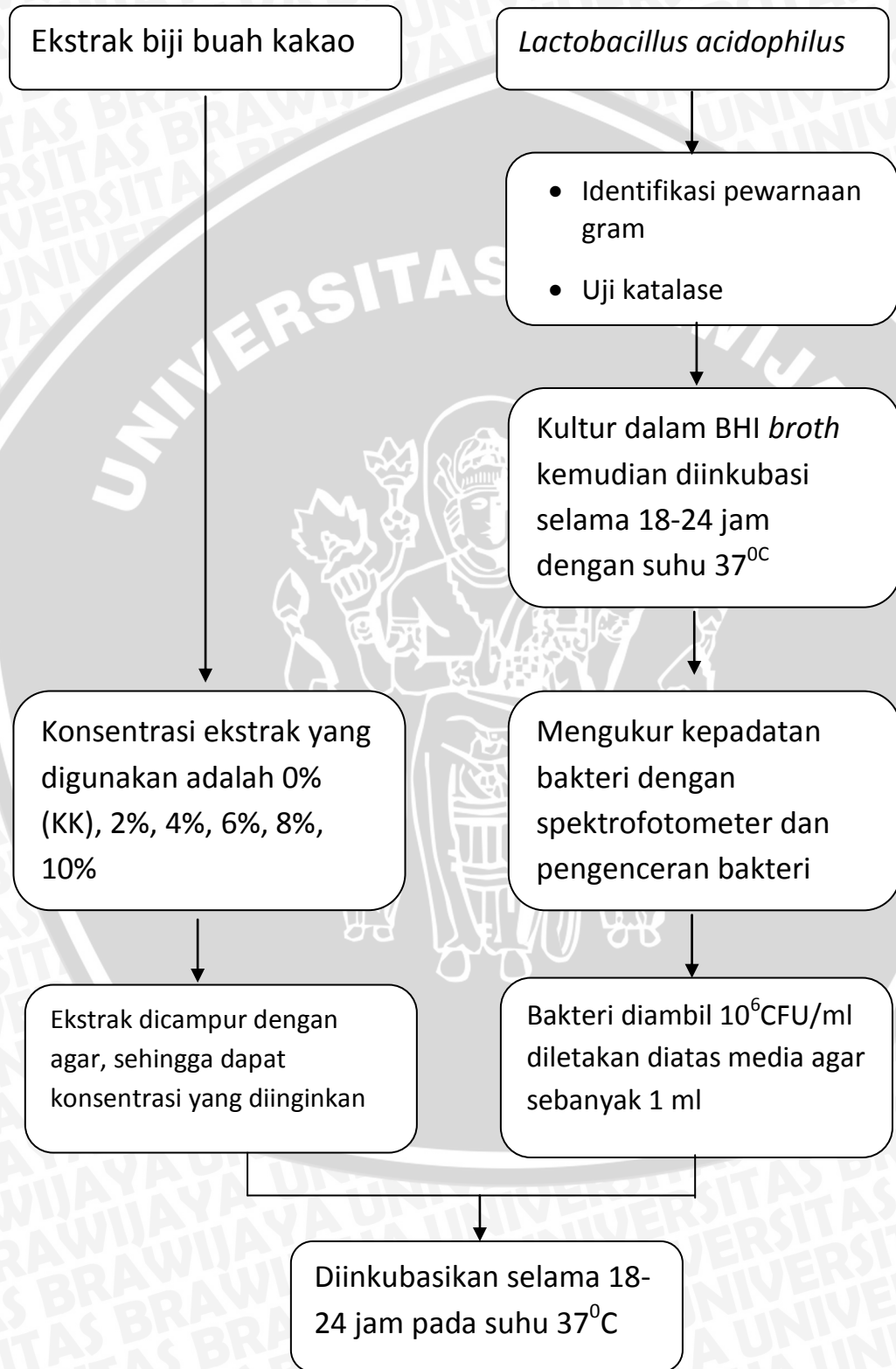
