

**APPENDIX L**  
**CHI-SQUARE ( $X^2$ ) ANALYSIS OF ENUMERATION DATA**

In an effort to analyze the possibility that poor people will not be affected as proportionally as wealthy people are, a test was done to analyze the enumeration data.

**DISCLAIMOR- Note:** All participants are employed at Barner Learning Center (BLC). Therefore the “level of income” does not include the unemployed poor, nor the wealthy citizens of Davao City. However, due to heavy familial financial responsibilities, many BLC employees live on the poverty line and are squatters who live among the very poor.

**EXPLANATION-** The following experiment was made at 6am Friday, May 26, 2006 at Loling’s Mountain Spring Resort in Toril, Davao City, Philippines. It took place during the annual Teachers’ Retreat of the BLC teachers and staff, of which 100% are born again, Protestant Christians. Its purpose was to assist in the synthesis of theories developed during the MASOR program (Mindanao Studies Emphasis) at Ateneo de Davao University. All participants (men and women, aged 18-67yrs) knew they were being tested, and also compared their findings in a group setting FGD (Focus Group Discussion). However, some participants were only informed later that their findings (though kept confidential in anonymity) would be used for this research project. Therefore their impact was not coerced, either physically nor psychologically.

(32 **RESPONDENTS**)

RELATIVE / GREATEST LEVEL OF / PRIORITY INCOME /	ACCESS TO HEAVEN “1”	SPIRITUAL NEEDS “2”	LOVE “3”	PRAYER “4”	PHYSICAL NEEDS “5”	TOTAL
HIGH PAY (TEACHERS/ ADMINISTRATION)	2	4	4	2	2	16
LOW PAY (JANITORS, STAFF)	2	0	8	2	2	16
<b>TOTAL</b>	<b>4</b>	<b>4</b>	<b>12</b>	<b>4</b>	<b>4</b>	<b>32</b>

“#” = PROXIMITY TO CORRECT ANSWER (“1” IS THE CLOSEST)

**PURPOSE:**

1. TEST THE CURVE
2. TEST EQUALITY TO EXPECTATIONS (EQUALITY IN CHRISTIANITY)
3. TEST INDEPENDENCE OF VARIABLES (EMPLOYMENT STATUS)

**NULL HYPOTHESIS-**The hypothesis that we hope to accept or reject ( $H_0$ ).

**ALTERNATIVE HYPOTHESIS- ( $H_a$ )** Rejection of  $H_0$ .

NOTE: Rejection of  $H_0$  implies acceptance of  $H_a$ .

**STEP 1**

State the null hypothesis.

**$H_0$ -** 1<sup>st</sup> variable (individual philosophical proximity [1-5] to ATH [Access to Heaven]) **does not** depend on the second variable (level of income). The 2 variables are independent from each other.

**$H_a$ -** 1<sup>st</sup> variable (individual philosophical proximity [1-5] to ATH [Access to Heaven]) **does** depend on the second variable (level of income). The 2 variables depend upon each other.

**STEP 2**

State the level of significance.

Set 5% significance level (.05).

**STEP 3**

Determine the degree of freedom.

Df = (r-1) (k-1)  
 r= number of rows describing one variable  
 k= number of columns describing the other variable

2 rows, 5 columns

df= (2-1) (5-1)  
 = (1) (4)  
 = 4

**STEP 4**

Locate the tabular value of  $X^2$  in the chi-square distribution table by getting the value where the desired level of significance and the computed degree of freedom intersect.

The tabular value at 4df and 5% (.05) significance level is 9.35.

**STEP 5**

Calculate the chi-square value using the formula:  $X^2 = \sum \frac{(fo - fe)^2}{fe}$

Where fo stands for the actual observed frequency and fe stands for the expected or ideal frequency. In two-way classification, the expected frequency is computed by multiplying the subtotals of the intersecting categories, then dividing the product by the total frequency represented by the grand total of the contingency table.

$$Fe = \frac{(\text{Subtotal A}) (\text{Subtotal B})}{\text{Grand Total}}$$

To compute fe we use the above formula.

$$\text{Where } fo_1 = 2, fe_1 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_2 = 2, fe_2 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_3 = 4, fe_3 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_4 = 0, fe_4 = \frac{0 \times 16}{32} = \frac{0}{32} = 0$$

$$32 \quad 32$$

$$\text{Where } fo_5 = 4, fe_5 = \frac{12 \times 16}{32} = \frac{192}{32} = 6$$

$$\text{Where } fo_6 = 8, fe_6 = \frac{12 \times 16}{32} = \frac{192}{32} = 6$$

$$\text{Where } fo_7 = 2, fe_7 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_8 = 2, fe_8 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_{10} = 2, fe_{10} = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

$$\text{Where } fo_9 = 2, fe_9 = \frac{4 \times 16}{32} = \frac{64}{32} = 2$$

Replacing the above values into the chi-square formula, we shall have:

$$X^2 = \sum \frac{(fo - fe)^2}{fe}$$

$$= \frac{(2-2)^2}{2} + \frac{(2-2)^2}{2} + \frac{(2-2)^2}{2} + \frac{(4-2)^2}{0} + \frac{(0-0)^2}{6} + \frac{(4-6)^2}{6} + \frac{(8-6)^2}{2} + \frac{(2-2)^2}{2} + \frac{(2-2)^2}{2} + \frac{(2-2)^2}{2}$$

$$= 0+0+4/2+0+4/6+4/6+0+0+0$$

$$= 2+.67+.67$$

$$= 3.34$$

#### STEP 6

**State the conclusion arrived at by the acceptance or rejection of the null hypothesis. If the computed value of the chi-square is less than the tabular value, the null hypothesis is accepted. If the computed value of the chi-square is greater than the tabular value, the null hypothesis is rejected.**

Since  $3.34 < 9.35$ , the null hypothesis is accepted. For the 32 BLC teachers and staff evaluated, individual philosophical proximity of the “most important thing in life” as measured against the absolute truth of Access to Heaven does NOT depend on one’s particular level of income.