

## An Important Variables That Relate In Using Mobile

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الخلاصة :

ان لتعدد وظائف جهاز الموبايل نتيجة للتطور التقني المستمر ادى الى تعدد استخداماته وتباينها من شخص لآخر ، لذا سيتم في هذا البحث دراسة التأثيرات المعنوية بين اهم المتغيرات المتعلقة باستخدام الموبايل باتباع اسلوب تصميم كامل العشوائية ( C.R.D ) ، ولمعرفة التأثيرات المعنوية لاختلاف الجنس سوف يتم اتباع اسلوب تصميم القطاعات الكاملة العشوائية ( R.C.B.D ) ، حيث تم توزيع استمارة الاستبيان لعينة قوامها ( ٢٠٠ ) مؤلفة من الذكور والاناث ، وتتضمن ( ٢٥ ) سؤال عن اهم المتغيرات المتعلقة باستخدام الموبايل ، ومن ثم تحديد اي زوج من ازواج المتغيرات اكثر معنوية ، ومن ثم تقدير نسبة الاتفاقية مع الاسئلة المتعلقة باستخدام الموبايل لكل من الذكور والاناث .

Abstract :

The multiple function of the mobile device is a result to continuous technical development leads to multitude varies uses from one person to another , so in this paper it will study the significant effects between the most important variables which relate with the mobile uses according to the ( C.R.D ) , and to know the significant effects for the sex difference it will apply ( R.C.B.D ) , where distributed questionnaire form for the sample size ( ٢٠٠ ) including male and female , and include ( ٢٥ ) question for the most important variables which relate with the mobile uses , and then determines any couple of the variables have more significant , and estimate the agreement ratio with this questions for the male and female .

## ١ - ١ Introduction :

The experiments design is one of the most widely statistical matters that relate with tests and the statistical analysis, where can apply in several subjects as biological and agronomic fields ....., it is including several methods as :

Completely Randomized Design (C.R.D) and Randomized Complete Blocks Design (R.C.B.D) .

The randomization protocol reduces any bias in particular treatments, and it can obtains better estimates of treatment effects and more powerful tests for treatment differences . [٥]

Analysis of variance (ANOVA) is the fundamental tool for analyzing data from designed experiments . [٢ & ٦]

So for important (C.R.D) and (R.C.B.D) the researchers had been these methods as : Marfa-Neto and Carde (١٩٩٨) utilized an (R.C.B.D) to test the effect of treatments, Zancen and Carde (١٩٩٩) applied an (R.C.B.D) to test the treatments on a given day on male . [٥] Clayton (٢٠٠٤) displayed the (C.R.D) with more than one observation . Pilla and others (٢٠٠٦) demonstrated that the effect of restricted randomization on inferences from (R.C.B.D) can lead to various interaction effects as well as potentially serious type (I or II) errors, and they said that the Split - Plot analysis provides a powerful alternative to the analysis of data collected under the restricted randomization protocol . Van and others (٢٠٠٧) depended Spatially \_ Balanced Complete Block design (S.B.C.B) for field experiments which its develop for (R.C.B.D) and applied to (١٥) treatments and (١٥) replications

, and they showed that the (96,7%) of agronomic field experiments are implemented through (R.C.B.D) .

Larget (2007) displayed (C.R.D) for fixed and random effect , and he gave number of examples in this matter .

In this paper it will depended on the (C.R.D.) and (R.C.B.D) methods to study the significant effects for the an important variables that relate with the mobile using by distributed the questionnaire form for the sample size (200) including male and female and the following adjectives :

- \* Including the all age classes from (10 year ) to (60 year) .
- \* Including the social state ( Married – Unmarried) .
- \* The sample size distributed for the all educational levels from ( Lower of Secondary) to ( PhD)
- \* Including difference of the home ( City Center – Village) .
- \* Including the person's have the different income ( Under 200 000 to Million and more) .

#### 1 - 2 Objective :

The Paper objective is abstract with the following points :

1- Studying of the significant effects between an important variables which relate with mobile uses in two cases :

i- Without studying the sex factor .

ii- With studying the sex factor .

٢- Studying the significant effect for varies of the sex .

٣- Determine any couple of the variables have more significant effect , and which couple haven't significant effect .

٤- Estimate agreement ratio persons (male , female) with studying variables .

٢ – ١ Completely Randomized Design : (C.R.D) [ ٢ & ٣ & ٤]

It is one of the analysis types for experiments designing which depend on one factor , and the mathematical design with more than one observation per experimental unit is as follows :

$$y_{ijk} = \mu + \tau_i + \gamma_{ij} + \epsilon_{ijk} \quad \dots\dots\dots (١)$$

$$\sum_{i=1}^t \tau_i = 0 \quad \dots\dots\dots (٢)$$

Where :

- $i=1, 2, 3, \dots\dots, t$  (number for treatment )
- $j=1, 2, 3, \dots\dots, r$  ( number for experimental unit )
- $k=1, 2, 3, \dots\dots, n$  (number for observations )
- $\epsilon_{ijk} \sim N (0, \sigma_e^2)$

It has several advantages :

- ١- It is completely flexible , any number of treatments can be investigated. Each treatment can have any number (more than one).
- ٢- The statistical analysis is straightforward.

τ- The analysis remains simple even if observations from some units are missing .

