

Young Consumers' Cell Phone Usage in Developing Market: The Case of Turkish Youth Market

Ömer Torlak
Eskisehir Osmangazi University

John E. Spillan
University of North Carolina at Pembroke

Talha Harcar
The Pennsylvania State University at Beaver

How do young Turkish consumers use cell phones? Can their behavior be differentiated, and what factors significantly identify categories of young wireless users? Why has this youth market become so important? Using survey research, descriptive statistics and Structured Equation Modeling (SEM), we analyzed results from a large sample of teenagers, providing a rich understanding of the substantial differences in Turkish youth consumers' behavior toward cell phones, and discuss implications for cell-phone marketers. Findings reveal three major usage groups in Turkey's cell-phone youth market: trendy style, heavy-usage style and price-conscious style. These results provide substantial insight and direction for marketing strategists.

INTRODUCTION

The popularity of digital devices among younger consumers has generated enormous attention among marketers. One device in particular, the cell phone, or the mobile phone, has become ubiquitous among millions of young consumers around the world. These young people are continuously looking for opportunities to purchase cell phones for use in their everyday activities. For instance, nearly half (47 percent) of U.S. teens say their social life would end or be worsened without their cell phone, and nearly six in 10 (57 percent) credit their mobile device with improving their life, according to a national survey from CTIA – The Wireless Association® and Harris Interactive. Four out of five teens carry a wireless device, a 40-percent increase since 2004, reports the study “Teenagers: A Generation Unplugged.” That research probes how the growing teen wireless segment uses cell products and how they want to use them in the future (Harris Interactive, 2010). With almost two billion cell phones being used worldwide, it is clear that there is a huge market for cell phones among young people (Crockett, 2005). Surveys and studies from a number of countries report that the use of cell phones among young people is increasing rapidly, and is starting at a younger age. Studies show varying prevalence of use at different ages in various countries (McLaughlin Centre for Population Health Risk Assessment, Institute for Population Health, University of Ottawa, 2010). Many of these phones have multiple applications such as calling, texting, and listening to music. These expandable applications provide young people with almost instant

communication to each other. The cell phone's popularity revolves around convenience, business, recreation, and safety. The ubiquity and utility of the cell phone has created an environment of immediate communication, which has produced economic benefit to business and society. Those who previously could not conduct business in remote locations are now free to contact their clients any time and at any place in the world. Recreationally, cell phones have become entertaining devices for not only communication, but for music and video activities. These applications are an enormous attraction to young consumers who are constantly changing their locations and interests. Each day, youth are entering into exciting and varied activities as part of their weekly agenda. These young people need cell-phone technology to establish and maintain peer-based social networks, which help in their social interactions and other new dimensions in their lives. Finally, the cell phone can be a lifesaver. The universal availability of wireless telephony provides anyone who is in trouble the opportunity to call for help. In many cases, this instant emergency-calling capability has and will continue to save lives.

While researchers have been successful in identifying market segments suitable for a number of narrowly defined purposes, relatively little of the research offers (Wilska, 2003) insight about segmentation of the cell-phone market for teenagers in the international consumer market. The results reveal that young people's use of cell phones fits their general consumption styles. An "addictive" use of the phone is related to "trendy" and "impulsive" consumption styles, and is prevalent among females. Technology enthusiasm and trend-consciousness is linked to impulsive consumption and "hard" values, and is prevalent among males. A frugal cell phone use is not related to gender, but to environmentalism and thrifty consumption in general (Wilska, 2003).

The purpose of this paper is to report on research that focuses on the consumer inclinations of the young population in Turkey, specifically as it relates to the mobile-phone industry. The authors will discuss what factors affect the Turkish youth's desire to purchase the cell-phone product(s), and how these purchases influence the other purchases and the market overall. Few studies have been conducted specifically on the marketing of this product to young consumers in Turkey (Wilska, 2003, Coogan & Kangas, 2001; Jones, 2002; Haste, 2005). As such, this study uniquely moves beyond the U.S. market, and considers consumer behaviors of young Turkish consumers who have become extremely interested in owning and using cell phones.

This paper consists of seven sections. The first section provides an overview of the recent literature associated with this topic. Section two presents conceptual framework and research questions. Section three points to Turkish population characteristics and cell-phone usage in Turkey, focusing on its youth population and the cell-phone market. Section four denotes on the research design and the methodology for conducting the study. Section five presents the analysis and findings from data. Section six introduces conclusions and discussions of the findings and how they relate to existing literature. The final section develops the managerial implications and limitations of the study.

LITERATURE REVIEW

The fact that so many teens have been involved in the selection and purchase of cell phones has motivated various researchers to investigate the usage of cell phones among this demographic group. The rapid adoption of cell-phone technology by teenagers and young adults has been studied by various researchers (Thrane, 2003; Rice & Katz, 2003, Wilska, 2003; Haddon, 2004; and Dedeoglu, 2004). These studies indicate that a youth's involvement in purchasing a cell phone is a critically important issue relating to how, when, and to what extent the cell phone is used. According to some theories, when moving from childhood to adulthood, most rites of passage are for sale in the marketplace. One can even argue that the actual significance of youth as a life stage lies in the ability to act as an independent consumer in the market (Griffin, 1997; Miles, 2000). Today, young people reach this stage earlier than ever before, and the discovery of one's style of consuming becomes important at a very early age. Additionally, keeping up with styles has recently become intense. Logos and brands of particular products are seemingly crucial to young consumers. Those researchers interested in this group have found that this market has great potential. Lindstrom (2003) has described the teen and tweens market as one of the

richest generations in history. Researchers have discovered that during the last 30 years, this cohort of young has increased its spending substantially, with a definite amount allocated to the purchase of cell phones (Klein, 1999 and Quart, 2003).

