Analysis of the Level of Public Trust in Personal Data Protection as an Evaluation for the Indonesian Government's for Improving Data Security

Alda Fuadiyah Suryono¹, Aqil Azmi Reswara², Hadi Prayogi³, Nafisa⁴, Sabrina Falasifah⁵, Nur Chamidah^{6*}

^{1,2,3,4,5}Statistics Study Program, Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia ⁶Department of Mathematics, Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia

*Corresponding author : nur- c@fst.unair.ac.id

Abstract: Information technology does not only function as a medium for replying to messages and exchanging information but also makesit easy to do everything. This has been reflected by the large number of cybercrimes in Indonesia. Many new cases have emerged related to the cyber world, such as data hacking and selling personal data. Therefore, the protection of personal data is a factor that determines how public trust in the government regarding cyber security in Indonesia. In this research, we will analyze the level of public trust in the protection of personal data in Indonesia as an evaluation for the government in improving data security using the Chis-Square Test using contingency tables $b \times k$, where this table will explain the relationship between the 2 categorical variables. Based on the results of this research, there are several evaluations that can be further examined by the government, namely increasing the effectiveness in handling data leakage cases in Indonesia, so that people have confidence in the government regarding their personal data. This is an unfavorable achievement for the government, so it is necessary to carry outan evaluation related to increasing the protection of personal data for the Indonesian public.

Keywords— Cybercrime, Government, Chis-Square, Contingency Tables, Technology

1. INTRODUCTION

In the current era of globalization, the development of information technology is very rapid. One of them is the development of social media. Social media is a very popular medium. Information technology today not only functions as a medium to reply to messages and exchange information but also provides convenience in doing everything. The more developed social media, the more vulnerable the security of information and privacy data to be leaked or spread. This has been reflected in the large number of cybercrimes in Indonesia.

Cybercrime is a criminal act committed on internet technology through the process of attacking public facilities in cyber space and personal data that is important or confidential [11]. The Cybercrime issue is not an easy problem to solve. This is because cybercrime is a type of crime committed in cyberspace and the crime can occur without the need for a direct interaction between the perpetrator and the victim. So, it can be said that when a cybercrime occurs, everyone from various countries who can enter the cyber world can be involved in it, whether it isas a perpetrator (directly or indirectly), a victim, or as a witness [9].

Cybercrime cases in Indonesia are still categorized as a serious problem and must be considered. Very many new cases have emerged related to the cyber world such as data hacking to the sale of personal data. Reporting from okezone.com, in Indonesia there have been cybercrime cases in the form of hacking the data of several people including government data by a person claiming to be named Bjorka who claims to have obtained personal data from public officials in Indonesia [10]. This case is one of the signs that the lack of protection carried out by the government causes privacy data to be spread to irresponsible parties so that it can be financially detrimental and even threaten the safety of the owner. Therefore, the protection of personal data is a factor that determines how publictrust in the government regarding cyber security in Indonesia.

The existence of various cases that have occurred certainly requires its own way to assess how high the level of public trust in the government regarding personal data protection in Indonesia. Therefore, this study will analyze the level of public trust in personal data protection in Indonesia as an evaluation for the government in improving data security using the Chis-Square Test using a b×k contingency table. The Chi-Square test is a statistical technique used to test a hypothesis of a population where the data is nominal or ordinal data and the sample has a large scale [18]. One of the methods in the Chi-Square test can use a b×k contingency table where this table will interpret the relationship between 2 categorical variables [4].

Currently, there is still no research that analyzes the level of public trust in personal data protection in Indonesia. Thus, it is important to know the public's trust in the influence of personal data protection in Indonesia as an evaluationmaterial, especially for the government in order to further improve the security of people's personal data in the future.

2. METHOD

The type of research used in this study is a quantitative type of research. The data collection method used by this study is a survey by spreading it online through google form. The research starts from October 2022 to November 2022, while data collection will be carried out on November 10-18, 2022.

