions where computing or telecommunications were advanced. The authors believed that such a population would represent early adopters of instant messaging and suggest future use by a more diverse populace. Similarly, the behavior of Singapore's youth and university students offers a similar look into the future, given the high penetration of mobile phones and seemingly faster acceptance of text messaging which can help in drawing out implications for other marketers around the globe.

## Singapore and Young Consumers

Singapore is a small, but centrally located country in southeastern Asia between Malaysia and Indonesia. Its location, economy and technologically advanced characteristics make it an ideal country for assessing changing media consumption patterns among teens and university students.



The population of Singapore is roughly 4.6 million with approximately 17% making up young consumers between the ages of 8 and 24 (CIA 2008; warc.com 2008). There are three main ethnic groups in Singapore; Chinese (76.8%), Malay (13.9%) and Indian (7.9%). Although, different languages are affiliated with each group, English is used in education and commerce (culturegrams 2009) making English a common language for communication. Singapore is also an economically strong country, placing ahead of many other developed nations such as Australia and Germany (O'Casey - Lim, 2002) with a GDP per capita (PPP) for 2007 estimated at \$49,700 (2008). It is also a country that is technologically advanced. Singapore is said to be "a regional pioneer of high-definition and mobile TV services" and the government is hoping to secure Singapore as the regional hub for the digital media industry (BBC News, 2008). Singapore has close to 90% broadband penetration (IDA Singapore, 2009) and several phone companies compete to keep mobile phone rates at some of the lowest levels in the world. These facts help to explain Singapore's high mobile phone penetration.

With respect to teens and young consumers, Singaporean youth have been found to have a relatively high disposable income due to strong family support and allowances (Sharma, 2002; Wee, 1999) as well as from part-time jobs (Mathi, 1998). Furthermore, many Singaporeans live at home until they are married and this includes the university years (Wee, 1999). High disposable income and few financial burdens help to create an attractive market for advertisers. Similarly, teens and university students in Singapore also have a high interest in IT products, video games and gaining the social approval of their friends (Leong, 2000; Wang, 2006). These qualities only enhance the potential desire to adopt new technology and new advertising platforms to reach consumers.

Taken together, the country of Singapore with its unique technological standing along with an eager population of young consumers that have money to spend provides a solid base to assess future trends in media consumption patterns and mobile advertising platforms. In addition, Singaporean teens and university students are ripe to examine the potential for converging media patterns across these traditionally un-segmented groups of consumers. On the one hand, we would expect different media patterns to exist given the different stages in the life cycle. Yet generationally these two groups in the popular press and several academic studies have been lumped together as the tech savvy generation (O'Doherty - Rao -

Mackay, 2007). Examination of Singaporean teens and university students will allow us a better understanding of the media options employed across both groups regarding traditional, interactive and mobile media and their reactions and use of mobile advertising.

## Research Method

Survey methodology was used to examine the media use of teens and university students in Singapore. Students from a public high school and a national university, both located in the western part of the island, were recruited to participate in the study. Permission was first obtained from authorities at both academic institutions and then from individual participants through a voluntary consent form. A draft of the questionnaire was prepared based on previous media usage studies and on current knowledge of media uses and gratifications. Given that English is the language used in schools and business in Singapore, the surveys were written in the English language. The survey was pre-tested on a group of Singaporean students (not used in the main survey) to ensure accuracy of meaning. In addition, the survey asked both groups for their comfort level with completing the survey in English. Students ( $n=12$ ) who indicated on the survey that they were not comfortable completing the survey in English were eliminated from further data analysis.

Data collected from the high school ( $n=195$ ) and from the university ( $n=159$ ) were used to understand how these groups use various traditional media including television, magazines, newspapers, and radio. In addition, we examined how often each day these students use email, surf the Internet, talk with friends and family, play video games, and talk and text message using their mobile phones. Students were then asked specific questions about how they use the Internet and how they use their mobile phones.