Young Consumers Defined

Over the last decade, marketing researchers have encountered a new customer terminology and new forces at work in targeting youth spending. Adolescence is the transitional stage of development between childhood and full adulthood, representing the period of time during which a person is close to becoming biologically adult, but emotionally not at full maturity. The span of adolescence and the term “teenager” varies by culture, but in the United States, adolescence is generally considered to begin around age 13 and end around age 24. The idea of “tweenager” has generated a significant amount of interest among marketers. The word preteen and the neologism “tween” has the same meaning (Economic Expert, 2010), describing a child a bit younger than a teenager; the age of tweenagers varies among some researchers. Tweens are estimated to spend around \$1.4 billion to \$1.6 billion in a year (Urban Dictionary, 2010).

Older adolescents, today’s teenagers, is an immense force in consumer spending, part of a highly influential \$175 billion consumer market. One in three high school seniors in U.S carry a credit card (Grant & Graeme, 2006). As a demographic group, they earn 63 percent of their income independently from parents, and spend it on brands they know and trust. However, teens are exceptionally hard to target, requiring unconventional tools and expertise. Consider that today’s teens are bombarded by choices, demanding of speed and response, savvy in the face of marketing messages, and “wired” throughout the day via multiple forms of interpersonal communication such as e-mail, IM, cell phones and text messaging.

Five major social trends have accounted significantly for the growth of the youth market (Grant & Graeme, 2006):

- a. Couples with fewer children, born later in life, typically have accumulated more money;
- b. Higher divorce rate can cause separated parents to feel emotionally obligated to give their children more material possessions they otherwise would;
- c. Two-income-families give parents more money and less time and attention for their children. The guilt felt for this absence of time and attention translates into more money for the offspring (Grant & Graeme, 2006).
- d. Emotionally and intellectually, these young people have progress to make in their development, but they are always striving towards “fitting in” or “being cool.” Products for this target market are perceived as “being a cool” brand.
- e. Youth, at an alarming rate, are influencing their parents’ spending patterns. The market continues to become more significant as younger consumers mimic older consumers.

Young People and Cell Phones

Among many young people, the cell-phone connection is described as an extremely important mechanism for connecting family and friends (Oksman & Rautianinen, 2001). A cell phone is also a symbol of belonging to a group and a part of one’s identity (Coogan & Kangas, 2001, Jokinen & Kangas, 2000; Numela et al., 2000). Generally, parents support their children’s cell-phone possession and activity. In many cases, parents are paying for the device (Coogan & Kangas, 2000). The most significant impact of cell phones by far is demonstrated daily among media-savvy, young people whose lives are increasingly being shaped by technology. Young people are the fastest-growing, cell-phone demographic; half of all teenagers between 12 and 17 carried cell phones in 2002 (Fattah, 2003). At the end of 2002, 29 million youngsters were to be toting cell phones. Parents who give their children phones to monitor them for security’s sake are driving much of that growth, even though the young people use the cell phones as a tool for independence and peer acceptance. (Fattah, 2003).

Among teens, age is the most important variable in mobile-phone ownership. Older teens are much more likely to own phones than younger teens, and the largest increase occurs at age 14, right at the

transition between middle and high school. Among 12- to 13-year-olds, 52 percent had a cell phone in 2008. Cell phone ownership jumped to 72 percent at age 14 in that survey, and by the age of 17, more than eight in 10 teens (84 percent) had their own cell phone. (Pew Internet, 2009). Young people can use cell phones without being monitored by family members. The ease of accessing friends with cell phones makes them an ideal community builder. Much like a driver's license, the cell phone is becoming a rite of passage (Fattah, 2003). This leads us to the conceptual framework and research questions.

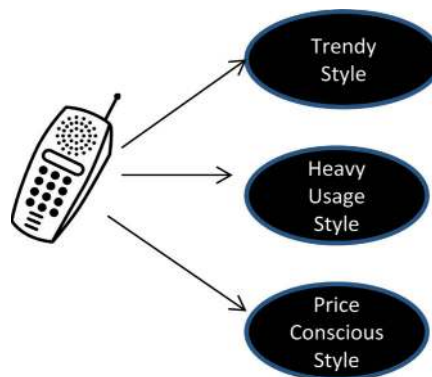
CONCEPTUAL FRAMEWORK AND RESEARCH QUESTIONS

The increasing internationalization of consumers as well as the growth of technology has created important opportunities for marketers to target customers across borders. Segmentation continues to be the focus of considerable attention in the popular business press as well as in academic journals. In particular, the international segmentation literature has focused upon criteria to select target countries (Hassan, Craft, & Kortam, 2003; Helsen, Jedidi, & DeSarbo, 1993; Nachum, 1994; Steenkamp, ter Hofstede, & Wedel, 1999) and behavioral bases to select target consumers (Crawford, Garland, & Ganesh, 1988; Dawar & Parker, 1994; Hassan, Craft, & Kortam, 2003; Hassan & Katsanis, 1991; Souiden, 2002; Steenkamp, Ter Hofstede, & Wedel, 1999) as drivers in defining segments. Several authors have presented general conceptual models that propose specific segment/product relationships (Domzal & Unger, 1987; Douglas & Craig, 1989; Jain, 1989; Kale & Sudharshan, 1987).

When thinking about how teens interact with cell phones, social interactions with peers is the No. 1 interaction that occupies their thoughts and time. The cell phone has become a major device enhancing young peoples' social interaction. While there have already been studies about social interaction, we concentrated on the usage dimension of cell phones among young people. The usage concept of the cell phone is a segue into understanding why the youth buys a cell phone in the first place. This is an interesting dimension because it provides a perspective on what reasons exist for acquiring the phone and how intense the usage of cell phones is among young consumers. Based on the questions asked in our survey, we were able to categorize their usage on three different dimensions.

