

## Cellular Phone E-mailing as an Important Communication Tool: A Preliminary Study

Mamoru Fukumori<sup>a\*</sup> and Takehiko Saiki<sup>b</sup>

<sup>a</sup>Department of Human Nutrition, Faculty of Contemporary Life Science, Chugokugakuen University, Okayama 701-0197, Japan

<sup>b</sup>Department of English Communication, Chugoku Junior College, Okayama 701-0197, Japan

This preliminary study tries to explore the general attitudes toward and the current situations regarding the cellular phone, with a group of university students as the research subjects. The results of the study clearly indicate that the cell phone is a necessary item for young people today, and the function of e-mail that it offers is an important communication tool. Also, the results of the Factor Analysis show that the following three factors comprise the image-structure of the cell phone: 1) "Whether or not the cell phone is necessary," 2) "Whether or not the cell phone unpleasant" and 3) "Whether or not e-mail is used."

**Key Words:** Cellular phones, Communication tools, CMC

### Introduction

The past few years have witnessed a rapid expansion in the number of cellular phone users in Japan. It is reported that about 70,000 new users are added to the existing cell phone population each month. This expansion owes much to the e-mail functions that cellular phones offer. It appears that the e-mail function has made cellular phones an important communication tool for text messages. A variety of network services such as "i-mode" have also contributed to utilizing cellular phones as information processors.

The Internet and cellular phones has become important tools for interpersonal communication in contemporary society. An increasing number of studies have been

conducted in the area of CMC, or Computer Mediated Communication. CMC studies compare technology enhanced communication processes with face-to-face communication. These studies have examined computer mediated communication from a variety of perspectives. For example, researchers have explored one negative aspect of CMC, namely, the "flaming" phenomenon, which refers to an act of defamation in the discussion process in e-mail and chat situations (Rice, 1984, 1989; Durbrowsky, Kiesler and Sethna, B. N, 1991). Others examined a positive aspect of CMC that may help promote closer relationships among the Internet users (Walther, 1995, 1996; and Tidwell, 1995).

Still other studies have paid attention to the psychology of the youth in this networked society. There appear young adults who, while expressive in communications that are mediated by the computer, become reticent in a face-to-face communication. Some even try to kill a person in an attempt to cease their relationship with him/her, just like they can reboot the computer by pushing the reset button. Fukumori et al. (2001) observed an appar-

\*Corresponding author.

Mamoru Fukumori.

Department of Human Nutrition, Faculty of Contemporary Life Science, Chugokugakuen University, 83-Banchi, Niwase, Okayama 701-0197, Japan

Tel. & FAX; +81 86 293 0247

ent tendency among the contemporary younger generation in their computer mediated communications: young people prefer not to be involved in a close relationship with others, and they want a more "easy-come-and- easy-go" type of interpersonal relationship. Given that some forms of CMC are relatively free from the restrictions of time and place due to their reliance on text, we contend that cellular phone e-mailing may push the above tendency a step further.

### The Questionnaire Survey and the Results

In order to explore the general attitudes toward and the current situations regarding the cellular phone, a questionnaire survey was conducted with a group of university students as the research subjects. The reason

that this particular group was chosen was that they are said to be the segment of the population who use cellular phones most frequently. The data regarding their gender and ages are as follows:

As for gender, 31.6% was male and 68.4% female. As far as their ages are concerned, 90% were between 18 and 21. This is due to the fact that the questionnaire was distributed to the first, second and third year students at a university in Fukuyama.

1) Do you have your own cell phone or PHS?

1. Yes 2. No

All the participants possessed their own cell phone. This is a clear indication that the cell phones are in wide use among college students.

2) What telephone company did you place a contract with?

1. NTT Docomo 2. TU-KA 3. J-Phone  
4. au 5. Cellular 6. DDI

**Table 1** Gender

Category	Count	%
1	24	31.6
2	52	68.4
Total	76	100.0

Gender 1. male 2. female

**Table 2** Age

Category	Count	%
18	15	19.7
19	18	23.7
20	27	35.5
21	8	10.5
22	4	5.3
23	3	3.9
25	1	1.3
Total	76	100.0

**Table 3** Ownership

Category	Count	%
1	76	100.0

**Table 4** Types of Cell Phone Service

Category	Count	%
1	41	53.9
2	3	3.9
3	26	34.2
4	2	2.6
5	1	1.3
6	2	2.6
8	1	1.3
Total	76	100.0

**Table 5** Duration

Category	Count	%
1	2	2.6
2	25	32.9
3	32	42.1
4	8	10.5
5	9	11.8
Total	76	100.0

**Table 6** E-mail Use

Category	Count	%
2	8	10.5
3	68	89.5
Total	76	100.0

**Table 7** Objectives

Category	Count	%
1	4	5.3
2	34	44.7
3	38	50.0
Total	76	100.0

**Table 8** Rationales

Category	Count	%
1	38	50.0
2	25	32.9
3	8	10.5
4	1	1.3
5	4	5.3
Total	76	100.0

7. Docomo PHS 8. Astel 9. others

The results show that more than half of the participants have their contract with NTT Docomo, and when combined with those who have with J-phone, they comprise about 90% of all the participants.