( ANOVA Table )

| Source of Variance | D.F     | S.S   | M.S   | F           |
|--------------------|---------|-------|-------|-------------|
| Treatment          | t-1     | SSTrt | MSTrt | MSTrt/MSEpE |
| Experimental Error | t(r-1)  | SSEpE | MSEpE |             |
| Sampling Error     | tr(n-1) | SSSE  | MSSE  |             |
| Total              | trn-1   | SST   |       |             |

Where :

$$SSTrt = \frac{\sum_{i=1}^t y_{i.}^2}{rn} - \frac{y_{..}^2}{trn} \quad : \quad MSTrt = SSTrt / (t-1)$$

$$SSEpE = \frac{\sum \sum y_{ij.}^2}{n} - \frac{\sum y_{i.}^2}{rn} \quad : \quad MSEpE = SSEpE / t(r-1)$$

$$SST = \sum \sum \sum y_{ijk}^2 - \frac{y_{..}^2}{trn} \quad SSSE = SST - (SSTrt + SSEpE)$$

$$MSSE = SSSE / tr(n-1)$$

τ - τ Randomized Complete Blocks Design : ( R.C.B.D ) [ 1 & 3 & 0 ]

It is one of the experiments design which depend two factors for testing , the first for the treatment effecting and the other for the blocks effect .

Blocking refers to the division of experimental runs into smaller sub-groups or blocks , each treatment is applied randomly to a number of subjects within each block .

The linear model with more than one observation per experimental unit is as follows :

$$y_{ijk} = \mu + \tau_i + \beta_j + \gamma_{ij} + \epsilon_{ijk} \quad \dots\dots\dots (\gamma)$$

$$\sum_{i=1}^t \tau_i = \sum_{j=1}^b \beta_j = 0 \quad \dots\dots\dots (\xi)$$

Where :

$i=1, 2, 3, \dots, t$  ( Index for treatment )

$j=1, 2, 3, \dots, b$  ( Index for blocks )

$k=1, 2, 3, \dots, n$  ( Index for observations )

$$\epsilon_{ijk} \sim N(0, \sigma_e^2)$$

ANOVA Table

| Source of variance | D.F          | S.S   | M.S   | F             |
|--------------------|--------------|-------|-------|---------------|
| Blocks             | $b-1$        | SSB   | MSB   | MSB / MSEpE   |
| Treatment          | $t-1$        | SSTrt | MSTrt | MSTrt / MSEpE |
| Experimental Error | $(b-1)(t-1)$ | SSEpE | MSEpE |               |
| Sampling Error     | $tb(n-1)$    | SSSE  |       |               |
| Total              | $tbn-1$      | SST   |       |               |

Where :

$$SSB = \frac{\sum_{j=1}^b V_{.j}^2}{tn} - \frac{V_{..}^2}{tbn} \quad ; \quad MSB = SSB / (b-1)$$

$$SSTrt = \frac{\sum_{i=1}^t V_{i.}^2}{bn} - \frac{V_{..}^2}{tbn} \quad ; \quad MSTrt = SSTrt / (t-1)$$

$$SSEpE = \frac{\sum \sum y_{ij.}^2}{n} - \frac{\sum V_{i.}^2}{bn} - \frac{\sum V_{.j}^2}{tn} + \frac{V_{..}^2}{tbn} \quad ; \quad MSEpE = SSEpE / (b-1)(t-1)$$

$$SST = \sum \sum \sum y_{ijk}^2 - \frac{V_{..}^2}{tbn}$$

$$SSSE = SST - (SSTrt + SSB + SSEpE)$$

٢ - ٣ Scheffe's Test : [ ٨ ]

It is one of an important tests to determine which the couple of variables (comparisons) is significant and which is non significant , and it is apply for the comparisons are orthogonal or non orthogonal , and the procedure points abstract as follows :

١- Determine the (F) tablet value with ( $\alpha$ ) and degree of freedom [ (t-1),(n-t) ] .

٢- Found the value of (A) where :

$$A = \sqrt{(t-1) * F_{(\alpha, t-1, n-t)}} \quad \dots (٥)$$

٣-found the value of standard error (Sc) as :

$$Sc = \sqrt{(MSE) * \sum_i n_i c_i^2} \quad \dots (٦)$$

٤- Found the value of ( $\xi$ ) where :

$$\xi = A * Sc$$

.....(٧)

٥- Calculation all the needed comparisons ( $C_i$ ) .

٦- If the (  $|C_i| > \xi$  ) then the comparison is significant .

٧- If the (  $|C_i| < \xi$  ) then the comparison is non significant .

### ٣ - ١ Data Description :

It will distribute the questionnaire form which is illustrative in the appendix for sample size (٢٠٠) includes (١٠٠) male and (١٠٠) female , and including (٢٥) question about how the mobile uses and the agreement ratio for each person to all question .

### ٣ - ٢ C.R.D :

To studying the significant effects between the studying variables without the sex factor , it will calculate the following :

$$H_0 : \tau_i = 0$$

$$H_1 : \tau_i \neq 0$$

Table (١)  
The ANOVA With Respect To C.R.d

| Source of variance | D.F  | S.S   | M.S   | F    |
|--------------------|------|-------|-------|------|
| Treatment          | ٢٤   | ٣٤٢٧  | ١٤٢,٨ | ١٥,٨ |
| Experimental Error | ٢٥   | ٢٢٦   | ٩,٠٤  |      |
| Sampling Error     | ٤٩٥٠ | ٨١٣٨  | ١,٦٤  |      |
| Total              | ٤٩٩٩ | ١١٧٩١ |       |      |

$$F_{(0.05,24,25)} = 1.97$$

∴ We reject ( $H_0$ ) , and that is mean there is a high significant effect between the treatments .