These dimensions are conceptualized in the form of style categories, which are depicted in Figure 1 below:

FIGURE 1
DIMENSIONS OF CELL-PHONE USAGE



Cell-Phone Usage

Research from a broad spectrum of disciplines presents some insights into the interest of cell phones to this market. Studies indicate that the symbolic value of these products, with ownership of particular cell phones communicating fashion savvy or individuality (Taylor & Harper, 2001; Ling, 2004), is important to young people. Cell phone usage may also facilitate young peoples' increase and retention of peer group acceptance (Oaksman & Turtiainen, 2004; Haste, 2005). Cova (1994), who underscores the "connection value" of goods and services, has been one who suggests that to gratify their

longing for communities, young individuals look for products and services less for their use value than for their connection value. Employing this perspective to cell phones, Jones (2002) maintains that young people's cell-phone use can be seen as "neo-tribalism" in action, as it suggests shared values and interests. Likewise, Taylor and Harper (2001) discovered that, for 11- to 18-year-olds, specific words and symbols amount to the implicit knowledge "owned" by certain social networks, and were used when texting to signify group membership and to differentiate others as "strangers." Moreover, possibility of contacting others in an emergency offers a sense of security and reassurance to young people, not to mention their parents (Haste, 2005). From a different perspective, several researchers have highlighted problematic as well as positive aspects of mobile-phone use. Sometimes peer-to-peer, cell-phone communications may include acts of mischievousness and bullying (Haste, 2005; Katz, L. 2005). Others have raised additional concerns. (Agnelli, 2004; see also Agnelli *et al.* 2004) maintains that cell phones have led to the overlapping of digital and physical space, so that physical presence no longer implies attentiveness or availability, and distinctions between public and private space are eroded. Dholakia and Zwick, (2003) discuss ideas in the technological literature as to whether cell-phone technology offers people greater freedom and creativity or enchain them through the greater potential for surveillance and monitoring by the powerful. They imply that cell-phone communication signifies accessibility, and more importantly, the requirement to be available. It also indicates the wearing away of boundaries for work, consumption, and recreation.

Based on this conceptualized framework, we are led to four research questions:

- Are there any different types of cell-phone usage categories that exist among adolescents? In other words, what are the different factors of the usage styles?
- Is there any relation among the different usage segments and amount of cell-phone use? In other words, does amount of use make any difference in term of usage style?
- Is there any relation among the different usage segments and cell-phone monthly expenses? In other words, does monthly expense relate to usage styles?
- Is there any relation among the different usage segments and gender of the users?

The answer to these questions can provide information that is important in developing design and marketing strategies for selling different types of cell phones to young consumers. Data from these questions also provide the direction for analysis and development. As such, these research questions allowed us to develop four major hypotheses that more directly focused on the analysis of the variables involved in this study.

Cell phones are extremely popular among young people across the world. Cross-cultural research has revealed interesting similarities and differences regarding cell-phone usage by young people from different countries. The older the teen, the more likely she uses her phone frequently. Older teens use them to talk to friends on a daily basis; younger teens tend to use cell phones to call pals a few times or less per week. More than seven in ten 17-year-olds with phones talk to friends on their cell phones daily, while just 28 percent of 12-year-olds with phones say the same. A large percentage of phone owning younger teens, ages 12-14, say that they talk to friends at least once a week; fewer than one in five the same age report weekly cell-phone use, and 10 percent of those age 15-17 use landline telephones. (Pew Internet, 2009). The Nielsen Co. completed a study of 1,200 Egyptians between the ages of 16 to 29 from four different socio-economic classes, people having the same social, economic, or educational status. Specific emphasis focused on Egyptian youth with the purpose of better understanding their current mobile-phone preferences. The study found that 68 percent of those interviewed use their phones for personal calls. Only 32 percent use their mobiles for business-related calls. The study also found that on average, 88 percent of Egyptian youth own at least one cell phone. (Daily News Egypt, 2009). In Japan, teenagers appear to be infatuated with their cell phones. A number of experts approximate that 96 percent of all Japanese children will have cell phones by the time they reach high school. One study demonstrated that these youth spent between 90 and 125 minutes daily on their phones, utilizing them to read books, chat with friends, surf the Internet, or listen to music (Stewart, 2008).

In a study at a Greek University, 416 students were surveyed regarding the use of mobile devices. The results indicated that students use their mobiles mostly for phone calls and Short Message Service (SMS). Additionally, they tend to use their mobiles to take photos and activate the reminder function. Surprisingly, they do not use many others of the devices' operations. They use their mobiles to communicate mostly with their boy/girl friend, then with their friends. They use their mobiles mostly at home, then at the university (Anastasios & Amalia, 2008).

A study of 630 cellular phone users 18 years or older, randomly selected in the city of Konya, Turkey, suggested that the use of cellular phones as a status symbol is more important than the other motives. The results confirm the importance of status/relaxation and security/sociability as reasons for cellular phone usage. Income, previous experience with cellular phones, brand of handset, use at the workplace and in the car are also found to be important in determining the level of usage. (Özcan & Koçak, 2003). Taken collectively, previous work and intuition offer two different hypotheses regarding the relation between different segments and period of using cell phones. As such, we can posit that: H₁: There are different usage styles among Turkish young people for their cell phones; H₂: There is a significant difference among the Turkish young people in cell-phone usage segments and period of using cell phones.

Around the world, technology devices are commonly considered to be essential items by 18- to 24-year-olds. If they don't already own them, young consumers are seeking to acquire them as soon as possible. Ownership of cell phones registers at 92 percent globally, and as high as 98 percent in many countries. PCs and laptops are owned by 76 percent and 52 percent respectively, while 68 percent own an MP3 Player. Digital cameras have penetrated the global marketplace at a rate of 59 percent, proving most popular among those living with a partner. Among those not already owning a laptop, they were next on the lineup of purchases, with 71 per cent intending to buy one.

A further measure of the centrality of technology in young adults' lives comes with the amount they spend on this category. Mobile-phone bills consume \$26.30 and technology items cost \$24.30 of 18- to 24-year-olds' weekly expenditures. Together, cell phones and other technology represent combined total spending of more than \$50 per week, by far the biggest expense in young adults' lives (Uyenco & Kingdon, 2010).