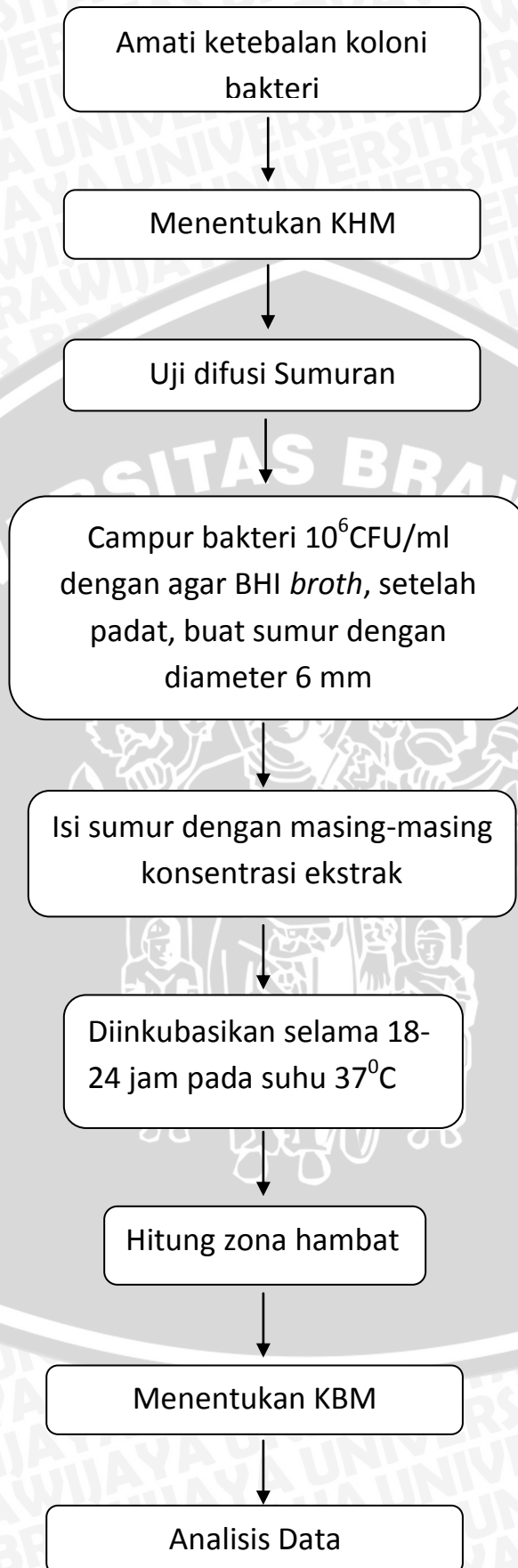


