**Universidad Tecnológica de Panamá**

**Facultad de Ingeniería en Sistemas Computacionales**

**Departamento de Ingeniería de Software**

**Licenciatura en Ingeniería de Software**

**Estadística con Herramientas Informáticas**

**Avance de proyecto**

**Docente:**

Juan Marcos Castillo

**Estudiante:**

López, Lourdes (8-988-2442)

**Grupo:**

1SF131

**Fecha de Entrega:**

26 de julio de 2023

ANÁLISIS NO. 1: CALIFICACIONES DE UN GRUPO DE 56 ESTUDIANTES

## REPORTE PREELIMINAR

Base de Datos ‘CALIFICACIONES’

ANALÍTICA VISUAL

**OBSERVACIONES**

Se observa que por test, no existe una tendencia en el rango de calificaciones. Estas se encuentran muy dispersas. Sin embargo, las calificaciones más bajas se encuentranen el Test No.8, 9 y 12.

OBSERVACIONES

El promedio de rendimiento en las pruebas fue disminuyendo a medida se avanzó en el periodo académico. Luego, en la prueba final, se elevó.

OBSERVACIONES

No existe un patrón de comportamiento específico con la muestra escogida. Los resultados de cada estudiante en las pruebas depende exclusivamente de este.

DIAGRAMA DE TALLO Y HOJA

|  |  |
| --- | --- |
| **0** | 9 |
| **1** | 29 |
| **2** | 2456789 |
| **3** | 013456789 |
| **4** | 0123456789 |
| **5** | 0123456789 |
| **6** | 0123456789 |
| **7** | 0123456789 |
| **8** | 0123456789 |
| **9** | 0123456789 |
| **10** | 0 |

ANÁLISIS POR TEST

|  |  |  |
| --- | --- | --- |
|  |  |  |
| *Groups* | *Average* | *Variance* |
| Test No.1 | 70.75 | 289.3181818 |
| Test No.2 | 69.19642857 | 313.7243506 |
| Test No.3 | 68.08928571 | 354.8827922 |
| Test No.4 | 67.44642857 | 392.3243506 |
| Test No.5 | 67.30357143 | 430.4334416 |
| Test No.6 | 66 | 443.2727273 |
| Test No.7 | 66.16071429 | 459.1555195 |
| Test No.8 | 65.30357143 | 516.5788961 |
| Test No.9 | 64.39285714 | 538.7883117 |
| Test No.10 | 64.25 | 510.7 |
| Test No.11 | 64.51785714 | 511.236039 |
| Test No.12 | 65.92857143 | 504.6493506 |
|  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Test No.1* |  | *Test No.2* |  | *Test No.3* |  | *Test No.4* |  | *Test No.5* |  | *Test No.6* |  |
| **Mean** | 70.75 | **Mean** | 69.20 | **Mean** | 68.09 | **Mean** | 67.45 | **Mean** | 67.30 | **Mean** | 66.00 |
| **Median** | 70.50 | **Median** | 68.50 | **Median** | 70.00 | **Median** | 71.50 | **Median** | 69.00 | **Median** | 65.50 |
| **Mode** | 78.00 | **Mode** | 56.00 | **Mode** | 70.00 | **Mode** | 74.00 | **Mode** | 54.00 | **Mode** | 86.00 |
| **Standard Deviation** | 17.01 | **Standard Deviation** | 17.71 | **Standard Deviation** | 18.84 | **Standard Deviation** | 19.81 | **Standard Deviation** | 20.75 | **Standard Deviation** | 21.05 |
| **Sample Variance** | 289.32 | **Sample Variance** | 313.72 | **Sample Variance** | 354.88 | **Sample Variance** | 392.32 | **Sample Variance** | 430.43 | **Sample Variance** | 443.27 |
| **Minimum** | 40.00 | **Minimum** | 34.00 | **Minimum** | 35.00 | **Minimum** | 28.00 | **Minimum** | 26.00 | **Minimum** | 29.00 |
| **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Test No.7* |  | *Test No.8* |  | *Test No.9* |  | *Test No.10* |  | *Test No.11* |  | *Test No.12* |  |
| **Mean** | 66.16 | **Mean** | 65.30 | **Mean** | 64.39 | **Mean** | 64.25 | **Mean** | 64.52 | **Mean** | 65.93 |
| **Median** | 64.00 | **Median** | 67.50 | **Median** | 65.50 | **Median** | 65.50 | **Median** | 64.00 | **Median** | 67.50 |
| **Mode** | 64.00 | **Mode** | 74.00 | **Mode** | 100.00 | **Mode** | 100.00 | **Mode** | 100.00 | **Mode** | 88.00 |
| **Standard Deviation** | 21.43 | **Standard Deviation** | 22.73 | **Standard Deviation** | 23.21 | **Standard Deviation** | 22.60 | **Standard Deviation** | 22.61 | **Standard Deviation** | 22.46 |
| **Sample Variance** | 459.16 | **Sample Variance** | 516.58 | **Sample Variance** | 538.79 | **Sample Variance** | 510.70 | **Sample Variance** | 511.24 | **Sample Variance** | 504.65 |
| **Minimum** | 26.00 | **Minimum** | 19.00 | **Minimum** | 9.00 | **Minimum** | 12.00 | **Minimum** | 19.00 | **Minimum** | 20.00 |
| **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 | **Maximum** | 100.00 |

DESCRIPCIÓN DE VARIABLES

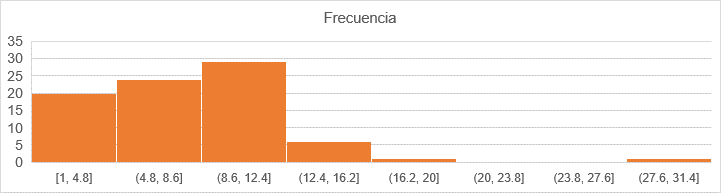
*Id de Estudiante:* Es el identificador único asignado a cada estudiante que realizó las pruebas.

*Test No.1 al Test No.12:* Valor numérico.Son los nombres de las pruebas realizadas a los estudiantes, donde se registraron los resultados obtenidos por cada estudiante en cada una de las pruebas. Cada Test No. representa una prueba numerada del 1 al 12. Los valores en cada celda corresponden a las calificaciones o puntajes obtenidos por los estudiantes en cada prueba.

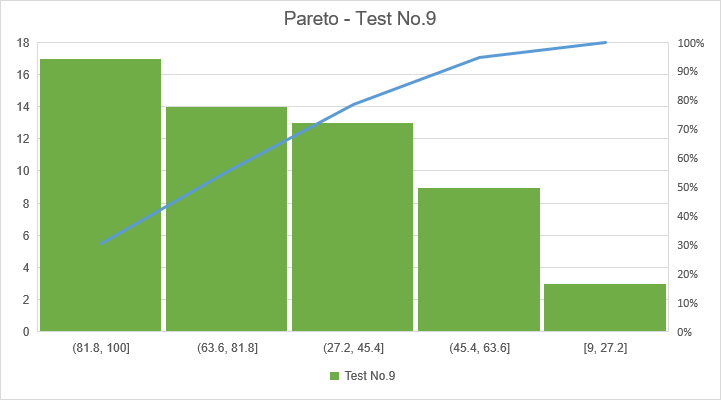
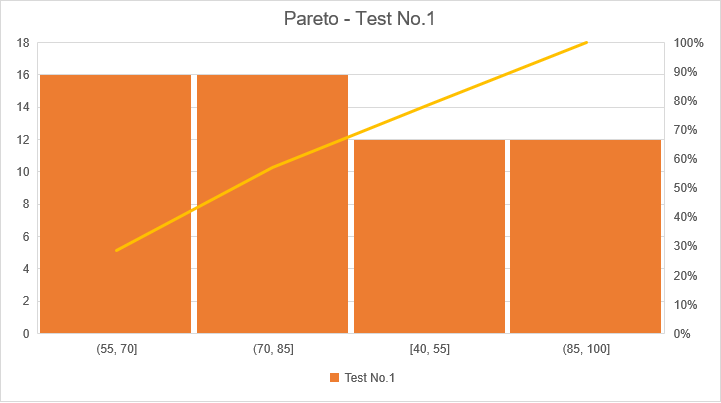
DESCRIPCIÓN DE LA APROXIMACIÓN

*Analizar el rendimiento académico de los estudiantes y obtener datos sobre el rendimiento académico de un grupo de 56 estudiantes en distintas evaluaciones.* El objetivo es identificar fortalezas y áreas de mejora para diseñar estrategias que promuevan su progreso y desarrollo académico de manera efectiva.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FRECUENCIAS E HISTOGRAMAS | | | | |
| Valor | Frecuencia | Frecuencia Acumulada | Frecuencia Relativa | Frecuencia Relativa Acumulada |
| 9 | 1 | 1 | 0.0015 | 0.0015 |
| 12 | 2 | 3 | 0.0030 | 0.0045 |
| 19 | 3 | 6 | 0.0045 | 0.0089 |
| 20 | 2 | 8 | 0.0030 | 0.0119 |
| 22 | 3 | 11 | 0.0045 | 0.0164 |
| 24 | 1 | 12 | 0.0015 | 0.0179 |
| 25 | 1 | 13 | 0.0015 | 0.0193 |
| 26 | 3 | 16 | 0.0045 | 0.0238 |
| 27 | 3 | 19 | 0.0045 | 0.0283 |
| 28 | 2 | 21 | 0.0030 | 0.0313 |
| 29 | 3 | 24 | 0.0045 | 0.0357 |
| 30 | 2 | 26 | 0.0030 | 0.0387 |
| 31 | 3 | 29 | 0.0045 | 0.0432 |
| 33 | 2 | 31 | 0.0030 | 0.0461 |
| 34 | 6 | 37 | 0.0089 | 0.0551 |
| 35 | 8 | 45 | 0.0119 | 0.0670 |
| 36 | 6 | 51 | 0.0089 | 0.0759 |
| 37 | 9 | 60 | 0.0134 | 0.0893 |
| 38 | 8 | 68 | 0.0119 | 0.1012 |
| 39 | 9 | 77 | 0.0134 | 0.1146 |
| 40 | 9 | 86 | 0.0134 | 0.1280 |
| 41 | 6 | 92 | 0.0089 | 0.1369 |
| 42 | 3 | 95 | 0.0045 | 0.1414 |
| 43 | 10 | 105 | 0.0149 | 0.1563 |
| 44 | 12 | 117 | 0.0179 | 0.1741 |
| 45 | 10 | 127 | 0.0149 | 0.1890 |
| 46 | 11 | 138 | 0.0164 | 0.2054 |
| 47 | 10 | 148 | 0.0149 | 0.2202 |
| 48 | 8 | 156 | 0.0119 | 0.2321 |
| 49 | 4 | 160 | 0.0060 | 0.2381 |
| 50 | 9 | 169 | 0.0134 | 0.2515 |
| 51 | 3 | 172 | 0.0045 | 0.2560 |
| 52 | 5 | 177 | 0.0074 | 0.2634 |
| 53 | 8 | 185 | 0.0119 | 0.2753 |
| 54 | 15 | 200 | 0.0223 | 0.2976 |
| 55 | 9 | 209 | 0.0134 | 0.3110 |
| 56 | 8 | 217 | 0.0119 | 0.3229 |
| 57 | 10 | 227 | 0.0149 | 0.3378 |
| 58 | 12 | 239 | 0.0179 | 0.3557 |
| 59 | 12 | 251 | 0.0179 | 0.3735 |
| 60 | 7 | 258 | 0.0104 | 0.3839 |
| 61 | 16 | 274 | 0.0238 | 0.4077 |
| 62 | 8 | 282 | 0.0119 | 0.4196 |
| 63 | 12 | 294 | 0.0179 | 0.4375 |
| 64 | 17 | 311 | 0.0253 | 0.4628 |
| 65 | 7 | 318 | 0.0104 | 0.4732 |
| 66 | 5 | 323 | 0.0074 | 0.4807 |
| 67 | 12 | 335 | 0.0179 | 0.4985 |
| 68 | 11 | 346 | 0.0164 | 0.5149 |
| 69 | 4 | 350 | 0.0060 | 0.5208 |
| 70 | 13 | 363 | 0.0193 | 0.5402 |
| 71 | 11 | 374 | 0.0164 | 0.5565 |
| 72 | 7 | 381 | 0.0104 | 0.5670 |
| 73 | 14 | 395 | 0.0208 | 0.5878 |
| 74 | 16 | 411 | 0.0238 | 0.6116 |
| 75 | 8 | 419 | 0.0119 | 0.6235 |
| 76 | 10 | 429 | 0.0149 | 0.6384 |
| 77 | 5 | 434 | 0.0074 | 0.6458 |
| 78 | 10 | 444 | 0.0149 | 0.6607 |
| 79 | 8 | 452 | 0.0119 | 0.6726 |
| 80 | 9 | 461 | 0.0134 | 0.6860 |
| 81 | 8 | 469 | 0.0119 | 0.6979 |
| 82 | 7 | 476 | 0.0104 | 0.7083 |
| 83 | 10 | 486 | 0.0149 | 0.7232 |
| 84 | 15 | 501 | 0.0223 | 0.7455 |
| 85 | 12 | 513 | 0.0179 | 0.7634 |
| 86 | 11 | 524 | 0.0164 | 0.7798 |
| 87 | 12 | 536 | 0.0179 | 0.7976 |
| 88 | 8 | 544 | 0.0119 | 0.8095 |
| 89 | 11 | 555 | 0.0164 | 0.8259 |
| 90 | 7 | 562 | 0.0104 | 0.8363 |
| 91 | 9 | 571 | 0.0134 | 0.8497 |
| 92 | 12 | 583 | 0.0179 | 0.8676 |
| 93 | 8 | 591 | 0.0119 | 0.8795 |
| 94 | 9 | 600 | 0.0134 | 0.8929 |
| 95 | 12 | 612 | 0.0179 | 0.9107 |
| 96 | 4 | 616 | 0.0060 | 0.9167 |
| 97 | 4 | 620 | 0.0060 | 0.9226 |
| 98 | 8 | 628 | 0.0119 | 0.9345 |
| 99 | 8 | 636 | 0.0119 | 0.9464 |
| 100 | 31 | 667 | 0.0461 | 0.9926 |



PARETOGRAMAS



Tomamos como muestra los *Tests No. 1 y 9*. Mediante los *paretogramas*, logramos concluir que en el Test No.1, las calificaciones que mayor impacto tuvieron fueron las que se encuentran entre 85 y 100. En el caso del Test No.9, las de mayor impacto fueron los que se encuentran entre 9 y 27.2. La línea nos ayuda a identificar el punto en el que se acumula la mayoría del efecto.

MEDIA Y DESVIACIÓN ESTÁNDAR

Para este caso, nuestra muestra es la población total ya que deseamos es estudiar el resultado final y desempeño total de los estudiantes; no por prueba.

**MEDIA = 66.61**

Los estudiantes obtuvieron en promedio 66.61 en el conjunto de pruebas evaluadas.

**DESVIACIÓN ESTÁNDAR = 20.85**

En promedio, las calificaciones se desvían alrededor de 20.85 puntos de la media.

## ANÁLISIS DE CONVERSIÓN DE DISTRIBUCIÓN DISCRETA A DISTRIBUCIÓN CONTINUA

Las categorías del histograma no son más de 30, por lo tanto, no podemos realizar la conversión de distribución discreta a distribución continua.

## ANÁLISIS DE CORRELACIÓN

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *Test No.1* | *Test No.2* | *Test No.3* | *Test No.4* | *Test No.5* | *Test No.6* | *Test No.7* | *Test No.8* | *Test No.9* | *Test No.10* | *Test No.11* | *Test No.12* |
| **Test No.1** | 1 |  |  |  |  |  |  |  |  |  |  |  |
| **Test No.2** | 0.94 | 1 |  |  |  |  |  |  |  |  |  |  |
| **Test No.3** | 0.88 | 0.96 | 1 |  |  |  |  |  |  |  |  |  |
| **Test No.4** | 0.85 | 0.92 | 0.95 | 1 |  |  |  |  |  |  |  |  |
| **Test No.5** | 0.84 | 0.90 | 0.91 | 0.97 | 1 |  |  |  |  |  |  |  |
| **Test No.6** | 0.78 | 0.86 | 0.88 | 0.93 | 0.96 | 1 |  |  |  |  |  |  |
| **Test No.7** | 0.72 | 0.81 | 0.84 | 0.87 | 0.90 | 0.95 | 1 |  |  |  |  |  |
| **Test No.8** | 0.65 | 0.73 | 0.78 | 0.81 | 0.86 | 0.91 | 0.96 | 1 |  |  |  |  |
| **Test No.9** | 0.62 | 0.69 | 0.74 | 0.77 | 0.81 | 0.86 | 0.92 | 0.95 | 1 |  |  |  |
| **Test No.10** | 0.61 | 0.68 | 0.73 | 0.76 | 0.79 | 0.84 | 0.88 | 0.92 | 0.96 | 1 |  |  |
| **Test No.11** | 0.59 | 0.66 | 0.70 | 0.74 | 0.78 | 0.82 | 0.86 | 0.89 | 0.94 | 0.97 | 1 |  |
| **Test No.12** | 0.52 | 0.59 | 0.66 | 0.72 | 0.75 | 0.79 | 0.84 | 0.88 | 0.93 | 0.94 | 0.96 | 1 |

OBSERVACIONES

Las correlaciones entre las pruebas son generalmente positivas y fuertes, lo que indica que hay una tendencia a obtener resultados similares en diferentes pruebas.

A medida que el número de prueba aumenta, las correlaciones disminuyen gradualmente, lo que puede sugerir que algunas pruebas están más relacionadas entre sí que otras.

ANÁLISIS DE REGRESIÓN LINEAL

En los datos estudiados, no se encuentran variables dependientes. Las calificaciones de cada test no se ven influenciadas por las demás, lo que significa que únicamente tenemos variables independientes. En este contexto, carece de sentido realizar un análisis de regresión, dado que dicho análisis busca establecer una relación entre una variable dependiente y una o más variables independientes. En ausencia de una variable dependiente en nuestros datos, hemos aplicado anteriormente, otras formas de análisis o visualización que podrían ser más apropiadas para explorar posibles relaciones o patrones entre las variables.

ANÁLISIS NO. 2: RECAUDACIÓN DE PELÍCULAS DE DISNEY 2000-2016

## REPORTE PREELIMINAR

Base de Datos ‘PELÍCULAS’

ANALÍTICA VISUAL

**OBSERVACIONES**

La recaudación total se comporta de forma muy parecida a la recaudación ajustada por inflación. Mientras más alejado a la fecha actual se encuentre el estreno de la película, mayor diferencia existe entre las recaudaciones totales y esta, pero ajustada a la inflación actual.

**OBSERVACIONES**

Los géneros que más generan, en otras palabras, los que mayor clientela atraen y les va mejor en taquilla, son Aventura (por una gran diferencia), Comedia y Acción. El que menos genera sería Documentales.

**OBSERVACIONES**

Observando la recaudación por película, podemos concluir qué películas, géneros y clasificaciones son las que les va mejor en taquilla. En este caso la película de mayor recaudación es Star Wars Ep. VII: The Force Awakens. Esta es género Aventura (el género más frecuente, por ende el más taquillero). La película de menor recaudación

DESCRIPCIÓN DE VARIABLES

*Película*: Texto. Nombre de la película.

*Fecha de estreno:* Fecha en la que la película fue estrenada en cines.

*Género*: Texto. Categoría a la que pertenece la película (p. ej., Comedia, Aventura, Drama, Musical, etc.).

Clasificación MPAA: Texto. Clasificación otorgada por la Motion Picture Association of America que indica la edad recomendada para el público (p. ej., G para todos los públicos, PG para audiencia general con algunos elementos para padres, PG-13 para mayores de 13 años, R para mayores de 17 años sin compañía de un adulto, etc.).

*Recaudación total:* Valor numérico. Cantidad total de ingresos generados por la película en taquilla hasta la fecha indicada.

*Recaudación ajustada a la inflación:* Valor numérico. Cantidad total de ingresos generados por la película en taquilla, ajustada teniendo en cuenta la inflación durante el periodo de análisis (2000-2016).