### ٣ - ٣ R.C.B.D :

To study the significant effects between variables with the sex factor , and significant effect of the sex , it will do the following :

Table (٢)

The ANOVA With Respect To R.C.B.D

| Source of variance | D.F  | S.S   | M.S   | F    |
|--------------------|------|-------|-------|------|
| Blocks             | ١    | ٦٤    | ٦٤    | ٩,٥  |
| Treatment          | ٢٤   | ٣٤٢٧  | ١٤٢,٨ | ٢١,٢ |
| Experimental Error | ٢٤   | ١٦٢   | ٦,٧٥  |      |
| Sampling Error     | ٤٩٥٠ | ٨١٣٨  | ١,٦٤  |      |
| Total              | ٤٩٩٩ | ١١٧٩١ |       |      |

$$F_{(0.05,1,24)} = 4.26$$

(Blocks)

$$F_{(0.05,24,24)} = 1.98$$

(Treatment)

It is observing that the block effect (sex) is significant , and already the treatments effect was increased because it reduces the experimental error .

٣ - ٤ Scheffe's Test :

To know which the couple of variables have significant effect or non significant , it will apply Scheffe's Test as following :

$$F_{(.,.,\infty,24,175)} = 1,٦$$

$$A = \sqrt{24 * 1.6} = ٦,٢$$

$$Sc = \sqrt{(6.75) * [200(1)^2 + 200(-1)^2]} = 02$$

$$\xi = 332.4$$

It observes from the table (I) in the appendix , that's not all contrasts have significant effect , and the contrasts which have significant effect illustrative in the table (3).

Table (3)

Which Have Significant Effect

The Contrasts

| No | Contrast | No | Contrast | No | Contrast | No | Contrast | No | Contrast |
|----|----------|----|----------|----|----------|----|----------|----|----------|
| 1  | 1 & 6    | 12 | 3 & 13   | 23 | 4 & 16   | 34 | 8 & 14   | 40 | 9 & 20   |
| 2  | 1 & 20   | 13 | 3 & 14   | 24 | 4 & 20   | 35 | 8 & 16   | 41 | 9 & 22   |
| 3  | 1 & 23   | 14 | 3 & 16   | 25 | 4 & 22   | 36 | 8 & 18   | 42 | 9 & 23   |
| 4  | 2 & 6    | 15 | 3 & 18   | 26 | 4 & 23   | 37 | 8 & 20   | 43 | 9 & 24   |
| 5  | 2 & 14   | 16 | 3 & 20   | 27 | 4 & 24   | 38 | 8 & 22   | 44 | 13 & 21  |
| 6  | 2 & 20   | 17 | 3 & 22   | 28 | 7 & 8    | 39 | 8 & 23   | 45 | 14 & 21  |
| 7  | 2 & 22   | 18 | 3 & 23   | 29 | 7 & 9    | 40 | 8 & 24   | 46 | 19 & 20  |
| 8  | 2 & 23   | 19 | 3 & 24   | 30 | 7 & 19   | 41 | 9 & 13   | 47 | 20 & 21  |
| 9  | 2 & 24   | 20 | 4 & 6    | 31 | 7 & 21   | 42 | 9 & 14   | 48 | 21 & 22  |
| 10 | 3 & 6    | 21 | 4 & 13   | 32 | 8 & 11   | 43 | 9 & 16   | 49 | 21 & 23  |
| 11 | 3 & 11   | 22 | 4 & 14   | 33 | 8 & 13   | 44 | 9 & 18   | 50 | 21 & 24  |

### ٣ - ٥ Estimation The Agreement Ratio :

To estimate agreement ratio of the persons (male & female) with the variables , it will depend on the mean for all variable as illustrative in the tables (٤) and (٥) .

Table (٤)

#### Illustrative The Mean And Agreement Ratio(Male)

| No. | $\bar{y}$ | Agreement Ratio | No. | $\bar{y}$ | Agreement Ratio |
|-----|-----------|-----------------|-----|-----------|-----------------|
| ١   | ٣,٥       | ٦٢,٥%           | ١٤  | ٢,٥       | ٣٧,٥%           |
| ٢   | ٣,٨       | ٧٠%             | ١٥  | ٢,٨       | ٤٥%             |
| ٣   | ٤,٣       | ٨٢,٥%           | ١٦  | ٢,٤       | ٣٥%             |
| ٤   | ٣,٩       | ٧٢,٥%           | ١٧  | ٣         | ٥٠%             |
| ٥   | ٣,٢       | ٥٥%             | ١٨  | ٢,٤       | ٣٥%             |
| ٦   | ١,٨       | ٢٠%             | ١٩  | ٣,٥       | ٦٢,٥%           |
| ٧   | ٣,١       | ٥٢,٥%           | ٢٠  | ٢         | ٢٥%             |
| ٨   | ٤,١       | ٧٧,٥%           | ٢١  | ٣,٨       | ٧٠%             |
| ٩   | ٣,٩       | ٧٢,٥%           | ٢٢  | ٢,٤       | ٣٥%             |
| ١٠  | ٢,٥       | ٣٧,٥%           | ٢٣  | ٢,٣       | ٣٢,٥%           |
| ١١  | ٢,٦       | ٤٠%             | ٢٤  | ٢,٣       | ٣٢,٥%           |
| ١٢  | ٢,٨       | ٤٥%             | ٢٥  | ٢,٧       | ٤٢,٥%           |
| ١٣  | ٢,٤       | ٣٥%             |     |           |                 |