2.1 Research Population and Sample

The population in this study was all Indonesians which amounted to 275,361,267 people. The respondent sampling method was carried out using the Purposive Sampling technique. According to Sugiyono (2018), the definition of purposive sampling is sampling using certain considerations according to the desired criteria to be able to determine the number of samples be studied. The main criterion for sample selection in this study is Indonesians who often use the internet to store their personal data. By using the Slovin formula with a margin of error of 10% obtained the number samples needed as many as 100 Indonesian respondents.

2.2 Research Variable

Research variables are everything in the form of anything that is set by the researcher to be studied, so that information is obtained about it, then conclusions are drawn [13]. The variables used in this studyare as follows:

- 1. Age of society which includes:
 - a. Age 17-22 years (Generation Z)
 - b. Age 23-38 years (Generation Y)
 - c. Age 39-54 years (Generation X)
- 2. Public trust in personal data protection in Indonesia based on dimension:
 - a. Willingness to support
 - Trustworthy
 - Responsive
 - b. Norms and values
 - Understanding
 - Justice
 - c. Perceived benefits
 - Previous experience
 - Effectiveness

The research variables that have been mentioned above, are then arranged in the form of a contingency table. Thefollowing is a table of contingencies used in this study:

| TABLE 1 | CONTINGENCY | TABLE | OF PUBLIC | TRUST | LEVEL |
|---------|--------------|----------|-------------|--------|-------|
| TOWARDS | PERSONAL DAT | A PROTEC | TION IN IND | ONESIA | |

| | Level of Public Trust | | | ust |
|-----------------------|-----------------------|----|---|-----|
| Research Variables | SDT | DT | Т | ST |
| Generasi Z | | | | |
| Generasi Y | | | | |
| Generasi X | | | | |

2.3 Research Procedure

There are several things that researchers need to prepare in conducting research, namely preparing research procedures. The procedure for conducting research is as follows:

- 1. Researchers make questionnaires in the form of google forms containing questions related to the research conducted.
- 2. Dissemination of questionnaires to the Community by seeking prior approval for the filling of the questionnaire.
- 3. Recap the data of the questionnaire results so that data processing and analysis can be carried out.
- 4. Processing and analyzing the data that has been obtained.
- 5. Draw conclusions or generalizations.

2.4 Data Collection Methods

Judging from the data source, data collection can use both primary sources and secondary sources. Primary sources are data sources that directly provide data to data collectors, while secondary sources are sources that do not provide data to data collectors [15].

1. Data Sources

This study used primary data sources obtained from the dissemination of questionnaires to respondents containing questions about public trust in personal data protection in Indonesia.

2. Research Instruments

The instrument of this study is to use a questionnaire. The answers to the questions in the questionnaire have an ordinal scale. The scale used in this study was between 1-3 with the following answer choices:

- a. 1 =Strongly Distrust
- b. 2 = Distrust
- c. 3 = Trust
- d. 4 = Strongly Trust

The scoring for each of the answers in the questionnaire is as follows:

- a. First choice, has a score of 1 (one)
- b. Second choice, has a score of 2 (two)
- c. Third choice, has a score of 3 (three)
- d. Fourth choice, has a score of 4 (four)

2.5 Data Analysis Methods

After the data is collected, the next stage of research is data analysis with the following analysis methods:

- 1. Conduct validity tests for each question from a variable for 30 first respondents. The validity testing steps are as follows:
 - a. Hypothesis formulation:
 - H_0 : Statements do not measure the same aspects.
 - H_1 : Statements do not measure aspects that are not the same
 - b. Calculating test statistics based on equations below:

 r_{xy}

=

$$\frac{\sum_{i=1}^{n} (X_i)(Y_i) - n \left[\frac{n+1}{2}\right]^2}{\sqrt{\left\{\sum_{i=1}^{n} (X_i) - n \left[\frac{n+1}{2}\right]^2\right\} \left\{\sum_{i=1}^{n} (Y_i) - n \left[\frac{n+1}{2}\right]^2\right\}}}$$
(1)

c. Draw conclusions based on the r that has been obtained

- 2. After the questionnaire is declared valid, the next analysis with reliability test is as follows:
 - a. Calculating α values using equations below:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum S_j^2}{S_x^2} \right) \tag{2}$$