Lampiran 1 Skema Prosedur Penelitian

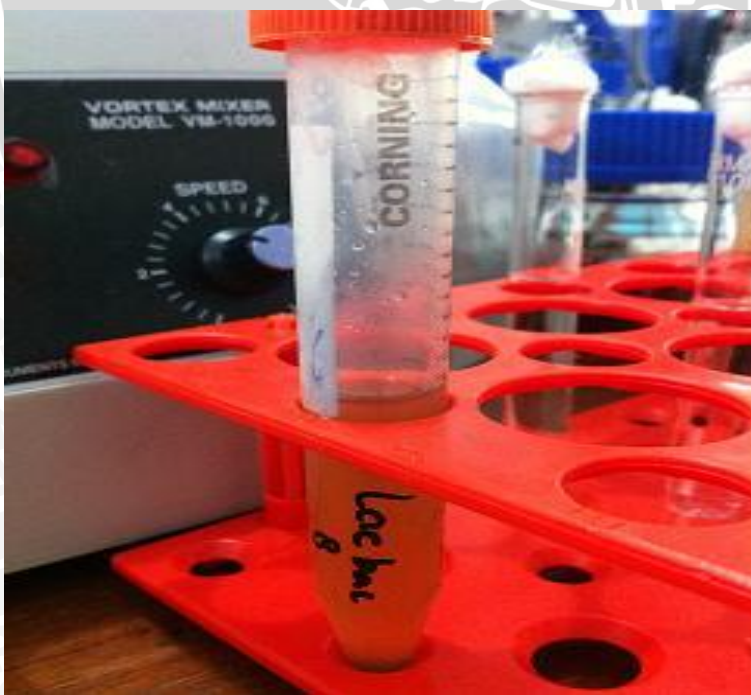




### Lampiran 2 Alat dan Bahan Penelitian



Gambar 1 ekstrak biji kakao,



Gambar 2 Vortex dan bakteri *Lactobacillus acidophilus*

**DINAS KESEHATAN PROPINSI JAWA TIMUR**  
**UPT MATERIA MEDICA**  
Jalan Labor No.87 Telp. (0341) 593396 Batu (65313)  
**KOTA BATU**

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Nomor : 074 / 030 / B / 101.8 / 2013  
Sifat : Biasa  
Perihal : **Determinasi Tanaman COKLAT**

Memenuhi permohonan saudara :  
Nama : MUHAMMAD RIZKY RADYA MAULANA  
N I M : 0910743009  
Fakultas : Kedokteran Universitas Brawijaya Malang

1. Perihal determinasi tanaman Coklat  
Kingdom : Plantae  
Sub Kingdom : Tracheobionta (berpembuluh)  
Super Divisi : Spermatophyta  
Divisi : Magnoliophyta  
Sub divisi : Angiospermae  
Kelas : Dicotyledonae  
Bangsa : Malvales  
Suku : Sterculiaceae  
Marga : Theobroma  
Jenis : *Theobroma cacao L.*  
Sinonim : -  
Coklat, kakao  
Kunci determinasi : 1b-2b-3b-4b-6b-7b-9b-10b-11b-12b-13b-14a-15a-109b-119b-120b-128b-129b-135b-136b-139b-140b-142b-143a-144b-145b-1b-3b-4b-5b-6b.

2. Morfologi : Habitus Pohon, tinggi 5-10 m . Batang Berkayu, bulat, percabangan monopodial, coklat kotor. Daun Tunggal, berlangkai.bulat telur, ujung dan pangkal, runcing, tepi rata, panjang 10-48 cm, lebar 4-20 . cm, hijau. Bunga Tunggal, di ketiak daun, berkelamin dua, kelopak putih panjang 6-8 mm, mahkota panjang 8-9 mm, benang sari bentuk perisik, stamodia ungu tua, ujung putih, bakal buah beruang lima, merah.Buah Buni, bulat telur, berusuk, kulit buah tebal, panjang 12-22 cm, merah. Biji Bulat telur, dibalut selaput putih, tebal, coklat. Akar Tunggang, bercabang, bulat, kecoklatan.

3. Nama Simplisia : Theobromae fructus / Buah coklat  
Theobromae Semen / Biji Coklat

4. Kandungan kimia : Tanaman coklat mengandung teobromin, kafein, protein, pati dan minyak lemak . Biji mengandung : tannin, alkaloid, flavonoid dan sponin

5. Penggunaan : Penelitian

6. Daftar Pustaka :

- Anonim, <http://www.warintek.ristek.go.id/coklat>, diakses 23 Oktober 2010
- Anonim/ <http://www.plantamor.co.id/> coklat , diakses tanggal 17 Desember 2010
- Steenis,CGGJ Van Dr , *FLORA*, 2008, Pradnya Paramita , Jakarta
- Syamsuhidayat, Sri sugati, Hutapea, Johny Ria. 1991. *Inventaris Tanaman Obat Indonesia* Departemen Kesehatan Republik Indonesia : Badan Penelitian Dan Pengembangan Kesehatan

Demikian determinasi ini kami buat untuk dipergunakan sebagaimana mestinya.