3) How long have you been using the cellular phone?

1. less than 6 months 2. 6 months to 1 year  
3. 1 year to 2 years 4. 2 years to 3 years  
5. more than 3 years

Those who chose either 2 or 3 as their answer for this question comprise 75% of all the participants. This seems to suggest that they started using cell phones as they commenced their college life.

4) How often do you use the e-mail function?

1. Have never used it before 2. Just once in a while  
3. Very often

Nobody chose "Have never used it before" as their answer and almost 90% of the participants answered that they use e-mail "very often." This result is interesting as it indicates that the cell phone is used for both telephone and e-mail communications.

5) What do you want to achieve with by using e-mail?

1. Nothing particular, just want to kill the time

2. To inform others of something

3. To give positive reinforcement to the existing relationship with others.

About 95% of the participants chose either 2 or 3 as their answer to the question. This may suggest that many of them use e-mail with clear intentions or motivation to communicate with others.

6) Why do you use the cell phone e-mail rather than some other means?

1. No need for the presence of the target person when an e-mail is sent  
2. Inexpensive 3. Free from time restriction  
4. No bother to people around 5. Others

**Table 9** Acquaintanceship

Category	Count	%
1	31	40.8
2	45	59.2
Total	76	100.0

**Table 10** Basic Statistics

Variable	Num of case	Min	Max	Mean	Stand.Dev.
1	76	1	5	2.6447	1.1742
2	76	1	5	3.2237	1.1501
3	76	1	5	3.1316	1.2038
4	76	1	5	4.2763	0.9033
5	76	1	5	3.8026	1.0831
6	76	1	5	4.1579	0.9668
7	76	1	5	3.4737	1.1941
8	76	1	5	2.6447	1.2078
9	76	1	5	2.4342	0.9141
10	76	1	5	3.4737	1.0129
11	76	1	5	3.8553	0.7951
12	76	1	5	3.8026	1.2002
13	76	1	5	4.3421	0.9026
14	76	1	5	1.6974	1.0069
15	76	1	5	4.4868	0.7210
16	76	1	5	2.7895	1.2577

**Table 11** Communalities

Variable	Communalities
1. I feel uncomfortable when I see others using cellular phones on the streets.	0.296
2. I feel uncomfortable when others in my car use cellular phones while I'm driving.	0.689
3. I feel uncomfortable when the person going in my company starts talking over the cellular phone.	0.690
4. The cellular phone is important as a communication tool.	0.582
5. The cellular phone is highly valued as a mobile tool.	0.297
6. E-mail plays an important role as a means of communication.	0.531
7. Exchanging e-mails alone can give you the feelings of closeness.	0.492
8. Talking over the cell phone and/or exchanging e-mail can give you a clue as to who the person is like even if you haven't meet him/her.	0.279
9. There are more bad things about cellular phones and e-mail than good things.	0.388
10. Cellular phones' information collecting function is very useful.	0.300
11. I observe proper etiquette when using cellular phones.	0.149
12. I send and receive e-mails quite often.	0.607
13. Cellular phones are important to me.	0.619
14. The amount of money I have to pay for the cell phone bill goes beyond my financial capability.	0.328
15. I always have my cell phone with me.	0.475
16. I use the telephone function more often than the e-mail function.	0.453

While the telephone conversation requires the presence of the target person at the other end of the line, e-mails can be sent asynchronously without bothering the target. The fact that about 40% of the participants chose No.1 for their answer may be due to a current tendency among some of today's youth that they often feel it troublesome to engage in interpersonal communication, whether it is face-to-face or over the phone.

7) Have you ever exchanged e-mails with those who you've never met or spoken before?

1. Yes, I have. 2. No, never.

While about 60% of the participants reported that they exchange e-mails with persons they have met, about 40% of them have experienced what may be termed

"blind e-mail exchange" with those whom they had never met before. This indicates that an e-mail message can be a facilitator for some people in meeting others for the first time. Some such meetings triggered by e-mail exchanges have resulted in tragic homicides in recent years and have become a grave social problem in contemporary Japanese society.

### An Analysis of Opinions on the Cellular Phone

In order to examine how the participants feel about cell phones, a total of 16 variables were given to them to rate on a scale, with 5 being "very applicable" and 1 "not applicable at all." The Mean and Standard Deviation of each item are shown on the list below.

The loadings for the variable 4, 6, 13 and 15 are very high. The variable 4 reads "The cell phone is important as a communication tool, and the variable 6 "E-mails play an important role as a means of communication." These results indicate that young people in today's Japanese society regard cell phones as one of their important communication tools and that they highly value e-mail as a method to initiate new relationships and nurture existing ones. The results also depict an image of today's youth who feel more comfortable with a personal relationship that is less involved and urgent.

The variable 13 reads "The cellular phone is important to me" and the variable 15 "I always have my cell phone with me." These results show that the cell phone has become a must item for young people today.