- b. Draw conclusions according to the criteria
- c. If the reability is accepted, the questionnaire can be used and then the questionnaire is distributed to the respondents on the second day.
- 3. The next step is data processing and drawing conclusions. The authors used the Chi-Square test to determine the relationship between the respondent's generation and the respondent's level of trust in personal data protection in Indonesia. The steps in testing Chi-Square are as follows:
 - a. Formulation of hypotheses for each of the research variables.
 - b. Determining critical regions by H_0 rejected criteria if $\chi^2_{count} > \chi^2_{(\alpha,\nu)}$ with a free degree (v)=2. Calculate the frequency of expectations on each column, if the expectation frequency of nothing < 5 out of 20% of the total cells then the test can be continued by calculating the test statistics.
 - c. Make a decision by comparing the statistical value of the test with the critical area.
 - d. Make inferences from testing.
- 4. Make a decision by comparing the statistical value of the test with the critical area, calculating the value of Cramers's V contingency coefficient using the formula:

$$V = \sqrt{\frac{\chi^2}{n.\min(b-1,k-1)}}$$
(3)

5. Interpreting research and analysis results.

3. RESULTS

3.1 COMPONENST OF THE RESEARCH QUESTIONNAIRE

The research questionnaire that has been distributed contains 6 main questions that serve as indicators of public trust in personal data protection in Indonesia, namely:

- 1. The government's ability to manage and protect personal data.
- 2. The government's responsiveness in dealing with data leaks.
- 3. The government does not misuse personal data.
- 4. The government's fairness in handling data leakage cases.
- 5. Previous government experience in handling data leakage cases.

6. The effectiveness of the methods used by the government in handling data leakage cases.

Each component of the questionnaire consists of four answer options with score details: strongly distrust (1), distrust (2), trust (3), and strongly trust (4).

3.2 Descriptive Statistical Analysis

1. Public Understanding of Personal Data

Public Understanding of Personal Data



Fig. 1 Percentage of Public Understanding of Personal Data

Based on Figure 1, 9% (9 respondents) said they did not understand personal data, 41% (41 respondents) said they understood, and 50% (50 respondents) said they understood very well. These results can be concluded that many people in Indonesia already understand personal data.

2. Distribution of Respondents by Age Group

The number of samples (respondents) involved in this study amounted to 100 respondents. All sample data taken from the questionnaire in appendix 1 to people throughout Indonesia. These respondents are grouped by age with the categories "Generation Z" for ages 17-22 years, "Generation Y" for ages 23-38 years, "Generation X" for ages 39-54 years as shown in Figure 2 below:



Fig. 2 Percentage of Respondents Age Group

Based on Figure 2, the distribution of respondents includes 20% (20 respondents) in the Generation X age group, 40% (40 respondents) in

the Generation Y age group, 40% (40 respondents) in the Generation Z age group.

3.3 Validity Test

The validity test is used to test the extent of the accuracy of an instrument as a tool for measuring research variables. The questionnaire is said to be valid if it can measure the research variables to be measured. The hypothesis used in the validity test is as follows:

 H_0 = Questions do not measure the same aspect. H_1 = Questions measuring the same aspect. Critical region: H_0 rejected if sig. \leq alpha = 0.05

TABLE 2 VALIDITY TEST RESULTS OF THE WILLINGNESS TO

 SUPPORT DIMENSION

| No. | Description | P-Value | Decision | Conclusion |
|-----|-------------|---------|--------------|------------|
| 1 | Trustworthy | 0.000 | Reject H_0 | Valid |
| 2 | Responsive | 0.000 | Reject H_0 | Valid |

 TABLE 3
 VALIDITY TEST RESULTS OF NORMS AND VALUES

 DIMENSION

| No. | Description | P-Value | Decision | Conclusion |
|-----|-------------|---------|--------------|------------|
| 1 | Definition | 0.000 | Reject H_0 | Valid |
| 2 | Justice | 0.000 | Reject H_0 | Valid |

TABLE 4 VALIDITY TEST RESULTS OF THE PERCEIVED BENEFITS

 DIMENSION

| No. | Description | P-Value | Decision | Conclusion |
|-----|---------------|---------|--------------|------------|
| 1 | Previous | 0.000 | Reject H_0 | Valid |
| | Experience | | - | |
| 2 | Effectiveness | 0.000 | Reject H_0 | Valid |

Based on the Table 2, 3, and 5 results of the validity test for each dimension, it is found that all question variables have a significance value of $0.000 \le 0.05$, so it can be concluded that all questions in the questionnaire can measure the same aspect, or can be said to be valid.

