# Diagnosis of Operational Failures in the SITM of Cartagena Diagnóstico de las Fallas Operativas del SITM en Cartagena

Alexander Sánchez González \* Amparo Hazbun Martinez † Maria Mercedes Romero Racine ‡ Misael Jose Pastrana Fuentes §

2025-04-17

#### Abstract

### Background:

Aims: Jorge Luis Villalba

Methods:

Results:

Conclusions:

Keywords: Colombia, méxico, word 3, word 4, word 5, word 6.

#### Resumen

#### **Antecedentes:**

**Objetivos:** 

Método:

Resultados:

Conclusión:

Palabras clave: Colombia, méxico, word 3, word 4, word 5, word 6.

<sup>\*</sup>Universidad Tecnológica de Bolívar, Colombia, e-mail: <a href="mailto:sancheza@utb.edu.co">sancheza@utb.edu.co</a>, ID: T00054514 †Universidad Tecnológica de Bolívar, Colombia, e-mail: <a href="mailto:ahazbun@utb.edu.co">ahazbun@utb.edu.co</a>, ID: T000XXXXX †Universidad Tecnológica de Bolívar, Colombia, e-mail: <a href="mailto:mracine@utb.edu.co">mracine@utb.edu.co</a>, ID: T000XXXXX

<sup>§</sup>Universidad Tecnológica de Bolívar, Colombia, e-mail: pastranam@utb.edu.co, ID: T000XXXXX

#### 1. Introduction

Distribution that, as in the preceding mode, can be distinguished by the occurrence probability allocated to the three scenarios. This paper presents an analysis of the distribution of the sample proportion and the difference in sample proportions [1] taken from a randomly generated population textit Mi rosoft.

#### 2. Data

Distribution that, as in the preceding mode, can be distinguished by the occurrence probability allocated to the three scenarios [2]. This paper presents an analysis of the distribution of the sample pro portion and the difference in sample proportions taken from a randomly generated population textit Mi rosoft [4, pág 21].

#### Ejemplo de ecuación 1

$$\int x^3 dx = \frac{x^4}{4} + C \tag{1}$$

#### 3. Materials and Methods



Figura 1: Villalba

#### 4. Results and Discussion

Distribution that, as in the preceding mode, can be distinguished by the occurrence probability allocated to the three scenarios.

This paper presents an analysis of the distribution of the sample pro

## Ejemplo de ecuación 2

$$\alpha = P(\text{``Error tipo I"})$$

$$\alpha = P(\text{"Rechazar} H_0\text{"}|\text{"}H_0\text{es verdadera"})$$

$$\alpha = P(|\frac{\bar{x} - \theta_0}{\sigma/\sqrt{n}}| > c|\theta = \theta_0)$$

$$\alpha = P(|Z| > c) \text{ con } Z \sim \mathcal{N}(0, 1).$$

## Ejemplo de gráfica 1

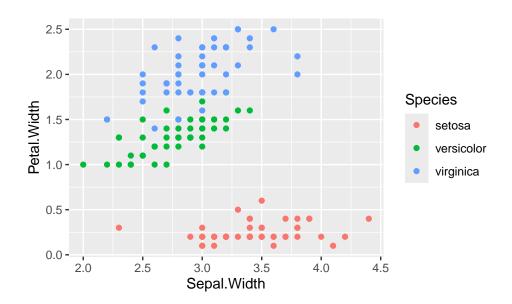


Figura 2: ggplot

## Ejemplo de tabla 1

Tabla 1: Datos de pobreza en Colombia en 2010 y 2011.

|               | Pob1 | Pob2     | Pobext1 | Pobext2 | Gini1    | Gini2 |
|---------------|------|----------|---------|---------|----------|-------|
|               | 2010 | 2011     | 2010    | 2011    | 2010     | 2011  |
| Pasto         | 43,2 | 40,6     | 11,7    | 8,8     | 52,3     | 52,2  |
| Montería      | 39,7 | 37,5     | 6,7     | 6,5     | 52,5     | 53,0  |
| Barranquilla  | 39,5 | 34,7     | 7,4     | 5,3     | 49,7     | 47,2  |
| Cúcuta        | 39,3 | 33,9     | 8,4     | 5,7     | 47,9     | 47,1  |
| Cartagena     | 34,2 | $33,\!4$ | 6,2     | 4,7     | 48,9     | 48,8  |
| Cali          | 26,1 | 25,1     | 6,4     | 5,2     | 52,9     | 50,4  |
| Villavicencio | 25,4 | 23,0     | 4,8     | 4,02    | 46,7     | 46,7  |
| Ibagué        | 26,6 | 22,0     | 4,3     | 2,7     | 49,5     | 44,9  |
| Pereira       | 26,8 | 21,6     | 3,8     | 2,2     | 45,6     | 45,1  |
| Manizales     | 23,8 | 19,2     | 4,7     | 2,3     | 49,5     | 47,1  |
| Medellín      | 22,0 | 19,2     | 5,6     | 4,0     | $53,\!8$ | 50,7  |
| Bogotá        | 15,5 | 13,1     | 2,6     | 2,0     | 52,6     | 52,2  |
| Bucaramanga   | 10,9 | 10,7     | 1,2     | 1,1     | 45,0     | 44,9  |

# Ejemplo de tabla 2

Tabla 2: marco de datos

| Sepal.Length | Sepal.Width | Petal.Length | Petal.Width | Species |
|--------------|-------------|--------------|-------------|---------|
| 5.1          | 3.5         | 1.4          | 0.2         | setosa  |
| 4.9          | 3.0         | 1.4          | 0.2         | setosa  |
| 4.7          | 3.2         | 1.3          | 0.2         | setosa  |
| 4.6          | 3.1         | 1.5          | 0.2         | setosa  |
| 5.0          | 3.6         | 1.4          | 0.2         | setosa  |
| 5.4          | 3.9         | 1.7          | 0.4         | setosa  |

## 5. Conclusion and Recommendations

# Acknowledgments

## Appendix A. Dataset link

# References

- [1] Referencia número uno.
- [2] Referencia número dos.
- [3] Referencia número tres.
- [4] BAZARAA, M.S., J.J. JARVIS y H.D. SHERALI, *Programación lineal y flujo en redes*, segunda edición, Limusa, México, DF, 2004.