Table (٥)  
Illustrative The Mean And Agreement Ratio (Female)

| No. | $\bar{y}$ | Agreement Ratio | No. | $\bar{y}$ | Agreement Ratio |
|-----|-----------|-----------------|-----|-----------|-----------------|
| ١   | ٣,٦       | ٦٥%             | ١٤  | ١,٧       | ١٧,٥%           |
| ٢   | ٣,٨       | ٧٠%             | ١٥  | ٢,٦       | ٤٠%             |
| ٣   | ٤,٣       | ٨٢,٥%           | ١٦  | ٢,١       | ٢٧,٥%           |
| ٤   | ٤         | ٧٥%             | ١٧  | ٢,٧       | ٤٢,٥%           |
| ٥   | ٣,٣       | ٥٧,٥%           | ١٨  | ٢,٢       | ٣٠%             |
| ٦   | ١,٥       | ١٢,٥%           | ١٩  | ٣,٥       | ٦٢,٥%           |
| ٧   | ٢,٨       | ٤٥%             | ٢٠  | ١,٢       | ٥%              |
| ٨   | ٤,٢       | ٨٠%             | ٢١  | ٣,٩       | ٧٢,٥%           |
| ٩   | ٤,٢       | ٨٠%             | ٢٢  | ١,٦       | ١٥%             |
| ١٠  | ٣         | ٥٠%             | ٢٣  | ١,٤       | ١٠%             |
| ١١  | ٢,٣       | ٣٢,٥%           | ٢٤  | ١,٦       | ١٥%             |
| ١٢  | ٢,٦       | ٤٠%             | ٢٥  | ٢,٦       | ٤٠%             |
| ١٣  | ١,٨       | ٢٠%             |     |           |                 |

#### ٤ - ١ Conclusions :

According to the previous analysis , a one could conclude the following :

- ١- It is observing that there is a big significant effect between the varies for the two cases .
- ٢- It is observing that there is si wegnificant effect for variables of the sex .
- ٣- It is observing that not all couples of the variables are significant , and the significant couples of variables illustrative in the table (٤) , and from this table we find the couple (٣&٢٠) have more significant effect than rest of variables .

٤- From the tables (٥) and (٦) , it is observing that the agreement ratios have differences between both of sexes for the following variables :

| Variable | Difference |
|----------|------------|
| ١٠       | ١٢,٥%      |
| ١٣       | ١٥%        |
| ١٤       | ٢٠%        |
| ٢٠       | ٢٠%        |
| ٢٢       | ٢٠%        |
| ٢٣       | ٢٢,٥%      |
| ٢٤       | ١٧,٥%      |

About the rest variables have the simple difference .

#### ٤ - ٢ Recommendations :

- ١ - Apply another statistical methods and compare the results .
- ٢ - Apply another sample size .

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Appendix : Table (I) / Results of Contrasts

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| $ C_1  =  Y_1 - Y_2  = ٤٦$        | $ C_{26}  =  Y_2 - Y_4  = ٣٠$     |
| $ C_2  =  Y_1 - Y_3  = ١٥٣$       | $ C_{27}  =  Y_2 - Y_5  = ١٠٩$    |
| $ C_3  =  Y_1 - Y_4  = ٧٦$        | $ C_{28}  =  Y_2 - Y_6  = ٤٢٣$    |
| $ C_4  =  Y_1 - Y_5  = ٦٣$        | $ C_{29}  =  Y_2 - Y_7  = ١٧٠$    |
| $ C_5  =  Y_1 - Y_6  = ٣٧٧$       | $ C_{30}  =  Y_2 - Y_8  = ٨٢$     |
| $ C_6  =  Y_1 - Y_7  = ١٢٤$       | $ C_{31}  =  Y_2 - Y_9  = ٥٤$     |
| $ C_7  =  Y_1 - Y_8  = ١٢٨$       | $ C_{32}  =  Y_2 - Y_{10}  = ٢١٠$ |
| $ C_8  =  Y_1 - Y_9  = ١٠٠$       | $ C_{33}  =  Y_2 - Y_{11}  = ٢٦٢$ |
| $ C_9  =  Y_1 - Y_{10}  = ١٦٤$    | $ C_{34}  =  Y_2 - Y_{12}  = ٢٢٤$ |
| $ C_{10}  =  Y_1 - Y_{11}  = ٢١٦$ | $ C_{35}  =  Y_2 - Y_{13}  = ٣٣٢$ |
| $ C_{11}  =  Y_1 - Y_{12}  = ١٧٨$ | $ C_{36}  =  Y_2 - Y_{14}  = ٣٤٢$ |
| $ C_{12}  =  Y_1 - Y_{13}  = ٢٨٦$ | $ C_{37}  =  Y_2 - Y_{15}  = ٢٢٤$ |
| $ C_{13}  =  Y_1 - Y_{14}  = ٢٩٦$ | $ C_{38}  =  Y_2 - Y_{16}  = ٣٠٨$ |
| $ C_{14}  =  Y_1 - Y_{15}  = ١٧٨$ | $ C_{39}  =  Y_2 - Y_{17}  = ١٩١$ |
| $ C_{15}  =  Y_1 - Y_{16}  = ٢٦٢$ | $ C_{40}  =  Y_2 - Y_{18}  = ٣٠٢$ |
| $ C_{16}  =  Y_1 - Y_{17}  = ١٤٥$ | $ C_{41}  =  Y_2 - Y_{19}  = ٥٧$  |