3.4 Reliability Test

The reliability test is carried out to see the extent of the consistency of the results of a study when carried out repeatedly on a characteristic.

| TARIE 5 | RELIA | BIITY | TEST | RESIL | TS |
|----------|-------|-------|------|-------|----|
| I ADDD 3 | | DILII | LOI | RESUL | 10 |

| No. | Dimensions | Cronbach's Alpha | Conclusion |
|-----|---------------------------|---------------------|------------------|
| 1 | Willingness to Support | 0.736 | High Reliability |
| 2 | Norms and Values | 0.714 | High Reliability |
| 3 | Perceived Benefits | 0.794 | High Reliability |

In the analysis results with the Cronbach's Alpha value on the three dimensions, the Cronbach's Alpha value > 0.8 is obtained, which means that the measuring instrument in the questionnaire has high reliability.

4. CHI-SQUARE TEST

4.1 Chi-Square Test Viewed from The Dimension of Willingness to Support

In this study, the dimension used as the basis for reviewing public trust in personal data protection in Indonesia is the willingness to support dimension, which consists of trustworthy and responsive indicators.

| TABLE 6 CONTINGENCY TABLE AND EXPE | CTED FREQUENCY OF |
|------------------------------------|-------------------|
| TRUSTWORTHINESS | |

| Concretion | Trust | | | | Total |
|------------|---------|---------|--------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation | 5 (2,8) | 17 | 17 | 1 (5,2) | 40 |
| Z | | (12,4) | (19,6) | | |
| Generation | 2 (2,8) | 8 | 21 | 9 (5,2) | 40 |
| Y | | (12,4) | (19,6) | | |
| Generation | 0 (1,4) | 6 (6,2) | 11 | 3 (2,6) | 20 |
| Х | | | (9,8) | | |
| Total | 7 | 31 | 49 | 13 | 100 |

TABLE 6 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 COMBINING TRUSTWORTHY INDICATORS

| Consticu | Tr | rust |
|--------------|-----------|-----------|
| Generation | DT | Т |
| Generation Z | 22 (15.2) | 18 (24,8) |
| Generation Y | 10 (15.2) | 30 (24,8) |
| Generation X | 6 (7,6) | 14 (12,4) |

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia as measured by the trustworthiness indicator.
- H_1 : There is a relationship between generation and the level of public trust in personal data protection inIndonesia as measured by the trustworthiness indicator.

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,\nu)} = 5,9915$, with free degree $\nu = (b-1)(k-1)$.

Test Statistics:

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}^{2}}{E(n_{ij})}$$
$$\chi^{2} = 8,3192$$

Decision:

In this study because the test statistic value $\chi^2 = 8,3192 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

Thus, there is a relationship between generation and the level of public trust in personal data protection in Indonesia as measured by the trustworthiness indicator.

International Journal of Academic and Applied Research (IJAAR) ISSN: 2643-9603 Vol. 6 Issue 12, December - 2022, Pages: 172-179

TABLE 8 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 RESPONSIVENESS INDICATOR

| Congration | Trust | | | | Total |
|-----------------|---------|--------------|--------------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation Z | 8 (5,6) | 18 (15,6) | 13 (15,2) | 1 (3,6) | 40 |
| Generation Y | 3 (5,6) | 12 (15,6) | 18 (15,2) | 7 (3,6) | 40 |
| Generation X | 3 (2,8) | 9 (7,8) | 7 (7,6) | 1 (1,8) | 20 |
| Total | 14 | 39 | 38 | 9 | 100 |

TABLE 9 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 COMBINING RESPONSIVENESS INDICATORS

| Consticu | Tr | rust |
|--------------|-----------|-----------|
| Generation | DT | Т |
| Generation Z | 26 (21,2) | 14 (18,8) |
| Generation Y | 15 (21,2) | 25 (18,8) |
| Generation X | 12 (10,6) | 8 (9,4) |

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia in terms of responsiveness indicators.
- H_1 : There is a relationship between generation and the level of public trust in personal data protection in Indonesia as measured by the responsiveness indicator.