DESCRIPCIÓN DE LA APROXIMACIÓN

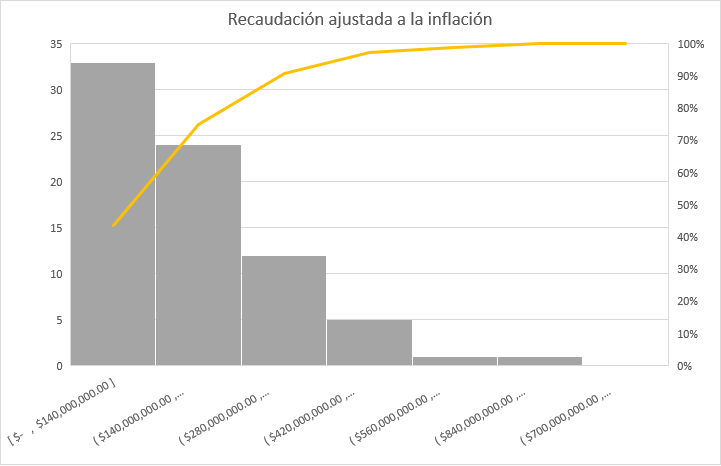
*Analizar el desempeño financiero de las películas producidas por Disney en este período y evaluar su éxito en taquilla*. Con esta información, podremos identificar tendencias de recaudación, conocer qué películas fueron más exitosas en términos de ingresos y entender cómo ha evolucionado el rendimiento financiero de Disney en la industria cinematográfica durante estos años.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FRECUENCIAS E HISTOGRAMAS | | | | |
| Valor | Frecuencia | Frecuencia Acumulada | Frecuencia Relativa | Frecuencia Relativa Acumulada |
| 9 | 1 | 1 | 0.0015 | 0.0015 |
| 12 | 2 | 3 | 0.0030 | 0.0045 |
| 19 | 3 | 6 | 0.0045 | 0.0089 |
| 20 | 2 | 8 | 0.0030 | 0.0119 |
| 22 | 3 | 11 | 0.0045 | 0.0164 |
| 24 | 1 | 12 | 0.0015 | 0.0179 |
| 25 | 1 | 13 | 0.0015 | 0.0193 |
| 26 | 3 | 16 | 0.0045 | 0.0238 |
| 27 | 3 | 19 | 0.0045 | 0.0283 |
| 28 | 2 | 21 | 0.0030 | 0.0313 |
| 29 | 3 | 24 | 0.0045 | 0.0357 |
| 30 | 2 | 26 | 0.0030 | 0.0387 |
| 31 | 3 | 29 | 0.0045 | 0.0432 |
| 33 | 2 | 31 | 0.0030 | 0.0461 |
| 34 | 6 | 37 | 0.0089 | 0.0551 |
| 35 | 8 | 45 | 0.0119 | 0.0670 |
| 36 | 6 | 51 | 0.0089 | 0.0759 |
| 37 | 9 | 60 | 0.0134 | 0.0893 |
| 38 | 8 | 68 | 0.0119 | 0.1012 |
| 39 | 9 | 77 | 0.0134 | 0.1146 |
| 40 | 9 | 86 | 0.0134 | 0.1280 |
| 41 | 6 | 92 | 0.0089 | 0.1369 |
| 42 | 3 | 95 | 0.0045 | 0.1414 |
| 43 | 10 | 105 | 0.0149 | 0.1563 |
| 44 | 12 | 117 | 0.0179 | 0.1741 |
| 45 | 10 | 127 | 0.0149 | 0.1890 |
| 46 | 11 | 138 | 0.0164 | 0.2054 |
| 47 | 10 | 148 | 0.0149 | 0.2202 |
| 48 | 8 | 156 | 0.0119 | 0.2321 |
| 49 | 4 | 160 | 0.0060 | 0.2381 |
| 50 | 9 | 169 | 0.0134 | 0.2515 |
| 51 | 3 | 172 | 0.0045 | 0.2560 |
| 52 | 5 | 177 | 0.0074 | 0.2634 |
| 53 | 8 | 185 | 0.0119 | 0.2753 |
| 54 | 15 | 200 | 0.0223 | 0.2976 |
| 55 | 9 | 209 | 0.0134 | 0.3110 |
| 56 | 8 | 217 | 0.0119 | 0.3229 |
| 57 | 10 | 227 | 0.0149 | 0.3378 |
| 58 | 12 | 239 | 0.0179 | 0.3557 |
| 59 | 12 | 251 | 0.0179 | 0.3735 |
| 60 | 7 | 258 | 0.0104 | 0.3839 |
| 61 | 16 | 274 | 0.0238 | 0.4077 |
| 62 | 8 | 282 | 0.0119 | 0.4196 |
| 63 | 12 | 294 | 0.0179 | 0.4375 |
| 64 | 17 | 311 | 0.0253 | 0.4628 |
| 65 | 7 | 318 | 0.0104 | 0.4732 |
| 66 | 5 | 323 | 0.0074 | 0.4807 |
| 67 | 12 | 335 | 0.0179 | 0.4985 |
| 68 | 11 | 346 | 0.0164 | 0.5149 |
| 69 | 4 | 350 | 0.0060 | 0.5208 |
| 70 | 13 | 363 | 0.0193 | 0.5402 |
| 71 | 11 | 374 | 0.0164 | 0.5565 |
| 72 | 7 | 381 | 0.0104 | 0.5670 |
| 73 | 14 | 395 | 0.0208 | 0.5878 |
| 74 | 16 | 411 | 0.0238 | 0.6116 |
| 75 | 8 | 419 | 0.0119 | 0.6235 |
| 76 | 10 | 429 | 0.0149 | 0.6384 |
| 77 | 5 | 434 | 0.0074 | 0.6458 |
| 78 | 10 | 444 | 0.0149 | 0.6607 |
| 79 | 8 | 452 | 0.0119 | 0.6726 |
| 80 | 9 | 461 | 0.0134 | 0.6860 |
| 81 | 8 | 469 | 0.0119 | 0.6979 |
| 82 | 7 | 476 | 0.0104 | 0.7083 |
| 83 | 10 | 486 | 0.0149 | 0.7232 |
| 84 | 15 | 501 | 0.0223 | 0.7455 |
| 85 | 12 | 513 | 0.0179 | 0.7634 |
| 86 | 11 | 524 | 0.0164 | 0.7798 |
| 87 | 12 | 536 | 0.0179 | 0.7976 |
| 88 | 8 | 544 | 0.0119 | 0.8095 |
| 89 | 11 | 555 | 0.0164 | 0.8259 |
| 90 | 7 | 562 | 0.0104 | 0.8363 |
| 91 | 9 | 571 | 0.0134 | 0.8497 |
| 92 | 12 | 583 | 0.0179 | 0.8676 |
| 93 | 8 | 591 | 0.0119 | 0.8795 |
| 94 | 9 | 600 | 0.0134 | 0.8929 |
| 95 | 12 | 612 | 0.0179 | 0.9107 |
| 96 | 4 | 616 | 0.0060 | 0.9167 |
| 97 | 4 | 620 | 0.0060 | 0.9226 |
| 98 | 8 | 628 | 0.0119 | 0.9345 |
| 99 | 8 | 636 | 0.0119 | 0.9464 |
| 100 | 31 | 667 | 0.0461 | 0.9926 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Recaudación total** | |  |  |  |
|  |  |  |  |  |
| *Media* | $ 191,521,734.75 |  |  |  |
| *Mediana* | $ 137,855,863.00 |  |  |  |
| *Desviación estándar* | $ 159,351,073.57 |  |  |  |
| *Mínimo* | $ 9,103,630.00 |  |  |  |
| *Máximo* | $ 936,662,225.00 |  |  |  |
| *Rango* | $ 927,558,595.00 |  |  |  |
|  |  |  |  |  |
| *Bin* | *Frecuencia* | *Frecuencia acumulada* | *Frecuencia Relativa* | *Frecuencia Relativa Acumulada* |
| $ 125,048,454.38 | 33 | 33 | 0.4400 | 0.4400 |
| $ 240,993,278.75 | 18 | 51 | 0.2400 | 0.6800 |
| $ 356,938,103.13 | 13 | 64 | 0.1733 | 0.8533 |
| $ 472,882,927.50 | 7 | 71 | 0.0933 | 0.9467 |
| $ 9,103,630.00 | 1 | 72 | 0.0133 | 0.9600 |
| $ 588,827,751.88 | 1 | 73 | 0.0133 | 0.9733 |
| $ 704,772,576.25 | 1 | 74 | 0.0133 | 0.9867 |
| $ 820,717,400.63 | 0 | 74 | 0.0000 | 0.9867 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Recaudación ajustada a la inflación** | | |  |  |
| *Media* | $ 213,368,310.17 |  |  |  |
| *Mediana* | $ 177,954,661.00 |  |  |  |
| *Desviación estándar* | $ 163,369,223.79 |  |  |  |
| *Mínimo* | $ 14,238,144.00 |  |  |  |
| *Máximo* | $ 936,662,225.00 |  |  |  |
| *Rango* | $ 922,424,081.00 |  |  |  |
|  |  |  |  |  |
| *Bin* | *Frequency* | *Frecuencia acumulada* | *Frecuencia Relativa* | *Frecuencia Relativa Acumulada* |
| 129541154.1 | 27 | 27 | 0.3600 | 0.3600 |
| 244844164.3 | 22 | 49 | 0.2933 | 0.6533 |
| 360147174.4 | 13 | 62 | 0.1733 | 0.8267 |
| 475450184.5 | 8 | 70 | 0.1067 | 0.9333 |
| 590753194.6 | 2 | 72 | 0.0267 | 0.9600 |
| 14238144 | 1 | 73 | 0.0133 | 0.9733 |
| 706056204.8 | 1 | 74 | 0.0133 | 0.9867 |
| 821359214.9 | 0 | 74 | 0.0000 | 0.9867 |

PARETOGRAMAS



OBSERVACIONES

Las películas de mayor recaudación son las que más impacto tienen.

MEDIA Y DESVIACIÓN ESTÁNDAR

|  |  |
| --- | --- |
| **Recaudación total** | |
| **Media** | $ 191,521,734.75 |
| **Desviación estándar** | $ 159,351,073.57 |
|  |  |
|  |  |
| **Recaudación ajustada a la inflación** | |
| **Media** | $ 213,368,310.17 |
| **Desviación estándar** | $ 163,369,223.79 |

## ANÁLISIS DE CONVERSIÓN DE DISTRIBUCIÓN DISCRETA A DISTRIBUCIÓN CONTINÚA

Las categorías del histograma no son más de 30, por lo tanto, no podemos realizar la conversión de distribución discreta a distribución continua.

## ANÁLISIS DE CORRELACIÓN

|  |  |  |
| --- | --- | --- |
|  | *Recaudación total* | *Recaudación ajustada a la inflación* |
| Recaudación total | 1 |  |
| Recaudación ajustada a la inflación | 0.986348489 | 1 |

OBSERVACIONES

La correlación de aproximadamente 0.986 entre "Recaudación total" y "Recaudación ajustada a la inflación" sugiere que ambas variables están altamente relacionadas de forma positiva.

ANÁLISIS DE REGRESIÓN LINEAL

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Estadísticas de regresión*** |  | |  | |  | |  | |  | |  | |  | |
| R Múltiple | | 0.986348489 | |  | |  | |  | |  | |  | |  | |  | |
| R Cuadrado | | 0.972883342 | |  | |  | |  | |  | |  | |  | |  | |
| Adjusted R Square | | 0.972511881 | |  | |  | |  | |  | |  | |  | |  | |
| Error estándar | | 26419676.99 | |  | |  | |  | |  | |  | |  | |  | |
| Observaciones | | 75 | |  | |  | |  | |  | |  | |  | |  | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |
| **ANOVA** |  | |  | |  | |  | |  | |  | |  | |  | |
|  | ***df*** | | ***SS*** | | ***MS*** | | ***F*** | | ***Significance F*** | |  | |  | |  | |
| Regresión | 1 | | 1.82811E+18 | | 1.828E+18 | | 2619.0722 | | 6.134E-59 | |  | |  | |  | |
| Residual | 73 | | 5.0954E+16 | | 6.98E+14 | |  | |  | |  | |  | |  | |
| Total | 74 | | 1.87906E+18 | |  | |  | |  | |  | |  | |  | |
|  |  | |  | |  | |  | |  | |  | |  | |  | |
|  | ***Coeficientes*** | | ***Error Estándar*** | | ***t Stat*** | | ***P-value*** | | ***Lower 95%*** | | ***Upper 95%*** | | ***Lower 95.0%*** | | ***Upper 95.0%*** | |
| Interceptor | -13757513.94 | | 5039460.374 | | -2.7299578 | | 0.0079342 | | -23801144 | | -3713883.9 | | -23801143.98 | | -3713883.9 | |
| Recaudación ajustada a la inflación | 0.96208874 | | 0.018799288 | | 51.176872 | | 6.134E-59 | | 0.9246218 | | 0.999555667 | | 0.924621813 | | 0.999555667 | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RESIDUAL OUTPUT | |  |  | PROBABILITY OUTPUT |
|  |  |  |  |  |
| *Observation* | *Predicted Recaudación total* | *Residuals* |  | *Percentile* |
| 1 | 77498867.8 | -16991639.8 |  | 0.666666667 |
| 2 | -59155.9217 | 9162785.922 |  | 2 |
| 3 | 86352667.42 | -19411108.42 |  | 3.333333333 |
| 4 | 117845885.2 | -28549312.16 |  | 4.666666667 |
| 5 | 141349401.4 | -33104627.36 |  | 6 |
| 6 | 386541806.6 | -97118381.59 |  | 7.333333333 |
| 7 | 189730702.5 | -43959175.48 |  | 8.666666667 |
| 8 | 180545057.3 | -41319203.3 |  | 10 |
| 9 | 50670570.14 | -2768988.144 |  | 11.33333333 |
| 10 | 43720737.41 | -986282.4099 |  | 12.66666667 |
| 11 | 484747380.3 | -104218010.3 |  | 14 |
| 12 | 134491086.4 | -24268648.36 |  | 15.33333333 |
| 13 | 24549557.8 | 4781510.205 |  | 16.66666667 |
| 14 | 110509915.2 | -15360480.22 |  | 18 |
| 15 | 327292080.5 | -65850988.48 |  | 19.33333333 |
| 16 | 129227180.4 | -16220300.41 |  | 20.66666667 |
| 17 | 17091558.45 | 7289775.553 |  | 22 |
| 18 | 69764101.5 | -3753419.501 |  | 23.33333333 |
| 19 | 67143425.65 | -3203971.65 |  | 24.66666667 |
| 20 | 157450661.6 | -22063996.63 |  | 26 |
| 21 | 288473412.3 | -44390430.28 |  | 27.33333333 |
| 22 | 67133733.57 | -1805612.568 |  | 28.66666667 |
| 23 | 57820795.38 | -13843.38019 |  | 30 |
| 24 | 101559009.1 | -3736838.103 |  | 31.33333333 |
| 25 | 350999151.6 | -41578726.57 |  | 32.66666667 |
| 26 | 229608540.9 | -23162886.91 |  | 34 |
| 27 | 93044686.35 | -2396484.347 |  | 35.33333333 |
| 28 | 136399822.3 | -8692945.311 |  | 36.66666667 |
| 29 | 59983694.98 | 5298086.023 |  | 38 |
| 30 | 92968935.33 | 1545466.672 |  | 39.33333333 |
| 31 | 88520733.43 | 2038682.568 |  | 40.66666667 |
| 32 | 114876153.9 | -822394.8923 |  | 42 |
| 33 | 109428019.5 | 673955.5042 |  | 43.33333333 |
| 34 | 34123472.17 | 10153877.83 |  | 44.66666667 |
| 35 | 22969920.65 | 15204764.35 |  | 46 |
| 36 | 72295204.97 | 7280984.034 |  | 47.33333333 |
| 37 | 303093598.5 | -10089434.51 |  | 48.66666667 |
| 38 | 115399947.7 | 4036822.287 |  | 50 |
| 39 | 135296109.3 | 2559753.702 |  | 51.33333333 |
| 40 | 98149239.61 | 6251659.387 |  | 52.66666667 |
| 41 | 329769257.9 | 4421852.092 |  | 54 |
| 42 | 412840575.4 | 2164304.587 |  | 55.33333333 |
| 43 | 29827161.96 | 12573061.04 |  | 56.66666667 |
| 44 | 192503294.1 | 8318641.928 |  | 58 |
| 45 | 162900507.6 | 9162255.413 |  | 59.33333333 |
| 46 | 88484423.24 | 11483246.76 |  | 60.66666667 |
| 47 | 182048880.9 | 9401994.112 |  | 62 |
| 48 | 13542590.11 | 13150255.89 |  | 63.33333333 |
| 49 | 159808082.1 | 9897504.894 |  | 64.66666667 |
| 50 | 621299199.1 | 1980347.851 |  | 66 |
| 51 | 228008114 | 9274068.011 |  | 67.33333333 |
| 52 | 179001736.1 | 10410940.89 |  | 68.66666667 |
| 53 | 394249151.4 | 14743120.56 |  | 70 |
| 54 | 254083797.5 | 14404531.47 |  | 71.33333333 |
| 55 | 192093094.1 | 14269045.93 |  | 72.66666667 |
| 56 | 385506594.3 | 15231414.71 |  | 74 |
| 57 | 244094848.6 | 15652109.35 |  | 75.33333333 |
| 58 | 3892989.172 | 13887204.83 |  | 76.66666667 |
| 59 | 225888986.5 | 15518341.46 |  | 78 |
| 60 | 316980855.9 | 16191256.08 |  | 79.33333333 |
| 61 | 206800581.2 | 15727246.8 |  | 80.66666667 |
| 62 | 112174357.6 | 15828014.39 |  | 82 |
| 63 | 179767937.8 | 21383415.19 |  | 83.33333333 |
| 64 | 427846863.3 | 31159004.75 |  | 84.66666667 |
| 65 | 329190284.4 | 27271426.55 |  | 86 |
| 66 | 159612958 | 20589205 |  | 87.33333333 |
| 67 | 104663218.2 | 18423901.75 |  | 88.66666667 |
| 68 | 887394665.9 | 49267559.09 |  | 90 |
| 69 | 12766847.38 | 14802710.62 |  | 91.33333333 |
| 70 | 314572824.8 | 26695423.22 |  | 92.66666667 |
| 71 | 336443867.8 | 27557255.16 |  | 94 |
| 72 | 378855843.2 | 29228505.8 |  | 95.33333333 |
| 73 | 209959793 | 22573130.05 |  | 96.66666667 |
| 74 | 222995235.3 | 23086793.73 |  | 98 |
| 75 | 495653018.9 | 33830917.11 |  | 99.33333333 |
|  |  |  |  |  |

ANÁLISIS NO. 3: ESTUDIO DE ACCIDENTES DE TRÁNSITO EN PANAMÁ SEGÚN TIPO Y CONDICIÓN DE VÍA

## REPORTE PREELIMINAR

Base de Datos ‘ACCIDENTES DE TRÁNSITO

ANALÍTICA VISUAL

**OBSERVACIONES**

En los tipos de vía más utilizados, la condición de la misma no es tan influyente en los accidentes.

**OBSERVACIONES**

En los tipos de vía de las áreas rurales, los accidentes si se ven más relacionados a la condición de la vía; siendo en ambos la vía defectuosa una en las que más se registran accidentes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| COUNTA of Clase Accidente | Clase Via |  |  |  |
| Condicion Via | Asfalto | Concreto | Grava | Tierra |
| Húmeda | 1315 | 268 |  | 28 |
| Húmeda buena | 2010 | 392 |  | 5 |
| Húmeda defectuosa | 173 | 28 | 9 | 72 |
| Húmeda en reparación | 20 | 10 |  | 7 |
| Seca | 1662 | 215 | 2 | 49 |
| Seca buena | 17403 | 2098 | 10 | 66 |
| Seca defectuosa | 439 | 70 | 12 | 95 |
| Seca en reparación | 113 | 32 | 2 | 17 |
| Grand Total | 23135 | 3113 | 35 | 339 |

OBSERVACIONES

Se puede concluir que, a pesar de la suposición de que las condiciones húmedas o defectuosas de la vía podrían causar más accidentes de tránsito, los datos revelan que la mayoría de los accidentes ocurren en condiciones de vía seca y en buen estado, es decir, en condiciones normales. Esto sugiere que otros factores, como malos hábitos y comportamientos al conducir, son los principales responsables de los accidentes de tránsito. Es importante considerar estos factores adicionales para abordar adecuadamente la seguridad vial y reducir los riesgos en nuestras carreteras.

DESCRIPCIÓN DE VARIABLES

C.Localización: Representa la localización del accidente en la ciudad de Panamá.

