

December 2006

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Recommended Citation

Isaac, Henri; Nickerson, Robert; and Mak, Brenda, "Mobile Phone Use in Social Settings: A Multinational Study" (2006). *AMCIS 2006 Proceedings*. 250.
<http://aisel.aisnet.org/amcis2006/250>

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Mobile Phone Use in Social Settings: A Multinational Study

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ABSTRACT

Mobile commerce relies extensively on mobile phones, which, unlike wired e-commerce client computers, can be used anywhere and anytime and consequently are often used in social situations including restaurants, theaters, and buses. Use of mobile phones in these environments affects not only the user but also co-located people who can be bothered by ringing phones, overheard conversations, and clicking keys. How people perceive the impact of mobile phones in these situations may vary by user factors such as age and work status, and by the culture of the country in which the user is located. We have conducted a multinational study of attitudes about mobile phone use in social situations to which we have received over 1000 responses from five countries. This paper presents the first results from this study.

Keywords

Mobile phone, cell phone, social attitudes, multinational

INTRODUCTION

Mobile commerce relies extensively on mobile (cell) phones to connect users to mobile service providers through voice and text messaging. Unlike wired e-commerce, however, m-commerce often takes place in social settings in which users and co-located people may be affected, including restaurants, theaters, classrooms, and sidewalks. Consequently, mobile service providers must understand attitudes about mobile phone use in these settings in order for m-commerce to be successful; otherwise, they may offer mobile services in situations that can negatively impact users and others. The general purpose of this research is to investigate social attitudes about mobile phone use.

Mobile phone technology has a paradoxical impact on people with both benefits and consequences. Arnold (2003) examined the many "Janus-faces" of mobile phones including liberating and leashed, private and public, and connected and distant. Jarvenpaa and Lang (2005) identified eight paradoxes of mobile technology such as empowerment and enslavement, independence and dependence, and fulfills needs and creates needs. In this paper we take as given the benefits of mobile phone technology and focus exclusively on the other side of the paradox.

The purpose of this research is to examine attitudes about mobile phone use in social settings in several countries. This paper presents the results of a large international survey about these attitudes. Because of the widespread use of text (SMS) messaging, or texting for short, we include it along with voice use of mobile phones in our study. First we review literature on mobile phones including their social use, the role of location and time in their use, and the effect of user and environmental factors on their use. Then we present our hypotheses, describe our research methodology, and present our results and analysis. Finally we discuss our results and give our conclusion.

BACKGROUND

Social Use of Mobile Phones

Mobile phones can interrupt social interactions. When a user receives a mobile phone call or a text message while interacting with others, the user must decide whether to accept the call or read the message and interrupt the interaction. The user's

decision may depend on whether they are at work or with family or friends. It also may depend on factors such as the user's age or experience using a mobile phone. Palen, Salzman, and Youngs (2001) showed that a person's attitude towards public mobile phone use becomes more accepting with increased use. Palen (2002) predicted that as adoption of mobile phones increases, people will be less concerned about appropriate use, but will still call for "mobile-free" zones.

Plant (2001) reported that people have three types of attitudes about taking a call when others are present: move away from the social situation ("flight"), remain in place but removed from the social engagement ("suspension"), stay engaged socially ("persistence"). Weilenmann and Larsson (2001) came to the same result when studying teenagers' mobile phone use in Sweden. Murtagh (2001), studying the attitude of people receiving a mobile phone call on trains, showed that people try to create a private space in a limited public space. Licoppe and Heurtin (2001) showed that French people adopt different strategies about giving their private phone number in order not to be disturbed.

Location and Time of Mobile Phone Use

The role of location and time of mobile phone use has been studied. Because mobile phones can be used almost anywhere and anytime, they can be used in locations and at times that people may consider inappropriate (e.g., a theater during a performance). In many settings co-located people can be annoyed by their use (Ling 1996, Ling and Haddon 2003). Wei and Leung (1999) found ringing phones, loud talking, and discourteous use are annoyances mobile phones can create, and that users and non-users agree it is inappropriate to use mobile phones in restaurants, schools, libraries, airports, train stations, and hospitals. Ling and Haddon (2003) reported that mobile phone users in France, Germany, Italy, Spain and the U.K. were least likely to leave their mobile phones on "when attending some event like a play or show, adhering to the rules of those particular settings."