Several teachers participated in the study and distributed questionnaires in their classes. Students then completed the self-administered questionnaire in class. Teen respondents were 48% male and 52% female, ranging in age from 13-18 years of age, and averaging 15 years old. The university student sample consisted of 36% male and 64% female, ranging in age from 18-24, and averaged just over 20 years of age. Most of the university students lived at home (65.6%), fol-

lowed by dorms (27.9%), friends (3.9%), and by themselves (1.2%), whereas all of the teens lived at home.

### *Measures*

The questionnaire consisted of several sections. In Part I, respondents were asked to indicate their use of individual media in hours and minutes on an average weekday as well as time spent talking with family and friends.

Part II focused on online issues. Specifically, information was assessed regarding the various gratifications teens and university students sought online. Respondents indicated how often they engaged in five entertainment online activities (e.g., listening to music, playing games etc...) using a 1 (infrequently) to 7 (frequently) scale. Respondents were then asked about their comfort level online using a 1 to 7 scale anchored with very uncomfortable to very comfortable. Next respondents were asked if they had made an online purchase in the past year (yes/no), and if yes, to indicate the number of purchases made. If respondents had not made any purchases online, they were asked to check reasons for not making a purchase such as: No method to pay for products; Difficulties with shipping to Singapore; Security issues; Shipping charges being too costly; Preference for being able to touch/try products; Products that were more expensive online; Customs' problems; or "other" and respondents were able to list more reasons. The last question about the Internet asked respondents to check any items from a list of online promotions that they considered to be an Internet advertisement. The items included: banner ads, a company's website, company links in a navigational sidebar, pop-ups, search engine links, or space to provide "other" additional ideas.

Inquiries into mobile phone use made up Part III of the survey. Respondents provided information about specific experiences with their mobile phones by indicating how frequently on a 1 to 7 scale they engaged in activities such as talking, texting, taking photos, accessing email, surfing the Internet, shopping, playing games, listening to music, downloading music, SMS voting, receiving ads, or receiving other discount offers.

Related to mobile phone use, Part IV examined text messaging issues in more detail. Given that text messaging is currently the most common mobile phone application (Cuneo, 2004), it was deemed important to assess motivations for use.

Part V of the survey captured demographic characteristics including age, gender, and English proficiency.

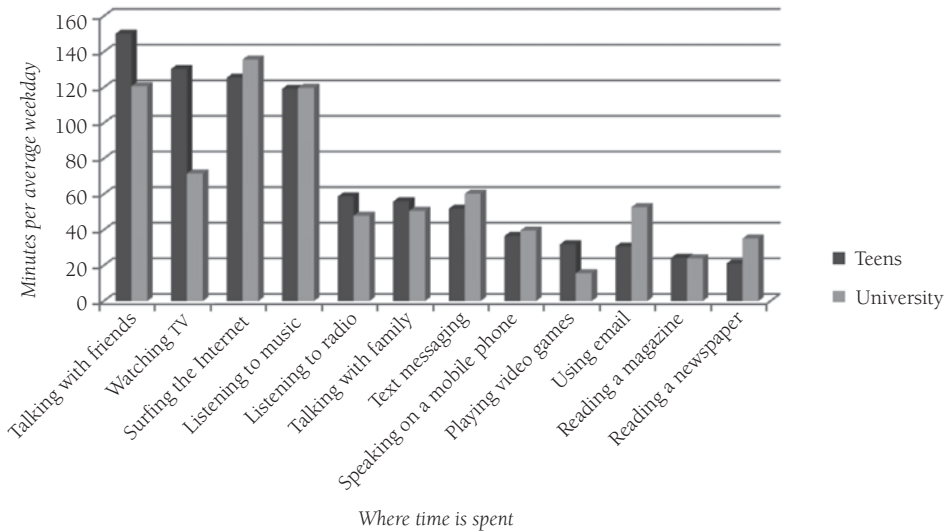
## Results

In an effort to set the context and assess access to various media, we first asked university students and teens to indicate their ownership of various technologies. University students were more likely than teens to: have access to a computer at home (100% vs. 90.4%), and at school (98.1% vs. 71.7%); have Internet access at home (98.1% vs. 84.6%) and at school (98.7% vs. 62.0%); own an MP3 player (53.5% vs. 49.5%), and a mobile phone (100% vs. 88.3%). Given that both groups had high levels of technology access, we moved on to address our research questions.