Corregimiento: Hace referencia al corregimiento en el que ocurrió el accidente.

Distrito: Indica el distrito al que pertenece la localización del accidente.

Mes: Es el mes en que ocurrió el accidente.

Provincia: Representa la provincia donde se encuentra la localización del accidente.

Área: Indica si la localización del accidente es urbana.

Calle: Nombre de la calle donde se produjo el accidente.

Clase Accidente: Describe la clase de accidente de tránsito que ocurrió (en este caso, "Colisión").

Clase Via: Especifica el tipo de vía donde ocurrió el accidente (por ejemplo, "Concreto").

Condición Via: Indica el estado de la vía en el momento del accidente (por ejemplo, "Seca buena").

Corregimiento: Es el nombre del corregimiento en el que ocurrió el accidente (repetido en algunas filas).

Dia: Representa el día de la semana en que ocurrió el accidente (por ejemplo, "Sábado").

Distrito: Nombre del distrito al que pertenece la localización del accidente (repetido en algunas filas).

Hora: Hora en la que ocurrió el accidente (por ejemplo, "7 p.m." o "9 a.m.").

Implicados: Indica si hubo personas implicadas en el accidente ("No hay" o "No especificada").

Magnitud: Describe la magnitud del accidente (por ejemplo, "Daños a la propiedad" o "Objeto fijo").

Mes: Mes en que ocurrió el accidente (repetido en algunas filas).

Sucedio: Describe el lugar específico del accidente (por ejemplo, "Entre intersección").

DESCRIPCIÓN DE LA APROXIMACIÓN

*Análisis de seguridad vial y prevención.* El objetivo es obtener datos sobre los accidentes de tránsito en Panamá, incluyendo información sobre su frecuencia, causas, tipos de vehículos involucrados y posibles factores contribuyentes. Con esta información, se busca evaluar la situación de seguridad vial en el país, identificar áreas de mayor riesgo y entender las tendencias

FRECUENCIAS E HISTOGRAMAS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Frecuencia | Frecuencia relativa | Frecuencia acumulativa | Frecuencia acumulativa relativa |
| Sunday | 44943 | 0.11808026 | 44943 | 0.11808026 |
| Monday | 66135 | 0.173758716 | 111078 | 0.291838976 |
| Tuesday | 67213 | 0.176590982 | 178291 | 0.468429958 |
| Wednesday | 64562 | 0.16962592 | 242853 | 0.638055878 |
| Thursday | 59785 | 0.157075147 | 302638 | 0.795131025 |
| Friday | 47200 | 0.124010152 | 349838 | 0.919141177 |
| Saturday | 30776 | 0.080858823 | 380614 | 1 |
|  | 380614 | 1 |  |  |

ANÁLISIS DE REGRESIÓN LINEAL

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.99888 |  |  |  |  |  |  |  |
| R Square | 0.997761 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.997313 |  |  |  |  |  |  |  |
| Standard Error | 459.202 |  |  |  |  |  |  |  |
| Observations | 7 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 4.7E+08 | 4.7E+08 | 2228.312 | 8.06E-08 |  |  |  |
| Residual | 5 | 1054332 | 210866.4 |  |  |  |  |  |
| Total | 6 | 4.71E+08 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | -1154.72 | 761.6523 | -1.51607 | 0.189942 | -3112.61 | 803.1724 | -3112.61 | 803.1724 |
| X Variable 1 | 0.643841 | 0.013639 | 47.205 | 8.06E-08 | 0.60878 | 0.678902 | 0.60878 | 0.678902 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted Y* | *Residuals* |  |  |  |  |  |  |
| 1 | 27781.44 | 592.5567 |  |  |  |  |  |  |
| 2 | 41425.73 | 55.27146 |  |  |  |  |  |  |
| 3 | 42119.79 | -170.789 |  |  |  |  |  |  |
| 4 | 40412.97 | 148.0339 |  |  |  |  |  |  |
| 5 | 37337.34 | 134.6638 |  |  |  |  |  |  |
| 6 | 29234.59 | -793.593 |  |  |  |  |  |  |
| 7 | 18660.14 | 33.85672 |  |  |  |  |  |  |

ANÁLISIS NO. 4: ESTUDIO DE ACCIDENTES DE TRÁNSITO EN PANAMÁ SEGÚN DESCRIPCIÓN DE CONDUCTOR

## REPORTE PREELIMINAR

Base de Datos ‘ACCIDENTES DE TRÁNSITO CONDUCTOR”

ANALÍTICA VISUAL

|  |  |  |  |
| --- | --- | --- | --- |
| **Cuenta de Rango edad** | **Column Labels** |  |  |
| **Row Labels** | **Hombre** | **Mujer** | **Grand Total** |
| 2010 | 72,060 | 14,197 | 86,257 |
| 2011 | 56,168 | 9,662 | 65,830 |
| 2012 | 65,500 | 11,568 | 77,068 |
| 2013 | 70,516 | 13,736 | 84,252 |
| 2014 | 69,188 | 13,497 | 82,685 |
| 2015 | 80,133 | 12,837 | 92,970 |
| 2016 | 92,457 | 14,858 | 107,315 |
| 2017 | 92,854 | 16,943 | 109,797 |
| 2018 | 88,734 | 17,682 | 106,416 |
| 2019 | 82,668 | 17,165 | 99,833 |
| **Grand Total** | **770,278** | **142,145** | **912,423** |

OBSERVACIONES

A pesar de la creencia generalizada de que las mujeres presentan un desempeño inferior al de los hombres en la conducción automovilística y carecen del dominio necesario para operar un vehículo, es notablemente mayor la cantidad de hombres involucrados en accidentes de tránsito. Es evidente que existen otros factores que influyen en esta situación; no obstante, la disparidad entre ambos géneros es significativa.

|  |  |  |
| --- | --- | --- |
|  | **Sin Alcohol** | **Grand Total** |
| *15 - 19* | 6324699 | 6375138 |
| *20 - 24* | 67028271 | 67772768 |
| *25 - 29* | 102622902 | 103797165 |
| *30 - 34* | 103096644 | 104194161 |
| *35 - 39* | 91568762 | 92496857 |
| *40 - 44* | 80910186 | 81813933 |
| *45 - 49* | 67231943 | 67772652 |
| *50 - 54* | 53691141 | 54221716 |
| *55 - 59* | 38303999 | 38586477 |
| *60 o más* | 69448435 | 70033515 |
| *Menores de 15* | 488162 | 500260 |

OBSERVACIONES

Los accidentes de tránsito con alcohol involucrado siguen siendo una preocupación significativa en todas las edades. También muestra que los accidentes sin alcohol también ocurren con frecuencia, lo que subraya la necesidad de mantener la atención en la seguridad vial en todos los grupos de edad.

El grupo de edad más afectado por los accidentes de tránsito es el de 25 a 34 años, con un total combinado de más de 207 millones de accidentes. Esto podría atribuirse a factores como la combinación de conductores jóvenes e inexpertos con personas que pueden haber perdido algo de agilidad y reflejos en comparación con los conductores más jóvenes.

A medida que la edad de los conductores aumenta más allá de los 60 años, se observa una tendencia a la disminución de los accidentes. Esto podría estar relacionado con la toma de conciencia sobre los riesgos de conducción y la adopción de medidas más cautelosas por parte de los conductores de mayor edad.

Existe una tendencia general hacia un aumento en el número total de accidentes de tráfico a medida que se aumenta la edad en todos los grupos de edad, a excepción de los menores de 15 años.

DESCRIPCIÓN DE VARIABLES

C.Localización: Es la ubicación geográfica o provincia donde ocurrió el accidente de tráfico.

Año: El año en que se registró el accidente.

Alcohol: Indica si el conductor involucrado en el accidente estaba bajo la influencia del alcohol.

Edad Conductor: La edad del conductor en el momento del accidente.

Placa: Tipo de placa del vehículo involucrado en el accidente (por ejemplo, Comercial, Oficial-Propiedad del Estado, Particular, etc.).

Rango edad: Rango de edad al que pertenece el conductor (por ejemplo, 25-29, 30-34, 50-54, etc.).

Sexo Conductor: El género del conductor (Hombre o Mujer).

Tipo Vehiculo: Tipo de vehículo involucrado en el accidente (por ejemplo, Microbús, Pick-up, Camionetas, Sedán y coupe, etc.).

DESCRIPCIÓN DE LA APROXIMACIÓN

Realizar un estudio de accidentes de tránsito en Panamá, analizando factores clave como la edad de los conductores involucrados, el consumo de alcohol u otros factores relevantes. El objetivo es comprender cómo estos elementos están relacionados con la incidencia de accidentes y sus consecuencias.

ACCIDENTES VEHICULARES POR SEXO

FRECUENCIAS E HISTOGRAMAS

|  |  |  |  |
| --- | --- | --- | --- |
|  | Hombres | Mujeres | total |
| Media | 77,028 | 14,215 | 91,242 |
| Mediana | 76,097 | 13,967 | 89,614 |
| Varianza | 151509392.2 | 6550956.722 | 211475054 |
| Desv.Estandar | 12308.91515 | 2559.483683 | 14542.1819 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **Frecuencia** | **Frecuencia Relativa** | **Frecuencia acumulativa** | **Frecuencia acumulativa relativa** |
| **Hombre** | **Mujer** |  |  | 2010 | 86,257 | 0.094536196 | 86,257 | 0.09453620 |
| 72060 | 14197 |  |  | 2011 | 65,830 | 0.072148554 | 152,087 | 0.16668475 |
| 56168 | 9662 |  |  | 2012 | 77,068 | 0.08446521 | 229,155 | 0.25114996 |
| 65500 | 11568 |  |  | 2013 | 84,252 | 0.092338751 | 313,407 | 0.34348871 |
| 70516 | 13736 |  |  | 2014 | 82,685 | 0.090621346 | 396,092 | 0.43411006 |
| 69188 | 13497 |  |  | 2015 | 92,970 | 0.10189353 | 489,062 | 0.53600359 |
| 80133 | 12837 |  |  | 2016 | 107,315 | 0.117615404 | 596,377 | 0.65361899 |
| 92457 | 14858 |  |  | 2017 | 109,797 | 0.120335634 | 706,174 | 0.77395462 |
| 92854 | 16943 |  |  | 2018 | 106,416 | 0.116630116 | 812,590 | 0.89058474 |
| 88734 | 17682 |  |  | 2019 | 99,833 | 0.10941526 | 912,423 | 1.00000000 |

ANÁLISIS DE DISTRIBUCIÓN

|  |  |
| --- | --- |
| **x** | **f(x)** |
| 47615.75432 | 3.04758E-07 |
| 62157.93621 | 3.71271E-06 |
| 76700.11811 | 1.66392E-05 |
| 91242.3 | 2.74335E-05 |
| 105784.4819 | 1.66392E-05 |
| 120326.6638 | 3.71271E-06 |
| 134868.8457 | 3.04758E-07 |
| 149411.0276 | 9.2029E-09 |

El análisis de distribución nos proporciona información sobre cómo se distribuyen los accidentes de tránsito en función de una variable específica (x), en este caso sexo.

ACCIDENTES VEHICULARES SEGÚN ESTADO DEL CONDUCTOR (SIN O CON ALCOHOL)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Accidentes Vehiculares** | **Alcohol** |  |  |  |  |
| **Edades** | **25 - 40** | **41 o >** | **5 - 24** | **Sin Alcohol** | **Grand Total** |
| 15 - 19 | 12,103 | 34,299 | 4,037 | 6,324,699 | 6,375,138 |
| 20 - 24 | 90,786 | 585,118 | 68,593 | 67,028,271 | 67,772,768 |
| 25 - 29 | 112,984 | 996,710 | 64,569 | 102,622,902 | 103,797,165 |
| 30 - 34 | 123,065 | 867,526 | 106,926 | 103,096,644 | 104,194,161 |
| 35 - 39 | 76,652 | 803,020 | 48,423 | 91,568,762 | 92,496,857 |
| 40 - 44 | 80,690 | 786,746 | 36,311 | 80,910,186 | 81,813,933 |
| 45 - 49 | 26,231 | 486,240 | 28,238 | 67,231,943 | 67,772,652 |
| 50 - 54 | 54,477 | 435,743 | 40,355 | 53,691,141 | 54,221,716 |
| 55 - 59 | 28,249 | 234,054 | 20,175 | 38,303,999 | 38,586,477 |
| 60 o más | 68,596 | 484,199 | 32,285 | 69,448,435 | 70,033,515 |
| Menores de 15 | 2,016 | 10,082 |  | 488,162 | 500,260 |
| **Grand Total** | **675,849** | **5,723,737** | **449,912** | **680,715,144** | **687,564,642** |

FRECUENCIAS E HISTOGRAMAS

|  |  |  |
| --- | --- | --- |
|  | Sin alcohol | Total de accidentes |
| Media | 61,883,195 | 62,505,877 |
| Moda | #N/A | #N/A |
| Mediana | 67,231,943 | 67,772,768 |
| Varianza | 1.2193E+15 | 1.24634E+15 |
| Desviación estandar | 34918519.35 | 35303553.94 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Frecuencia | Frecuencia Relativa | Frecuencia acumulativa | Frecuencia acumulativa relativa |
| 15 - 19 | 6,375,138 | 0.009272056 | 6,375,138 | 0.00927 |
| 20 - 24 | 67,772,768 | 0.098569304 | 74,147,906 | 0.10784 |
| 25 - 29 | 103,797,165 | 0.1509635 | 177,945,071 | 0.25880 |
| 30 - 34 | 104,194,161 | 0.151540895 | 282,139,232 | 0.41035 |
| 35 - 39 | 92,496,857 | 0.134528234 | 374,636,089 | 0.54487 |
| 40 - 44 | 81,813,933 | 0.118990896 | 456,450,022 | 0.66386 |
| 45 - 49 | 67,772,652 | 0.098569135 | 524,222,674 | 0.76243 |
| 50 - 54 | 54,221,716 | 0.078860536 | 578,444,390 | 0.84129 |
| 55 - 59 | 38,586,477 | 0.056120508 | 617,030,867 | 0.89742 |
| 60 o más | 70,033,515 | 0.101857354 | 687,064,382 | 0.99927 |
| Menores de 15 | 500,260 | 0.000727582 | 687,564,642 | 1.00000 |
|  | 687,564,642 |  |  |  |

ANÁLISIS DE DISTRIBUCIÓN

|  |  |
| --- | --- |
| **x** | **f(x)** |
| -42872363 | 1.2692E-10 |
| -7953843.8 | 1.5462E-09 |
| 26964675.6 | 6.9296E-09 |
| 61883194.9 | 1.1425E-08 |
| 96801714.3 | 6.9296E-09 |
| 131720234 | 1.5462E-09 |
| 166638753 | 1.2692E-10 |

El análisis de distribución nos proporciona información sobre cómo se distribuyen los accidentes de tránsito en función de una variable específica (x), en este caso si hay o no alcohol involucrado en el accidente.

ANÁLISIS DE REGRESIÓN LINEAL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Regression Statistics* | |  |  |  |  |  |  |  |  |
| Multiple R | 0.847732 |  |  |  |  |  |  |  |  |
| R Square | 0.71865 |  |  |  |  |  |  |  |  |
| Adjusted R Square | 0.683481 |  |  |  |  |  |  |  |  |
| Standard Error | 1439.966 |  |  |  |  |  |  |  |  |
| Observations | 10 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |  |
| Regression | 1 | 42370602 | 42370602 | 20.43433 | 0.001949 |  |  |  |  |
| Residual | 8 | 16588008 | 2073501 |  |  |  |  |  |  |
| Total | 9 | 58958611 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |  |
| Intercept | 636.407 | 3038.034 | 0.20948 | 0.83931 | -6369.31 | 7642.125 | -6369.31 | 7642.125 |  |
| X Variable 1 | 0.176275 | 0.038995 | 4.520435 | 0.001949 | 0.086352 | 0.266198 | 0.086352 | 0.266198 |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted Y* | *Residuals* |  |  |  |  |  |  |  |
| 1 | 13338.8 | 858.2001 |  |  |  |  |  |  |  |
| 2 | 10537.43 | -875.434 |  |  |  |  |  |  |  |
| 3 | 12182.43 | -614.434 |  |  |  |  |  |  |  |
| 4 | 13066.63 | 669.369 |  |  |  |  |  |  |  |
| 5 | 12832.54 | 664.4625 |  |  |  |  |  |  |  |
| 6 | 14761.87 | -1924.87 |  |  |  |  |  |  |  |
| 7 | 16934.29 | -2076.29 |  |  |  |  |  |  |  |
| 8 | 17004.27 | -61.267 |  |  |  |  |  |  |  |
| 9 | 16278.01 | 1403.987 |  |  |  |  |  |  |  |
| 10 | 15208.73 | 1956.272 |  |  |  |  |  |  |  |

La regresión es altamente predecible debido a los altos coeficientes de determinación. El modelo está bien ajustado y preciso, mostrando una relación extremadamente sólida entre las variables.

ANÁLISIS NO. 5: EMBARAZOS EN PANAMÁ

## REPORTE PREELIMINAR

Base de datos ‘NACIMIENTOS’

DESCRIPCIÓN DE VARIABLES

Provincia: Representa el nombre de la provincia en la que se registraron los datos. Esta variable indica el lugar geográfico al que pertenecen las estadísticas.

C. Fila1: Rango de edad.

Año: Indica el año en el que se registraron los datos de nacimientos. Esta variable permite identificar el período de tiempo al que corresponden las estadísticas.

*C. Columna1:* Texto. Sexo del individuo.

*Nacimientos*: Representa el número de nacimientos registrados para una categoría específica, que generalmente se determina por la provincia, el grupo de edad, el año y el género. Esta variable muestra cuántos nacimientos ocurrieron en una categoría particular.

DESCRIPCIÓN DE LA APROXIMACIÓN

Esta investigación tiene como objetivo examinar las tendencias de embarazos en adolescentes y evaluar si ha habido variaciones en estos casos a lo largo de los años. El enfoque es reunir datos relevantes sobre embarazos en jóvenes dentro de un período específico (10-14 años) para aumentar la sensibilización sobre este importante problema. Al comprender las fluctuaciones en la incidencia de embarazos en esta población vulnerable, podremos tomar medidas preventivas adecuadas y desarrollar programas de educación sexual y reproductiva dirigidos a adolescentes.