User and Environmental Factors

The impact of mobile phone use may be affected by user characteristics such as gender, age, length of mobile phone use, and employment status. It may also be affected by the factors specific to the user's country.

From their research on the gendered nature of mobile phone culture in Israel, Lemish and Cohen (2005) concluded that there might be different attitudes among men and women toward mobile phones. Rakow and Navarro (1993) noted that the mobile phone "seems to be an extension on the public world when used by men, an extension of the private world when used by women". This study, however, concludes that perceptions of mobile phones among men and women are almost the same.

Much research of mobile phones focuses on teenagers. A study of French mobile phone users shows that age is the key variable to understanding the differences in attitudes and behaviors (Observatoire Societal du telephone mobile 2005).

Certain country factors such as legal environment and national culture may also affect both the user of a mobile phone and co-located individuals. Some countries have laws related to mobile phone use, such as banning mobile phone use while driving.

Few cross-cultural studies of mobile phone use have been conducted. One by Carlson, Kahn, and Rowe (1999), which examined the impact of mobile phone use on decision-making among sales organizations in the U.S. and France, found that mobile phone use predicted changes in certain independent variables more accurately in the U.S. than in France.

HYPOTHESES

We hypothesize that user characteristics, length of mobile phone use, and country of use will affect user preferences for mobile phone use in different social settings. Our dependent variables are user preferences for prohibiting mobile phone voice use and texting in different social settings (while driving, in the classroom, on public transportation, while walking, in public restrooms, in restaurants, in theaters). Our factors are the user's country, age, gender, length of mobile phone use, and work status. Specifically, we hypothesize the following with respect to users:

H1a: country affects preference for mobile phone voice use.

H1b: country affects preference for mobile phone texting.

H2a: age affects preference for mobile phone voice use.

H2b: age affects preference for mobile phone texting.

- H3a: gender affects preference for mobile phone voice use.
 H3b: gender affects preference for mobile phone texting.
 H4a: length of mobile phone use affects preference for mobile phone voice use.
 H4b: length of mobile phone use affects preference for mobile phone texting.
 H5a: work status affects preference for mobile phone voice use.
 H5b: work status affects preference for mobile phone texting.

RESEARCH METHODOLOGY

Our research methodology involved a paper-based questionnaire, which was developed in English through an iterative process involving a U.S. researcher not associated with this paper and the first and second authors. The first author translated the questionnaire into French and colleagues in Italy, Turkey, and Finland translated it into their respective languages. Because of conference-imposed space limitations, we do not include the questionnaire in this paper and we only describe the parts of the questionnaire related to the analysis we report here. The complete questionnaire is available from the authors.

The questionnaire includes background questions classifying users by such factors as age, gender, length of mobile phone use, and work status. The country in which the user uses a mobile phone is identified by the location where the questionnaire was administered.

Because a user can use a mobile phone for voice and texting we include separate but parallel questions for each mode of communication. For each mode we ask for the respondent's strength of agreement regarding the prohibition of mobile phone use in the following social situations: while driving, in the classroom, on public transportation, while walking, in public restrooms, in restaurants, in theaters. We also ask for the respondent's strength of agreement with the statement "I feel lost without my cell phone" as it relates to each mode of communication. These questions form eight subscales used in the analysis. Responses to all questions were on a 1 to 7 Likert scale indicating strong disagreement (1) to strong agreement (7).

The questionnaire was administered to self-selected undergraduate and graduate business students in the United States, France, Italy, Turkey, and Finland. All students either owned or had full time use of a mobile phone at the time of the survey. 1079 valid questionnaires were returned distributed as follows: USA 332, France 272, Italy 198, Finland 75, Turkey 202. Table 1 shows the characteristics of the respondents.

Gender	
Male	46.0%
Female	53.9%
NR	0.1%
Age (years)	
< 20	7.7%
20 – 22	39.6%
23 – 25	31.2%
26 – 30	11.7%
> 30	9.4%
NR	0.5%
Work status	
Working	45.4%
Non-working	54.4%
NR	0.2%
Length of mobile phone use (years)	
< 1	5.1%
1 – 2	8.0%
2 – 3	14.7%
3 – 4	19.3%
4 – 5	19.2%
> 5	33.6%
NR	0.1%

Table 1. Characteristics of respondents

RESULTS AND ANALYSIS

We studied the effects of the user's age, gender, length of mobile phone use, work status, and country on user perceptions of mobile phone use for voice and texting. The GLM multivariate procedure in SPSS 12 was used to conduct MANOVA to analyze the effects of these factors.