|                                       |                                        |
|---------------------------------------|----------------------------------------|
| $ C_{17}  =  Y_{.1} - Y_{.18}  = 206$ | $ C_{42}  =  Y_{.2} - Y_{.20}  = 440$  |
| $ C_{18}  =  Y_{.1} - Y_{.19}  = 11$  | $ C_{43}  =  Y_{.2} - Y_{.21}  = 10$   |
| $ C_{19}  =  Y_{.1} - Y_{.20}  = 294$ | $ C_{44}  =  Y_{.2} - Y_{.22}  = 208$  |
| $ C_{20}  =  Y_{.1} - Y_{.21}  = 06$  | $ C_{45}  =  Y_{.2} - Y_{.23}  = 287$  |
| $ C_{21}  =  Y_{.1} - Y_{.22}  = 212$ | $ C_{46}  =  Y_{.2} - Y_{.24}  = 467$  |
| $ C_{22}  =  Y_{.1} - Y_{.23}  = 241$ | $ C_{47}  =  Y_{.2} - Y_{.25}  = 224$  |
| $ C_{23}  =  Y_{.1} - Y_{.24}  = 221$ | $ C_{48}  =  Y_{.3} - Y_{.4}  = 77$    |
| $ C_{24}  =  Y_{.1} - Y_{.25}  = 178$ | $ C_{49}  =  Y_{.3} - Y_{.5}  = 216$   |
| $ C_{25}  =  Y_{.2} - Y_{.3}  = 107$  | $ C_{50}  =  Y_{.3} - Y_{.6}  = 030$   |
| $ C_{51}  =  Y_{.3} - Y_{.7}  = 277$  | $ C_{86}  =  Y_{.4} - Y_{.21}  = 20$   |
| $ C_{52}  =  Y_{.3} - Y_{.8}  = 20$   | $ C_{87}  =  Y_{.4} - Y_{.22}  = 288$  |
| $ C_{53}  =  Y_{.3} - Y_{.9}  = 03$   | $ C_{88}  =  Y_{.4} - Y_{.23}  = 417$  |
| $ C_{54}  =  Y_{.3} - Y_{.10}  = 217$ | $ C_{89}  =  Y_{.4} - Y_{.24}  = 297$  |
| $ C_{55}  =  Y_{.3} - Y_{.11}  = 269$ | $ C_{90}  =  Y_{.4} - Y_{.25}  = 204$  |
| $ C_{56}  =  Y_{.3} - Y_{.12}  = 231$ | $ C_{91}  =  Y_{.5} - Y_{.6}  = 214$   |
| $ C_{57}  =  Y_{.3} - Y_{.13}  = 439$ | $ C_{92}  =  Y_{.5} - Y_{.7}  = 61$    |
| $ C_{58}  =  Y_{.3} - Y_{.14}  = 449$ | $ C_{93}  =  Y_{.5} - Y_{.8}  = 191$   |
| $ C_{59}  =  Y_{.3} - Y_{.15}  = 231$ | $ C_{94}  =  Y_{.5} - Y_{.9}  = 163$   |
| $ C_{60}  =  Y_{.3} - Y_{.16}  = 410$ | $ C_{95}  =  Y_{.5} - Y_{.10}  = 101$  |
| $ C_{61}  =  Y_{.3} - Y_{.17}  = 298$ | $ C_{96}  =  Y_{.5} - Y_{.11}  = 103$  |
| $ C_{62}  =  Y_{.3} - Y_{.18}  = 409$ | $ C_{97}  =  Y_{.5} - Y_{.12}  = 110$  |
| $ C_{63}  =  Y_{.3} - Y_{.19}  = 164$ | $ C_{98}  =  Y_{.5} - Y_{.13}  = 223$  |
| $ C_{64}  =  Y_{.3} - Y_{.20}  = 047$ | $ C_{99}  =  Y_{.5} - Y_{.14}  = 233$  |
| $ C_{65}  =  Y_{.3} - Y_{.21}  = 97$  | $ C_{100}  =  Y_{.5} - Y_{.15}  = 110$ |
| $ C_{66}  =  Y_{.3} - Y_{.22}  = 460$ | $ C_{101}  =  Y_{.5} - Y_{.16}  = 199$ |
| $ C_{67}  =  Y_{.3} - Y_{.23}  = 494$ | $ C_{102}  =  Y_{.5} - Y_{.17}  = 82$  |
| $ C_{68}  =  Y_{.3} - Y_{.24}  = 474$ | $ C_{103}  =  Y_{.5} - Y_{.18}  = 193$ |
| $ C_{69}  =  Y_{.3} - Y_{.25}  = 231$ | $ C_{104}  =  Y_{.5} - Y_{.19}  = 02$  |
| $ C_{70}  =  Y_{.4} - Y_{.5}  = 139$  | $ C_{105}  =  Y_{.5} - Y_{.20}  = 231$ |