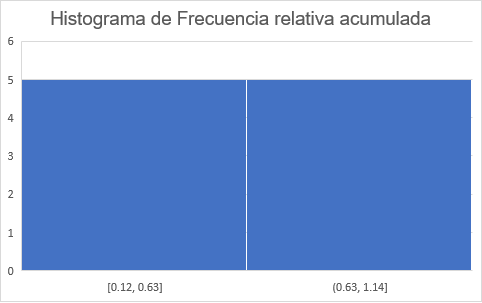
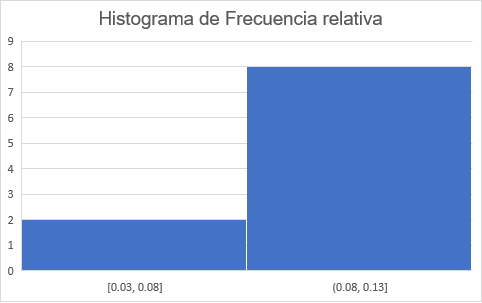
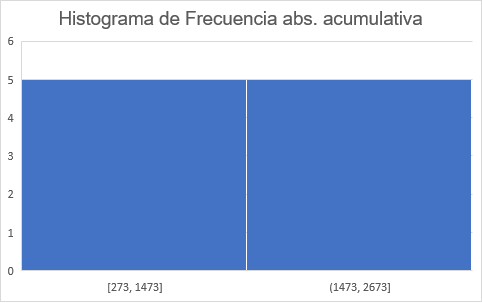
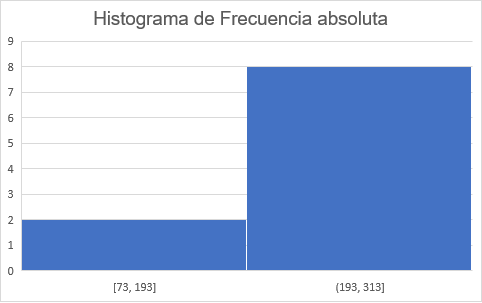
ANALÍSIS PREVIO

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Analisis del total y porcentajes de aumento o disminucion por años en adolecentes de entre 10 a 14 años. | | | | | | | | | | | |
|
| Años | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Total de embarazos por años | 608 | 641 | 575 | 666 | 669 | 603 | 506 | 517 | 522 | 458 | 393 |
| Porcentaje de aumento o disminución | - | 5.43 | -10.3 | 15.8 | 0.45 | -9.9 | -16.1 | 2.17 | 1 | -12.3 | -14.2 |
|  |  |  |  |  |  |  |  |  |  |  |  |

**OBSERVACIONES**

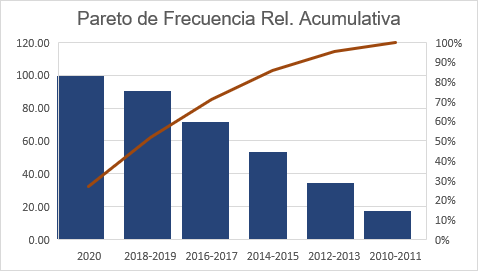
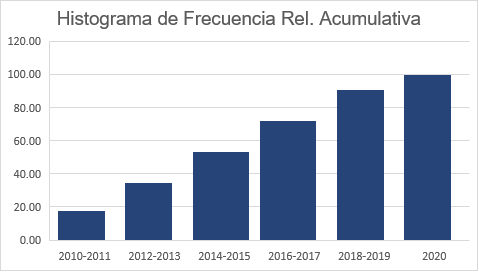
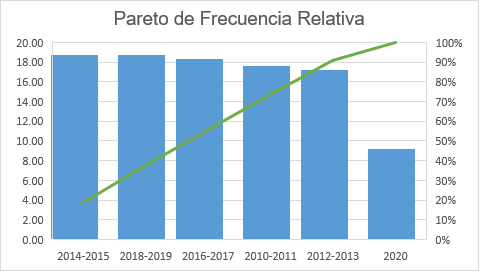
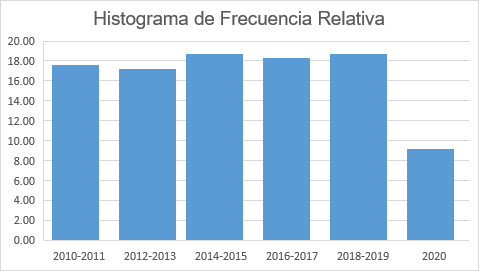
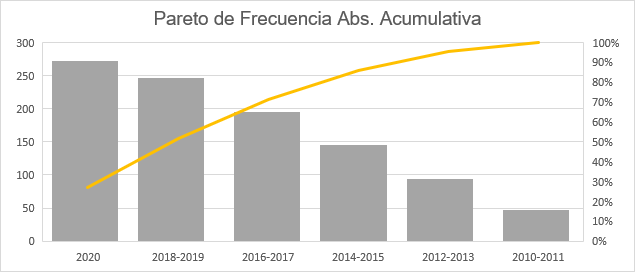
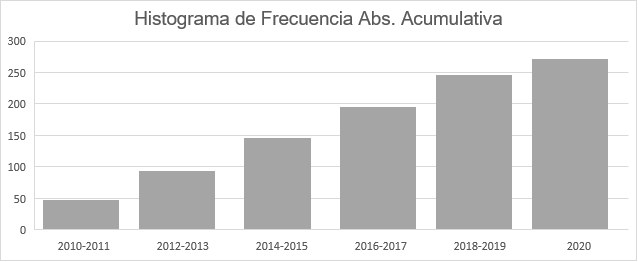
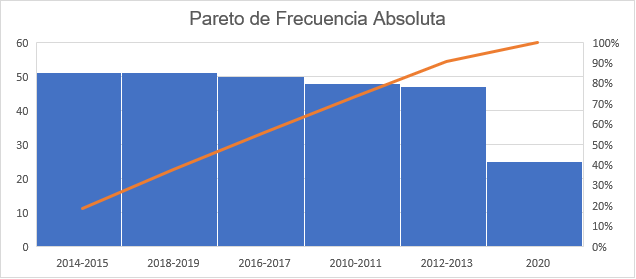
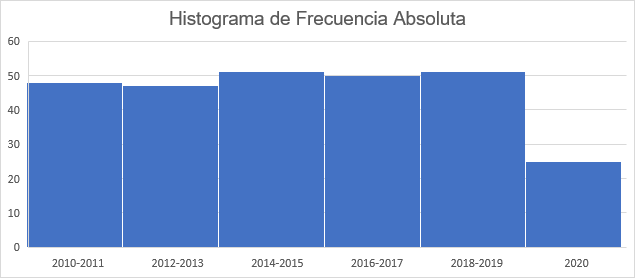
Los embarazos van disminuyendo a través de los años. En 2020, comparado a otros años, fue baja la cantidad, esto se puede deber a la crisis econcómica que se dio por la pandemia.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Intervalo** | **Fr. absoluta** | **Fr. ab. acum.** | **Fr. relativa** | **Fr. rel. acum.** |
| *10-14* | 273 | 273 | 0.12 | 0.12 |
| *15-19* | 278 | 551 | 0.12 | 0.23 |
| *20-24* | 278 | 829 | 0.12 | 0.35 |
| *25-29* | 278 | 1107 | 0.12 | 0.47 |
| *30-34* | 278 | 1385 | 0.12 | 0.59 |
| *35-39* | 278 | 1663 | 0.12 | 0.71 |
| *40-44* | 278 | 1941 | 0.12 | 0.82 |
| *45-49* | 221 | 2162 | 0.09 | 0.92 |
| *50 y mas* | 73 | 2235 | 0.03 | 0.95 |
| *No especificado* | 123 | 2358 | 0.05 | 1.00 |
| *Total* | 2358 | 14504 | 1.00 | 6.15 |



ANÁLISIS POSTERIOR

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intervalo (10-14) | Fr. absoluta | Fr. ab. acum. | Fr. relativa | Fr. rel. acum. | Suma de los intervalos | Media por intervalo | Desviación estándar | | | |
| 2010-2011 | 48 | 48 | 17.65 | 17.65 | 1249 | 26.02 | 1222.98 | 1495678.04 | 31159.9592 | 176.52184 |
| 2012-2013 | 47 | 95 | 17.28 | 34.93 | 1241 | 26.40 | 1214.60 | 1475242.82 | 31388.1452 | 177.167 |
| 2014-2015 | 51 | 146 | 18.75 | 53.68 | 1272 | 24.94 | 1247.06 | 1555155.71 | 30493.2492 | 174.62316 |
| 2016-2017 | 50 | 196 | 18.38 | 72.06 | 1023 | 20.46 | 1002.54 | 1005086.45 | 20101.729 | 141.78057 |
| 2018-2019 | 51 | 247 | 18.75 | 90.81 | 980 | 19.22 | 960.78 | 923106.50 | 18100.1274 | 134.53671 |
| 2020 | 25 | 272 | 9.19 | 100.00 | 393 | 15.72 | 377.28 | 142340.20 | 5693.60794 | 75.456 |
| Total | 272 | 1004 | 100 | 369.12 |  |  |  |  |  |  |
| Media | 45.33 | 167.33 | 16.67 | 61.52 |  |  |  |  |  |  |



|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intervalo (10-14) | Fr. absoluta | Fr. ab. acum. | Fr. relativa | Fr. rel. acum. | Suma de los intervalos | Media por intervalo | Análisis exponencial | Covarianza | Desviación estándar | Correlación |
| 2010-2011 | 48 | 48 | 17.65 | 17.65 | 1249 | 26.02 | 1.9985E+11 | 0 | 1698.47049 | 0 |
| 2012-2013 | 47 | 95 | 17.28 | 34.93 | 1241 | 26.40 | 2.9324E+11 | 0 | 1688.57099 | 0 |
| 2014-2015 | 51 | 146 | 18.75 | 53.68 | 1272 | 24.94 | 6.7891E+10 | 0 | 1726.75476 | 0 |
| 2016-2017 | 50 | 196 | 18.38 | 72.06 | 1023 | 20.46 | 768537564 | 0 | 1376.0298 | 0 |
| 2018-2019 | 51 | 247 | 18.75 | 90.81 | 980 | 19.22 | 221445324 | 0 | 1313.8044 | 0 |
| 2020 | 25 | 272 | 9.19 | 100.00 | 393 | 15.72 | 6715977.86 | 0 | 520.430591 | 0 |

ANÁLISIS

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
| 2010 | 608 | 24 |  |  |  |  |  |  |
| 2011 | 641 | 24 |  |  |  |  |  |  |
| 2012 | 575 | 23 |  |  |  |  |  |  |
| 2013 | 666 | 24 |  |  |  |  |  |  |
| 2014 | 669 | 26 |  |  |  |  |  |  |
| 2015 | 603 | 26 |  |  |  |  |  |  |
| 2016 | 506 | 24 |  |  |  |  |  |  |
| 2017 | 517 | 26 |  |  |  |  |  |  |
| 2018 | 522 | 26 |  |  |  |  |  |  |
| 2019 | 458 | 25 |  |  |  |  |  |  |
| 2020 | 393 | 25 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Resumen |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Estadísticas de la regresión* | |  |  |  |  |  |  |  |
| Coeficiente de correlación múltiple | 0.14680869 |  |  |  |  |  |  |  |
| Coeficiente de determinación R^2 | 0.02155279 |  |  |  |  |  |  |  |
| R^2 ajustado | -0.08716356 |  |  |  |  |  |  |  |
| Error típico | 1.12475022 |  |  |  |  |  |  |  |
| Observaciones | 11 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANÁLISIS DE VARIANZA |  |  |  |  |  |  |  |  |
|  | *Grados de libertad* | *Suma de cuadrados* | *Promedio de los cuadrados* | *F* | *Valor crítico de F* |  |  |  |
| Regresión | 1 | 0.25079612 | 0.25079612 | 0.19824792 | 0.66665533 |  |  |  |
| Residuos | 9 | 11.3855675 | 1.26506306 |  |  |  |  |  |
| Total | 10 | 11.6363636 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coeficientes* | *Error típico* | *Estadístico t* | *Probabilidad* | *Inferior 95%* | *Superior 95%* | *Inferior 95,0%* | *Superior 95,0%* |
| Intercepción | 25.8184425 | 2.27196504 | 11.363926 | 1.2228E-06 | 20.6789005 | 30.9579845 | 20.6789005 | 30.9579845 |
| Variable X 1 | -0.00178676 | 0.00401293 | -0.4452504 | 0.66665533 | -0.01086464 | 0.00729112 | -0.01086464 | 0.00729112 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Análisis de los residuales |  |  |  | Resultados de datos de probabilidad | | |  |  |
|  |  |  |  |  |  |  |  |  |
| *Observación* | *Pronóstico para Y* | *Residuos* |  | *Percentil* | *Y* |  |  |  |
| 1 | 24.7320925 | -0.73209248 |  | 4.54545455 | 23 |  |  |  |
| 2 | 24.6731294 | -0.6731294 |  | 13.6363636 | 24 |  |  |  |
| 3 | 24.7910556 | -1.79105555 |  | 22.7272727 | 24 |  |  |  |
| 4 | 24.6284604 | -0.6284604 |  | 31.8181818 | 24 |  |  |  |
| 5 | 24.6231001 | 1.37689988 |  | 40.9090909 | 24 |  |  |  |
| 6 | 24.7410263 | 1.25897372 |  | 50 | 25 |  |  |  |
| 7 | 24.914342 | -0.91434199 |  | 59.0909091 | 25 |  |  |  |
| 8 | 24.8946876 | 1.10531237 |  | 68.1818182 | 26 |  |  |  |
| 9 | 24.8857538 | 1.11424617 |  | 77.2727273 | 26 |  |  |  |
| 10 | 25.0001065 | -0.00010646 |  | 86.3636364 | 26 |  |  |  |
| 11 | 25.1162459 | -0.11624586 |  | 95.4545455 | 26 |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Prueba t para medias de dos muestras emparejadas | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Variable 1* | *Variable 2* |  |  |  |  |  |  |
| Media | 559.818182 | 24.8181818 |  |  |  |  |  |  |
| Varianza | 7855.76364 | 1.16363636 |  |  |  |  |  |  |
| Observaciones | 11 | 11 |  |  |  |  |  |  |
| Coeficiente de correlación de Pearson | -0.14680869 |  |  |  |  |  |  |  |
| Diferencia hipotética de las medias | 0 |  |  |  |  |  |  |  |
| Grados de libertad | 10 |  |  |  |  |  |  |  |
| Estadístico t | 19.9824749 |  |  |  |  |  |  |  |
| P(T<=t) una cola | 1.0823E-09 |  |  |  |  |  |  |  |
| Valor crítico de t (una cola) | 1.81246112 |  |  |  |  |  |  |  |
| P(T<=t) dos colas | 2.1645E-09 |  |  |  |  |  |  |  |
| Valor crítico de t (dos colas) | 2.22813885 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Prueba F para varianzas de dos muestras | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Variable 1* | *Variable 2* |  |  |  |  |  |  |
| Media | 559.818182 | 24.8181818 |  |  |  |  |  |  |
| Varianza | 7855.76364 | 1.16363636 |  |  |  |  |  |  |
| Observaciones | 11 | 11 |  |  |  |  |  |  |
| Grados de libertad | 10 | 10 |  |  |  |  |  |  |
| F | 6751.04687 |  |  |  |  |  |  |  |
| P(F<=f) una cola | 8.9739E-18 |  |  |  |  |  |  |  |
| Valor crítico para F (una cola) | 2.97823702 |  |  |  |  |  |  |  |

ANÁLISIS NO. 6: PIB DEL SECTOR CONSTRUCCIÓN

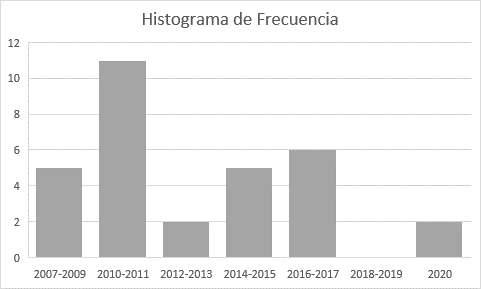
## REPORTE PREELIMINAR

Base de Datos ‘PIB’

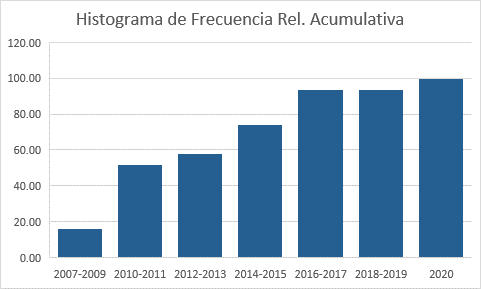
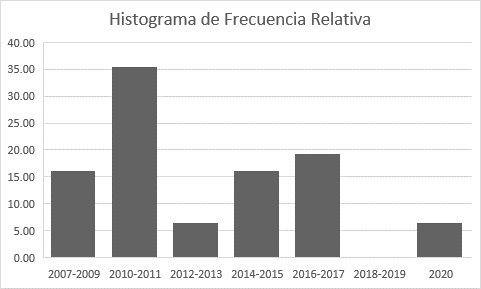
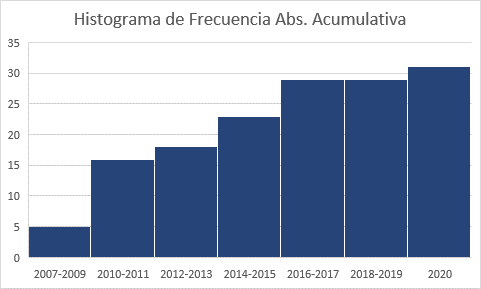
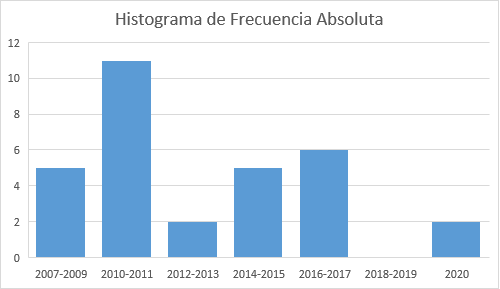
ANALÍTICA VISUAL

El año de mayor PIB es 2014-2015. A partir de estos datos, podríamos investigar qué factores y condiciones habían este año que influyeron en que el PIB fuera alto. El PIB es una medida clave para evaluar la salud y el rendimiento económico de u sector.

FRECUENCIAS E HISTOGRAMAS



|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Intervalos de años | Total | Frecuencia | Frecuencia absoluta | Frecuencia abs. Acumulativa | Frecuencia Relativa | Frecuencia Relativa Acumulativa | Media por intervalo | Desviación estándar | | | |
| 2007-2009 | 15858 | 5 | 5 | 5 | 16.13 | 16.13 | 3171.6 | 12686.4 | 160944745 | 32188948.99 | **5673.53056** |
| 2010-2011 | 45619 | 11 | 11 | 16 | 35.48 | 51.61 | 4147.18182 | 41471.8182 | 1719911703 | 156355609.4 | **12504.2237** |
| 2012-2013 | 5449 | 2 | 2 | 18 | 6.45 | 58.06 | 2724.5 | 2724.5 | 7422900.25 | 3711450.125 | **1926.51243** |
| 2014-2015 | 79710 | 5 | 5 | 23 | 16.13 | 74.19 | 15942 | 63768 | 4066357824 | 813271564.8 | **28517.9166** |
| 2016-2017 | 75222 | 6 | 6 | 29 | 19.35 | 93.55 | 12537 | 62685 | 3929409225 | 654901537.5 | **25591.0441** |
| 2018-2019 | 60629 | 0 | 0 | 29 | 0.00 | 93.55 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | **#DIV/0!** |
| 2020 | 3093 | 2 | 2 | 31 | 6.45 | 100 | 1546.5 | 1546.5 | 2391662.25 | 1195831.125 | **1093.54064** |
| Total | 285580 | 31 | 31 | 151 | 100 | 487.096774 |  |  |  |  |  |
| Media | 40797.1429 | 4.42857143 | 4.42857143 | 21.5714286 | 14.2857143 | 69.5852535 |  |  |  |  |  |



DESCRIPCIÓN DE VARIABLES

Categorías: Representa diferentes categorías relacionadas con la construcción (por ejemplo, "CONSTRUCCION (UFP)" y "CONSTRUCCION").

Años/Relación - Años: Indica el año o el rango de años al que se refiere la información en la fila (por ejemplo, "2007" o "2008-2007").

Año: Representa el año específico al que pertenece la información en la fila (por ejemplo, "2007" o "2008").

Relación - Año: Es la relación entre el valor de un año específico y el valor del año anterior, expresado como un porcentaje o un número decimal (por ejemplo, "0.753662660" o "0.785217228").

Composición Constante: Indica el valor de una variable (en este caso, relacionada con la construcción) para un año específico, considerando los precios constantes de un año base.

Composición Corriente: Representa el valor de una variable para un año específico, considerando los precios corrientes del mismo año.

Valor Constante: Es el valor absoluto de la variable para un año específico, considerando los precios constantes de un año base.

Valor Corriente: Es el valor absoluto de la variable para un año específico, considerando los precios corrientes del mismo año.

Valores: Representa el valor de la variable para un año específico, sin indicar si es a precios constantes o corrientes.

Variación Absoluta Constante: Indica la diferencia absoluta en el valor de la variable entre dos años consecutivos, considerando los precios constantes.

Variación Absoluta Corriente: Representa la diferencia absoluta en el valor de la variable entre dos años consecutivos, considerando los precios corrientes.

Variación Porcentual Constante: Muestra la variación porcentual en el valor de la variable entre dos años consecutivos, considerando los precios constantes.

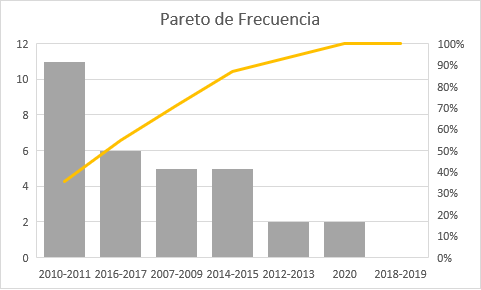
Variación Porcentual Corriente: Indica la variación porcentual en el valor de la variable entre dos años consecutivos, considerando los precios corrientes.