In order to further explore the participants' thoughts

Table 12 Eigenvalues

Value	Eigenvalues	Total Variance	Cum %
1	3.475	21.719	21.719
2	2.005	12.531	34.249
3	1.746	10.910	45.160
4	1.416	8.849	54.009
5	1.201	7.507	61.516
6	1.100	6.878	68.394
7	1.075	6.721	75.114
8	0.810	5.060	80.175
9	0.708	4.425	84.600
10	0.579	3.620	88.219
11	0.484	3.028	91.247
12	0.404	2.524	93.771
13	0.359	2.241	96.012
14	0.302	1.887	97.899
15	0.186	1.163	99.062
16	0.150	0.938	100.000

Table 13 Factor Loadings

Value	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	-3.421E-02	0.302	-4.405E-02	5.108E-02	-0.161
2	-0.120	0.787	1.527E-02	7.967E-03	1.055E-02
3	-6.033E-02	0.986	-3.002E-03	-5.583E-02	0.130
4	0.766	-0.145	-1.686E-02	3.248E-02	1.733E-02
5	0.407	5.287E-02	-0.227	0.261	-3.620E-02
6	0.495	-5.466E-02	0.404	-0.151	-0.167
7	8.107E-02	-1.936E-02	0.724	-0.119	2.699E-02
8	8.376E-02	0.165	0.224	0.119	-0.127
9	-0.543	7.320E-02	-4.995E-02	0.301	0.145
10	0.390	9.243E-02	0.109	2.710E-02	0.200
11	7.718E-02	2.234E-03	4.431E-02	-0.189	-1.074E-03
12	0.388	-7.717E-02	0.652	6.618E-02	0.301
13	0.722	-0.156	0.129	-0.171	0.318
14	2.755E-02	5.032E-02	5.447E-02	0.959	-6.204E-02
15	0.289	-0.127	0.283	-4.642E-02	0.795
16	6.318E-02	1.907E-02	-0.560	2.329E-02	-9.604E-02

on cell phones, a Factor Analysis was conducted. As the first step, factors were extracted through Principle Factor Analysis. The communalities are presented in Table 11.

The results of the Factor Analysis show an extremely low loading on the variable 1, 5, 8 and 11. In addition, the communality is rather low on three other variables: namely, variable 9, 10 and 14. While it was expected, due to these variables above, that the factor analysis would not yield satisfactory structures, the same analysis was conducted with all the variables to see the results. Eigenvalue and contribution ratios are shown in Table 12. We can see that the cumulative contribution ratio up to the fifth factor is about 61%, and that this ratio is 75% even to the seventh factor whose Eigenvalue is greater than 1.0. Given this, that the number of the variables is sixteen, the values can be regarded as being not necessarily high if the number of the variables is taken into account. Although it may have been desirable to conduct another round of factor analysis after reexamining the variables, an attempt was made to interpret the extracted factors. One rationale behind this attempt was that the number of the variables was not too large.

With the Eigenvalues and the number of the variances taken into account, five factors were extracted, and then Quartimax rotation was performed on factor loadings obtained through the principle factor method. Table 13 shows rotated factor loadings for the variables. Based on these results, an attempt was made to interpret each factor.

As for the first factor, the loading is high on the variable 4 and 13. Given this, it is possible to name this hypothetical construct "The importance of the cell phone." The second factor was named "Uncomfortableness" because the factor loading is high on the variable 2 and 3, and the variable 1 loads significantly only on this factor. As for the third factor, due to the fact that the loading is high on the variable 7 and 12, and that the variable 16 loads most negatively on this factor, it was interpreted as "The use of e-mails." Regarding the factor 4 and 5, it was wise not to interpret them with the data obtained: each factor has only one variable that has a significant loading.

The cumulative contribution rate up to the first three factors is only about 45%. This means that the explanatory power may not good enough. But, it is still possible to interpret the image of cell phones with the above three-factor structure.

## Conclusion

This present study examined the current situations and attitudes of today's youth toward cell phones in general and its e-mail function in particular. The results of the study clearly indicate that the cell phone is a necessary item for young people today, and the function of e-mail that it offers is an important communication tool. Another interesting finding was obtained from the results of the Factor Analysis. The following three factors were found to comprise the image-structure of the cell phone: 1) "Whether or not the cell phone is necessary," 2) "Whether or not the cell phone unpleasant" and 3) "Whether or not e-mail is used." With these results, the study was able to point out to a certain extent the importance of the cell phone as a means of communication and its some problems that it contains.

The study on Cell Phone Mediated Communication is still in its infancy and needs to be explored more systematically as the cell phone has become one of necessities of contemporary life. This preliminary study has some drawbacks. One of them is the age of the participants, which ranged only from 18 to 23. Other age groups should also be explored in the future studies. Also, it will be interesting to examine the influence that the difference in gender and age may have on the nature of CPMC. A future study will need to reexamine the variables used for the factor analysis. It is highly recommended to perform the factor analysis with the variables that yield higher contribution rates.

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