|                                    |                                    |
|------------------------------------|------------------------------------|
| $ C_{71}  =  Y_4 - Y_6  = 403$     | $ C_{106}  =  Y_5 - Y_{21}  = 119$ |
| $ C_{72}  =  Y_4 - Y_7  = 200$     | $ C_{107}  =  Y_5 - Y_{22}  = 249$ |
| $ C_{73}  =  Y_4 - Y_8  = 02$      | $ C_{108}  =  Y_5 - Y_{23}  = 278$ |
| $ C_{74}  =  Y_4 - Y_9  = 24$      | $ C_{109}  =  Y_5 - Y_{24}  = 208$ |
| $ C_{75}  =  Y_4 - Y_{10}  = 240$  | $ C_{110}  =  Y_5 - Y_{25}  = 110$ |
| $ C_{76}  =  Y_4 - Y_{11}  = 292$  | $ C_{111}  =  Y_6 - Y_7  = 203$    |
| $ C_{77}  =  Y_4 - Y_{12}  = 204$  | $ C_{112}  =  Y_6 - Y_8  = 000$    |
| $ C_{78}  =  Y_4 - Y_{13}  = 362$  | $ C_{113}  =  Y_6 - Y_9  = 477$    |
| $ C_{79}  =  Y_4 - Y_{14}  = 372$  | $ C_{114}  =  Y_6 - Y_{10}  = 213$ |
| $ C_{80}  =  Y_4 - Y_{15}  = 204$  | $ C_{115}  =  Y_6 - Y_{11}  = 161$ |
| $ C_{81}  =  Y_4 - Y_{16}  = 338$  | $ C_{116}  =  Y_6 - Y_{12}  = 199$ |
| $ C_{82}  =  Y_4 - Y_{17}  = 221$  | $ C_{117}  =  Y_6 - Y_{13}  = 91$  |
| $ C_{83}  =  Y_4 - Y_{18}  = 332$  | $ C_{118}  =  Y_6 - Y_{14}  = 81$  |
| $ C_{84}  =  Y_4 - Y_{19}  = 87$   | $ C_{119}  =  Y_6 - Y_{15}  = 199$ |
| $ C_{85}  =  Y_4 - Y_{20}  = 470$  | $ C_{120}  =  Y_6 - Y_{16}  = 110$ |
| $ C_{121}  =  Y_6 - Y_{17}  = 232$ | $ C_{156}  =  Y_8 - Y_{17}  = 273$ |
| $ C_{122}  =  Y_6 - Y_{18}  = 121$ | $ C_{157}  =  Y_8 - Y_{18}  = 384$ |
| $ C_{123}  =  Y_6 - Y_{19}  = 366$ | $ C_{158}  =  Y_8 - Y_{19}  = 139$ |
| $ C_{124}  =  Y_6 - Y_{20}  = 17$  | $ C_{159}  =  Y_8 - Y_{20}  = 022$ |
| $ C_{125}  =  Y_6 - Y_{21}  = 433$ | $ C_{160}  =  Y_8 - Y_{21}  = 77$  |
| $ C_{126}  =  Y_6 - Y_{22}  = 70$  | $ C_{161}  =  Y_8 - Y_{22}  = 440$ |
| $ C_{127}  =  Y_6 - Y_{23}  = 37$  | $ C_{162}  =  Y_8 - Y_{23}  = 469$ |
| $ C_{128}  =  Y_6 - Y_{24}  = 06$  | $ C_{163}  =  Y_8 - Y_{24}  = 449$ |
| $ C_{129}  =  Y_6 - Y_{25}  = 199$ | $ C_{164}  =  Y_8 - Y_{25}  = 306$ |
| $ C_{130}  =  Y_7 - Y_8  = 202$    | $ C_{165}  =  Y_9 - Y_{10}  = 274$ |
| $ C_{131}  =  Y_7 - Y_9  = 224$    | $ C_{166}  =  Y_9 - Y_{11}  = 316$ |
| $ C_{132}  =  Y_7 - Y_{10}  = 40$  | $ C_{167}  =  Y_9 - Y_{12}  = 278$ |
| $ C_{133}  =  Y_7 - Y_{11}  = 92$  | $ C_{168}  =  Y_9 - Y_{13}  = 387$ |
| $ C_{134}  =  Y_7 - Y_{12}  = 04$  | $ C_{169}  =  Y_9 - Y_{14}  = 397$ |

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| $ C_{135}  =  Y_7 - Y_{13}  = 162$    | $ C_{170}  =  Y_9 - Y_{15}  = 278$    |
| $ C_{136}  =  Y_7 - Y_{14}  = 172$    | $ C_{171}  =  Y_9 - Y_{16}  = 262$    |
| $ C_{137}  =  Y_7 - Y_{15}  = 54$     | $ C_{172}  =  Y_9 - Y_{17}  = 240$    |
| $ C_{138}  =  Y_7 - Y_{16}  = 138$    | $ C_{173}  =  Y_9 - Y_{18}  = 306$    |
| $ C_{139}  =  Y_7 - Y_{17}  = 21$     | $ C_{174}  =  Y_9 - Y_{19}  = 111$    |
| $ C_{140}  =  Y_7 - Y_{18}  = 132$    | $ C_{175}  =  Y_9 - Y_{20}  = 494$    |
| $ C_{141}  =  Y_7 - Y_{19}  = 112$    | $ C_{176}  =  Y_9 - Y_{21}  = 44$     |
| $ C_{142}  =  Y_7 - Y_{20}  = 270$    | $ C_{177}  =  Y_9 - Y_{22}  = 412$    |
| $ C_{143}  =  Y_7 - Y_{21}  = 180$    | $ C_{178}  =  Y_9 - Y_{23}  = 441$    |
| $ C_{144}  =  Y_7 - Y_{22}  = 188$    | $ C_{179}  =  Y_9 - Y_{24}  = 421$    |
| $ C_{145}  =  Y_7 - Y_{23}  = 217$    | $ C_{180}  =  Y_9 - Y_{25}  = 278$    |
| $ C_{146}  =  Y_7 - Y_{24}  = 197$    | $ C_{181}  =  Y_{10} - Y_{11}  = 52$  |
| $ C_{147}  =  Y_7 - Y_{25}  = 54$     | $ C_{182}  =  Y_{10} - Y_{12}  = 14$  |
| $ C_{148}  =  Y_8 - Y_9  = 28$        | $ C_{183}  =  Y_{10} - Y_{13}  = 122$ |
| $ C_{149}  =  Y_8 - Y_{10}  = 292$    | $ C_{184}  =  Y_{10} - Y_{14}  = 132$ |
| $ C_{150}  =  Y_8 - Y_{11}  = 344$    | $ C_{185}  =  Y_{10} - Y_{15}  = 14$  |
| $ C_{151}  =  Y_8 - Y_{12}  = 306$    | $ C_{186}  =  Y_{10} - Y_{16}  = 98$  |
| $ C_{152}  =  Y_8 - Y_{13}  = 414$    | $ C_{187}  =  Y_{10} - Y_{17}  = 19$  |
| $ C_{153}  =  Y_8 - Y_{14}  = 424$    | $ C_{188}  =  Y_{10} - Y_{18}  = 92$  |
| $ C_{154}  =  Y_8 - Y_{15}  = 306$    | $ C_{189}  =  Y_{10} - Y_{19}  = 103$ |
| $ C_{155}  =  Y_8 - Y_{16}  = 390$    | $ C_{190}  =  Y_{10} - Y_{20}  = 230$ |
| $ C_{191}  =  Y_{10} - Y_{21}  = 220$ | $ C_{226}  =  Y_{13} - Y_{17}  = 141$ |
| $ C_{192}  =  Y_{10} - Y_{22}  = 148$ | $ C_{227}  =  Y_{13} - Y_{18}  = 30$  |
| $ C_{193}  =  Y_{10} - Y_{23}  = 177$ | $ C_{228}  =  Y_{13} - Y_{19}  = 270$ |
| $ C_{194}  =  Y_{10} - Y_{24}  = 107$ | $ C_{229}  =  Y_{13} - Y_{20}  = 108$ |
| $ C_{195}  =  Y_{10} - Y_{25}  = 14$  | $ C_{230}  =  Y_{13} - Y_{21}  = 342$ |
| $ C_{196}  =  Y_{11} - Y_{12}  = 28$  | $ C_{231}  =  Y_{13} - Y_{22}  = 26$  |
| $ C_{197}  =  Y_{11} - Y_{13}  = 70$  | $ C_{232}  =  Y_{13} - Y_{23}  = 50$  |
| $ C_{198}  =  Y_{11} - Y_{14}  = 80$  | $ C_{233}  =  Y_{13} - Y_{24}  = 30$  |