### *Media Use*

The first research question examined how teens and university students allocate their time across personal and mediated sources. Teens reported spending most time talking with friends on an average day ( $\bar{x}$ =150 minutes), followed closely by watching TV ( $\bar{x}$ =130 minutes), surfing the Internet ( $\bar{x}$ =125 minutes), and listening to music ( $\bar{x}$ =119 minutes). University students reported using the Internet most ( $\bar{x}$ =131 minutes), followed closely by talking with friends ( $\bar{x}$ =121 minutes) and listening to music ( $\bar{x}$ =120 minutes). However, university students spent much less time watching TV ( $\bar{x}$ =72 minutes) than did teens yet it was still in their top four activities reported. Neither teens nor university students reported spending more than 60 minutes on any other activity or medium (see Fig. 1). However, teens reported listening to radio, talking with family, and text messaging as the next three most popular activities, while university students spent more time text messaging, using email, and then talking with family. See Table 1 for means and significance tests.

To further examine media use patterns, we categorized the use of each medium by hour and examined the percentage of respondents in each time category. For the most part, we see similar patterns when examining the media use of Singaporean teens and university students. However, there are slight variations. As can be

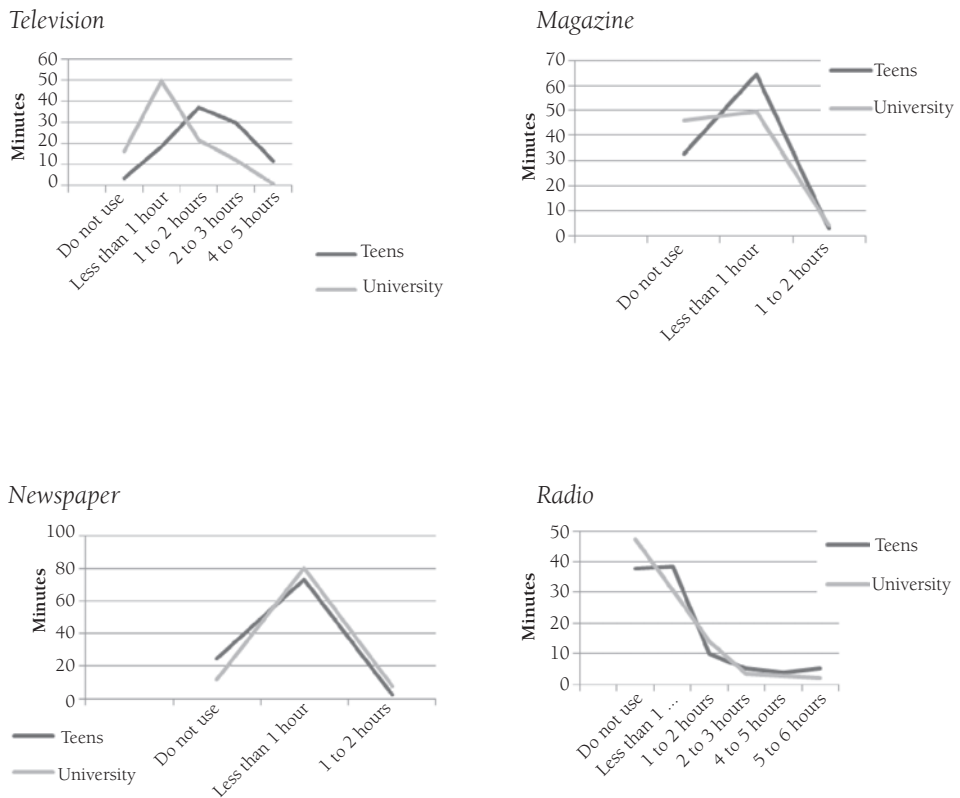
**FIGURE 1 - HOW TEENS AND UNIVERSITY STUDENTS SPEND THEIR TIME****TABLE 1 - MEDIA USE COMPARISON OF TEENS AND UNIVERSITY STUDENTS (AVERAGE NUMBER OF MINUTES)**