Mobile Phone Use for Voice

The overall effects of the factors were assessed using Wilk's lambda. Table 2 shows that there is a significant difference in user perceptions of mobile phone use for voice (collapsed across the eight subscales for voice) due to country, age, and length of mobile phone use. Thus H1a, H2a, H4a are accepted at the 0.05 significance level. The effects of gender and work status are not significant, and H3a and H5a are rejected. The following interaction effects are significant: country by length of mobile phone use, country by work status by length of mobile phone use by gender.

Effect	Wilk's Lambda	F	Hypothesis df	Error df	Significance
Intercept	0.735	40.049	8.000	887.000	0.000*
Country	0.813	5.919	32.000	3272.690	0.000*
Age	0.936	7.551	8.000	887.000	0.000*
Gender	0.992	0.915	8.000	887.000	0.503
Length of mobile phone use	0.933	1.560	40.000	3869.138	0.014*
Work status	0.994	0.656	8.000	887.000	0.731
Country BY Work status	0.967	0.988	32.000	3409.139	0.487
Country BY Length of mobile phone use	0.766	1.651	152.000	6866.562	0.000*
Work status BY Length of mobile phone use	0.952	1.143	40.000	4030.417	0.248
Country BY Work status BY Length of mobile phone use	0.865	1.211	112.000	6491.256	0.066
Country BY Gender	0.955	1.325	32.000	3409.139	0.105
Work status BY Gender	0.986	1.620	8.000	924.000	0.115
Country BY Work status BY Gender	0.962	1.113	32.000	3409.139	0.304
Length of mobile phone use BY Gender	0.971	0.680	40.000	4030.417	0.938
Country BY Length of mobile phone use BY Gender	0.880	0.935	128.000	6675.775	0.686
Work Status BY Length of mobile phone use BY Gender	0.944	1.344	40.000	4030.417	0.073
Country BY Work status BY Length of mobile phone use BY Gender	0.887	1.275	88.000	6068.533	0.043*

* significant at 0.05 level

Table 2. Effects of user characteristics and country on user perceptions of voice use

For variables with significant multivariate effects on user perception of voice use, the effects were further examined to determine whether the independent variables were significant for each item of user perception of voice use. Table 3 displays the result. (See Table 4 for the item codes.) Table 5 summarizes whether the effect on each item for user perception of voice use is significant at the 0.05 level.

Table 6 gives the mean response to each question about prohibiting mobile phone use for voice by country. From Table 5, country is the only primary factor accounting for a significant difference in user perceptions of mobile phone use for voice while driving. Table 6 shows that France had the highest mean score agreeing with the prohibition of mobile phone use for voice while driving and Finland the lowest. From Table 5, country is the only primary factor accounting for significant difference in user perceptions of mobile phone use for voice in theaters. Table 6 shows that Italy had the highest mean score agreeing with the prohibition of mobile phone use for voice in theaters and the United States the lowest.