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| $ C_{199}  =  Y_{11} - Y_{15}  = 38$  | $ C_{234}  =  Y_{13} - Y_{25}  = 108$ |
| $ C_{200}  =  Y_{11} - Y_{16}  = 46$  | $ C_{235}  =  Y_{14} - Y_{15}  = 118$ |
| $ C_{201}  =  Y_{11} - Y_{17}  = 71$  | $ C_{236}  =  Y_{14} - Y_{16}  = 34$  |
| $ C_{202}  =  Y_{11} - Y_{18}  = 40$  | $ C_{237}  =  Y_{14} - Y_{17}  = 101$ |
| $ C_{203}  =  Y_{11} - Y_{19}  = 200$ | $ C_{238}  =  Y_{14} - Y_{18}  = 40$  |
| $ C_{204}  =  Y_{11} - Y_{20}  = 178$ | $ C_{239}  =  Y_{14} - Y_{19}  = 280$ |
| $ C_{205}  =  Y_{11} - Y_{21}  = 272$ | $ C_{240}  =  Y_{14} - Y_{20}  = 98$  |
| $ C_{206}  =  Y_{11} - Y_{22}  = 96$  | $ C_{241}  =  Y_{14} - Y_{21}  = 302$ |
| $ C_{207}  =  Y_{11} - Y_{23}  = 120$ | $ C_{242}  =  Y_{14} - Y_{22}  = 16$  |
| $ C_{208}  =  Y_{11} - Y_{24}  = 100$ | $ C_{243}  =  Y_{14} - Y_{23}  = 40$  |
| $ C_{209}  =  Y_{11} - Y_{25}  = 38$  | $ C_{244}  =  Y_{14} - Y_{24}  = 20$  |
| $ C_{210}  =  Y_{12} - Y_{13}  = 108$ | $ C_{245}  =  Y_{14} - Y_{25}  = 118$ |
| $ C_{211}  =  Y_{12} - Y_{14}  = 118$ | $ C_{246}  =  Y_{15} - Y_{16}  = 84$  |
| $ C_{212}  =  Y_{12} - Y_{15}  = 0$   | $ C_{247}  =  Y_{15} - Y_{17}  = 33$  |
| $ C_{213}  =  Y_{12} - Y_{16}  = 84$  | $ C_{248}  =  Y_{15} - Y_{18}  = 78$  |
| $ C_{214}  =  Y_{12} - Y_{17}  = 33$  | $ C_{249}  =  Y_{15} - Y_{19}  = 167$ |
| $ C_{215}  =  Y_{12} - Y_{18}  = 78$  | $ C_{250}  =  Y_{16} - Y_{20}  = 216$ |
| $ C_{216}  =  Y_{12} - Y_{19}  = 167$ | $ C_{251}  =  Y_{15} - Y_{21}  = 234$ |
| $ C_{217}  =  Y_{12} - Y_{20}  = 216$ | $ C_{252}  =  Y_{15} - Y_{22}  = 134$ |
| $ C_{218}  =  Y_{12} - Y_{21}  = 234$ | $ C_{253}  =  Y_{16} - Y_{23}  = 163$ |
| $ C_{219}  =  Y_{12} - Y_{22}  = 134$ | $ C_{254}  =  Y_{15} - Y_{24}  = 143$ |
| $ C_{220}  =  Y_{12} - Y_{23}  = 163$ | $ C_{255}  =  Y_{15} - Y_{25}  = 0$   |
| $ C_{221}  =  Y_{12} - Y_{24}  = 143$ | $ C_{256}  =  Y_{16} - Y_{17}  = 117$ |
| $ C_{222}  =  Y_{12} - Y_{25}  = 0$   | $ C_{257}  =  Y_{16} - Y_{18}  = 6$   |
| $ C_{223}  =  Y_{13} - Y_{14}  = 10$  | $ C_{258}  =  Y_{16} - Y_{19}  = 201$ |
| $ C_{224}  =  Y_{13} - Y_{15}  = 108$ | $ C_{259}  =  Y_{16} - Y_{20}  = 132$ |
| $ C_{225}  =  Y_{13} - Y_{16}  = 24$  | $ C_{260}  =  Y_{16} - Y_{21}  = 318$ |
| $ C_{261}  =  Y_{16} - Y_{22}  = 0$   | $ C_{261}  =  Y_{19} - Y_{21}  = 77$  |
| $ C_{262}  =  Y_{16} - Y_{23}  = 79$  | $ C_{262}  =  Y_{19} - Y_{22}  = 201$ |