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,v)} = 5,9915$, with free degree v = (b-1)(k-1).

Test Statistics:

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}}{E(n_{ij})}$$
$$\chi^{2} = 6,5636$$

Decision:

In this study because the test statistic value $\chi^2 = 6,5636 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

So, there is a relationship between generation and the level of public trust in personal data protection in Indonesia as measured by the responsiveness indicator.

4.2 Chi-Square Test Viewed from The Dimension of Norms and Values

In this study, the dimension used as the basis for reviewing public trust in personal data protection in Indonesia is the Norms and Values dimension which consists of indicators of understandability and fairness.

 TABLE 10 CONTINGENCY TABLE AND EXPECTED FREQUENCIES

 INDICATOR DEFINITION

| Ganaration | | Total | | | |
|------------|---------|---------|--------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation | 6 (3.6) | 16 | 16 | 2 (8.4) | 40 |
| Z | 0 (0,0) | (10,8) | (17,2) | = (0,1) | |
| Generation | 3 (3 6) | 6 | 15 | 16 | 40 |
| Y | 5 (5,0) | (10,8) | (17,2) | (8,4) | 40 |
| Generation | 0(18) | 5(54) | 12 | 3(42) | 20 |
| Х | 0(1,0) | 5 (5,7) | (8,6) | 5 (4,2) | 20 |
| Total | 9 | 27 | 43 | 21 | 100 |

TABLE 11 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 MERGING INDICATORS OF DEFINITION

| Concretion | Tr | rust |
|--------------|-----------|-----------|
| Generation | DT | Т |
| Generation Z | 22 (14,4) | 18 (25,6) |
| Generation Y | 9 (14,4) | 31 (25,6) |
| Generation X | 5 (7,2) | 15 (12,8) |

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia in terms of the indicator of understanding
- H_1 : There is a relationship between generation and the level of public trust in personal data protection in Indonesia, in terms of the indicator of understanding

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,v)} = 5,9915$, with free degree v = (b-1)(k-1).

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}^{2}}{E(n_{ij})}$$
$$\chi^{2} = 10,4818$$

Decision:

In this study because the test statistic value $\chi^2 = 10,4818 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

So, there is a relationship between generation and the level of public trust in personal data protection in Indonesia in terms of understanding indicators.

| TABLE 12 CONT | TINGENCY TABLE AND EXPECTED | FREQU | ENCY OF |
|---------------|-----------------------------|-------|---------|
| FAIRNESS INDI | CATOR | | |
| | | | |

| Consticu | Trust | | | | Total |
|------------|---------|---------|--------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation | 7(4.4) | 19 | 14 | 0(2.6) | 40 |
| Z | 7 (4,4) | (13,6) | (18,4) | 0 (3,0) | 40 |
| Generation | 2(4,4) | 10 | 21 | 6 (2 6) | 40 |
| Y | 5 (4,4) | (13,6) | (18,4) | 0 (3,0) | 40 |
| Generation | 1 (2 2) | 5 (6 9) | 11 | 2(1.0) | 20 |
| Х | 1 (2,2) | 5 (0,8) | (9,2) | 5 (1,8) | 20 |
| Total | 11 | 34 | 46 | 9 | 100 |

| Consticution | Tı | rust |
|--------------|---------|---------|
| Generation | DT | Т |
| Generation Z | 26 (18) | 14 (22) |
| Generation Y | 13 (18) | 27 (22) |
| Generation X | 6 (9) | 14 (11) |

TABLE 13 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 COMBINING FAIRNESS INDICATORS

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia in terms of fairness indicators.
- H_1 : There is a relationship between generation and the level of public trust in personal data protection in Indonesia in terms of fairness indicators.

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,v)} = 5,9915$, with free degree v = (b-1)(k-1).