DESCRIPCIÓN DE LA APROXIMACIÓN

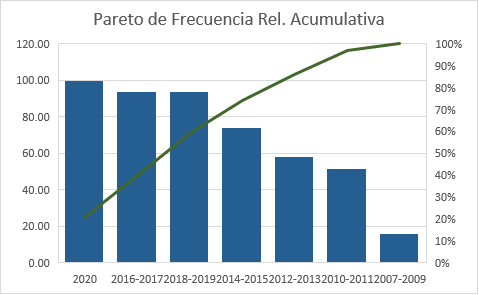
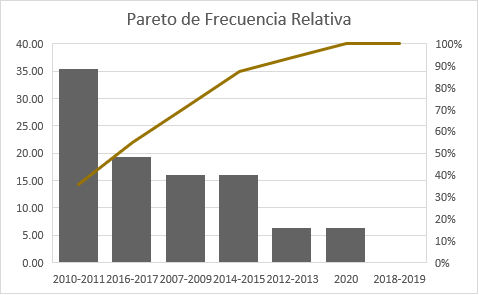
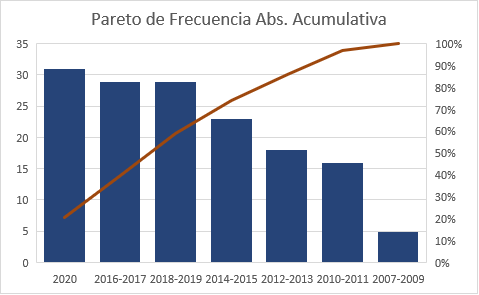
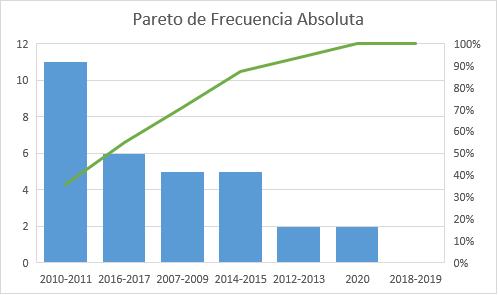
*Curiosidad y análisis económico.* El objetivo es obtener datos sobre el Producto Interno Bruto (PIB) del sector de la construcción en un determinado país o región. Se busca entender cómo ha evolucionado la contribución de este sector a la economía en un período específico. La recopilación de información sobre el PIB del sector de la construcción nos permitirá evaluar su importancia relativa en comparación con otros sectores económicos, identificar tendencias a lo largo del tiempo y comprender su impacto en el crecimiento económico general.

ANÁLISIS DE CORRELACIÓN

Entre las variables de valor constante y valor corriente, existe un coeficiente de correlación de 0.992217891; lo que indica una correlación positiva y extremadamente fuerte entre ambas variables. Esto significa que están altamente relacionadas y tienden a moverse en la misma dirección en la mayoría de los casos. La alta correlación puede tener implicaciones importantes para el análisis y pronóstico económico en el sector de la construcción.

PARETOGRAMAS

**OBSERVACIONES**

Los años de mayor impacto son 2018-2019. 