Media used	Teens	University students	t value	df	Probability
Talking with friends	150 min.	121 min.	2.19	310	.030
Watching TV	130	72	8.34	289	.001
Surfing the Internet	125	136	.90	316	.371
Listening to music	119	120	.04	309	.964
Listening to radio	59	48	1.20	301	.229
Talking with family	56	51	.99	300	.322
Text messaging	52	60	1.09	282	.278
Speaking on a mobile phone	37	40	.60	299	.546
Playing video games	32	16	3.38	264	.001
Using email	31	53	4.28	313	.001
Reading a magazine	24	24	.08	310	.939
Reading a newspaper	21	35	5.31	321	.001

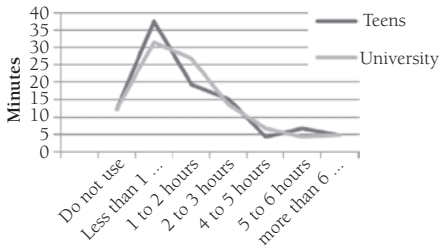
seen in the media use charts in Figure 2, almost 20% of university students watch no TV and another 50% watch less than an hour per day. This compares with 97% television use by teens, 67% who report watching between one and three hours

daily. Teens also are more likely to read magazines (almost 70%); compared with about 50% of university students, but both groups use the medium for a relatively short period of time. Newspaper use is high for both groups reaching between 70-80% penetrations, but only for a short period of time each day. Radio shows a similar pattern for both teens and university students demonstrating less penetration than newspapers, but is used for a longer period of time. These findings however do not indicate both teens and university students are not listening to music, because over 70% of both groups report listening to music from one minute up to three hours per day with 14% of both teens and university students listening to music more than three hours per day. These results clearly indicate something more than traditional radio being used to listen to music.