In a study conducted among four focus groups (32 students) and an administered survey to 137 students regarding cell-phone usage by college students in the United States, cost-consciousness emerged as a theme. Among all of the respondents, the largest group believed that a cell phone is the cheaper way to make calls. These students expend a large portion of time receiving calls and talking on cell phones, but did not make most of the calls (Matanhelia, 2009). There are small differences in phone ownership by socio-economic status; in families with the highest levels of income and education, teens are more likely than in less well-off families to have a cell phone (Pew Internet, 2009).

Parents generally pay the cell-phone bills of children who are not old enough to work or do not have part-time jobs. The most problematic area with respect to children (mainly teenagers) and cell phones in Australia appears to be that of unexpectedly high mobile-phone bills (in extreme cases, up to \$5,000 in accumulated charges) incurred by about 10 percent of users, which parents end up paying, or the teens themselves pay with a loan from a parent or other adult. Anecdotal evidence suggests that most teens rack up higher monthly bills than expected. This is due to getting carried away during weekends, with too many calls sent unnecessarily, from downloading games or ring tones on impulse, sending Multimedia Messaging Service (MMS) messages using cell phones with cameras for still and video photography (Weerakkody, 2008). With this evidence in mind we can hypothesize say that: H₃: There is a significant difference among Turkish young people in cell-phone usage segments and monthly phone expense.

Girls and boys are equally likely to own a phone and there are no differences by race or ethnicity in phone ownership (Pew Internet, 2009). A recent survey by the Global Youth organization discovered that that 4 percent more girls owned a cell phone than boys, and 9 percent more girls who did not own a cell phone wanted to. The survey also verified that young people's ownership of cell phones has a direct correlation with age, being female, parental income, parental emphasis on education, and use of video

games and computers. However, cell-phone usage varies from one country to another; the survey's findings indicate that Chinese boys were more likely to own a cell phone earlier than Chinese girls (Global Youth, 2009). In another major study of profiles of Norwegian adolescent cell-phone usage, researchers found that 99.4 percent of the girls demonstrate their use of the cell phone by text messaging (SMS), while 97.5 percent of the boys did so. Additionally, girls used their cell phones as either watches or alarms more frequently than boys (81.9 percent vs. 75.9 percent); however, boys more frequently used their phone as a fax machine. While 6.1 percent of the boys had used their cellular phones for fax purposes, only 3.2 percent of the girls had done so. For most uses, there were no gender differences. However, girls used text messaging and clock/alarm functions more often than boys did. (Global Youth, 2009). Only boys than by girls more often used the fax function. For both Internet and cell phone use, we observe a female preponderance for activities, which involve relational aspects of behavior such as chatting, E-mail, and text messaging Reidulf, Kleiven, and, Halvor (2009).

In this study, we investigate the relationship between cell-phone usage style and the gender of young users. As such, the above studies predict some differences and similarities between young male and female cell-phone users. Consequently, we expect that in the different usage segments female and male dominance will be different. Therefore, we predict: *H₄: There is a significant difference among the Turkish young people in cell-phone usage segments and gender.*

Turkish Population Characteristics and Cell-phone Usage in Turkey

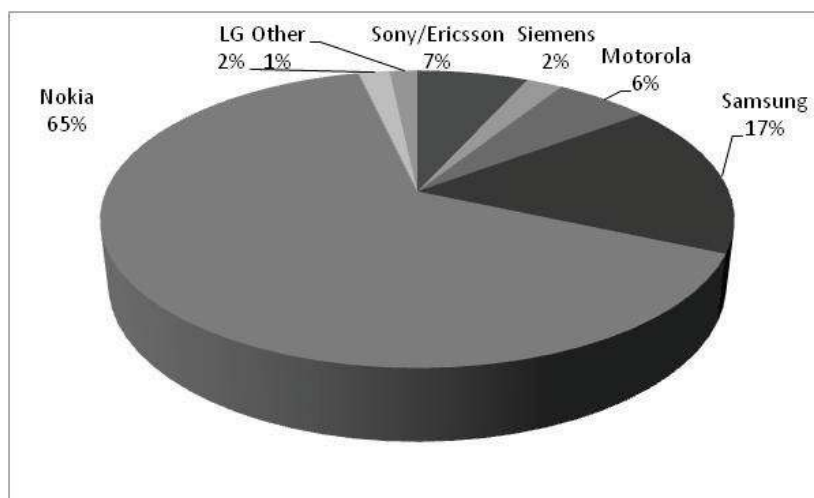
The 2009 Census of Turkey counts its population at 72.5 million, with a growth rate of 1.45 percent per annum. Two-thirds (67 percent) of the population are in the group of those 15- to 64-years-old. One-fourth (26 percent) are in the youngest group, newborns up to 14-years-old; only 7 percent of the population is 65 years and older (Turkish Statistical Institute, 2010). With its young population, a result of having the highest birth rate in Western Europe, Turkey possesses highly skilled and competitive labor, a huge domestic market, a unique geographical location, and a dynamic private sector with close regional connections. As a result, the country can benefit from the great potential for international investors. The population will continue to grow rapidly, increasing to 82.6 million by 2015, when it is poised to surpass Germany as the most populous country in Western Europe (Dinçer & Kolain, 2008).

One of the most significant attributes of the Turkish population is its young population: Approximately 50 percent of the population is below 25 years old. This growing market of youthful consumers is perfect for consumer business as young people spend more, particularly on goods such as cell phones and the Internet. There are 6.3 million people in the age group 15-19 in Turkey. Of those, 3.5 million are not enrolled in school: 1.6 million males (46 percent) and 1.9 million females (54 percent). Sixty-seven percent of the 6.3 million people in the age group 15-19 who graduate from primary or secondary school dropped out the school before attending college or high school. (Dinçer and Kolain, 2008). While these statistics alone do not tell much about the specific aspects of the socio-economic situations in Turkey, they do indicate that cell-phone use among young people may be much more pronounced than what we have presented in this study. Because we only studied young people who were members of a high school student body, we have captured just a portion of the intensity and dominance of cell-phone use among Turkish youths.