Source	Dependent variable	Type III Sum of Squares	df	F	Significance
Corrected model	Item3a	1136.675	101	3.602	0.000*
	Item3b	507.405	101	1.850	0.000*
	Item3c	601.582	101	1.995	0.000*
	Item3d	173.112	101	2.095	0.000*
	Item3e	490.932	101	1.721	0.000*
	Item3f	1200.874	101	3.570	0.000*
	Item3g	385.465	101	1.210	0.087
	Item3h	1231.878	101	3.232	0.000*
Intercept	Item3a	539.941	1	172.834	0.000*
	Item3b	535.454	1	197.204	0.000*
	Item3c	25.721	1	8.615	0.003*
	Item3d	36.299	1	44.360	0.000*
	Item3e	66.030	1	23.383	0.000*
	Item3f	81.719	1	24.539	0.000*
	Item3g	875.206	1	277.412	0.000*
	Item3h	846.764	1	224.389	0.000*
Country	Item3a	277.758	4	22.227	0.000*
	Item3b	50.181	4	4.620	0.001*
	Item3c	54.429	4	4.558	0.001*
	Item3d	7.220	4	2.206	0.067
	Item3e	13.037	4	1.154	0.330
	Item3f	248.363	4	18.645	0.000*
	Item3g	32.398	4	2.567	0.037*
	Item3h	162.114	4	10.740	0.000*
Age	Item3a	6.443	1	2.063	0.151
	Item3b	43.858	1	16.153	0.000*
	Item3c	58.838	1	19.707	0.000*
	Item3d	0.927	1	1.133	0.287
	Item3e	7.611	1	2.695	0.101
	Item3f	21.899	1	6.576	0.010*
	Item3g	1.284	1	0.407	0.524
	Item3h	112.420	1	29.791	0.000*
Length of mobile phone use	Item3a	16.128	5	1.033	0.397
	Item3b	9.183	5	0.676	0.641
	Item3c	17.674	5	1.184	0.315
	Item3d	12.822	5	3.134	0.008*
	Item3e	13.219	5	0.936	0.457
	Item3f	13.471	5	0.809	0.543
	Item3g	31.318	5	1.985	0.078
	Item3h	81.866	5	4.339	0.001*
Country BY Length of mobile phone use	Item3a	98.918	19	1.667	0.036*
	Item3b	57.970	19	1.124	0.320
	Item3c	36.297	19	0.640	0.877
	Item3d	58.221	19	3.745	0.000*
	Item3e	53.672	19	1.000	0.458
	Item3f	56.964	19	0.900	0.583
	Item3g	71.103	19	1.186	0.261
	Item3h	172.423	19	2.405	0.001*
Country BY Work status BY Length of mobile phone use BY Gender	Item3a	68.730	11	2.000	0.026*
	Item3b	45.918	11	1.537	0.113
	Item3c	42.845	11	1.305	0.216
	Item3d	9.542	11	1.060	0.391
	Item3e	45.306	11	1.459	0.142
	Item3f	84.934	11	2.319	0.008*
	Item3g	27.833	11	0.802	0.638
	Item3h	28.567	11	0.688	0.751

* significant at 0.05 level

Table 3. Tests of between-subjects effects for perceptions of voice use

Item code	User perception	
Item3a Item3b Item3c Item3d Item3e Item3f Item3g Item3h	Mobile phone use for voice should be prohibited	while driving in the classroom on public transportation while walking in public restrooms in restaurants in theaters
	I feel lost without my mobile phone	

Table 4. Item codes for voice use

Source of effect	Mobile phone use for voice should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
Country	yes	yes	yes	no	no	yes	yes	yes
Age	no	yes	yes	no	no	yes	no	yes
Length of mobile phone use	no	no	no	yes	no	no	no	yes
Country BY Length of mobile phone use	yes	no	no	yes	no	no	no	yes
Country BY Work status BY Length of mobile phone use BY Gender	yes	no	no	no	no	yes	no	no

Table 5. Significance of individual items for voice use (0.05 level)

Country	Mobile phone use should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
United States	4.53	6.04	2.48	1.48	2.42	3.44	5.63	4.68
France	5.93	5.92	2.50	1.25	2.12	3.95	6.21	3.86
Italy	5.03	5.98	2.22	1.16	2.37	2.48	6.41	3.16
Turkey	5.44	5.18	3.36	1.41	1.83	1.62	6.05	4.58
Finland	3.48	5.69	1.55	1.24	1.56	2.24	6.25	3.84
All countries	5.07	5.81	2.54	1.33	2.16	2.97	6.04	4.12

Table 6. Mean response to questions about prohibition of mobile phone use for voice by country

Table 7 gives the mean response to each question about prohibiting mobile phone use for voice by age. From Table 5, both country and age have significant effect on the difference in user perceptions of mobile phone use for voice in the classroom, on public transportation, and in restaurants. Table 6 shows that the United States had the highest mean score agreeing with the prohibition of mobile phone for voice in the classroom and Turkey the lowest. Table 7 shows that older people tend to agree more with the prohibition of mobile phone use for voice in the classroom, on public transportation, and in restaurants.