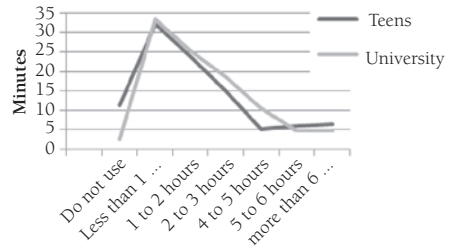
**FIGURE 2 - MEDIA USE CHARTS BY INDIVIDUAL MEDIA**



*Listening to music*

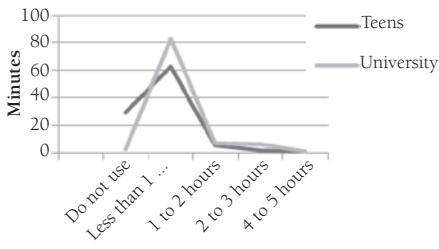


*Internet*

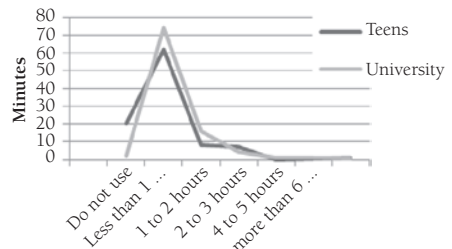


**FIGURE 2 CONTINUED - MEDIA USE CHARTS BY INDIVIDUAL MEDIA AND INTERPERSONAL COMMUNICATION**

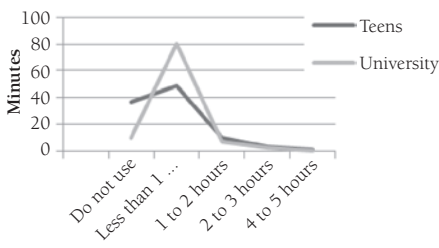
*Email*



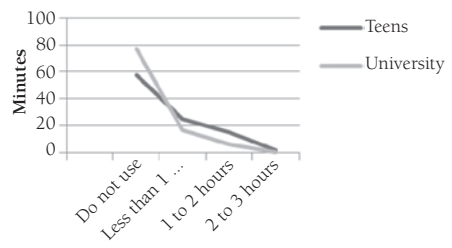
*Text messaging*



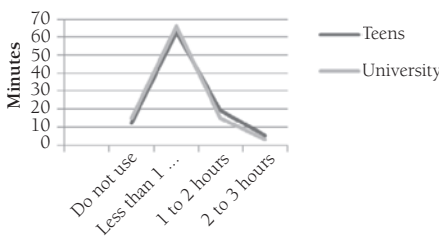
*Talking on mobile phone*



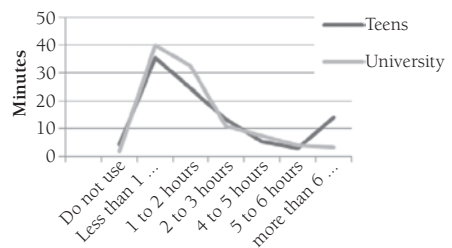
*Playing video games*



*Talking with family*



*Talking with friends*



Finally, we see very similar patterns regarding the percent of respondents in each time period for use of the Internet, text messaging, and talking with friends and family. However, a greater percentage of university students use email and talk on their mobile phones than do teens, while teens are slightly more apt to play video games.

### *Internet Use*

Both groups of respondents were equally comfortable online (teens  $\bar{x}=6.34$  vs. university students  $\bar{x}=6.30$ ,  $p>.05$ ), but in general teens rated using the Internet more frequently across a range of activities than university students. Teens reported using the Internet more frequently to listen to music ( $\bar{x}=5.12$ ) than university students ( $\bar{x}=3.82$ ),  $t_{(341)}=5.36$ ,  $p<.001$ , but there were no differences regarding downloading music,  $p>.05$ . Teens also reported greater use of the Internet for playing games ( $\bar{x}=4.76$ ), watching movies ( $\bar{x}=2.91$ ), and communicating in chat rooms ( $\bar{x}=3.68$ ) versus university students ( $\bar{x}=3.00$ ;  $\bar{x}=2.21$ ;  $\bar{x}=2.70$ , respectively). Please see Table 2 for t-tests.

**TABLE 2 - INTERNET USE COMPARISON OF TEENS AND UNIVERSITY STUDENTS (FREQUENCY 1-7 SCALE)**

<i>Internet use</i>	<i>Teens</i>	<i>University students</i>	<i>t value</i>	<i>df</i>	<i>Probability</i>
Listening to music	5.12	3.82	5.36	341	.001
Downloading music	4.22	3.88	1.28	341	.201
Video games	4.76	3.00	6.94	340	.001
Movies	2.91	2.21	2.89	340	.004
Chat rooms	3.68	2.70	3.70	341	.001

While teens seem to use the Internet more frequently, a greater percentage of university students had made an online purchase (41.8% vs. 12.8%) and they also purchased more often (52.2% vs. 41.7% purchased four or more times). Teens reported security concerns (74.3%) as the most often mentioned reason for not making an online purchase, followed by the desire to touch products (64.3%), and then not having a payment method (32.7%). University students most often reported the desire to touch (58.9%) as the reason for not making an online purchase followed by security concerns (45.3%) and lack of a payment method (41.1%).