Turkey is also one of the countries in the world with a rapid process of urbanization, at an average annual rate of 1.9 percent between 2005 and 2010 (McGinley, 2009). There is a great migration into the cities from rural areas, which is causing the urban population to rapidly increase. While there have been changes in Turkey's demographics, the migration movement has not lost much of its momentum. Turkey's population is concentrated especially in the large provinces and industrial regions. The rapid urbanization created by the population coming from the rural areas has increased the number of large cities, and caused serious problems from the viewpoint of sound urbanization in the large metropolises (tbb.gen.tr The Bank Association of Turkey, 2008). The proportion of the population residing in urban areas is now 75.5 percent (Turkish Statistical Institute, 2010). This recent rate of economic development and urbanization has pushed Turkish customers to adopt technology and incorporate it into their society at a phenomenal rate. As the evolution of technology in Turkish society

has increased, modern digital devices have become highly attractive to consumers, representing a simultaneous, rapid paradigm shift. The cell-phone market is a good example of this phenomenon. According to the latest consumer research from Euromonitor International, cell-phone usage in Turkey is booming due to the country's growing population and expanding consumer markets (euromonitor.com, 2009). Turkish residents have adopted cell phones as a primary mode of communication in a relatively short period of time. With the advent of cell-phone systems, particularly GSM-based systems in the last 10 years, interest has declined in extending the landline telephone infrastructure; residents are now fully adopting cell phones (Hofmann, 2007). Turkey's mobile market offers strong growth potential, albeit within a competitive environment. About 66 percent of Turkey's population has cell phones, compared with 100 percent coverage in many western European countries (Parker, 2006). According to Euromonitor International, the number of people using cell phones in Turkey grew by more than 208 percent during just six years. In 2000, there were a mere 16.1 million cell phone users; in 2006, this figure had increased dramatically to 49.7 million users (euromonitor.com, 2009). Based on the Chairman of the Competition Board's report (2006), the Turkish cell phone market is crowded with more than 10 brands, and many models. As of May 2006, the distribution of the estimated market share can be followed in Figure 2.

FIGURE 2 (*)
MOBILE-PHONE MARKET SHARE IN TURKEY



(*) Chairman of the Competition Board's Report (2006)

The significant rise in mobile-phone usage can be attributed to the fact that Turkey has the youngest population in Western Europe, with a median age of 27.1 years in 2006. Turkey's young population is the result of having the highest birth rate in Western Europe. This growing market of young consumers is ideal for business as young people spend more, particularly on goods such as cell phones. Turkey presently has the sixth-largest, young mobile subscriber base in the world, with more than 11 million subscribers under the age of 25, providing a very profitable market for cell phone companies (euromonitor, 2009).

The customary gender division in attraction to new technology appears to be neutralized in mobile-phone usage styles. Technology interest, usually regarded as a "typically male" thing, has also been linked to "female" consumption styles. This may reflect young men's changing relationship to consumption.

In Turkey, mobile-telephone operators are required to provide the level of quality of service that was stated in their consumer privilege agreements, and to provide quarterly reports regarding call blockage rate, unsuccessful call ratio, call set-up time and bill complaints ratio to telecommunication

officials (Information and Communication Technologies Authority, 2004). In January 2000, the Turkish Parliament enacted legislation separating telecommunications policy and regulatory functions, establishing an independent regulatory body, the Telecommunication Authority. The authority is responsible for issuing licenses, supervising operators, and taking necessary technical measures against violations of the rules. Most regulatory functions of the Transport Ministry were transferred to the authority, and the regulator is slowly gaining competence and independence (U.S. Department of State, 2009). Since the beginning of 2007, the Telecommunications Authority and the Ministry of Transportation have improved the pace of their studies and regulatory activities. The authority has issued further regulations that are important to the liberalization process by enhancing competition in the shifting market (Ozeke, 2008). The Electronic Communication Law, passed in 2008, gave greater autonomy to the Telecommunication Authority, and the authority accomplished some important projects in 2008. Introduction of number portability is a big step forward, encouraging more competition among the GSM mobile-phone operators. Earlier, the long-expected privatization of the state-owned, fixed-line telecommunications company was accomplished by the sale of 55 percent of Turk Telekom to the Saudi-owned Oger Group in November 2005. The company retains its monopoly in fixed lines, but the GSM operators' competition against Turk Telekom has been increasing (U.S. Department of State, 2009).

RESEARCH DESIGN AND METHODOLOGY

Questionnaire Development

In the first section of the questionnaire, a number of relevant demographic variables were identified (see Table 1), based on earlier studies. In addition to the customary questions regarding gender and family income, respondents also were asked demographic characteristic questions regarding years of cell-phone use and monthly cell-phone expenses.

The second section of the questionnaire contained a set of 17 statements that measure attitudes and everyday practices related to cell phones, adopted from Wilska (2003). Respondents were instructed to indicate their level of agreement with 17 questions on a five-point, Likert-type scale (1 = strongly agree; 5 = strongly disagree). The 17 statements of Wilska's scale were translated into Turkish using a back-translation procedure. This procedure involved two bilingual individuals, who participated independently in the translation process. The English versions were translated into Turkish and then the Turkish versions were translated back into English. This process was repeated until the statements were easily understandable in Turkish.

Data Collection Procedures

Eskisehir is one of the largest industrial centers in Turkey, an old, culturally developed province, with a population of 755,400 in 2008. Eskisehir's population has a high literacy level at about 99 percent (Wikipedia, 2010). Several modern industries include production of railway locomotives, fighter aircraft, agricultural equipment; our aim, in this study, was to build a sample that would reflect the characteristics and cell-phone usage and attitude of Turkish high school students. Therefore, high schools were selected from both metropolitan and regional areas in Eskisehir. Even though the study did not aim for complete representativeness, the ratios of female-male and family-income levels were close to those of the high schools' populations in Turkey.

The data for this study was collected through self-administered questionnaires. The questionnaires were administered in Eskisehir, Turkey, in spring 2006. The survey data were collected from 2,140 students at 30 randomly selected high schools in Eskisehir and surrounding areas. At that time the population of Eskisehir's high schools was 24,840 students; the sample represents close to 10 percent of Eskisehir's high school population. In Turkey it is not imperative to get parental consent before using individuals under the age of 18 in research. But we needed to receive approval from the district superintendent and school principals. After receiving approval, high school teachers handed out the questionnaires in class, and then collected the completed ones.