Test Statistics:

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}^{2}}{E(n_{ij})}$$

$$\chi^{2} = 10,8081$$

Decision:

In this study because the test statistic value $\chi^2 = 10,8081 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

So, there is a relationship between generation and the level of public trust in personal data protection in Indonesia in terms of fariness indicators.

4.3 Chi-Square Test Viewed from The Perceived Benefit Dimension

In this study, the dimension used as the basis for reviewing public trust in personal data protection in Indonesia is the dimension of perceived benefits consisting of indicators of previous experience and effectiveness.

TABLE 14 CONTINGENCY TABLE AND EXPECTED FREQUENCIES

 PRIOR EXPERIENCE INDICATOR

| Congration | | Total | | | |
|------------|---------|---------|--------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation | 10 | 15 | 14 | 1 (4,8) | 40 |
| Z | (5,2) | (12,4) | (17,6) | | |
| Generation | 1 (5,2) | 13 | 18 | 8 (4,8) | 40 |
| Y | | (12,4) | (17,6) | | |
| Generation | 2 (2,6) | 3 (6,2) | 12 | 3 (2,4) | 20 |
| Х | | | (8,8) | | |
| Total | 13 | 31 | 44 | 12 | 100 |

TABLE 15 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF

 INCORPORATION PREVIOUS EXPERIENCE INDICATOR

| Concretion | Trust | | |
|--------------|-----------|-----------|--|
| Generation | DT | Т | |
| Generation Z | 25 (17,6) | 15 (22,4) | |
| Generation Y | 14 (17,6) | 26 (22,4) | |
| Generation X | 5 (8,8) | 15 (11,2) | |

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia as measured by previous experience.
- H_1 : There is a relationship between generation and the level of public trust in personal data protection inIndonesia as measured by previous experience.

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,v)} = 5,9915$, with free degree v = (b-1)(k-1).

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}^{2}}{E(n_{ij})}$$
$$\chi^{2} = 9,8011$$

Decision:

In this study because the test statistic value $\chi^2 = 9,8011 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

Thus, there is a relationship between generation and the level of public trust in personal data protection in Indonesia as measured by previous experience.

TABLE 16 CONTINGENCY TABLE AND EXPECTED FREQUENCIES

 EFFECTIVENESS INDICATORS

| Congration | | Total | | | |
|------------|---------|--------|---------|---------|-------|
| Generation | SDT | DT | Т | ST | Total |
| Generation | 10 | 21 | 9 (2,8) | 0 (2,4) | 40 |
| Z | (4,8) | (16,4) | | | |
| Generation | 2 (4,8) | 9 | 25 | 4 (2,4) | 40 |
| Y | | (16,4) | (2,8) | | |
| Generation | 0 (2,4) | 11 | 7 (1,4) | 2 (1,2) | 20 |
| Х | | (8,2) | | | |
| Total | 12 | 41 | 41 | 6 | 100 |

| TABLE 17 CONTINGENCY TABLE AND EXPECTED FREQUENCY OF |
|--|
| INCORPORATION PREVIOUS EXPERIENCE INDICATOR |

| Comparties | Tı | rust |
|--------------|-----------|----------|
| Generation | DT | Т |
| Generation Z | 31 (21,2) | 9 (5,2) |
| Generation Y | 11 (21,2) | 29 (5,2) |
| Generation X | 11 (10,6) | 9 (2,6) |

Hypothesis:

- H_0 : There is no relationship between generation and the level of public trust in personal data protection in Indonesia in terms of effectiveness indicators
- H_1 : There is a relationship between generation and the level of public trust in personal data protection inIndonesia in terms of effectiveness indicators.

Critical Area:

 H_0 is rejected if $\chi^2_{hitung} > \chi^2_{(\alpha,\nu)} = 5,9915$, with free degree $\nu = (b-1)(k-1)$.

Test Statistics:

The test statistics obtained based on the calculation are:

$$\chi^{2} = \sum_{j=1}^{3} \sum_{i=1}^{2} \frac{\{n_{ij} - E(n_{ij})\}^{2}}{E(n_{ij})}$$
$$\chi^{2} = 136.9144$$

Decision:

In this study because the test statistic value $\chi^2 = 136,9144 > 5,9915$ then the decision is Reject H_0 .