Gambar 3 Sertifikat biji Kakao



Gambar 4 Setifikat Bakteri *Lactobacillus acidophilus*

**Lampiran 3 Analisis Statistik**

**Uji Normalitas**

**One-Sample Kolmogorov-Smirnov Test**

|                                  |                | Konsentrasi | Zona Hambat |
|----------------------------------|----------------|-------------|-------------|
| N                                |                | 24          | 24          |
| Normal Parameters <sup>a,b</sup> | Mean           | 5,00        | 9,88        |
|                                  | Std. Deviation | 3,489       | 6,609       |
| Most Extreme Differences         | Absolute       | ,138        | ,153        |
|                                  | Positive       | ,138        | ,153        |
|                                  | Negative       | -,138       | -,141       |
| Kolmogorov -Smirnov Z            |                | ,678        | ,751        |
| Asymp. Sig. (2-tailed)           |                | ,748        | ,625        |

a. Test distribution is Normal.

b. Calculated from data.

**Oneway**

**Descriptives**

| Zona Hambat |    |       |                |            |                                  |             |         |         |
|-------------|----|-------|----------------|------------|----------------------------------|-------------|---------|---------|
|             | N  | Mean  | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |             | Minimum | Maximum |
|             |    |       |                |            | Lower Bound                      | Upper Bound |         |         |
| KK          | 4  | ,00   | ,000           | ,000       | ,00                              | ,00         | 0       | 0       |
| 2%          | 4  | 7,00  | ,816           | ,408       | 5,70                             | 8,30        | 6       | 8       |
| 4%          | 4  | 7,50  | 1,915          | ,957       | 4,45                             | 10,55       | 6       | 10      |
| 6%          | 4  | 9,25  | 1,893          | ,946       | 6,24                             | 12,26       | 8       | 12      |
| 8%          | 4  | 16,25 | 2,363          | 1,181      | 12,49                            | 20,01       | 13      | 18      |
| 10%         | 4  | 19,25 | ,957           | ,479       | 17,73                            | 20,77       | 18      | 20      |
| Total       | 24 | 9,88  | 6,609          | 1,349      | 7,08                             | 12,67       | 0       | 20      |

**Test of Homogeneity of Variances**

**Zona Hambat**

| Levene Statistic | df 1 | df 2 | Sig. |
|------------------|------|------|------|
| 1,492            | 5    | 18   | ,254 |

**ANOVA**

**Zona Hambat**

|                | Sum of Squares | df | Mean Square | F      | Sig. |
|----------------|----------------|----|-------------|--------|------|
| Between Groups | 961,375        | 5  | 192,275     | 80,022 | ,000 |
| Within Groups  | 43,250         | 18 | 2,403       |        |      |
| Total          | 1004,625       | 23 |             |        |      |