Age	Mobile phone use should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
< 20	4.33	5.40	2.23	1.40	2.46	2.90	5.80	4.58
20 - 22	5.16	5.66	2.23	1.23	2.08	2.98	6.15	4.10
23 - 25	5.10	5.80	2.76	1.41	2.18	2.66	5.99	4.25
26 - 30	5.24	6.18	2.65	1.31	2.05	2.91	6.02	3.94
> 39	4.97	6.40	3.15	1.43	2.35	4.08	6.09	3.61
All ages	5.07	5.82	2.53	1.33	2.16	2.97	6.05	4.12

Table 7. Mean response to questions about prohibition of mobile phone use for voice by age

Mobile Phone Use for Texting

As shown in Table 8, the multivariate tests using Wilk’s lambda show that there is a significant difference in user perceptions of mobile phone use for texting (collapsed across the eight subscales for texting) due to country, age, length of mobile phone use, and gender. Thus H1b, H2b, H3b, H4b are accepted at the 0.05 significance level. The effect of work status is not significant, and H5b is rejected. In addition, the following interaction effects are significant: country by length of mobile phone use, country by length of mobile phone use by gender, country by work status by length of mobile phone use by gender.

Effect	Wilk’s Lambda	F	Hypothesis df	Error df	Significance
Intercept	0.515	108.826	8.000	924.000	0.000*
Country	0.733	9.373	32.000	3409.139	0.000*
Age	0.943	7.014	8.000	924.000	0.000*
Gender	0.979	2.487	8.000	924.000	0.011*
Length of mobile phone use	0.919	1.963	40.000	4030.417	0.000*
Work status	0.991	1.008	8.000	924.000	0.428
Country BY Work status	0.970	0.854	32.000	3272.690	0.702
Country BY Length of mobile phone use	0.752	1.701	152.000	6592.162	0.000*
Work status BY Length of mobile phone use	0.947	1.223	40.000	3869.138	0.159
Country BY Work status BY Length of mobile phone use	0.867	1.140	112.000	6231.790	0.150
Country BY Gender	0.969	0.889	32.000	3272.690	0.647
Work status BY Gender	0.988	1.369	8.000	887.000	0.206
Country BY Work status BY Gender	0.968	0.898	32.000	3272.690	0.632
Length of mobile phone use BY Gender	0.959	0.930	40.000	3869.138	0.596
Country BY Length of mobile phone use BY Gender	0.833	1.283	128.000	6408.965	0.018*
Work Status BY Length of mobile phone use BY Gender	0.941	1.351	40.000	3869.138	0.070
Country BY Work status BY Length of mobile phone use BY Gender	0.881	1.286	88.000	5825.907	0.038*

* significant at 0.05 level

Table 8. Effects of user characteristics and country on user perceptions of texting

For variables with significant multivariate effects on user perception of texting, the effects were further examined to determine whether the independent variables were significant for each item of user perception of texting. Table 9 displays the result. (See Table 10 for item codes.) Table 11 summarizes whether the effect on each item for user perception of texting is significant at the 0.05 level.