ANALYSIS AND FINDINGS

To complete our investigation of the data, we performed several statistical analyses, using the Statistical Package for Social Science, version 15.0 software and AMOS 7.0.

A summary of descriptive statistics for the present sample can be found in Table 1. The sample consisted of 2,140 high school students, of which 48.6 percent were females and 51.4 percent males. The average age was 16.3 years old; 21 percent had used cell phones less than one year, 37.5 percent between 1-2 years, and 41.5 percent more than two years. Approximately one-third (32.8 percent) of the sample's monthly spending was below 10 YTL (Turkish Lira), one-third (35.4) between 11-20YTL and the remaining one-third was above 21 YTL. Twenty-five percent of the respondents reported total monthly, family income of more than 1200 YTL.

TABLE 1
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

<i>Demographics</i>	<i>Number of participants (N)</i>	<i>Percentage (%)</i>
Gender		
Female	1,039	48.6
Male	1,101	51.4
Period of Cell-phone use		
Less than one year	449	21.0
1-2 years	802	37.5
More than 2 years	889	41.5
Monthly Cell-phone Expenses		
10 YTL and below	702	32.8
11-20 YTL	757	35.4
21 YTL and above	681	31.8
Monthly Family Income (\$1US dollar = 1.3 YTL)		
400 YTL or less	147	6.9
401-800 YTL	699	32.7
801-1200 YTL	754	35.2
1201 YTL or more	540	25.2

In order to pre-test our items and explore the underlying factor structure of our cell-phone usage subscales, we used principal axis factoring in an Exploratory Factor Analysis (EFA), with a varimax rotation on the data. Exploratory factor analysis with orthogonal (Varimax) rotation was used, because theoretically, factors were presumed to be unrelated and varimax rotation will extract uncorrelated orthogonal factors (Washington, 2009). Varimax rotation maximizes high correlations and minimizes small ones, allows for maximum factor and variable correlations, provides better data interpretation, and finally Varimax rotation maximizes variance (Ferketich, 1991).

While there is some inconsistency on minimum sample size requirements, many researchers agree that at least five to 10 respondents per item are necessary for exploratory factor analysis EFA (Comrey, 1988). We had more than 142 respondents per item. We used the latent root criteria of an Eigen value greater than one for the determination of factor extraction. Additionally, we considered items with loadings of greater than .40 to be "substantial" (Floyd & Widaman, 1995). Because the purpose of this article is to examine the factor structure of responses to our scale items, we also used confirmatory factor analysis to cross-validate the results of our exploratory factor analysis. Exploratory factor analysis

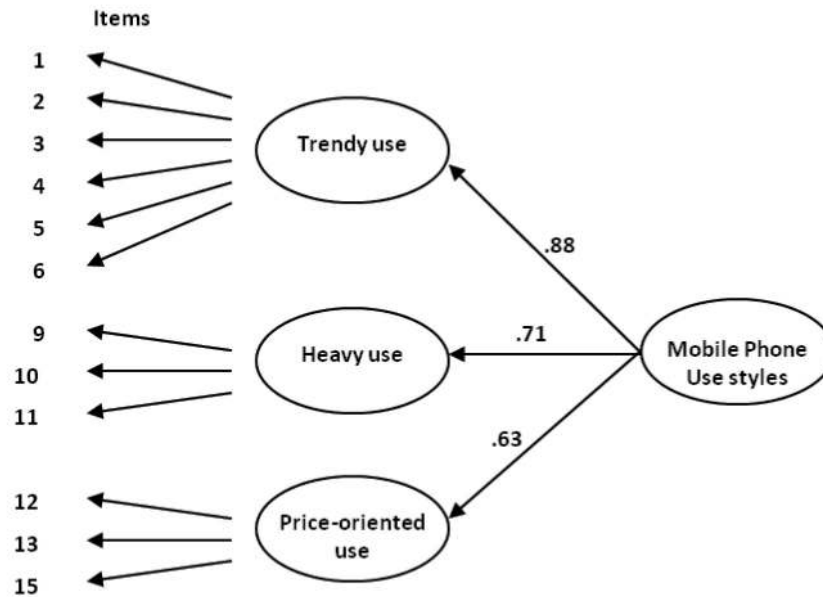
verified three factors for Wilska's (2003) scale of cell-phone usage segments. The three factors explained about 46 percent of the total variance. The 17-item instrument was first analyzed using exploratory factor analysis for the 2,000 responses from high school students. The items, "I often make cell-phone calls without any particular purpose," and "A cell phone is necessary only for connecting people and organizing things," had a low factor loading or serious cross-loadings, and were dropped. Coefficient alphas and item-to-total correlations were recalculated repeatedly as part of the reassignment and deletion (of items) process. The results are shown in Table 2. We examined the reliability of each of the composite constructs by using Cronbach's alpha. These are depicted in the last column of Table 2. Cronbach's alpha analysis allowed the identification of 15 sub-dimensions (constructs) that were tested for reliability and validity by means of exploratory and confirmatory factor analysis. All constructs have Cronbach alpha coefficients greater than 0.60 to indicate acceptable internal consistency and reliability. Furthermore, all