## ANÁLISIS DE REGRESIÓN

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.99221789 |  |  |  |  |  |  |  |
| R Square | 0.98449634 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.98444617 |  |  |  |  |  |  |  |
| Standard Error | 1100.38229 |  |  |  |  |  |  |  |
| Observations | 311 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 2.3759E+10 | 2.3759E+10 | 19621.7828 | 1.208E-281 |  |  |  |
| Residual | 309 | 374149925 | 1210841.18 |  |  |  |  |  |
| Total | 310 | 2.4133E+10 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | 178.700926 | 68.2621361 | 2.61786308 | 0.00928393 | 44.3835079 | 313.018343 | 44.3835079 | 313.0183433 |
| X Variable 1 | 0.6826336 | 0.00487325 | 140.077774 | 1.208E-281 | 0.67304465 | 0.69222255 | 0.67304465 | 0.692222547 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  |  | PROBABILITY OUTPUT | |  |  |
|  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted Y* | *Residuals* | *Standard Residuals* |  | *Percentile* | *Y* |  |  |
| 1 | 288.263619 | -127.763619 | -0.11629612 |  | 0.1607717 | 41.9 |  |  |
| 2 | 383.149689 | -110.749689 | -0.10080928 |  | 0.48231511 | 50 |  |  |
| 3 | 2287.15133 | 123.248671 | 0.11218641 |  | 0.80385852 | 52.2 |  |  |
| 4 | 1686.77508 | 144.424923 | 0.13146198 |  | 1.12540193 | 58.4 |  |  |
| 5 | 2078.94808 | -71.3480805 | -0.06494419 |  | 1.44694534 | 58.8 |  |  |
| 6 | 1299.72183 | -266.621825 | -0.24269102 |  | 1.76848875 | 60.4 |  |  |
| 7 | 5574.91954 | 464.280459 | 0.42260869 |  | 2.09003215 | 65.6 |  |  |
| 8 | 217.815831 | -165.615831 | -0.15075088 |  | 2.41157556 | 70.7 |  |  |
| 9 | 2307.22076 | -613.720757 | -0.55863588 |  | 2.73311897 | 76.4 |  |  |
| 10 | 214.402663 | -164.402663 | -0.1496466 |  | 3.05466238 | 79.2 |  |  |
| 11 | 1151.24902 | -175.649017 | -0.15988353 |  | 3.37620579 | 81.1 |  |  |
| 12 | 5004.10132 | 360.698676 | 0.32832395 |  | 3.6977492 | 84 |  |  |
| 13 | 4627.90195 | 192.498054 | 0.17522028 |  | 4.0192926 | 84.5 |  |  |
| 14 | 1092.13295 | 245.967053 | 0.22389013 |  | 4.34083601 | 85.8 |  |  |
| 15 | 26652.3924 | 2673.50755 | 2.43354528 |  | 4.66237942 | 131.7 |  |  |
| 16 | 14139.582 | 6311.91799 | 5.745388 |  | 4.98392283 | 145.3 |  |  |
| 17 | 1293.85118 | 339.748824 | 0.30925446 |  | 5.30546624 | 146.8 |  |  |
| 18 | 854.09861 | -125.89861 | -0.1145985 |  | 5.62700965 | 147 |  |  |
| 19 | 3290.21314 | -198.613142 | -0.1807865 |  | 5.94855305 | 154.4 |  |  |
| 20 | 668.695324 | -25.3953243 | -0.02311595 |  | 6.27009646 | 158.6 |  |  |
| 21 | 237.612205 | -153.612205 | -0.13982465 |  | 6.59163987 | 160.5 |  |  |
| 22 | 491.415378 | -24.0153782 | -0.02185986 |  | 6.91318328 | 162.1 |  |  |
| 23 | 687.740802 | -22.1408018 | -0.02015354 |  | 7.23472669 | 162.1 |  |  |
| 24 | 3073.6135 | -169.6135 | -0.15438974 |  | 7.5562701 | 163.6 |  |  |
| 25 | 1377.269 | 64.2309979 | 0.05846591 |  | 7.8778135 | 168.4 |  |  |
| 26 | 1680.97269 | 212.227309 | 0.19317872 |  | 8.19935691 | 169.3 |  |  |
| 27 | 728.562291 | -46.0622911 | -0.04192794 |  | 8.52090032 | 169.4 |  |  |
| 28 | 1251.05005 | 319.849951 | 0.29114163 |  | 8.84244373 | 170.1 |  |  |
| 29 | 3164.13072 | -189.530716 | -0.17251927 |  | 9.16398714 | 172 |  |  |
| 30 | 725.217387 | -211.817387 | -0.19280559 |  | 9.48553055 | 176.5 |  |  |
| 31 | 707.946756 | -140.946756 | -0.128296 |  | 9.80707395 | 178.2 |  |  |
| 32 | 336.321024 | -134.921024 | -0.12281111 |  | 10.1286174 | 181 |  |  |
| 33 | 639.819923 | -181.219923 | -0.16495442 |  | 10.4501608 | 181.2 |  |  |
| 34 | 320.142608 | -136.442608 | -0.12419612 |  | 10.7717042 | 181.6 |  |  |
| 35 | 419.807113 | -109.607113 | -0.09976926 |  | 11.0932476 | 183.7 |  |  |
| 36 | 1555.09506 | 183.504945 | 0.16703435 |  | 11.414791 | 184.5 |  |  |
| 37 | 8431.87769 | -918.477687 | -0.83603917 |  | 11.7363344 | 186.2 |  |  |
| 38 | 464.041771 | -89.8417708 | -0.08177797 |  | 12.0578778 | 187.9 |  |  |
| 39 | 2750.9326 | -611.832597 | -0.55691719 |  | 12.3794212 | 192.2 |  |  |
| 40 | 1017.04325 | -218.643251 | -0.19901879 |  | 12.7009646 | 199.8 |  |  |
| 41 | 1639.46857 | 156.931432 | 0.14284596 |  | 13.022508 | 201.4 |  |  |
| 42 | 2168.57787 | 173.422128 | 0.15785652 |  | 13.3440514 | 206.3 |  |  |
| 43 | 353.932971 | -177.432971 | -0.16150737 |  | 13.6655949 | 207.9 |  |  |
| 44 | 3154.30079 | 664.299208 | 0.60467463 |  | 13.9871383 | 216.1 |  |  |
| 45 | 1862.34844 | -897.048439 | -0.81653332 |  | 14.3086817 | 240.3 |  |  |
| 46 | 207.303273 | -165.403273 | -0.1505574 |  | 14.6302251 | 242.9 |  |  |
| 47 | 809.863953 | -250.663953 | -0.22816546 |  | 14.9517685 | 243.8 |  |  |
| 48 | 919.221856 | -304.321856 | -0.27700726 |  | 15.2733119 | 255.9 |  |  |
| 49 | 2429.82175 | -437.521751 | -0.39825172 |  | 15.5948553 | 264.8 |  |  |
| 50 | 356.868295 | -188.468295 | -0.17155221 |  | 15.9163987 | 270.4 |  |  |
| 51 | 2463.20253 | -177.202534 | -0.16129761 |  | 16.2379421 | 272.4 |  |  |
| 52 | 331.883906 | -139.683906 | -0.12714649 |  | 16.5594855 | 273.5 |  |  |
| 53 | 545.275169 | -147.075169 | -0.13387435 |  | 16.8810289 | 278.8 |  |  |
| 54 | 1524.30828 | 10.9917203 | 0.01000515 |  | 17.2025723 | 282.3 |  |  |
| 55 | 620.979236 | -179.079236 | -0.16300587 |  | 17.5241158 | 293.2 |  |  |
| 56 | 1103.73772 | -569.237718 | -0.51814544 |  | 17.8456592 | 293.8 |  |  |
| 57 | 2722.19372 | 1003.80628 | 0.91370904 |  | 18.1672026 | 310.2 |  |  |
| 58 | 564.18412 | 0.51587996 | 0.00046958 |  | 18.488746 | 319.1 |  |  |
| 59 | 1125.24068 | -275.240677 | -0.25053628 |  | 18.8102894 | 329.6 |  |  |
| 60 | 2563.82273 | -709.722727 | -0.64602114 |  | 19.1318328 | 336.5 |  |  |
| 61 | 416.393945 | -230.193945 | -0.20953275 |  | 19.4533762 | 355.8 |  |  |
| 62 | 338.573715 | -169.273715 | -0.15408045 |  | 19.7749196 | 359 |  |  |
| 63 | 598.52059 | -118.42059 | -0.10779168 |  | 20.096463 | 374.2 |  |  |
| 64 | 312.974955 | -125.074955 | -0.11384878 |  | 20.4180064 | 380.2 |  |  |
| 65 | 34256.7942 | 147.205766 | 0.13399322 |  | 20.7395498 | 392.4 |  |  |
| 66 | 239.591843 | -155.091843 | -0.14117148 |  | 21.0610932 | 398.2 |  |  |
| 67 | 8011.10234 | -782.802336 | -0.71254144 |  | 21.3826367 | 403.2 |  |  |
| 68 | 373.183239 | -108.383239 | -0.09865524 |  | 21.7041801 | 404.2 |  |  |
| 69 | 2242.91667 | -318.816671 | -0.29020109 |  | 22.0257235 | 409.4 |  |  |
| 70 | 756.072425 | 42.3275747 | 0.03852844 |  | 22.3472669 | 410.5 |  |  |
| 71 | 846.521377 | 111.178623 | 0.10119972 |  | 22.6688103 | 414.3 |  |  |
| 72 | 20275.6389 | 4790.36107 | 4.36039934 |  | 22.9903537 | 418.1 |  |  |
| 73 | 22831.2143 | 3881.68566 | 3.53328263 |  | 23.3118971 | 418.3 |  |  |
| 74 | 27777.3726 | 2853.02738 | 2.59695219 |  | 23.6334405 | 422.4 |  |  |
| 75 | 224.573904 | -165.773904 | -0.15089477 |  | 23.9549839 | 424.4 |  |  |
| 76 | 389.634708 | -107.334708 | -0.09770082 |  | 24.2765273 | 424.6 |  |  |
| 77 | 344.922207 | -137.022207 | -0.1247237 |  | 24.5980707 | 432.1 |  |  |
| 78 | 1350.64629 | 293.753708 | 0.26738767 |  | 24.9196141 | 437.3 |  |  |
| 79 | 943.796666 | 754.903334 | 0.68714653 |  | 25.2411576 | 437.7 |  |  |
| 80 | 948.984681 | -511.284681 | -0.46539402 |  | 25.562701 | 441.9 |  |  |
| 81 | 1428.67131 | -520.771312 | -0.47402917 |  | 25.8842444 | 447.2 |  |  |
| 82 | 572.034406 | -105.434406 | -0.09597108 |  | 26.2057878 | 456.9 |  |  |
| 83 | 1765.96057 | 193.439426 | 0.17607715 |  | 26.5273312 | 458.6 |  |  |
| 84 | 6892.33413 | -578.434127 | -0.52651642 |  | 26.8488746 | 463.3 |  |  |
| 85 | 311.677951 | -141.577951 | -0.12887054 |  | 27.170418 | 466.6 |  |  |
| 86 | 322.463562 | -177.163562 | -0.16126214 |  | 27.4919614 | 467.4 |  |  |
| 87 | 761.874811 | 644.125189 | 0.58631135 |  | 27.8135048 | 475.7 |  |  |
| 88 | 621.730133 | 144.469867 | 0.13150289 |  | 28.1350482 | 480.1 |  |  |
| 89 | 2224.14425 | 223.055753 | 0.20303525 |  | 28.4565916 | 501.2 |  |  |
| 90 | 381.170052 | -138.270052 | -0.12585954 |  | 28.778135 | 506.4 |  |  |
| 91 | 593.742155 | 14.257845 | 0.01297812 |  | 29.0996785 | 509.3 |  |  |
| 92 | 228.533178 | -168.133178 | -0.15304228 |  | 29.4212219 | 510.2 |  |  |
| 93 | 1634.7584 | -389.758396 | -0.3547754 |  | 29.7427653 | 513.4 |  |  |
| 94 | 377.347303 | -177.547303 | -0.16161144 |  | 30.0643087 | 534.5 |  |  |
| 95 | 44501.6911 | -2703.19105 | -2.46056452 |  | 30.3858521 | 534.7 |  |  |
| 96 | 520.836886 | -83.5368864 | -0.07603898 |  | 30.7073955 | 546.7 |  |  |
| 97 | 41084.4955 | -2543.09551 | -2.31483845 |  | 31.0289389 | 550.9 |  |  |
| 98 | 688.218645 | -6.21864533 | -0.00566049 |  | 31.3504823 | 559.2 |  |  |
| 99 | 1046.12344 | -24.6234423 | -0.02241335 |  | 31.6720257 | 564.7 |  |  |
| 100 | 222.594266 | -151.894266 | -0.13826091 |  | 31.9935691 | 567 |  |  |
| 101 | 1746.43725 | 133.362747 | 0.12139269 |  | 32.3151125 | 585.7 |  |  |
| 102 | 418.851426 | -148.451426 | -0.13512708 |  | 32.6366559 | 591.9 |  |  |
| 103 | 1393.37916 | 186.420845 | 0.16968853 |  | 32.9581994 | 605.3 |  |  |
| 104 | 3068.56201 | 175.237988 | 0.1595094 |  | 33.2797428 | 605.6 |  |  |
| 105 | 968.303212 | -214.503212 | -0.19525035 |  | 33.6012862 | 608 |  |  |
| 106 | 646.509732 | -8.80973232 | -0.00801901 |  | 33.9228296 | 610.5 |  |  |
| 107 | 2329.47461 | -120.674612 | -0.10984339 |  | 34.244373 | 612.1 |  |  |
| 108 | 840.172885 | 247.727115 | 0.22549222 |  | 34.5659164 | 612.5 |  |  |
| 109 | 3375.54234 | 887.657658 | 0.80798541 |  | 34.8874598 | 614.9 |  |  |
| 110 | 1008.23728 | -186.237277 | -0.16952144 |  | 35.2090032 | 624.3 |  |  |
| 111 | 700.574314 | -308.174314 | -0.28051394 |  | 35.5305466 | 625 |  |  |
| 112 | 514.147077 | -177.647077 | -0.16170226 |  | 35.85209 | 637.7 |  |  |
| 113 | 4381.74427 | -273.14427 | -0.24862804 |  | 36.1736334 | 643.3 |  |  |
| 114 | 3038.25308 | 622.14692 | 0.56630575 |  | 36.4951768 | 648.6 |  |  |
| 115 | 4197.63799 | 410.962012 | 0.37407587 |  | 36.8167203 | 657.6 |  |  |
| 116 | 5343.71154 | -692.71154 | -0.6305368 |  | 37.1382637 | 664.9 |  |  |
| 117 | 2049.18526 | 205.414745 | 0.18697762 |  | 37.4598071 | 665.6 |  |  |
| 118 | 1654.00866 | -703.008664 | -0.6399097 |  | 37.7813505 | 667.2 |  |  |
| 119 | 981.88762 | 695.31238 | 0.6329042 |  | 38.1028939 | 678.9 |  |  |
| 120 | 819.76214 | 128.53786 | 0.11700087 |  | 38.4244373 | 680.7 |  |  |
| 121 | 587.120609 | -1.42060904 | -0.0012931 |  | 38.7459807 | 682 |  |  |
| 122 | 1460.41377 | 285.686225 | 0.26004429 |  | 39.0675241 | 682.5 |  |  |
| 123 | 1306.95774 | -281.257741 | -0.25601328 |  | 39.3890675 | 683.2 |  |  |
| 124 | 2506.41324 | 114.586759 | 0.10430196 |  | 39.7106109 | 684.8 |  |  |
| 125 | 743.716757 | 83.9832429 | 0.07644528 |  | 40.0321543 | 694.2 |  |  |
| 126 | 2921.72752 | -321.527524 | -0.29266863 |  | 40.3536977 | 702.9 |  |  |
| 127 | 5226.29856 | 452.601439 | 0.41197793 |  | 40.6752412 | 718.6 |  |  |
| 128 | 1818.52336 | 252.076638 | 0.22945135 |  | 40.9967846 | 728.2 |  |  |
| 129 | 2271.24597 | -676.745966 | -0.61600423 |  | 41.318328 | 738.4 |  |  |
| 130 | 476.738756 | -73.5387558 | -0.06693824 |  | 41.6398714 | 741.8 |  |  |
| 131 | 618.658281 | -208.158281 | -0.18947491 |  | 41.9614148 | 747.4 |  |  |
| 132 | 2968.76098 | 162.239021 | 0.14767716 |  | 42.2829582 | 753.7 |  |  |
| 133 | 2051.50621 | -548.40621 | -0.49918368 |  | 42.6045016 | 753.8 |  |  |
| 134 | 1055.47552 | -125.375523 | -0.11412237 |  | 42.926045 | 754.4 |  |  |
| 135 | 1181.2849 | -131.284895 | -0.11950134 |  | 43.2475884 | 766.2 |  |  |
| 136 | 443.90408 | -124.80408 | -0.11360221 |  | 43.5691318 | 776.3 |  |  |
| 137 | 851.163286 | -148.263286 | -0.13495583 |  | 43.8906752 | 780.6 |  |  |
| 138 | 1625.95242 | 135.347577 | 0.12319937 |  | 44.2122186 | 781.5 |  |  |
| 139 | 1864.66939 | 165.230607 | 0.15040023 |  | 44.5337621 | 789.8 |  |  |
| 140 | 2585.18916 | 940.110841 | 0.85573063 |  | 44.8553055 | 798.4 |  |  |
| 141 | 14716.0661 | 6579.93391 | 5.98934799 |  | 45.1768489 | 798.4 |  |  |
| 142 | 563.706277 | -12.8062765 | -0.01165684 |  | 45.4983923 | 805.5 |  |  |
| 143 | 866.044698 | -124.244698 | -0.11309304 |  | 45.8199357 | 822 |  |  |
| 144 | 42992.5247 | -2987.02469 | -2.71892249 |  | 46.1414791 | 827.7 |  |  |
| 145 | 737.436528 | -231.036528 | -0.21029971 |  | 46.4630225 | 850 |  |  |
| 146 | 242.049324 | -156.249324 | -0.14222507 |  | 46.7845659 | 877.6 |  |  |
| 147 | 575.242784 | -160.942784 | -0.14649727 |  | 47.1061093 | 887 |  |  |
| 148 | 1259.24165 | 323.658347 | 0.2946082 |  | 47.4276527 | 900.4 |  |  |
| 149 | 233.994247 | -154.794247 | -0.1409006 |  | 47.7491961 | 901.1 |  |  |
| 150 | 2767.24754 | -73.8475403 | -0.06721931 |  | 48.0707395 | 907.9 |  |  |
| 151 | 706.308436 | -12.1084358 | -0.01102164 |  | 48.392283 | 922 |  |  |
| 152 | 1687.86729 | 88.3327095 | 0.08040435 |  | 48.7138264 | 930.1 |  |  |
| 153 | 7385.19559 | -678.195587 | -0.61732373 |  | 49.0353698 | 943.9 |  |  |
| 154 | 1679.4709 | 33.2291028 | 0.0302466 |  | 49.3569132 | 948.3 |  |  |
| 155 | 37025.2148 | -1705.4148 | -1.55234427 |  | 49.6784566 | 951 |  |  |
| 156 | 319.528237 | -113.228237 | -0.10306537 |  | 50 | 957.7 |  |  |
| 157 | 854.3034 | 288.5966 | 0.26269344 |  | 50.3215434 | 962.6 |  |  |
| 158 | 1219.6489 | -342.048904 | -0.3113481 |  | 50.6430868 | 965.3 |  |  |
| 159 | 1866.78556 | -473.185557 | -0.4307145 |  | 50.9646302 | 972.2 |  |  |
| 160 | 1560.01002 | -214.310017 | -0.19507449 |  | 51.2861736 | 975.6 |  |  |
| 161 | 912.19073 | -164.79073 | -0.14999984 |  | 51.607717 | 992.6 |  |  |
| 162 | 8566.28824 | -896.788243 | -0.81629648 |  | 51.9292605 | 995.6 |  |  |
| 163 | 6112.69829 | -856.298292 | -0.77944072 |  | 52.2508039 | 1021.5 |  |  |
| 164 | 667.057004 | -242.657004 | -0.22087718 |  | 52.5723473 | 1025.7 |  |  |
| 165 | 4039.0622 | 710.337798 | 0.646581 |  | 52.8938907 | 1033.1 |  |  |
| 166 | 689.856966 | -22.656966 | -0.02062338 |  | 53.2154341 | 1050 |  |  |
| 167 | 6810.07678 | -372.376778 | -0.33895388 |  | 53.5369775 | 1087.9 |  |  |
| 168 | 1427.10125 | 334.098745 | 0.30411151 |  | 53.8585209 | 1091.2 |  |  |
| 169 | 1258.2177 | -295.617702 | -0.26908436 |  | 54.1800643 | 1093.2 |  |  |
| 170 | 2795.71336 | -682.713361 | -0.62143601 |  | 54.5016077 | 1142.9 |  |  |
| 171 | 1050.83361 | -106.933614 | -0.09733572 |  | 54.8231511 | 1182.3 |  |  |
| 172 | 1035.74741 | 55.4525884 | 0.05047541 |  | 55.1446945 | 1245 |  |  |
| 173 | 708.62939 | 67.67061 | 0.06159679 |  | 55.4662379 | 1249 |  |  |
| 174 | 353.386864 | -97.4868641 | -0.08873687 |  | 55.7877814 | 1274.5 |  |  |
| 175 | 981.000197 | -191.200197 | -0.17403891 |  | 56.1093248 | 1297.1 |  |  |
| 176 | 818.055556 | -271.355556 | -0.24699988 |  | 56.4308682 | 1338.1 |  |  |
| 177 | 549.234444 | -92.3344442 | -0.08404691 |  | 56.7524116 | 1345.7 |  |  |
| 178 | 2441.01694 | -134.116942 | -0.1220792 |  | 57.073955 | 1393.6 |  |  |
| 179 | 397.894575 | -124.394575 | -0.11322947 |  | 57.3954984 | 1406 |  |  |
| 180 | 354.956921 | -173.356921 | -0.15779717 |  | 57.7170418 | 1441.5 |  |  |
| 181 | 690.5396 | -32.9395996 | -0.02998309 |  | 58.0385852 | 1503.1 |  |  |
| 182 | 326.08152 | -145.08152 | -0.13205964 |  | 58.3601286 | 1535.3 |  |  |
| 183 | 663.029465 | -128.329465 | -0.11681118 |  | 58.681672 | 1549 |  |  |
| 184 | 44457.2516 | -3205.85161 | -2.91810847 |  | 59.0032154 | 1570.9 |  |  |
| 185 | 848.227961 | 700.772039 | 0.63787382 |  | 59.3247588 | 1579.8 |  |  |
| 186 | 338.710242 | -160.510242 | -0.14610355 |  | 59.6463023 | 1582.9 |  |  |
| 187 | 1800.5701 | -828.370098 | -0.75401924 |  | 59.9678457 | 1594.5 |  |  |
| 188 | 5281.86494 | 347.335064 | 0.3161598 |  | 60.2893891 | 1596.4 |  |  |
| 189 | 345.741368 | -187.141368 | -0.17034438 |  | 60.6109325 | 1621.5 |  |  |
| 190 | 6877.93056 | -1198.03056 | -1.09050061 |  | 60.9324759 | 1633.6 |  |  |
| 191 | 226.826594 | -161.226594 | -0.1467556 |  | 61.2540193 | 1644.4 |  |  |
| 192 | 768.018513 | 506.481487 | 0.46102194 |  | 61.5755627 | 1662.6 |  |  |
| 193 | 700.91563 | -16.1156303 | -0.01466916 |  | 61.8971061 | 1677.2 |  |  |
| 194 | 306.489936 | -121.989936 | -0.11104066 |  | 62.2186495 | 1692.3 |  |  |
| 195 | 1551.13578 | 222.96422 | 0.20295193 |  | 62.5401929 | 1693.5 |  |  |
| 196 | 980.590617 | -504.890617 | -0.45957386 |  | 62.8617363 | 1698.7 |  |  |
| 197 | 388.542495 | -94.7424945 | -0.08623883 |  | 63.1832797 | 1705.9 |  |  |
| 198 | 228.533178 | -152.133178 | -0.13847837 |  | 63.5048232 | 1712.7 |  |  |
| 199 | 734.296413 | -309.696413 | -0.28189943 |  | 63.8263666 | 1738.6 |  |  |
| 200 | 963.866093 | -62.7660934 | -0.05713248 |  | 64.14791 | 1746.1 |  |  |
| 201 | 1062.09707 | -551.897069 | -0.50236122 |  | 64.4694534 | 1761.2 |  |  |
| 202 | 785.357407 | -104.657407 | -0.09526382 |  | 64.7909968 | 1761.3 |  |  |
| 203 | 533.943452 | -32.7434515 | -0.02980454 |  | 65.1125402 | 1763.9 |  |  |
| 204 | 3574.46177 | 630.438227 | 0.57385286 |  | 65.4340836 | 1774.1 |  |  |
| 205 | 39708.4427 | -1530.2427 | -1.39289485 |  | 65.755627 | 1775.7 |  |  |
| 206 | 1011.37739 | -292.777392 | -0.26649898 |  | 66.0771704 | 1776.2 |  |  |
| 207 | 215.017033 | -156.617033 | -0.14255978 |  | 66.3987138 | 1796.4 |  |  |
| 208 | 471.004634 | -141.404634 | -0.12871278 |  | 66.7202572 | 1820.2 |  |  |
| 209 | 972.12596 | -307.22596 | -0.27965071 |  | 67.0418006 | 1831.2 |  |  |
| 210 | 341.577303 | -187.177303 | -0.17037709 |  | 67.3633441 | 1852.3 |  |  |
| 211 | 596.814006 | -187.414006 | -0.17059255 |  | 67.6848875 | 1854.1 |  |  |
| 212 | 299.45881 | -130.05881 | -0.1183853 |  | 68.0064309 | 1879.8 |  |  |
| 213 | 641.59477 | -16.5947704 | -0.0151053 |  | 68.3279743 | 1893.2 |  |  |
| 214 | 907.139241 | -153.439241 | -0.13966721 |  | 68.6495177 | 1924.1 |  |  |
| 215 | 1377.81511 | -128.815109 | -0.11725323 |  | 68.9710611 | 1959.4 |  |  |
| 216 | 1591.75248 | 4.64752049 | 0.00423038 |  | 69.2926045 | 1992.3 |  |  |
| 217 | 2960.97896 | -135.378956 | -0.12322794 |  | 69.6141479 | 2007.6 |  |  |
| 218 | 1329.14333 | -680.543333 | -0.61946076 |  | 69.9356913 | 2029.9 |  |  |
| 219 | 2709.90632 | -269.106318 | -0.24495252 |  | 70.2572347 | 2060.8 |  |  |
| 220 | 4999.39115 | 368.808848 | 0.33570619 |  | 70.5787781 | 2070.6 |  |  |
| 221 | 582.751754 | -178.551754 | -0.16252573 |  | 70.9003215 | 2084.5 |  |  |
| 222 | 1734.62769 | 29.2723078 | 0.02664495 |  | 71.221865 | 2113 |  |  |
| 223 | 7783.10271 | -1631.10271 | -1.48470211 |  | 71.5434084 | 2136.4 |  |  |
| 224 | 2783.69901 | -617.19901 | -0.56180194 |  | 71.8649518 | 2139.1 |  |  |
| 225 | 302.598924 | -138.998924 | -0.12652299 |  | 72.1864952 | 2166.5 |  |  |
| 226 | 473.666905 | -41.5669046 | -0.03783604 |  | 72.5080386 | 2208.8 |  |  |
| 227 | 1604.92731 | 16.572692 | 0.0150852 |  | 72.829582 | 2254.6 |  |  |
| 228 | 17350.9635 | 6043.83647 | 5.5013683 |  | 73.1511254 | 2286 |  |  |
| 229 | 1007.14506 | -201.645064 | -0.18354629 |  | 73.4726688 | 2306.9 |  |  |
| 230 | 1465.32874 | 240.571263 | 0.21897865 |  | 73.7942122 | 2342 |  |  |
| 231 | 2584.43826 | -213.738262 | -0.19455406 |  | 74.1157556 | 2370.7 |  |  |
| 232 | 636.270228 | -126.970228 | -0.11557394 |  | 74.437299 | 2410.4 |  |  |
| 233 | 911.508096 | 751.091904 | 0.6836772 |  | 74.7588424 | 2436.6 |  |  |
| 234 | 23856.6665 | 4045.23347 | 3.68215111 |  | 75.0803859 | 2440.8 |  |  |
| 235 | 750.952673 | -67.7526733 | -0.06167149 |  | 75.4019293 | 2447.2 |  |  |
| 236 | 505.47763 | -83.0776304 | -0.07562095 |  | 75.7234727 | 2521.5 |  |  |
| 237 | 417.827476 | -236.627476 | -0.21538883 |  | 76.0450161 | 2540.9 |  |  |
| 238 | 2913.33113 | 891.468869 | 0.81145455 |  | 76.3665595 | 2600.2 |  |  |
| 239 | 4540.66137 | 192.638628 | 0.17534823 |  | 76.6881029 | 2621 |  |  |
| 240 | 1161.76157 | -169.161574 | -0.15397838 |  | 77.0096463 | 2693.4 |  |  |
| 241 | 7165.86541 | -655.665411 | -0.59681577 |  | 77.3311897 | 2811.4 |  |  |
| 242 | 2889.43895 | 48.1610451 | 0.04383832 |  | 77.6527331 | 2825.6 |  |  |
| 243 | 1277.87755 | -377.47755 | -0.34359683 |  | 77.9742765 | 2904 |  |  |
| 244 | 595.448739 | 15.051261 | 0.01370033 |  | 78.2958199 | 2937.6 |  |  |
| 245 | 2527.09704 | 13.8029605 | 0.01256407 |  | 78.6173633 | 2974.6 |  |  |
| 246 | 900.039852 | -308.139852 | -0.28048257 |  | 78.9389068 | 3030.7 |  |  |
| 247 | 2538.49702 | -477.697021 | -0.43482104 |  | 79.2604502 | 3049.2 |  |  |
| 248 | 555.03683 | -174.83683 | -0.15914425 |  | 79.5819936 | 3080.5 |  |  |
| 249 | 1303.74936 | -6.64936328 | -0.00605255 |  | 79.903537 | 3087.9 |  |  |
| 250 | 640.229503 | 141.270497 | 0.12859068 |  | 80.2250804 | 3091.6 |  |  |
| 251 | 695.864142 | -16.9641417 | -0.01544151 |  | 80.5466238 | 3131 |  |  |
| 252 | 31306.7931 | 1438.10687 | 1.30902873 |  | 80.8681672 | 3243.8 |  |  |
| 253 | 345.263524 | -173.263524 | -0.15771215 |  | 81.1897106 | 3525.3 |  |  |
| 254 | 626.235514 | -1.93551437 | -0.00176179 |  | 81.511254 | 3660.4 |  |  |
| 255 | 864.952485 | -401.652485 | -0.36560192 |  | 81.8327974 | 3726 |  |  |
| 256 | 6489.78509 | -214.885093 | -0.19559795 |  | 82.1543408 | 3804.8 |  |  |
| 257 | 7684.94 | -706.940001 | -0.64348818 |  | 82.4758842 | 3818.6 |  |  |
| 258 | 997.246876 | -216.646876 | -0.19720161 |  | 82.7974277 | 4108.6 |  |  |
| 259 | 32911.1869 | -45.7868799 | -0.04167725 |  | 83.1189711 | 4204.9 |  |  |
| 260 | 2664.8525 | 146.5475 | 0.13339404 |  | 83.4405145 | 4263.2 |  |  |
| 261 | 1204.22138 | -21.9213843 | -0.01995382 |  | 83.7620579 | 4522.5 |  |  |
| 262 | 916.150005 | 5.84999532 | 0.00532493 |  | 84.0836013 | 4608.6 |  |  |
| 263 | 35690.4613 | -917.261323 | -0.83493198 |  | 84.4051447 | 4651 |  |  |
| 264 | 279.048065 | -132.048065 | -0.12019601 |  | 84.7266881 | 4733.3 |  |  |
| 265 | 357.619192 | -113.819192 | -0.10360328 |  | 85.0482315 | 4749.4 |  |  |
| 266 | 893.691359 | -6.69135921 | -0.00609077 |  | 85.3697749 | 4820.4 |  |  |
| 267 | 2800.35527 | -278.85527 | -0.25382645 |  | 85.6913183 | 5256.4 |  |  |
| 268 | 1750.46479 | -58.1647917 | -0.05294418 |  | 86.0128617 | 5364.8 |  |  |
| 269 | 944.206246 | -332.106246 | -0.30229785 |  | 86.3344051 | 5368.2 |  |  |
| 270 | 38136.6788 | -1655.67883 | -1.50707238 |  | 86.6559486 | 5629.2 |  |  |
| 271 | 366.834746 | -204.734746 | -0.18635866 |  | 86.977492 | 5678.9 |  |  |
| 272 | 3250.27908 | -201.079076 | -0.1830311 |  | 87.2990354 | 5679.9 |  |  |
| 273 | 611.354102 | -5.75410187 | -0.00523764 |  | 87.6205788 | 6039.2 |  |  |
| 274 | 324.921043 | -193.221043 | -0.17587837 |  | 87.9421222 | 6152 |  |  |
| 275 | 1443.75751 | -350.557515 | -0.31909301 |  | 88.2636656 | 6274.9 |  |  |
| 276 | 1573.25311 | 246.946891 | 0.22478202 |  | 88.585209 | 6313.9 |  |  |
| 277 | 441.105282 | -85.3052818 | -0.07764865 |  | 88.9067524 | 6348.2 |  |  |
| 278 | 539.336257 | -121.236257 | -0.11035462 |  | 89.2282958 | 6354 |  |  |
| 279 | 1012.46961 | 763.230394 | 0.69472619 |  | 89.5498392 | 6437.7 |  |  |
| 280 | 369.019174 | -90.2191735 | -0.0821215 |  | 89.8713826 | 6510.2 |  |  |
| 281 | 18689.4032 | 4996.19677 | 4.54776013 |  | 90.192926 | 6707 |  |  |
| 282 | 17952.0224 | 4809.17759 | 4.37752696 |  | 90.5144695 | 6978 |  |  |
| 283 | 4034.9664 | 487.533599 | 0.44377473 |  | 90.8360129 | 7228.3 |  |  |
| 284 | 240.479266 | -159.379266 | -0.14507408 |  | 91.1575563 | 7513.4 |  |  |
| 285 | 344.444364 | -197.644364 | -0.17990468 |  | 91.4790997 | 7669.5 |  |  |
| 286 | 16683.1431 | 5753.95692 | 5.23750706 |  | 91.8006431 | 20451.5 |  |  |
| 287 | 2835.71569 | 252.18431 | 0.22954936 |  | 92.1221865 | 21296 |  |  |
| 288 | 599.271487 | 6.02851287 | 0.00548742 |  | 92.4437299 | 22437.1 |  |  |
| 289 | 484.930359 | -37.730359 | -0.03434385 |  | 92.7652733 | 22761.2 |  |  |
| 290 | 2939.476 | 91.2240022 | 0.08303614 |  | 93.0868167 | 23394.8 |  |  |
| 291 | 8274.46238 | -1926.26238 | -1.75336954 |  | 93.4083601 | 23685.6 |  |  |
| 292 | 969.054109 | -214.654109 | -0.1953877 |  | 93.7299035 | 25066 |  |  |
| 293 | 2329.26982 | 107.330178 | 0.09769669 |  | 94.0514469 | 26712.9 |  |  |
| 294 | 8380.40711 | -2026.40711 | -1.84452573 |  | 94.3729904 | 27901.9 |  |  |
| 295 | 950.418211 | -337.918211 | -0.30758816 |  | 94.6945338 | 29325.9 |  |  |
| 296 | 4299.1456 | -1218.6456 | -1.10926534 |  | 95.0160772 | 30630.4 |  |  |
| 297 | 389.020338 | -226.920338 | -0.20655297 |  | 95.3376206 | 31297.7 |  |  |
| 298 | 371.340128 | -131.040128 | -0.11927854 |  | 95.659164 | 32744.9 |  |  |
| 299 | 610.807995 | -192.507995 | -0.17522932 |  | 95.9807074 | 32865.4 |  |  |
| 300 | 42640.354 | -2327.55401 | -2.11864301 |  | 96.3022508 | 34404 |  |  |
| 301 | 45904.5031 | -2860.5031 | -2.60375693 |  | 96.6237942 | 34773.2 |  |  |
| 302 | 2619.66216 | -535.162156 | -0.48712836 |  | 96.9453376 | 35319.8 |  |  |
| 303 | 30108.2251 | 1189.47495 | 1.08271291 |  | 97.266881 | 36376.3 |  |  |
| 304 | 1898.52802 | -46.2280198 | -0.0420788 |  | 97.5884244 | 36481 |  |  |
| 305 | 1013.76661 | -275.36661 | -0.25065091 |  | 97.9099678 | 38178.2 |  |  |
| 306 | 330.518638 | -114.418638 | -0.10414892 |  | 98.2315113 | 38541.4 |  |  |
| 307 | 1857.97958 | -862.379584 | -0.78497619 |  | 98.5530547 | 40005.5 |  |  |
| 308 | 2251.10827 | -114.708275 | -0.10441256 |  | 98.8745981 | 40312.8 |  |  |
| 309 | 499.606981 | -140.606981 | -0.12798672 |  | 99.1961415 | 41251.4 |  |  |
| 310 | 37103.5129 | -727.212877 | -0.66194145 |  | 99.5176849 | 41798.5 |  |  |
| 311 | 560.088318 | -266.888318 | -0.2429336 |  | 99.8392283 | 43044 |  |  |

ANÁLISIS NO. 7: INFORMACIÓN SOBRE NACIMIENTOS EN PANAMÁ

## REPORTE PREELIMINAR

Base de datos completa en Excel ‘NACIMIENTOS’.

