**APPENDIX I**

**T-Test**

1. **Statement of the Hypothesis**

**Null Hypothesis (Ho).** There is no significant difference between the existing and the proposed system in terms of security, efficiency and reliability.

**Alternative Hypothesis (Ha).** There is a significant difference between the existing and the proposed system in terms of accuracy, reliability and security.

1. **Criteria for Evaluation**

The following are the criteria utilized to evaluate the performance of both the existing and the proposed system.

* 1. Security
  2. Efficiency
  3. Reliability

1. **Computation of Weighted Mean**
2. **Existing System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Scores | | | | |
| 5 | 4 | 3 | 2 | 1 |
| Security | 0 | 2 | 8 | 36 | 108 |
| Efficiency | 0 | 6 | 23 | 39 | 112 |
| Reliability | 0 | 4 | 5 | 56 | 100 |

**Computation of the Mean**

Security = 5(0) + 4(2) + 3(8) + 2(36) + 1(108)

222

= 0.955

Efficiency = 5(0) + 4(6) + 3(23) + 2(39) + 1(112)

222

= 1.275

Reliability = 5(0) + 4(4) + 3(5) + 2(56) + 1(100)

222

= 1.095

1. **Proposed System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Scores | | | | |
| 5 | 4 | 3 | 2 | 1 |
| Security | 53 | 127 | 34 | 6 | 2 |
| Efficiency | 56 | 115 | 40 | 7 | 4 |
| Reliability | 69 | 92 | 50 | 8 | 3 |

**Computation of the Mean**

Security = 5(53) + 4(127) + 3(34) + 2(6) + 1(2)

222

= 4.005

Efficiency = 5(56) + 4(115) + 3(40) + 2(7) + 1(4)

222

= 3.887

Reliability = 5(69) + 4(92) + 3(50) + 2(8) + 1(3)

222

= 3.973

**Computation of Weighted Mean**

1. Existing System

= 0.955+1.275+1.095

3

= **1.108**

1. Proposed System

= 4.005+3.887+3.973

3

= **3.995**

**Computation of Variance**

1. Existing System

= 0.023 + 0.167 + 0.000

2

= 0.095

1. Proposed System

= 0.000 + 0.012 + 0.000

2

= 0.053

**Computation of t-computed (tc)**

\*tt value is based on the level of significance used.

1. **Decision Rule**
2. If tc > tt ; accept Ha, reject Ho
3. If tc < tt ; accept Ho, reject Ha
4. **Findings**

Since the t-computed (129.46) is greater than the t-tabulated (1.96), it could be justified that there is a significant difference between the existing and the proposed system in terms of security, efficiency and reliability.