TABLE 2
RESULTS OF EXPLORATORY FACTOR ANALYSIS

Factor and Items ^a	Factor Loadings	% of Variances	Cronbach Alpha
Factor 1. Trendy use		19.97	.76
1. It's important for me that my mobile phone uses the latest technology and is "posh."	.76		
2. It's important for me that there is an internet connection on my phone.	.72		
3. A three year old mobile phone looks too old-fashioned for me.	.70		
4. It's important form me that my phone fits in with my clothing style and general image.	.68		
5. Some operators or types of connections are more "trendy" than others.	.50		
6. I often change logos and/or ringing tones.	.40		
Factor 2. Heavy use		17.14	.70
7. I'll probably use the mobile phone even more in the future.	.70		
8. I keep checking for possible phone calls and text messages all the time.	.70		
9. I write a lot of text messages.	.67		
10. It's important for me to receive a lot of phone calls and text messages.	.60		
11. I feel very uncomfortable, if, for some reason, my mobile phone is not with me.	.57		
Factor 3. Price-oriented use		8.89	.63
12. I often have difficulties in paying my mobile phone bills.	.74		
13. The cheapest phone model is good enough for me.	.53		
14. A cell phone is necessary only for connecting people and organizing things.	.45		
15. Price is the most important issue when choosing a phone.	.62		
^a Items were measured: 5 = Strongly agree, ... 1 = Strongly disagree. KMO= .855; X ² = 6223,228 p = .000 Cumulative variances : 46,00			

constructs were measured to check their validity. To test the appropriateness of factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was conducted. The KMO was 0.855, which is very close to extremely high level, 0.90. Bartlett's test of sphericity reveals significance at a level of 0.000 (Chi-square = 6223.228). The result supports reliability and validity of constructs.

FIGURE 3
FACTORS OF MOBILE PHONE USE STYLES



Several indices were used to assess the goodness-of-fit of the model: the maximum likelihood chi-square statistic, chi-square/degree of freedom ratio, the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the normed fit index (NFI), the Tucker-Lewis non-normed fit index (TLI), the root mean square error of approximation (RMSEA), and the comparative fit index (CFI).

The chi-square statistic is used to evaluate the fit between the hypothesized statistical model and the actual data set. A significant chi-square statistic implies poor model fit. However, the chi-square statistic was employed only as a basis of comparison with the other fit indices in the current study because it is highly sensitive to sample size. Conventional interpretation for fit indices (GFI, AGFI, CFI, TLI, and NFI) is that values of .95 or greater indicate excellent correspondence between the hypothetical model and the actual data, and values between .85 and .90 indicate reasonable model fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). RMSEA assesses how well the model approximates the data by determining the lack of fit of the model to the sample covariance matrix, expressed as the discrepancy per degree of freedom. A RMSEA value of less than .05 is required to claim good fit, values around .08 indicate fair fit, and values approaching .10 indicate poor fit (Marsh, Balla, & MacDonald, 1988).

TABLE 3
CONFIRMATORY FACTOR ANALYSIS OF MOBILE-PHONE USAGE SEGMENT

GFI (>0.90)	AGFI (>0.85)	CFI (>0.90)	RMSEA (<0.10)	TLI (>0.90)	NFI (>0.90)	X ² /sd (<5)
.965	.946	.913	.061	.888	.904	3.89

As Table 3 indicates, the measurement model had an excellent fit. The GFI, AGFI, and CFI showed excellent fit with the model. Given the chi-square test's sensitivity to sample size, attention was focused on incremental fit measures, including normed fit index (NFI) = 0.904, and root mean square error of approximation = 0.061. Further, the Chi-square/df ratio was well below the recommended level of 5.0 (Bollen, 1989), indicating an acceptable model fit. Finally, all of the cross-construct correlations were significantly different from 1.0 (via a Chi-square test with one degree of freedom when constraining the path to 1.0, rather than allowing free estimation), providing evidence of discriminate validity.

FINDINGS

One-way Analysis of Variance (ANOVA) is used to investigate the differences of cell-phone usage segments and period of cell-phone use. Since significant differences were found, a Scheffe test was then employed to conduct a post-hoc analysis. Scheffe test indicates the significant difference between pairs, when the decision from ANOVA is to reject the null hypothesis; at least one of the means isn't the same as the other means. Tables 4 and 5 show where the differences lie among the cell-phone usage styles with period of cell-phone use and with cell-phone monthly expenses.

TABLE 4
RELATIONSHIP BETWEEN MOBILE-PHONE USAGE SEGMENT AND PERIOD OF CELL-PHONE USE

Mobile Phone Usage Segment	Results of One-Way ANOVA		Results of Scheffe Test			
	F	p	Period of Cell Phone Use	Mean difference	sd	P
Trendy use	10.277	.000*	<u>More than 2 years</u>	.23	.05	.000
			Less than one year	.16	.04	.001
			<u>1-2 years</u>			
			Less than one year			NS**
Heavy use	14.217	.000*	<u>More than 2 years</u>	.29	.05	.000
			Less than one year	.17	.04	.000
			<u>1-2 years</u>			
			Less than one year			NS**
Price-oriented use	11.736	.000*	<u>More than 2 years</u>	-.26	.05	.000
			Less than one year	-.16	.04	.001
			<u>1-2 years</u>			
			Less than one year			NS**
* p < .001		**Not Significant				

The results of our analyses allowed us to confirm hypothesis 1. Our analyses indicated that there are three significantly different segments among Turkish young cell-phone consumers in how long a

period of time they have been using cell phones. Based on the results of the statistical analysis, H₁ is confirmed, suggesting that there are different factors constituting distinct usage segments in the Turkish youth cell-phone market.

Post-hoc Scheffé tests revealed that teenagers who own cell phones for a longer period are more trendy and heavy users, whereas teenagers who have owned cell phones for a shorter time period are more price-oriented. Based on this statistical analysis, we can say that the second hypothesis (H₂) is also confirmed. This means that there is a significant difference among the Turkish young people regarding their cell-phone styles and length of time they have been using cell phones.

To investigate the style dimension of our study, we completed univariate ANOVA of the users' monthly cell-phone expenses. A bivariate analysis using one-way ANOVA with Scheffé post-hoc tests revealed that teenagers who have higher monthly cell-phone expenses are trendier and heavier users. The price-oriented group, on the other hand, was more likely to have lower monthly expenses (Table 5). Statistical testing of our third hypotheses (H₃) showed that there is a significant difference among the Turkish young people in their cell-phone styles and monthly phone expense. These results are also related to family income. Chi-square results indicate significant relationships between family income and monthly expenses. (Pearson Chi-Square = 482,516; df = 6; p = .000). The findings show that the higher the family income, the more the cell phone is used.