ANALÍTICA VISUAL

Esto se puede deber a que la mayoría de hospitales se encuentran en este distrito,

El análisis estadístico realizado en el análisis de ‘Embarazos en Panamá’, muestra que a lo largo de los años, ha habido una disminución en el número de embarazos en Panamá. Esta reducción naturalmente se traduce en una disminución proporcional de los nacimientos en el país. Es decir, si hay menos embarazos, es lógico que también haya menos nacimientos, ya que ambos están estrechamente relacionados y siguen un patrón esperado.

Siendo x la edad de la madre y y la edad del padre.

**OBSERVACIONES**

En la mayoría de los casos, se observa que la edad del padre es mayor que la de la madre. En las mujeres, el promedio de edad no supera los 43 años, mientras que en los hombres puede llegar a alcanzar hasta los 72 años. Esta diferencia en las edades promedio entre padres y madres refleja una tendencia común en la estructura de edades de las parejas y es relevante para comprender la dinámica demográfica.

|  |  |  |
| --- | --- | --- |
| Edades agrupadas |  | Frecuencia |
| 13 | 18 | 26 |
| 18 | 23 | 93 |
| 23 | 28 | 209 |
| 28 | 33 | 103 |
| 33 | 38 | 63 |
| 38 | 43 | 22 |
|  |  | 0 |
|  | Total | 516 |

|  |  |  |
| --- | --- | --- |
| **Media par las edad de la madre** | **Varianza** | **Desviacion estandar** |
| 27.50 | 32.11 | 5.67 |
|  |  |  |
|  |  |  |
| **Media por edad del** | **Varianza** | **Desviacion** |
| **padre** |  | **estandar** |
| 31.80 | 52.73 | 7.26 |

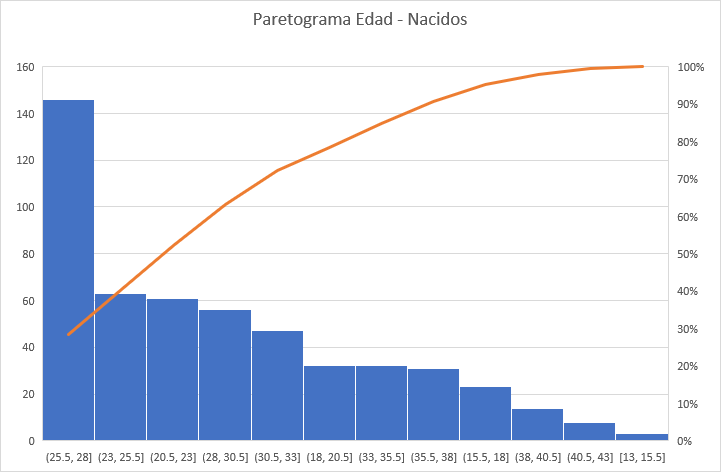
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mínimo | 13 |  |  |  |  |
| Máximo | 43 |  |  |  |  |
| Amplitud | 5 |  |  |  |  |
|  |  |  |  |  |  |
| **Intervalos Edad de la madre** | **Frecuencia Absoluta** | **Frecuencia Acumulada** | **Frecuencia Relativa** | **Frecuencia relativa Acumulada** | **Probabilidad** |
| 13-18 | 26 | 26 | 0.05 | 0.05 | 2.88545E-07 |
| 18-23 | 93 | 119 | 0.18 | 0.23 | 2.05815E-07 |
| 23-28 | 209 | 328 | 0.41 | 0.64 | 1.61748E-07 |
| 28-33 | 103 | 431 | 0.20 | 0.84 | 1.9988E-07 |
| 33-38 | 63 | 494 | 0.12 | 0.96 | 2.29429E-07 |
| 38-43 | 22 | 516 | 0.04 | **1.00** | 3.00482E-07 |
| Total | 516 |  |  |  |  |

DIAGRAMA DE TALLO Y HOJA

|  |  |
| --- | --- |
| Edad de la madre | |
| 1 | 3 5 5 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |
| 2 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |
| 3 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 |
| 4 | 0 0 0 0 0 1 1 1 1 2 2 2 3 |

|  |  |
| --- | --- |
| Edad del padre | |
| 2 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |
| 3 | 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 |
| 4 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 5 5 5 5 5 6 7 8 8 8 9 9 |
| 5 | 0 0 0 0 5 9 |
| 6 | 0 |
| 7 | 2 |

PARETOGRAMAS



ANÁLISIS DE CORRELACIÓN

|  |  |  |
| --- | --- | --- |
|  | *Edad de la madre* | *Edad del padre* |
| Edad de la madre | 1 |  |
| Edad del padre | 0.566151022 | 1 |