Conclusion:

So, there is a relationship between generation and the level of public trust in personal data protection inIndonesia in terms of effectiveness indicators.

4.4 Cramer's V Coefficient

To measure the association between indicators, *Cramer's* V coefficient analysis is carried out with the formula (3)So that the results are as shown in the following table:

| AND ERAMERS V COLITICIENT TOR EACH INDICATOR | | | | | |
|--|-----------------|-------------|--|--|--|
| Trust Level | Chi-Square Test | Cramer's V | | | |
| Indicator | Decision | coefficient | | | |
| Trustworthy | Reject H_0 | 0.20395079 | | | |
| Responsive | Reject H_0 | 0.18115779 | | | |
| Definition | Reject H_0 | 0.22892980 | | | |
| Justice | Reject H_0 | 0.23246592 | | | |
| Previous | Deiget U | 0 22127227 | | | |
| experience | Reject H_0 | 0.22137227 | | | |
| Effectiveness | Reject H_0 | 0.82738857 | | | |

| TABLE | 18 SU | MMA | RY OF | CHI-SO | QUARE | TEST | DECISION | RESULTS |
|---------|-------|---------|-------|--------|--------|-------|----------|---------|
| AND CR. | AMEI | R'S V C | OEFFI | CIENT | FOR EA | CH IN | DICATOR | |

5. DISCUSSION

Based on Figure 1, 9% (9 respondents) said they did not understand personal data, 41% (41 respondents) said they understood, and 50% (50 respondents) said they understood very well. These results can be concluded that many people in Indonesia already understand personal data.

Based on Figure 2, the distribution of respondents includes 20% (20 respondents) in the Generation X age group, 40% (40 respondents) in the Generation Y age group, 40% (40 respondents) in the Generation Z age group.

Based on the Table 2, 3, and 5 results of the validity test for each dimension, it is found that all question variables have a significance value of $0.000 \le 0.05$, so it can be

concluded that all questions in the questionnaire can measure the same aspect, or can be said to be valid.

Based on the Table 5 analysis results with the Cronbach's Alpha value on the three dimensions, the Cronbach's Alpha value> 0.8 is obtained, which means that the measuring instrument in the questionnaire has high reliability.

Based on Table 6, it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number of cells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in table 7.

Based on Table 7, there is a relationship between generation and the level of public trust in personal data protectionin Indonesia as measured by the trustworthiness indicator.

Based on Table 8 it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number of cells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in Table 9.

Based on Table 9, there is a relationship between generation and the level of public trust in personal data protectionin Indonesia as measured by the responsiveness indicator.

Based on Table 10, it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number ofcells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in Table 11.

Based on Table 11, there is a relationship between generation and the level of public trust in personal data protectionin Indonesia in terms of understanding indicators.

Based on Table 12, it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number ofcells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in Table 13.

Based on Table 13, there is a relationship between generation and the level of public trust in personal data protectionin Indonesia in terms of justice indicators.

Based on Table 14, it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number ofcells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in Table 15.

Based on Table 15, there is a relationship between generation and the level of public trust in personal dataprotection in Indonesia as measured by previous experience.

Based on Table 16, it can be seen that there is a frequency of expectation <5 which exceeds 20% of the number ofcells, so the STP category is combined with TP into the TP category and the P category with SP into the P category described in Table 17.

Based on Table 17, there is a relationship between generation and the level of public trust in personal data protection in Indonesia in terms of effectiveness indicators. Based on Table 18, the *Chi-Square* test decision is rejected H_0 for all indicators. Therefore, it can be concluded that the level of public trust in data protection in Indonesia depends on generation in terms of all indicators.

Table 18 also shows that the largest *Cramer's V* coefficient value is owned by the effectiveness indicator with a closeness value of 0.82738857. Thus, the effectiveness indicator is the most influential factor on public trust. Thus, the priority indicator that must be evaluated is effectiveness.

Based on the results of this study, overall there are several evaluations that can be further examined by the government, namely increasing the effectiveness in handling data leakage cases in Indonesia, so that people have confidence in the government regarding their personal data.