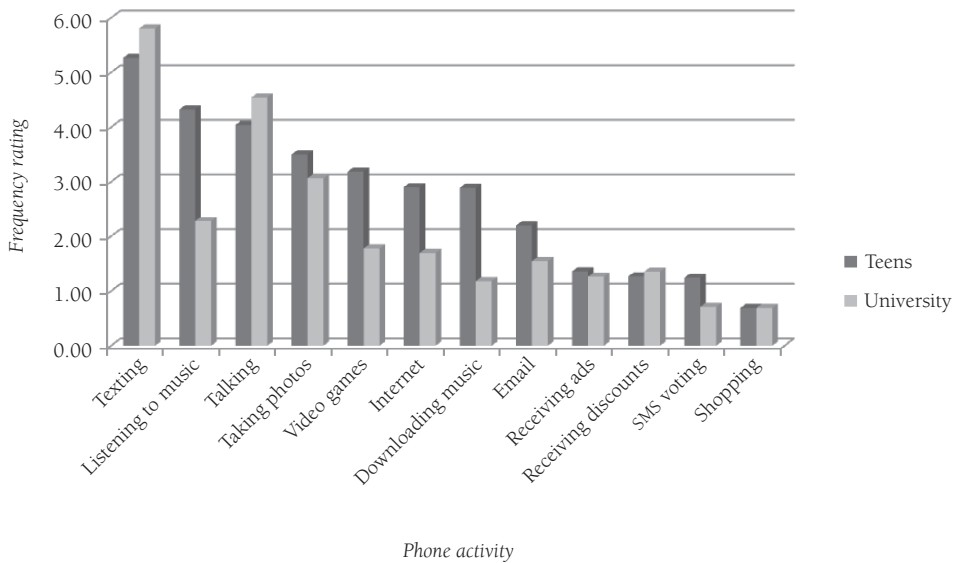
In looking at which group recognized various forms of Internet advertising, university students recognized all categories more than teens. Banners were the most recognized form of Internet advertising (85.4% vs. 33.2%), followed by pop-ups (79.1% vs. 47.6%), a company's web site (46.2% vs. 33.2%), links in a navigation sidebar (38.6% vs. 13.9%), and then search engine links (32.3% vs. 29.9). However, as can be seen by the numbers above many persuasive attempts are not recognized as advertising and therefore may hold opportunities for advertisers, but also generate public policy concerns.

### *Mobile Phone Use*

Focusing on frequency of mobile phone use and motivations for use, we examined how frequently teens and university students used their mobile phones for activities such as talking, texting, taking photos, surfing the Internet, playing games, and listening and downloading music were examined (see Fig. 3). For most activities, teens used their mobile phones more frequently than university students (see Table 3 for means and significance tests). Teens used their phones more frequently than university students for email, using the Internet, playing games, listening and downloading music, and text voting,  $p < .05$ .

**TABLE 3 - MOBILE PHONE USE COMPARISON OF TEENS AND UNIVERSITY STUDENTS (FREQUENCY 1-7 SCALE)**

<i>Phone use</i>	<i>Teens</i>	<i>University students</i>	<i>t value</i>	<i>df</i>	<i>Probability</i>
Texting	5.26	5.80	2.88	331	.004
Listening to music	4.33	2.28	7.06	331	.001
Talking	4.04	4.54	2.50	331	.013
Taking photos	3.50	3.06	1.87	331	.063
Video games	3.18	1.78	6.15	330	.001
Internet	2.90	1.70	4.37	331	.001
Downloading music	2.89	1.18	6.62	331	.001
Email	2.20	1.54	2.71	329	.007
Receiving ads	1.36	1.26	0.56	331	.574
Receiving discounts	1.26	1.35	.49	326	.628
SMS voting	1.24	0.71	3.26	331	.001
Shopping	0.69	0.69	.01	331	.991

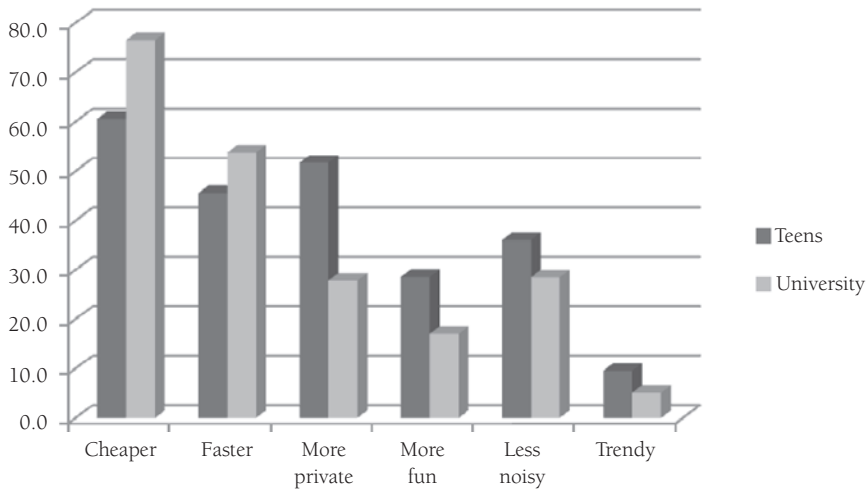
**FIGURE 3 - HOW TEENS AND UNIVERSITY STUDENTS SPEND THEIR TIME ON THEIR MOBILE PHONES**