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| $ C_{263}  =  Y_{16} - Y_{24}  = 09$  | $ C_{283}  =  Y_{19} - Y_{23}  = 33$  |
| $ C_{264}  =  Y_{16} - Y_{25}  = 84$  | $ C_{284}  =  Y_{19} - Y_{24}  = 31$  |
| $ C_{265}  =  Y_{17} - Y_{18}  = 111$ | $ C_{285}  =  Y_{19} - Y_{25}  = 167$ |
| $ C_{266}  =  Y_{17} - Y_{19}  = 134$ | $ C_{286}  =  Y_{20} - Y_{21}  = 40$  |
| $ C_{267}  =  Y_{17} - Y_{20}  = 249$ | $ C_{287}  =  Y_{20} - Y_{22}  = 82$  |
| $ C_{268}  =  Y_{17} - Y_{21}  = 201$ | $ C_{288}  =  Y_{20} - Y_{23}  = 03$  |
| $ C_{269}  =  Y_{17} - Y_{22}  = 167$ | $ C_{289}  =  Y_{20} - Y_{24}  = 73$  |
| $ C_{270}  =  Y_{17} - Y_{23}  = 196$ | $ C_{290}  =  Y_{20} - Y_{25}  = 216$ |
| $ C_{271}  =  Y_{17} - Y_{24}  = 176$ | $ C_{291}  =  Y_{21} - Y_{22}  = 378$ |
| $ C_{272}  =  Y_{17} - Y_{25}  = 33$  | $ C_{292}  =  Y_{21} - Y_{23}  = 397$ |
| $ C_{273}  =  Y_{18} - Y_{19}  = 240$ | $ C_{293}  =  Y_{21} - Y_{24}  = 377$ |
| $ C_{274}  =  Y_{18} - Y_{20}  = 138$ | $ C_{294}  =  Y_{21} - Y_{25}  = 234$ |
| $ C_{275}  =  Y_{18} - Y_{21}  = 312$ | $ C_{295}  =  Y_{22} - Y_{23}  = 29$  |
| $ C_{276}  =  Y_{18} - Y_{22}  = 06$  | $ C_{296}  =  Y_{22} - Y_{24}  = 9$   |
| $ C_{277}  =  Y_{18} - Y_{23}  = 80$  | $ C_{297}  =  Y_{22} - Y_{25}  = 134$ |
| $ C_{278}  =  Y_{18} - Y_{24}  = 60$  | $ C_{298}  =  Y_{23} - Y_{24}  = 20$  |
| $ C_{279}  =  Y_{18} - Y_{25}  = 78$  | $ C_{299}  =  Y_{23} - Y_{25}  = 163$ |
| $ C_{280}  =  Y_{19} - Y_{20}  = 383$ | $ C_{300}  =  Y_{24} - Y_{25}  = 143$ |

### Questionnaire Form

| Question                                                                                                     | Agreement Ratio |     |     |     |      |
|--------------------------------------------------------------------------------------------------------------|-----------------|-----|-----|-----|------|
|                                                                                                              | 0%              | 25% | 50% | 75% | 100% |
| ١- Is the message service useful .                                                                           |                 |     |     |     |      |
| ٢ - Is there any easiness and speedness in calling any time .                                                |                 |     |     |     |      |
| ٣ - Are you using the mobile as a device to assuring for others especially in this time .                    |                 |     |     |     |      |
| ٤ - Are you using it to exchange congratulations or personal comforting                                      |                 |     |     |     |      |
| ٥- Are you using it to exchange congratulations or religious comforting .                                    |                 |     |     |     |      |
| ٦- Is there any benefit from the internet service in the mobile .                                            |                 |     |     |     |      |
| ٧ - Is there any benefit from the continuous technical development for the devices and servises increasing . |                 |     |     |     |      |
| ٨ - Is the mobile useful to know the date and time .                                                         |                 |     |     |     |      |
| ٩- Are you using it as alarm for waking .                                                                    |                 |     |     |     |      |
| ١٠ - Are you using it as remembrance for some an important occasion in your life .                           |                 |     |     |     |      |
| ١١ - Are you using the games in your mobile .                                                                |                 |     |     |     |      |
| ١٢ - Are you using it as acamera device                                                                      |                 |     |     |     |      |
| ١٣ - Are you saving Artists photo in your mobile .                                                           |                 |     |     |     |      |
| ١٤ - Are you saving players photo in your mobile .                                                           |                 |     |     |     |      |

|                                                                                      |  |  |  |  |  |
|--------------------------------------------------------------------------------------|--|--|--|--|--|
| ١٥ - Are you hearing the songs in your mobile                                        |  |  |  |  |  |
| ١٦ - Are you seting up some scientific programs in your mobile .                     |  |  |  |  |  |
| ١٧ - Are you consider it one of the devices that develop children mentality.         |  |  |  |  |  |
| ١٨ - Are you plug your mobile to computer or TV to play the recording .              |  |  |  |  |  |
| ١٩ - Are the recharge of card mobile is effecting on your economically .             |  |  |  |  |  |
| ٢٠ - Are you using it to call the another sex .                                      |  |  |  |  |  |
| ٢١ - Are you turn off it in some place as (class , meeting , sad occasions , els ) . |  |  |  |  |  |
| ٢٢ - Are you consider it as a device for threatening by unknown persons .            |  |  |  |  |  |
| ٢٣ - Are you using it when you drive the car .                                       |  |  |  |  |  |
| ٢٤ - Are you calling with others at late time .                                      |  |  |  |  |  |
| ٢٥ - Are you believe that the mobile has bad effect on health .                      |  |  |  |  |  |