## Post Hoc Tests

### Multiple Comparisons

Dependent Variable: Zona Hambat

| (I) Kelompok | (J) Kelompok | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------|--------------|-----------------------|------------|------|-------------------------|-------------|
|              |              |                       |            |      | Lower Bound             | Upper Bound |
| LSD          | KK           | -7,000*               | 1,096      | ,000 | -9,30                   | -4,70       |
|              | 4%           | -7,500*               | 1,096      | ,000 | -9,80                   | -5,20       |
|              | 6%           | -9,250*               | 1,096      | ,000 | -11,55                  | -6,95       |
|              | 8%           | -16,250*              | 1,096      | ,000 | -18,55                  | -13,95      |
|              | 10%          | -19,250*              | 1,096      | ,000 | -21,55                  | -16,95      |
| 2%           | KK           | 7,000*                | 1,096      | ,000 | 4,70                    | 9,30        |
|              | 4%           | -,500                 | 1,096      | ,654 | -2,80                   | 1,80        |
|              | 6%           | -2,250                | 1,096      | ,055 | -4,55                   | ,05         |
|              | 8%           | -9,250*               | 1,096      | ,000 | -11,55                  | -6,95       |
|              | 10%          | -12,250*              | 1,096      | ,000 | -14,55                  | -9,95       |
| 4%           | KK           | 7,500*                | 1,096      | ,000 | 5,20                    | 9,80        |
|              | 2%           | ,500                  | 1,096      | ,654 | -1,80                   | 2,80        |
|              | 6%           | -1,750                | 1,096      | ,128 | -4,05                   | ,55         |
|              | 8%           | -8,750*               | 1,096      | ,000 | -11,05                  | -6,45       |
|              | 10%          | -11,750*              | 1,096      | ,000 | -14,05                  | -9,45       |
| 6%           | KK           | 9,250*                | 1,096      | ,000 | 6,95                    | 11,55       |
|              | 2%           | 2,250                 | 1,096      | ,055 | -,05                    | 4,55        |
|              | 4%           | 1,750                 | 1,096      | ,128 | -,55                    | 4,05        |
|              | 8%           | -7,000*               | 1,096      | ,000 | -9,30                   | -4,70       |
|              | 10%          | -10,000*              | 1,096      | ,000 | -12,30                  | -7,70       |
| 8%           | KK           | 16,250*               | 1,096      | ,000 | 13,95                   | 18,55       |
|              | 2%           | 9,250*                | 1,096      | ,000 | 6,95                    | 11,55       |
|              | 4%           | 8,750*                | 1,096      | ,000 | 6,45                    | 11,05       |
|              | 6%           | 7,000*                | 1,096      | ,000 | 4,70                    | 9,30        |
|              | 10%          | -3,000*               | 1,096      | ,014 | -5,30                   | -,70        |
| 10%          | KK           | 19,250*               | 1,096      | ,000 | 16,95                   | 21,55       |
|              | 2%           | 12,250*               | 1,096      | ,000 | 9,95                    | 14,55       |
|              | 4%           | 11,750*               | 1,096      | ,000 | 9,45                    | 14,05       |
|              | 6%           | 10,000*               | 1,096      | ,000 | 7,70                    | 12,30       |
|              | 8%           | 3,000*                | 1,096      | ,014 | ,70                     | 5,30        |

\*. The mean difference is significant at the .05 level.

## Homogeneous Subsets

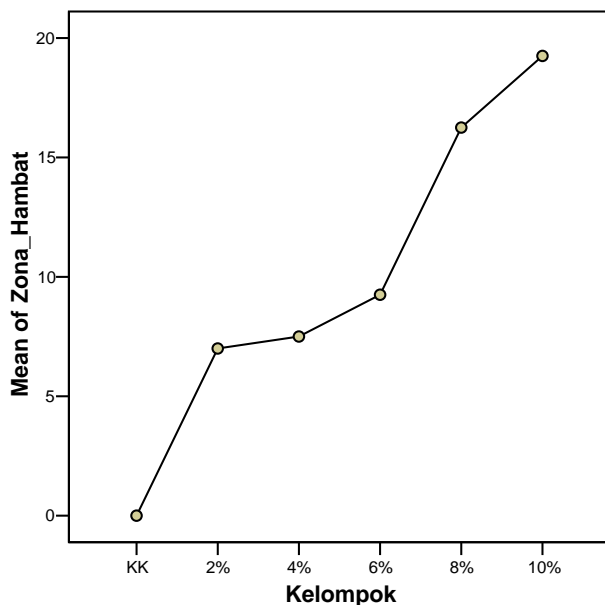
### Zona Hambat

| Kelompok               | N | Subset for alpha = .05 |      |       |       |
|------------------------|---|------------------------|------|-------|-------|
|                        |   | 1                      | 2    | 3     | 4     |
| Duncan <sup>a</sup> KK | 4 | ,00                    |      |       |       |
| 2%                     | 4 |                        | 7,00 |       |       |
| 4%                     | 4 |                        | 7,50 |       |       |
| 6%                     | 4 |                        | 9,25 |       |       |
| 8%                     | 4 |                        |      | 16,25 |       |
| 10%                    | 4 |                        |      |       | 19,25 |
| Sig.                   |   | 1,000                  | ,066 | 1,000 | 1,000 |

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 4,000.