TABLE 5
RELATIONSHIP BETWEEN MOBILE-PHONE USAGE SEGMENT AND MONTHLY CELL-PHONE EXPENSES

Mobile Phone Usage Segments	Results of One-Way ANOVA		Results of Scheffé Test			
	F	p	Monthly Expenses	Mean difference	sd	p
Trendy use	65.935	.000*	<u>21 TL and above</u>	.59	.05	.000
			10 TL or less	.37	.05	.000
			11-20 TL			
			<u>11-20 TL</u>			
			10 YTL or less	.21	.05	.000
Heavy use	37.339	.000*	<u>21 TL and above</u>	.45	.05	.000
			10 TL or less	.25	.05	.000
			11-20 YTL			
			<u>11-20 TL</u>			
			10 TL or less	.20	.05	.000
Price-oriented use	9.932	.000*	<u>21 TL and above</u>	-.20	.05	.000
			10 TL or less	-.20	.05	.000
			11-20 TL			
			<u>11-20 TL</u>			
			10 YTL or less	–	–	NS**
* p < .001		** Not Significant				

Finally, in testing our fourth hypotheses (H_4), there were no significant difference in results between teenage boys and girls in the trendy usage and price-oriented segments, but we did find differences in the heavy-usage segment between the genders. T-test results ($t=4.7$; $p=0.000$) show that girls are significantly more represented in the heavy-usage segment than boys are represented.

DISCUSSION AND CONCLUSIONS

The results of our inquiry into the use of cell phones among Turkish young people suggest that there are substantial differences in perception of usage and actual usage itself. Clearly, there is a robust sample data set used in this study, taken from a large cross-section of the Turkish youth population. The large sample of 2,140 respondents provides a rich source of understanding about the disposition of educated Turkish youth toward cell phones. It demonstrates a pervasive adaptation of cell phones usage among a diverse group of youth.

The factor analysis of the data shows that there are three major categories of cell-phone users: trendy users, heavy users, and price-oriented users. The fact that these three segments can be statistically differentiated provides an important context for discussing the outcomes of our study. The findings of this study present sufficient information to make decisions about our hypotheses. The first hypothesis, "There is more than one factor among Turkish teen cell-phone users in how they intend to use the cell phones," is fully supported. The second hypothesis, H_2 , states that there is a significant difference among Turkish young people in the three cell-phone categories and the amount of time spent using cell phones. This hypothesis also is confirmed. It strengthens the argument that usage is an important variable among the young people who own cell phones. The third hypothesis states that "there is a significant difference among Turkish young people in the usage segments and monthly phone expenses." This is also confirmed and strongly supported. Finally, the fourth hypothesis, which considered differences by gender and style segments, is also supported by the research results.

MANAGERIAL IMPLICATIONS

We believe the analytical approach utilized in this paper will increase the understanding of cell-phone usage by young consumers and of marketplaces outside of the United States. With globalization, most international markets are focused on the supposition of similar needs and wants of consumers. This is especially true for young peoples' consumer markets. These markets have more similarities than older consumers' markets because young people adapt much easier to technology innovations than older generations. As such, anywhere in the world, youths are using similar products, listening to similar types of music, etc. However, as this study reveals, international marketers would profit from studying the differences in young persons' buying decisions, especially in countries that vary greatly in social, behavioral, cultural, and economic conditions. This information can assist marketers in determining appropriate market penetration strategies. Marketers of cell-phone products should target most of their marketing and communications strategies toward the consumer who has the most influence, namely the young consumer.

The purchase and maintenance of a cell phone can become a major expense for a young person. This is true in a developed country as well as in a big, emerging country such as Turkey. This information regarding the composition of the youth cell-phone market and the variables that produce significant differences in usage provides substantial insight for the marketing strategist.

From another perspective, there is a pattern of differences that emerges from this study that provide insight into the wants and desires of young cell-phone consumers. The young consumer has an insightful understanding of cell-phone pricing and trend issues. Clearly, young people around the world have many of the same attributes. They want to be accepted by their peers and thus, be part of the crowd, by virtue of the product or services they buy and use. This is particularly true in their choices regarding cell phones. Having a trendy cell phone is important for acceptability, coolness, and social status. Our study verifies the fact that these characteristics not only exist in Western countries, but also in Turkey.

With regard to cell-phone prices and the cost of using them, young Turkish consumers are extremely price-conscious. Because they typically do not have a lot of money to spend on a cell phone, these young consumers need to be resourceful in finding and using technical devices at affordable prices. Both attributes stand out in this study.

Information from this research provides a platform for developing marketing and consumer targeting strategies. We have confirmed that buying decisions related to cell phones appear to be universally accepted in both developed and developing countries.

Additionally, the marketer's strategy should recognize the desires and needs in usage of cell-phone and their design details. Marketing strategies and, in particular, communications strategies should reflect this effect on buying decisions. This significant dimension must be understood if marketers are to be more successful in matching consumer markets and company products and services.

LIMITATIONS OF STUDY

The current research focused on whether there is dominance in young peoples' decision-making regarding the purchase of cell phones overall. While our results seem to suggest there is dominance among the sample of respondents, the findings of this study cannot be generalized to the entire population of the country, as the samples were drawn only from middle and upper socio-economic groups in Turkey. Moreover, the primary limitation of our research relates to the size of the youth population and the type of youth that is enrolled in school. The fact that 6.3 million youth comprise the age group of 15-19 in Turkey is an important statistic. It is even more significant that 3.5 million of these teenagers, consisting of 1.6 million male (46 percent) and 1.9 millions female (54 percent), are not enrolled in high school. (Dinçer and Kolasin, 2008). Since our data sample came from students enrolled in high schools, we believe that this constitutes a limitation to our study in terms of representing the overall youth in Turkey. While this limitation exists, we also believe that the ratios for young people not enrolled in school can apply to all of Turkey. Because Eskisehir is a large city with a good diversity of youth, the ratio of youth that attend high school is above the nation's average.

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