Source	Dependent variable	Type III Sum of Squares	df	F	Significance
Corrected model	Item8a	544.483	101	1.560	0.001*
	Item8b	1072.876	101	2.354	0.000*
	Item8c	270.140	101	1.725	0.000*
	Item8d	304.092	101	1.847	0.000*
	Item8e	323.598	101	1.740	0.000*
	Item8f	304.865	101	1.671	0.000*
	Item8g	953.841	101	1.990	0.000*
	Item8h	1986.687	101	1.695	0.000*
Intercept	Item8a	609.772	1	176.472	0.000*
	Item8b	33.352	1	7.391	0.007*
	Item8c	39.346	1	25.376	0.000*
	Item8d	37.709	1	23.136	0.000*
	Item8e	69.089	1	37.523	0.000*
	Item8f	61.118	1	33.828	0.000*
	Item8g	124.042	1	26.136	0.000*
	Item8h	959.848	1	82.735	0.000*
Country	Item8a	16.556	4	1.198	0.310
	Item8b	87.664	4	4.857	0.001*
	Item8c	41.340	4	6.665	0.000*
	Item8d	71.009	4	10.892	0.000*
	Item8e	31.105	4	4.223	0.002*
	Item8f	43.007	4	5.951	0.000*
	Item8g	140.604	4	7.406	0.000*
	Item8h	137.811	4	2.970	0.019*
Age	Item8a	15.291	1	4.425	0.036*
	Item8b	193.148	1	42.805	0.000*
	Item8c	1.701	1	1.097	0.295
	Item8d	2.543	1	1.560	0.212
	Item8e	0.046	1	0.025	0.875
	Item8f	0.099	1	0.055	0.815
	Item8g	17.698	1	3.729	0.054
	Item8h	208.352	1	17.959	0.000*
Length of mobile phone use	Item8a	26.969	5	1.561	0.169
	Item8b	29.822	5	1.322	0.252
	Item8c	6.378	5	0.823	0.534
	Item8d	4.977	5	0.611	0.692
	Item8e	16.204	5	1.760	0.118
	Item8f	4.143	5	0.459	0.807
	Item8g	28.628	5	1.206	0.304
	Item8h	137.450	5	2.370	0.038*
Gender	Item8a	3.882	1	1.124	0.289
	Item8b	3.375	1	0.748	0.387
	Item8c	0.418	1	0.270	0.604
	Item8d	1.287	1	0.790	0.374
	Item8e	1.451	1	0.788	0.375
	Item8f	3.168	1	1.753	0.186
	Item8g	0.310	1	0.065	0.798
	Item8h	31.348	1	2.702	0.101
Country BY Length of mobile phone use	Item8a	99.016	19	1.508	0.075
	Item8b	147.968	19	1.726	0.027*
	Item8c	48.702	19	1.653	0.039*
	Item8d	50.856	19	1.642	0.041*
	Item8e	53.884	19	1.540	0.065
	Item8f	45.303	19	1.320	0.162
	Item8g	192.902	19	2.139	0.003*
	Item8h	239.231	19	1.085	0.360

Country BY	Item8a	59.605	16	1.078	0.372
Length of mobile phone use BY	Item8b	48.953	16	0.678	0.818
	Item8c	19.350	16	0.780	0.710
Gender	Item8d	19.103	16	0.733	0.762
	Item8e	46.902	16	1.592	0.065
	Item8f	41.580	16	1.438	0.116
	Item8g	227.801	16	3.000	0.000*
	Item8h	163.012	16	0.878	0.595
Country BY	Item8a	48.833	11	1.285	0.228
Work status BY	Item8b	92.685	11	1.867	0.040*
Length of mobile phone use BY	Item8c	16.784	11	0.984	0.459
	Item8d	10.385	11	0.579	0.847
Gender	Item8e	50.464	11	2.492	0.004*
	Item8f	43.154	11	2.171	0.014*
	Item8g	51.560	11	0.988	0.456
	Item8h	38.489	11	0.302	0.986

* significant at 0.05 level

Table 9. Tests of between-subjects effects on perceptions of texting

Item code	User perception	
Item8a	Texting should be prohibited	while driving
Item8b		in the classroom
Item8c		on public transportation
Item8d		while walking
Item8e		in public restrooms
Item8f		in restaurants
Item8g		in theaters
Item8h	I feel lost without my mobile phone	

Table 10. Item codes for texting

Table 12 gives the mean response to each question about prohibiting texting by country. From Table 11, country is the only primary factor accounting for a significant difference in user perceptions of the prohibition of texting on public transportation, while walking, in public restrooms, restaurants, and theaters. Table 12 shows that respondents across different countries disagree with the prohibition of texting on public transportation, with Finland showing the strongest disagreement. Table 12 also shows that respondents disagree with the prohibition of texting while walking, with France and Finland showing the strongest disagreement. Table 12 indicates that respondents from different countries disagree with the prohibition of texting in public restrooms and restaurants, with Finland indicating the strongest disagreement to such prohibition in public restrooms, and Italy indicating the strongest disagreement to such the prohibition in restaurants. Finally, Table 12 indicates that respondents' perceptions of the prohibition of texting in theatres differ across countries with Italy agreeing with such prohibition, and the United States and Finland disagreeing.

Table 13 gives the mean response to each question about prohibiting texting by age. From Table 11, age is the only primary factor accounting for a significant difference in user perceptions of texting while driving. Table 13 shows that the 26 to 30 age group has the strongest agreement with such prohibition.

Finally, from Table 11, user perceptions of the prohibition of mobile phone use for texting in the classroom differs significantly across countries and age groups. Table 12 shows that the United States and Italy agree with the prohibition of texting in the classroom and Finland disagrees. Table 13 shows that older people agree more with the prohibition of texting in the classroom.