In contrast, university students used their mobile phones more frequently for talking ( $\bar{x}=4.54$ ) than did teens ( $\bar{x}=4.04$ ),  $t_{(341)}=2.50$ ,  $p<.05$ . University students also used their mobile phones more frequently for sending text messages ( $\bar{x}=5.80$ ) than did teens ( $\bar{x}=5.26$ ),  $t_{(341)}=2.88$ ,  $p<.01$ . There were no significant differences between teens and university students regarding the frequency of using their mobile phones for taking photos, shopping, and receiving ads or promotional discounts,  $p>.05$ . In general, the frequency of receiving ads or promotional discounts was very low across both groups.

Given the high level of text messaging and its importance for acceptance of future mobile phone applications, we wanted to understand the motivations for teens and university students to choose text messaging over making voice calls. While not exhaustive, we asked them to agree or disagree with motivations for text messaging including cost, speed, privacy, fun, noise, and it being the trendy thing to do. As shown in Figure 4, Cost savings were most important, followed by speed of communication. The opinion of others (*i.e.*, trendiness) was not much of a factor for either group. However, differences between the groups did exist for several of the motivations. We found that a greater percentage of university students (76.6%) over teens (60.5%) reported texting because they find it cheaper. In con-

trast, a greater percentage of teens over university students reported texting because they felt it was more private (51.7% vs. 27.8%) and because it was seen as being more fun (28.6% vs. 17.1%). There were no differences between the groups regarding perceived speed, noise to others, or that texting is in fashion,  $p > .05$ .

**FIGURE 4 - REASONS TO USE SMS OVER VOICE (PERCENT REPORTING YES)**



	Teens	University	$X^2$	$df$	$p$
Cheaper	60.5%	76.6%	9.13	1	.003
Faster	45.6%	53.8%	2.06	1	.151
More private	51.7%	27.8%	18.16	1	.000
More fun	28.6%	17.1%	5.74	1	.017
Less noisy	36.1%	28.5%	2.00	1	.157
Trendy	9.5%	5.1%	2.26	1	.132

## Discussion

Teens and university students are attractive consumers for marketers and yet they have traditionally been hard to reach and sometimes treated as separate markets. Fragmentation of media has not helped the situation. However, recent trends with new media and technology would suggest that reaching these illusive con-

sumers is becoming easier (Sultan - Rohm, 2008). Therefore, the current study set out to provide advertisers with information to more effectively reach teens and young adult consumers in the Singaporean market and beyond.

First, the data revealed that across many media options, both old and new, the two groups shared similar choices and amounts of time with media. The Internet was among the top three for both segments, suggesting this is a good medium to reach both groups. Listening to music was also a high frequency activity, but not necessarily via radio (i.e., MP3 player; Internet etc.). Significant differences in time spent with TV suggest that media planners would be better to spend their money in this medium on teens and avoid the university crowd. 97% of teens watched television in comparison to 20% of university students that did not watch any and another 50% who watched less than one hour per day.