### Means Plots



### Correlations

#### Correlations

|             |                     | Konsentrasi | Zona Hambat |
|-------------|---------------------|-------------|-------------|
| Konsentrasi | Pearson Correlation | 1           | ,948**      |
|             | Sig. (2-tailed)     | .           | ,000        |
|             | N                   | 24          | 24          |
| Zona Hambat | Pearson Correlation | ,948**      | 1           |
|             | Sig. (2-tailed)     | ,000        | .           |
|             | N                   | 24          | 24          |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Regression

#### Model Summary

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | ,948 <sup>a</sup> | ,899     | ,895              | 2,143                      |

a. Predictors: (Constant), Konsentrasi

#### ANOVA<sup>b</sup>

| Model |            | Sum of Squares | df | Mean Square | F       | Sig.              |
|-------|------------|----------------|----|-------------|---------|-------------------|
| 1     | Regression | 903,604        | 1  | 903,604     | 196,783 | ,000 <sup>a</sup> |
|       | Residual   | 101,021        | 22 | 4,592       |         |                   |
|       | Total      | 1004,625       | 23 |             |         |                   |

a. Predictors: (Constant), Konsentrasi

b. Dependent Variable: Zona Hambat



**Coefficients<sup>a</sup>**

| Model |             | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------|-------------|-----------------------------|------------|---------------------------|--------|------|
|       |             | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant)  | ,893                        | ,775       |                           | 1,151  | ,262 |
|       | Konsentrasi | 1,796                       | ,128       | ,948                      | 14,028 | ,000 |

a. Dependent Variable: Zona Hambat

**Crosstabs**

**Kelompok \* Bakteri Crosstabulation**

|          |       | Bakteri           |       |             |          | Total |
|----------|-------|-------------------|-------|-------------|----------|-------|
|          |       | Tidak Ada Lapisan | Tipis | Cukup Tebal | Tebal TT |       |
| Kelompok | KK    | Count             | 0     | 0           | 0        | 4     |
|          |       | % of Total        | ,0%   | ,0%         | ,0%      | 16,7% |
| 2%       | Count | 0                 | 0     | 4           | 0        | 4     |
|          |       | % of Total        | ,0%   | ,0%         | 16,7%    | ,0%   |
| 4%       | Count | 0                 | 4     | 0           | 0        | 4     |
|          |       | % of Total        | ,0%   | 16,7%       | ,0%      | ,0%   |
| 6%       | Count | 0                 | 4     | 0           | 0        | 4     |
|          |       | % of Total        | ,0%   | 16,7%       | ,0%      | ,0%   |
| 8%       | Count | 4                 | 0     | 0           | 0        | 4     |
|          |       | % of Total        | 16,7% | ,0%         | ,0%      | ,0%   |
| 10%      | Count | 4                 | 0     | 0           | 0        | 4     |
|          |       | % of Total        | 16,7% | ,0%         | ,0%      | ,0%   |
| Total    |       | Count             | 8     | 8           | 4        | 4     |
|          |       | % of Total        | 33,3% | 33,3%       | 16,7%    | 16,7% |

**Chi-Square Tests**

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 72,000 <sup>a</sup> | 15 | ,000                  |
| Likelihood Ratio             | 63,824              | 15 | ,000                  |
| Linear-by-Linear Association | 21,205              | 1  | ,000                  |
| N of Valid Cases             | 24                  |    |                       |

a. 24 cells (100,0%) have expected count less than 5. The minimum expected count is ,67.

**Symmetric Measures**

|   | Value | Asymp. Std. Error <sup>a</sup> | Approx. T <sup>b</sup> | Approx. Sig. <sup>c</sup> |
|---|-------|--------------------------------|------------------------|---------------------------|
| Interval by Interval Pearson's R        | -,960 | ,010                           | -16,121                | ,000 <sup>c</sup>         |
| Ordinal by Ordinal Spearman Correlation | -,971 | ,013                           | -19,053                | ,000 <sup>c</sup>         |
| N of Valid Cases                        | 24    |                                |                        |                           |

- a. Not assuming the null hypothesis.
- b. Using the asymptotic standard error assuming the null hypothesis.
- c. Based on normal approximation.