6. CONCLUSIONS

The results of the analysis show that there is a dependence on the level of public trust in the protection of people'spersonal data and the age of the community, as well as on an influential indicator, namely effectiveness. This is a badachievement for the government, so it is necessary to hold an evaluation to increase effectiveness in handling data leakage cases in Indonesia.

7. REFERENCES

- [1] Abidin, J., Satyahadewi, N., and Martha, S., "Analisis Korespondensi untuk Mengetahui Keterkaitan Alasan Mahasiswa Memilih Jurusan di FMIPA Universitas Tanjungpura", Bimaster: Buletin Ilmiah Matematika Statistika dan Terapannya, vol. 10, 2021.
- [2] Imaduddin, A. H., (2022, September 22), "Inilah 4 Poin Penting Undang-Undang Perlindungan Data Pribadi (UU PDP)" [Online], Available: https://nasional.tempo.co/read/1637212/inilah-4poin-penting-undang-undang-pelindungan-datapribadi-uu-pdp
- [3] Jannah, L. M., (2022, September 21), "UU Perlindungan Data Pribadi dan Tantangan Implementasinya" [Online], Available: https://fia.ui.ac.id/uu-perlindungan-data-pribadidan-tantangan-implementasinya/
- [4] Kusuma, A. W. A., Srinadi, I. G. A. M., and Sari, K., "Aplikasi Analisis Korespondensi untuk Melihat Karakteristik Usaha Pariwisata di Provinsi Bali", E-Journal of Mathematics, Vol. 5, pp. 76 – 81, 2016.
- [5] Mansur, A. and Gultom, E., "Cyber Law Aspek Hukum Teknologi Informasi", Bandung: Refika Aditama, 2005.
- [6] Noor and Juliansyah, "*Metodologi Penelitian*", Jakarta: Kencana Prenada Media Grup, 2012.
- [7] Pradana, A, "Hubungan kanker serviks dan faktor eksternal penyebabnya menggunakan tabel kontingensi", Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim, 2022.
- [8] Pratama, A. B. and Suputra, I. D. G. D., "Pengaruh Persepsi Manfaat, Persepsi Kemudahan Penggunaan, dan Tingkat Kepercayaan Pada Minat

Menggunakan Uang Elektronik", E-Journal of Accounting, Vol. 27, pp. 927-953, 2019.

- [9] Rahmawati, N., "Analisis Manajemen Risiko Ancaman Kejahatan Siber (Cyber Crime) Dalam Peningkatan Cyber Defense", Jurnal Pertahanan & Bela Negara, Vol. 7, 2017.
- [10] Ramdan, F., (2022, September 21), "Heboh Kasus Peretasan Bjorka, Ini Penyebab Indonesia Masih Rentan Kebocoran Data" [Online], Available: https://techno.okezone.com/read/2022/09/21/54/267 2267/heboh-kasus-peretasan-bjorka-ini-penyebabindonesia-masih-rentan- kebocoran-data
- [11] Sari, N. W., "Kejahatan Cyber Dalam Perkembangan Teknologi Informasi Berbasis Komputer", Jurnal Surya Kencana Dua, Vol.5, 2018.
 [12] Siegel, S., "Statistik Nonparametrik untuk Ilmu-ilmu
- [12] Siegel, S., "*Statistik Nonparametrik untuk Ilmu-ilmu Sosial*", Jakarta: Gramedia, 1986.
- [13] Sugiyono,, " Metode Penelitian Pendidikan Pendekatan Kuantitatif, kualitatif dan R&D" Bandung: Alfabeta, 2010
- [14] Sugiyono., "Metode Penelitian Kuantitatif, Kualitatif dan R&D", Bandung: Alfa1beta, 2017.
- [15] Sugiyono., "Metode Penelitian Kuantitatif, Kualitatif dan R&D", Bandung: Alfa1beta, 2009.
- [16] Sugiyono., "Metode Penelitian Kuantitatif", Bandung: Alfa1beta, 2018.
- [17] Sugiyono., "Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif, dan R&D)", Bandung: Alfa1beta, 2015.
- [18] Sugiyono., "Statistika Untuk Penelitian", Bandung: Alfa1beta, 2007.