Source of effect	Texting should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
Country	no	yes	yes	yes	yes	yes	yes	yes
Age	yes	yes	no	no	no	no	no	yes
Length of mobile phone use	no	no	no	no	no	no	no	yes
Gender	no	no	no	no	no	no	no	no
Country BY Length of mobile phone use	no	yes	yes	yes	no	no	yes	no
Country BY Length of mobile phone use BY Gender	no	no	no	no	no	no	yes	no
Country BY Work status BY Length of mobile phone use BY Gender	no	yes	no	no	yes	yes	no	no

Table 11. Significance of individual items for texting (0.05 level)

Country	Texting should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
United States	6.04	4.14	1.67	2.07	2.02	2.06	2.68	4.43
France	5.35	3.95	1.27	1.21	1.57	1.87	2.84	3.61
Italy	5.69	4.12	1.33	1.27	1.42	1.32	3.51	3.90
Turkey	6.00	3.49	2.03	1.77	1.70	1.46	3.29	4.39
Finland	5.53	2.16	1.18	1.22	1.38	1.49	2.53	3.55
All countries	5.76	3.82	1.54	1.58	1.69	1.72	2.98	4.05

Table 12. Mean response to questions about prohibition of mobile phone use for texting by country

DISCUSSION

Mobile phones are widespread throughout the world; thus we might think they are global tools where acceptable use does not depend on national differences. Our results indicate otherwise. The prohibition of the use of mobile phones for voice may be linked to national culture. For example, France bans the use of mobile phones while driving, which may be a consequence of the strong view of the French that the use of mobile phones for voice while driving should be prohibited. U.S. respondents do not feel strongly about such prohibition, perhaps because cars, which play a key role in everyday life in the U.S., may be viewed as an extension of one’s private space. Use of mobile phones in theaters may also be linked to national culture. The French, who feel more strongly than the U.S. respondents about prohibiting the use of mobile phones for voice in theaters, would not think of eating or using the restroom during a theater performance, but such behavior is considered acceptable in the U.S.

Age	Texting should be prohibited:							I feel lost without my mobile phone
	while driving	in the classroom	on public transportation	while walking	in public restrooms	in restaurants	in theaters	
< 20	5.71	3.52	1.54	1.63	1.88	1.84	2.65	5.59
20 – 22	5.74	3.54	1.47	1.49	1.66	1.68	3.15	4.03
23 – 25	5.68	3.70	1.63	1.63	1.70	1.71	2.84	4.05
26 – 30	5.94	4.50	1.53	1.67	1.60	1.61	2.76	3.78
> 30	5.84	4.90	1.44	1.60	1.65	1.83	3.26	3.05
All ages	5.75	3.82	1.53	1.58	1.68	1.71	2.98	4.05

Table 13. Mean response to questions about prohibition of mobile phone use for texting by age

Age is the second factor explaining differences in the prohibition of mobile phone use, with older respondents favoring prohibition more than younger respondents. Young people seem to be getting mobile phones at a younger age and may not have assimilated the social norms common among older generations.

Length of mobile phone use does not explain differences in perceptions of prohibiting mobile phone use for voice in all but one situation. This result may indicate that the appropriateness of mobile phone use for voice is perceived as an issue linked to social interactions rather than personal experiences. Gender is not a factor explaining any differences.

Differences in perceptions of prohibition of mobile phone use for texting may also be explained by national culture and age, but not by length of mobile phone use or gender. For example, U.S. and Finnish respondents differ widely in the perception of prohibition of mobile phone use for texting in the classroom. This may be explained by difference in social norms in educational environments in the two countries.

CONCLUSION

Mobile phones are becoming universal devices that provide many capabilities. Their increasing universality, both as personal devices and as m-commerce clients, adds importance to the question of when and where mobile phones should be used. M-commerce service providers must understand the social impact of mobile phone use so that their services are offered at the appropriate place and time for the user, and do not negatively impact individuals; to do otherwise is likely to result in negative goodwill among potential customers.

The results of this research show that attitudes about the prohibition of mobile phone use in certain social situations, which vary by location and time, are influenced by the country in which the user resides and the user's age. Current research is investigating a more general model relating location and time with use of mobile phones for voice and texting and its impact in social situations, with mitigating factors such as country and age of user.

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