Examining specific activities while online also provides some interesting differences between the two groups. Teens were found to engage significantly more frequently in a range of activities online than university students. Specifically, teens listened to more music online, played more games online and communicated more in chat rooms than their older counterparts. Most likely these differences can be attributed to teens having more free time than university students. However, the implications for advertisers are clear. Products targeted to teens would do well in branded entertainment deals of online games and co-promotions with singers and sites for downloading music. Chat room "brand talkers" could also be money well spent in reaching the teen segment. And yet, more time online did not translate into more purchases made online. In fact, almost 42% of university students indicated purchasing online in comparison to only 12.8% of the teen sample. Interestingly, the two top reasons across both groups for avoiding online purchases involved security issues and the lack of ability to "touch" products online. Therefore, targeting teens online should currently be limited to raising brand awareness rather than attempting to stimulate online purchases.

Regardless, both groups had limited recognition of online persuasion attempts. While banner ads and pop-ups had strong recognition among the university students, a company's website, search engine links and links in navigational sidebars were not seen as advertising for over 50% of both samples. These findings provide positive implications for advertisers in that teens and university students should not be as skeptical as some to these types of 'advertising' attempts since they are not seen as persuasion. On the other hand, these findings raise questions

of public policy concerns and the potential for these online advertising practices to be deceptive or misleading among young consumers in Singapore.

Finally, with respect to mobile phone use, teens appear to seek more entertainment gratifications (i.e., listening to music, video games) whereas university students appear more motivated by communication functions (i.e., talking and texting). However, both groups used their mobile phones the most for texting suggesting solid opportunities for mobile advertising messages. Singaporean young consumers reported that mobile phone texting is cheaper than voice communication. However, advertisers have not appeared to be taking advantage of this preference for mobile communication. Both groups reported scant advertising or discount offers via their mobile phones, yet they seem to be receptive to this messaging strategy. Therefore, advertisers should embrace this strategy and integrate it into their marketing plans.

One interesting promotion at a mall near where the data was collected allowed for shoppers to receive discounts via their mobile phones by simply texting the operation center of the mall upon arrival (Lim, 2002). Consumers immediately received a welcome note followed later by text messaged coupons for various stores throughout the mall. Although a small example, it does give a glimpse of what is to come for mobile phone advertising and m-commerce, provided advertisers can provide consumers with content that is relevant and desired (Klassen, 2008; Ting, 2008).

In thinking about the mobile phone applications currently being used and those to come, the results of this study help us to remember that we must move beyond simply examining media preferences and frequencies of use to also come to know the motivations for media use if we want to be able to create engaging content. Frequency of online and mobile activities differed between our teens and university students, even while media preferences and frequency of use were quite similar. Teens more frequently engaged in “fun” entertainment activities versus the more ‘functional’ and communication oriented activities undertaken by the university students.

Two fairly recent mobile phone applications by Burger King and by Uniglo highlight the implications of these findings (see article by Schmitt, 2009 in [adage.com](http://adage.com) for details and other examples of app-vertising). Burger King created a mobile phone game application where participants would burst bubbles rising up out of a bath tub. The object of the game was to burst as many bubbles as fast

as possible before time ran out. While this mobile phone application may have been fun and well suited for the teen group in our study, it really had no functional use and provided no long term benefit to consumers and no reason to return to the application.

In contrast, a clothing application by Uniglo provided two people dancing strangely in Uniglo clothes while also providing a digital clock in the background (Schmitt, 2009). Users could upload this application to their mobile phones and enjoy both the functionality of the clock while also seeing examples of Uniglo clothes changing on the dancers. So as we move toward mobile phone applications as part of the media mix, we need to remember the basics of successful advertising strategy; create something useful and in line with consumers' needs to allow consumers to want to spend time with your brand (and your mobile phone applications).

Results of the current study help advertisers to better consider the placement of their messages. Clearly, all media avenues are still relevant (McClellan, 2007) and important to consider in reaching different demographic groups. This is even true across seemingly similar groups that are embracing new media options, where we witnessed teens and university students using mobile phones differently. Media use patterns provide guidance as to how best to reach consumers, but consumers themselves define the needs gratified by each medium. In the end, good advertising is about knowing where to place your messages but also knowing what kinds of messages and content will resonate best with the gratifications sought by consumers.

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