ANÁLISIS DE REGRESIÓN

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Regression Statistics* | |  |  |  |  |  |  |  |  |
| Multiple R | 0.25522609 |  |  |  |  |  |  |  |  |
| R Square | 0.065140357 |  |  |  |  |  |  |  |  |
| Adjusted R Square | 0.063318018 |  |  |  |  |  |  |  |  |
| Standard Error | 5.494891031 |  |  |  |  |  |  |  |  |
| Observations | 515 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |  |
| Regression | 1 | 1079.292737 | 1079.293 | 35.74548 | 4.21541E-09 |  |  |  |  |
| Residual | 513 | 15489.43348 | 30.19383 |  |  |  |  |  |  |
| Total | 514 | 16568.72621 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |  |
| Intercept | 24.9874813 | 0.48402218 | 51.62466 | 2.7E-205 | 24.03657178 | 25.93839081 | 24.03657178 | 25.93839081 |  |
| 5 | 1.119208268 | 0.187197639 | 5.978752 | 4.22E-09 | 0.751439966 | 1.486976569 | 0.751439966 | 1.486976569 |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  |  | PROBABILITY OUTPUT | |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted 29* | *Residuals* | *Standard Residuals* |  | *Percentile* | *29* |  |  |  |
| 1 | 26.10668956 | 5.893310437 | 1.073552 |  | 0.097087379 | 13 |  |  |  |
| 2 | 26.10668956 | -7.106689563 | -1.29459 |  | 0.291262136 | 15 |  |  |  |
| 3 | 26.10668956 | -4.106689563 | -0.74809 |  | 0.485436893 | 15 |  |  |  |
| 4 | 26.10668956 | -3.106689563 | -0.56593 |  | 0.67961165 | 16 |  |  |  |
| 5 | 27.22589783 | -3.225897831 | -0.58764 |  | 0.873786408 | 16 |  |  |  |
| 6 | 26.10668956 | 0.893310437 | 0.162729 |  | 1.067961165 | 16 |  |  |  |
| 7 | 29.46431437 | 1.535685633 | 0.279747 |  | 1.262135922 | 16 |  |  |  |
| 8 | 30.58352264 | 2.416477365 | 0.440196 |  | 1.45631068 | 17 |  |  |  |
| 9 | 27.22589783 | 5.774102169 | 1.051837 |  | 1.650485437 | 17 |  |  |  |
| 10 | 26.10668956 | 6.893310437 | 1.255717 |  | 1.844660194 | 17 |  |  |  |
| 11 | 30.58352264 | 6.416477365 | 1.168855 |  | 2.038834951 | 17 |  |  |  |
| 12 | 27.22589783 | 10.77410217 | 1.962659 |  | 2.233009709 | 17 |  |  |  |
| 13 | 29.46431437 | 5.535685633 | 1.008406 |  | 2.427184466 | 17 |  |  |  |
| 14 | 28.3451061 | 10.6548939 | 1.940944 |  | 2.621359223 | 17 |  |  |  |
| 15 | 30.58352264 | 5.416477365 | 0.98669 |  | 2.815533981 | 17 |  |  |  |
| 16 | 28.3451061 | 3.654893901 | 0.665792 |  | 3.009708738 | 17 |  |  |  |
| 17 | 27.22589783 | 1.774102169 | 0.323178 |  | 3.203883495 | 17 |  |  |  |
| 18 | 29.46431437 | 3.535685633 | 0.644076 |  | 3.398058252 | 17 |  |  |  |
| 19 | 28.3451061 | 11.6548939 | 2.123108 |  | 3.59223301 | 18 |  |  |  |
| 20 | 26.10668956 | -9.106689563 | -1.65892 |  | 3.786407767 | 18 |  |  |  |
| 21 | 28.3451061 | -7.345106099 | -1.33802 |  | 3.980582524 | 18 |  |  |  |
| 22 | 27.22589783 | -7.225897831 | -1.3163 |  | 4.174757282 | 18 |  |  |  |
| 23 | 27.22589783 | -4.225897831 | -0.76981 |  | 4.368932039 | 18 |  |  |  |
| 24 | 26.10668956 | 1.893310437 | 0.344894 |  | 4.563106796 | 18 |  |  |  |
| 25 | 28.3451061 | -1.345106099 | -0.24503 |  | 4.757281553 | 18 |  |  |  |
| 26 | 26.10668956 | -0.106689563 | -0.01944 |  | 4.951456311 | 18 |  |  |  |
| 27 | 26.10668956 | -1.106689563 | -0.2016 |  | 5.145631068 | 19 |  |  |  |
| 28 | 26.10668956 | 2.893310437 | 0.527059 |  | 5.339805825 | 19 |  |  |  |
| 29 | 26.10668956 | -0.106689563 | -0.01944 |  | 5.533980583 | 19 |  |  |  |
| 30 | 27.22589783 | -0.225897831 | -0.04115 |  | 5.72815534 | 19 |  |  |  |
| 31 | 26.10668956 | 2.893310437 | 0.527059 |  | 5.922330097 | 19 |  |  |  |
| 32 | 27.22589783 | -3.225897831 | -0.58764 |  | 6.116504854 | 19 |  |  |  |
| 33 | 26.10668956 | -4.106689563 | -0.74809 |  | 6.310679612 | 19 |  |  |  |
| 34 | 28.3451061 | -7.345106099 | -1.33802 |  | 6.504854369 | 19 |  |  |  |
| 35 | 26.10668956 | -4.106689563 | -0.74809 |  | 6.699029126 | 19 |  |  |  |
| 36 | 27.22589783 | -3.225897831 | -0.58764 |  | 6.893203883 | 19 |  |  |  |
| 37 | 26.10668956 | -2.106689563 | -0.38376 |  | 7.087378641 | 19 |  |  |  |
| 38 | 26.10668956 | -2.106689563 | -0.38376 |  | 7.281553398 | 19 |  |  |  |
| 39 | 28.3451061 | -5.345106099 | -0.97369 |  | 7.475728155 | 19 |  |  |  |
| 40 | 26.10668956 | -2.106689563 | -0.38376 |  | 7.669902913 | 19 |  |  |  |
| 41 | 26.10668956 | -5.106689563 | -0.93026 |  | 7.86407767 | 19 |  |  |  |
| 42 | 26.10668956 | -3.106689563 | -0.56593 |  | 8.058252427 | 20 |  |  |  |
| 43 | 26.10668956 | -4.106689563 | -0.74809 |  | 8.252427184 | 20 |  |  |  |
| 44 | 26.10668956 | -4.106689563 | -0.74809 |  | 8.446601942 | 20 |  |  |  |
| 45 | 28.3451061 | -7.345106099 | -1.33802 |  | 8.640776699 | 20 |  |  |  |
| 46 | 27.22589783 | -6.225897831 | -1.13414 |  | 8.834951456 | 20 |  |  |  |
| 47 | 27.22589783 | -3.225897831 | -0.58764 |  | 9.029126214 | 20 |  |  |  |
| 48 | 28.3451061 | -8.345106099 | -1.52018 |  | 9.223300971 | 20 |  |  |  |
| 49 | 26.10668956 | -6.106689563 | -1.11242 |  | 9.417475728 | 20 |  |  |  |
| 50 | 29.46431437 | -6.464314367 | -1.17757 |  | 9.611650485 | 20 |  |  |  |
| 51 | 29.46431437 | -5.464314367 | -0.9954 |  | 9.805825243 | 20 |  |  |  |
| 52 | 27.22589783 | -5.225897831 | -0.95197 |  | 10 | 20 |  |  |  |
| 53 | 26.10668956 | -6.106689563 | -1.11242 |  | 10.19417476 | 20 |  |  |  |
| 54 | 28.3451061 | -8.345106099 | -1.52018 |  | 10.38834951 | 20 |  |  |  |
| 55 | 27.22589783 | -4.225897831 | -0.76981 |  | 10.58252427 | 20 |  |  |  |
| 56 | 27.22589783 | -5.225897831 | -0.95197 |  | 10.77669903 | 20 |  |  |  |
| 57 | 28.3451061 | -6.345106099 | -1.15585 |  | 10.97087379 | 20 |  |  |  |
| 58 | 28.3451061 | -7.345106099 | -1.33802 |  | 11.16504854 | 20 |  |  |  |
| 59 | 28.3451061 | -3.345106099 | -0.60936 |  | 11.3592233 | 21 |  |  |  |
| 60 | 30.58352264 | -5.583522635 | -1.01712 |  | 11.55339806 | 21 |  |  |  |
| 61 | 29.46431437 | -4.464314367 | -0.81324 |  | 11.74757282 | 21 |  |  |  |
| 62 | 26.10668956 | -0.106689563 | -0.01944 |  | 11.94174757 | 21 |  |  |  |
| 63 | 26.10668956 | -9.106689563 | -1.65892 |  | 12.13592233 | 21 |  |  |  |
| 64 | 27.22589783 | -6.225897831 | -1.13414 |  | 12.33009709 | 21 |  |  |  |
| 65 | 26.10668956 | -2.106689563 | -0.38376 |  | 12.52427184 | 21 |  |  |  |
| 66 | 28.3451061 | -2.345106099 | -0.4272 |  | 12.7184466 | 21 |  |  |  |
| 67 | 28.3451061 | 2.654893901 | 0.483627 |  | 12.91262136 | 21 |  |  |  |
| 68 | 29.46431437 | 12.53568563 | 2.283557 |  | 13.10679612 | 21 |  |  |  |
| 69 | 26.10668956 | -8.106689563 | -1.47675 |  | 13.30097087 | 21 |  |  |  |
| 70 | 26.10668956 | -2.106689563 | -0.38376 |  | 13.49514563 | 21 |  |  |  |
| 71 | 28.3451061 | -1.345106099 | -0.24503 |  | 13.68932039 | 21 |  |  |  |
| 72 | 26.10668956 | 2.893310437 | 0.527059 |  | 13.88349515 | 21 |  |  |  |
| 73 | 29.46431437 | 4.535685633 | 0.826241 |  | 14.0776699 | 21 |  |  |  |
| 74 | 30.58352264 | 1.416477365 | 0.258032 |  | 14.27184466 | 21 |  |  |  |
| 75 | 26.10668956 | 12.89331044 | 2.348704 |  | 14.46601942 | 21 |  |  |  |
| 76 | 26.10668956 | 10.89331044 | 1.984375 |  | 14.66019417 | 22 |  |  |  |
| 77 | 29.46431437 | -1.464314367 | -0.26675 |  | 14.85436893 | 22 |  |  |  |
| 78 | 28.3451061 | -1.345106099 | -0.24503 |  | 15.04854369 | 22 |  |  |  |
| 79 | 28.3451061 | 0.654893901 | 0.119298 |  | 15.24271845 | 22 |  |  |  |
| 80 | 28.3451061 | -2.345106099 | -0.4272 |  | 15.4368932 | 22 |  |  |  |
| 81 | 28.3451061 | 0.654893901 | 0.119298 |  | 15.63106796 | 22 |  |  |  |
| 82 | 28.3451061 | 0.654893901 | 0.119298 |  | 15.82524272 | 22 |  |  |  |
| 83 | 28.3451061 | 0.654893901 | 0.119298 |  | 16.01941748 | 22 |  |  |  |
| 84 | 27.22589783 | 0.774102169 | 0.141014 |  | 16.21359223 | 22 |  |  |  |
| 85 | 30.58352264 | -1.583522635 | -0.28846 |  | 16.40776699 | 22 |  |  |  |
| 86 | 27.22589783 | -1.225897831 | -0.22332 |  | 16.60194175 | 22 |  |  |  |
| 87 | 28.3451061 | -1.345106099 | -0.24503 |  | 16.7961165 | 22 |  |  |  |
| 88 | 27.22589783 | 1.774102169 | 0.323178 |  | 16.99029126 | 22 |  |  |  |
| 89 | 29.46431437 | -4.464314367 | -0.81324 |  | 17.18446602 | 22 |  |  |  |
| 90 | 27.22589783 | 0.774102169 | 0.141014 |  | 17.37864078 | 22 |  |  |  |
| 91 | 27.22589783 | -2.225897831 | -0.40548 |  | 17.57281553 | 22 |  |  |  |
| 92 | 26.10668956 | -0.106689563 | -0.01944 |  | 17.76699029 | 22 |  |  |  |
| 93 | 27.22589783 | -0.225897831 | -0.04115 |  | 17.96116505 | 22 |  |  |  |
| 94 | 26.10668956 | 2.893310437 | 0.527059 |  | 18.15533981 | 22 |  |  |  |
| 95 | 26.10668956 | 2.893310437 | 0.527059 |  | 18.34951456 | 22 |  |  |  |
| 96 | 27.22589783 | 0.774102169 | 0.141014 |  | 18.54368932 | 22 |  |  |  |
| 97 | 26.10668956 | 2.893310437 | 0.527059 |  | 18.73786408 | 23 |  |  |  |
| 98 | 27.22589783 | 1.774102169 | 0.323178 |  | 18.93203883 | 23 |  |  |  |
| 99 | 26.10668956 | 1.893310437 | 0.344894 |  | 19.12621359 | 23 |  |  |  |
| 100 | 26.10668956 | 1.893310437 | 0.344894 |  | 19.32038835 | 23 |  |  |  |
| 101 | 27.22589783 | 0.774102169 | 0.141014 |  | 19.51456311 | 23 |  |  |  |
| 102 | 28.3451061 | -1.345106099 | -0.24503 |  | 19.70873786 | 23 |  |  |  |
| 103 | 27.22589783 | -2.225897831 | -0.40548 |  | 19.90291262 | 23 |  |  |  |
| 104 | 27.22589783 | -2.225897831 | -0.40548 |  | 20.09708738 | 23 |  |  |  |
| 105 | 26.10668956 | 2.893310437 | 0.527059 |  | 20.29126214 | 23 |  |  |  |
| 106 | 26.10668956 | 2.893310437 | 0.527059 |  | 20.48543689 | 23 |  |  |  |
| 107 | 27.22589783 | -0.225897831 | -0.04115 |  | 20.67961165 | 23 |  |  |  |
| 108 | 26.10668956 | -0.106689563 | -0.01944 |  | 20.87378641 | 23 |  |  |  |
| 109 | 27.22589783 | -0.225897831 | -0.04115 |  | 21.06796117 | 23 |  |  |  |
| 110 | 26.10668956 | 1.893310437 | 0.344894 |  | 21.26213592 | 23 |  |  |  |
| 111 | 26.10668956 | -0.106689563 | -0.01944 |  | 21.45631068 | 23 |  |  |  |
| 112 | 28.3451061 | 0.654893901 | 0.119298 |  | 21.65048544 | 23 |  |  |  |
| 113 | 27.22589783 | 0.774102169 | 0.141014 |  | 21.84466019 | 23 |  |  |  |
| 114 | 29.46431437 | -2.464314367 | -0.44891 |  | 22.03883495 | 23 |  |  |  |
| 115 | 26.10668956 | -0.106689563 | -0.01944 |  | 22.23300971 | 23 |  |  |  |
| 116 | 27.22589783 | -1.225897831 | -0.22332 |  | 22.42718447 | 23 |  |  |  |
| 117 | 28.3451061 | -2.345106099 | -0.4272 |  | 22.62135922 | 23 |  |  |  |
| 118 | 28.3451061 | -2.345106099 | -0.4272 |  | 22.81553398 | 23 |  |  |  |
| 119 | 28.3451061 | -2.345106099 | -0.4272 |  | 23.00970874 | 23 |  |  |  |
| 120 | 33.94114744 | -7.941147439 | -1.4466 |  | 23.2038835 | 24 |  |  |  |
| 121 | 30.58352264 | -3.583522635 | -0.65279 |  | 23.39805825 | 24 |  |  |  |
| 122 | 27.22589783 | 0.774102169 | 0.141014 |  | 23.59223301 | 24 |  |  |  |
| 123 | 26.10668956 | -0.106689563 | -0.01944 |  | 23.78640777 | 24 |  |  |  |
| 124 | 26.10668956 | -1.106689563 | -0.2016 |  | 23.98058252 | 24 |  |  |  |
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| 134 | 29.46431437 | 4.535685633 | 0.826241 |  | 25.9223301 | 24 |  |  |  |
| 135 | 26.10668956 | 7.893310437 | 1.437881 |  | 26.11650485 | 24 |  |  |  |
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| 138 | 27.22589783 | 2.774102169 | 0.505343 |  | 26.69902913 | 24 |  |  |  |
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| 157 | 26.10668956 | 6.893310437 | 1.255717 |  | 30.38834951 | 25 |  |  |  |
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| 324 | 27.22589783 | -4.225897831 | -0.76981 |  | 62.81553398 | 28 |  |  |  |
| 325 | 28.3451061 | -2.345106099 | -0.4272 |  | 63.00970874 | 28 |  |  |  |
| 326 | 27.22589783 | 2.774102169 | 0.505343 |  | 63.2038835 | 28 |  |  |  |
| 327 | 27.22589783 | 7.774102169 | 1.416166 |  | 63.39805825 | 28 |  |  |  |
| 328 | 29.46431437 | 9.535685633 | 1.737064 |  | 63.59223301 | 28 |  |  |  |
| 329 | 27.22589783 | -8.225897831 | -1.49847 |  | 63.78640777 | 29 |  |  |  |
| 330 | 27.22589783 | -3.225897831 | -0.58764 |  | 63.98058252 | 29 |  |  |  |
| 331 | 26.10668956 | -3.106689563 | -0.56593 |  | 64.17475728 | 29 |  |  |  |
| 332 | 28.3451061 | 0.654893901 | 0.119298 |  | 64.36893204 | 29 |  |  |  |
| 333 | 28.3451061 | 0.654893901 | 0.119298 |  | 64.5631068 | 29 |  |  |  |
| 334 | 27.22589783 | -0.225897831 | -0.04115 |  | 64.75728155 | 29 |  |  |  |
| 335 | 30.58352264 | -2.583522635 | -0.47063 |  | 64.95145631 | 29 |  |  |  |
| 336 | 28.3451061 | 2.654893901 | 0.483627 |  | 65.14563107 | 29 |  |  |  |
| 337 | 29.46431437 | 2.535685633 | 0.461912 |  | 65.33980583 | 29 |  |  |  |
| 338 | 28.3451061 | 9.654893901 | 1.758779 |  | 65.53398058 | 29 |  |  |  |
| 339 | 27.22589783 | 8.774102169 | 1.59833 |  | 65.72815534 | 29 |  |  |  |
| 340 | 30.58352264 | 10.41647736 | 1.897513 |  | 65.9223301 | 29 |  |  |  |
| 341 | 26.10668956 | 0.893310437 | 0.162729 |  | 66.11650485 | 29 |  |  |  |
| 342 | 28.3451061 | -3.345106099 | -0.60936 |  | 66.31067961 | 29 |  |  |  |
| 343 | 29.46431437 | -1.464314367 | -0.26675 |  | 66.50485437 | 29 |  |  |  |
| 344 | 28.3451061 | -1.345106099 | -0.24503 |  | 66.69902913 | 29 |  |  |  |
| 345 | 28.3451061 | -0.345106099 | -0.06287 |  | 66.89320388 | 29 |  |  |  |
| 346 | 27.22589783 | 1.774102169 | 0.323178 |  | 67.08737864 | 29 |  |  |  |
| 347 | 26.10668956 | 1.893310437 | 0.344894 |  | 67.2815534 | 29 |  |  |  |
| 348 | 26.10668956 | 2.893310437 | 0.527059 |  | 67.47572816 | 29 |  |  |  |
| 349 | 28.3451061 | -3.345106099 | -0.60936 |  | 67.66990291 | 29 |  |  |  |
| 350 | 28.3451061 | 0.654893901 | 0.119298 |  | 67.86407767 | 29 |  |  |  |
| 351 | 27.22589783 | -2.225897831 | -0.40548 |  | 68.05825243 | 29 |  |  |  |
| 352 | 26.10668956 | 2.893310437 | 0.527059 |  | 68.25242718 | 29 |  |  |  |
| 353 | 26.10668956 | 0.893310437 | 0.162729 |  | 68.44660194 | 29 |  |  |  |
| 354 | 28.3451061 | -0.345106099 | -0.06287 |  | 68.6407767 | 29 |  |  |  |
| 355 | 26.10668956 | -0.106689563 | -0.01944 |  | 68.83495146 | 29 |  |  |  |
| 356 | 29.46431437 | -1.464314367 | -0.26675 |  | 69.02912621 | 29 |  |  |  |
| 357 | 29.46431437 | -0.464314367 | -0.08458 |  | 69.22330097 | 29 |  |  |  |
| 358 | 27.22589783 | -1.225897831 | -0.22332 |  | 69.41747573 | 29 |  |  |  |
| 359 | 28.3451061 | -0.345106099 | -0.06287 |  | 69.61165049 | 29 |  |  |  |
| 360 | 28.3451061 | -0.345106099 | -0.06287 |  | 69.80582524 | 29 |  |  |  |
| 361 | 27.22589783 | -2.225897831 | -0.40548 |  | 70 | 29 |  |  |  |
| 362 | 30.58352264 | -2.583522635 | -0.47063 |  | 70.19417476 | 29 |  |  |  |
| 363 | 28.3451061 | -2.345106099 | -0.4272 |  | 70.38834951 | 29 |  |  |  |
| 364 | 29.46431437 | -2.464314367 | -0.44891 |  | 70.58252427 | 29 |  |  |  |
| 365 | 28.3451061 | -1.345106099 | -0.24503 |  | 70.77669903 | 29 |  |  |  |
| 366 | 28.3451061 | 0.654893901 | 0.119298 |  | 70.97087379 | 29 |  |  |  |
| 367 | 30.58352264 | -4.583522635 | -0.83496 |  | 71.16504854 | 29 |  |  |  |
| 368 | 29.46431437 | -4.464314367 | -0.81324 |  | 71.3592233 | 29 |  |  |  |
| 369 | 29.46431437 | -3.464314367 | -0.63108 |  | 71.55339806 | 29 |  |  |  |
| 370 | 26.10668956 | -0.106689563 | -0.01944 |  | 71.74757282 | 30 |  |  |  |
| 371 | 26.10668956 | 2.893310437 | 0.527059 |  | 71.94174757 | 30 |  |  |  |
| 372 | 27.22589783 | 1.774102169 | 0.323178 |  | 72.13592233 | 30 |  |  |  |
| 373 | 28.3451061 | -1.345106099 | -0.24503 |  | 72.33009709 | 30 |  |  |  |
| 374 | 26.10668956 | 3.893310437 | 0.709223 |  | 72.52427184 | 30 |  |  |  |
| 375 | 26.10668956 | 3.893310437 | 0.709223 |  | 72.7184466 | 30 |  |  |  |
| 376 | 26.10668956 | 4.893310437 | 0.891388 |  | 72.91262136 | 30 |  |  |  |
| 377 | 28.3451061 | 3.654893901 | 0.665792 |  | 73.10679612 | 30 |  |  |  |
| 378 | 26.10668956 | 7.893310437 | 1.437881 |  | 73.30097087 | 30 |  |  |  |
| 379 | 28.3451061 | 3.654893901 | 0.665792 |  | 73.49514563 | 30 |  |  |  |
| 380 | 26.10668956 | 7.893310437 | 1.437881 |  | 73.68932039 | 30 |  |  |  |
| 381 | 26.10668956 | 10.89331044 | 1.984375 |  | 73.88349515 | 30 |  |  |  |
| 382 | 26.10668956 | 8.893310437 | 1.620046 |  | 74.0776699 | 30 |  |  |  |
| 383 | 27.22589783 | 9.774102169 | 1.780495 |  | 74.27184466 | 30 |  |  |  |
| 384 | 26.10668956 | 8.893310437 | 1.620046 |  | 74.46601942 | 31 |  |  |  |
| 385 | 32.82193917 | 3.178060829 | 0.57893 |  | 74.66019417 | 31 |  |  |  |
| 386 | 26.10668956 | 11.89331044 | 2.166539 |  | 74.85436893 | 31 |  |  |  |
| 387 | 32.82193917 | 9.178060829 | 1.671917 |  | 75.04854369 | 31 |  |  |  |
| 388 | 26.10668956 | 13.89331044 | 2.530868 |  | 75.24271845 | 31 |  |  |  |
| 389 | 30.58352264 | 10.41647736 | 1.897513 |  | 75.4368932 | 31 |  |  |  |
| 390 | 26.10668956 | 13.89331044 | 2.530868 |  | 75.63106796 | 31 |  |  |  |
| 391 | 26.10668956 | 14.89331044 | 2.713033 |  | 75.82524272 | 31 |  |  |  |
| 392 | 26.10668956 | 16.89331044 | 3.077362 |  | 76.01941748 | 31 |  |  |  |
| 393 | 27.22589783 | 10.77410217 | 1.962659 |  | 76.21359223 | 31 |  |  |  |
| 394 | 27.22589783 | -6.225897831 | -1.13414 |  | 76.40776699 | 31 |  |  |  |
| 395 | 26.10668956 | 0.893310437 | 0.162729 |  | 76.60194175 | 31 |  |  |  |
| 396 | 26.10668956 | 1.893310437 | 0.344894 |  | 76.7961165 | 31 |  |  |  |
| 397 | 27.22589783 | -0.225897831 | -0.04115 |  | 76.99029126 | 31 |  |  |  |
| 398 | 26.10668956 | 2.893310437 | 0.527059 |  | 77.18446602 | 32 |  |  |  |
| 399 | 26.10668956 | -0.106689563 | -0.01944 |  | 77.37864078 | 32 |  |  |  |
| 400 | 27.22589783 | 4.774102169 | 0.869672 |  | 77.57281553 | 32 |  |  |  |
| 401 | 26.10668956 | 4.893310437 | 0.891388 |  | 77.76699029 | 32 |  |  |  |
| 402 | 27.22589783 | 5.774102169 | 1.051837 |  | 77.96116505 | 32 |  |  |  |
| 403 | 26.10668956 | 3.893310437 | 0.709223 |  | 78.15533981 | 32 |  |  |  |
| 404 | 27.22589783 | 2.774102169 | 0.505343 |  | 78.34951456 | 32 |  |  |  |
| 405 | 28.3451061 | 3.654893901 | 0.665792 |  | 78.54368932 | 32 |  |  |  |
| 406 | 28.3451061 | 4.654893901 | 0.847957 |  | 78.73786408 | 32 |  |  |  |
| 407 | 27.22589783 | 4.774102169 | 0.869672 |  | 78.93203883 | 32 |  |  |  |
| 408 | 27.22589783 | 6.774102169 | 1.234001 |  | 79.12621359 | 32 |  |  |  |
| 409 | 27.22589783 | 3.774102169 | 0.687508 |  | 79.32038835 | 32 |  |  |  |
| 410 | 28.3451061 | 5.654893901 | 1.030121 |  | 79.51456311 | 32 |  |  |  |
| 411 | 26.10668956 | 8.893310437 | 1.620046 |  | 79.70873786 | 32 |  |  |  |
| 412 | 26.10668956 | 11.89331044 | 2.166539 |  | 79.90291262 | 32 |  |  |  |
| 413 | 26.10668956 | 10.89331044 | 1.984375 |  | 80.09708738 | 32 |  |  |  |
| 414 | 27.22589783 | 8.774102169 | 1.59833 |  | 80.29126214 | 32 |  |  |  |
| 415 | 27.22589783 | 9.774102169 | 1.780495 |  | 80.48543689 | 33 |  |  |  |
| 416 | 27.22589783 | 10.77410217 | 1.962659 |  | 80.67961165 | 33 |  |  |  |
| 417 | 27.22589783 | 11.77410217 | 2.144824 |  | 80.87378641 | 33 |  |  |  |
| 418 | 27.22589783 | 12.77410217 | 2.326988 |  | 81.06796117 | 33 |  |  |  |
| 419 | 26.10668956 | 13.89331044 | 2.530868 |  | 81.26213592 | 33 |  |  |  |
| 420 | 26.10668956 | 14.89331044 | 2.713033 |  | 81.45631068 | 33 |  |  |  |
| 421 | 27.22589783 | 14.77410217 | 2.691317 |  | 81.65048544 | 33 |  |  |  |
| 422 | 26.10668956 | 1.893310437 | 0.344894 |  | 81.84466019 | 33 |  |  |  |
| 423 | 26.10668956 | 1.893310437 | 0.344894 |  | 82.03883495 | 33 |  |  |  |
| 424 | 26.10668956 | -1.106689563 | -0.2016 |  | 82.23300971 | 33 |  |  |  |
| 425 | 28.3451061 | -0.345106099 | -0.06287 |  | 82.42718447 | 33 |  |  |  |
| 426 | 27.22589783 | 6.774102169 | 1.234001 |  | 82.62135922 | 33 |  |  |  |
| 427 | 27.22589783 | 5.774102169 | 1.051837 |  | 82.81553398 | 33 |  |  |  |
| 428 | 28.3451061 | 2.654893901 | 0.483627 |  | 83.00970874 | 33 |  |  |  |
| 429 | 27.22589783 | 5.774102169 | 1.051837 |  | 83.2038835 | 33 |  |  |  |
| 430 | 28.3451061 | 4.654893901 | 0.847957 |  | 83.39805825 | 33 |  |  |  |
| 431 | 27.22589783 | 6.774102169 | 1.234001 |  | 83.59223301 | 34 |  |  |  |
| 432 | 26.10668956 | -6.106689563 | -1.11242 |  | 83.78640777 | 34 |  |  |  |
| 433 | 26.10668956 | -3.106689563 | -0.56593 |  | 83.98058252 | 34 |  |  |  |
| 434 | 26.10668956 | -2.106689563 | -0.38376 |  | 84.17475728 | 34 |  |  |  |
| 435 | 27.22589783 | -3.225897831 | -0.58764 |  | 84.36893204 | 34 |  |  |  |
| 436 | 26.10668956 | -3.106689563 | -0.56593 |  | 84.5631068 | 34 |  |  |  |
| 437 | 26.10668956 | -3.106689563 | -0.56593 |  | 84.75728155 | 34 |  |  |  |
| 438 | 28.3451061 | -5.345106099 | -0.97369 |  | 84.95145631 | 34 |  |  |  |
| 439 | 27.22589783 | -5.225897831 | -0.95197 |  | 85.14563107 | 34 |  |  |  |
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| 441 | 26.10668956 | -3.106689563 | -0.56593 |  | 85.53398058 | 34 |  |  |  |
| 442 | 26.10668956 | -3.106689563 | -0.56593 |  | 85.72815534 | 34 |  |  |  |
| 443 | 28.3451061 | -6.345106099 | -1.15585 |  | 85.9223301 | 34 |  |  |  |
| 444 | 26.10668956 | -2.106689563 | -0.38376 |  | 86.11650485 | 34 |  |  |  |
| 445 | 27.22589783 | -6.225897831 | -1.13414 |  | 86.31067961 | 34 |  |  |  |
| 446 | 26.10668956 | -2.106689563 | -0.38376 |  | 86.50485437 | 34 |  |  |  |
| 447 | 27.22589783 | -0.225897831 | -0.04115 |  | 86.69902913 | 34 |  |  |  |
| 448 | 28.3451061 | -1.345106099 | -0.24503 |  | 86.89320388 | 35 |  |  |  |
| 449 | 26.10668956 | -1.106689563 | -0.2016 |  | 87.08737864 | 35 |  |  |  |
| 450 | 26.10668956 | 1.893310437 | 0.344894 |  | 87.2815534 | 35 |  |  |  |
| 451 | 26.10668956 | 2.893310437 | 0.527059 |  | 87.47572816 | 35 |  |  |  |
| 452 | 29.46431437 | -0.464314367 | -0.08458 |  | 87.66990291 | 35 |  |  |  |
| 453 | 27.22589783 | -1.225897831 | -0.22332 |  | 87.86407767 | 35 |  |  |  |
| 454 | 26.10668956 | 0.893310437 | 0.162729 |  | 88.05825243 | 35 |  |  |  |
| 455 | 26.10668956 | 1.893310437 | 0.344894 |  | 88.25242718 | 35 |  |  |  |
| 456 | 27.22589783 | -2.225897831 | -0.40548 |  | 88.44660194 | 35 |  |  |  |
| 457 | 28.3451061 | -0.345106099 | -0.06287 |  | 88.6407767 | 35 |  |  |  |
| 458 | 27.22589783 | -1.225897831 | -0.22332 |  | 88.83495146 | 35 |  |  |  |
| 459 | 27.22589783 | 1.774102169 | 0.323178 |  | 89.02912621 | 35 |  |  |  |
| 460 | 26.10668956 | 2.893310437 | 0.527059 |  | 89.22330097 | 35 |  |  |  |
| 461 | 28.3451061 | -2.345106099 | -0.4272 |  | 89.41747573 | 35 |  |  |  |
| 462 | 29.46431437 | -2.464314367 | -0.44891 |  | 89.61165049 | 35 |  |  |  |
| 463 | 26.10668956 | 0.893310437 | 0.162729 |  | 89.80582524 | 36 |  |  |  |
| 464 | 27.22589783 | -0.225897831 | -0.04115 |  | 90 | 36 |  |  |  |
| 465 | 27.22589783 | 0.774102169 | 0.141014 |  | 90.19417476 | 36 |  |  |  |
| 466 | 26.10668956 | 1.893310437 | 0.344894 |  | 90.38834951 | 36 |  |  |  |
| 467 | 27.22589783 | 0.774102169 | 0.141014 |  | 90.58252427 | 36 |  |  |  |
| 468 | 28.3451061 | 0.654893901 | 0.119298 |  | 90.77669903 | 36 |  |  |  |
| 469 | 26.10668956 | 1.893310437 | 0.344894 |  | 90.97087379 | 36 |  |  |  |
| 470 | 27.22589783 | -0.225897831 | -0.04115 |  | 91.16504854 | 36 |  |  |  |
| 471 | 28.3451061 | -0.345106099 | -0.06287 |  | 91.3592233 | 36 |  |  |  |
| 472 | 30.58352264 | -2.583522635 | -0.47063 |  | 91.55339806 | 37 |  |  |  |
| 473 | 28.3451061 | -2.345106099 | -0.4272 |  | 91.74757282 | 37 |  |  |  |
| 474 | 28.3451061 | -1.345106099 | -0.24503 |  | 91.94174757 | 37 |  |  |  |
| 475 | 27.22589783 | -2.225897831 | -0.40548 |  | 92.13592233 | 37 |  |  |  |
| 476 | 26.10668956 | -1.106689563 | -0.2016 |  | 92.33009709 | 37 |  |  |  |
| 477 | 28.3451061 | -1.345106099 | -0.24503 |  | 92.52427184 | 37 |  |  |  |
| 478 | 29.46431437 | -1.464314367 | -0.26675 |  | 92.7184466 | 37 |  |  |  |
| 479 | 27.22589783 | -1.225897831 | -0.22332 |  | 92.91262136 | 37 |  |  |  |
| 480 | 28.3451061 | 0.654893901 | 0.119298 |  | 93.10679612 | 37 |  |  |  |
| 481 | 26.10668956 | -0.106689563 | -0.01944 |  | 93.30097087 | 37 |  |  |  |
| 482 | 26.10668956 | -1.106689563 | -0.2016 |  | 93.49514563 | 37 |  |  |  |
| 483 | 26.10668956 | -1.106689563 | -0.2016 |  | 93.68932039 | 37 |  |  |  |
| 484 | 27.22589783 | -2.225897831 | -0.40548 |  | 93.88349515 | 37 |  |  |  |
| 485 | 27.22589783 | 0.774102169 | 0.141014 |  | 94.0776699 | 37 |  |  |  |
| 486 | 27.22589783 | -0.225897831 | -0.04115 |  | 94.27184466 | 37 |  |  |  |
| 487 | 29.46431437 | -2.464314367 | -0.44891 |  | 94.46601942 | 38 |  |  |  |
| 488 | 28.3451061 | -1.345106099 | -0.24503 |  | 94.66019417 | 38 |  |  |  |
| 489 | 28.3451061 | -3.345106099 | -0.60936 |  | 94.85436893 | 38 |  |  |  |
| 490 | 27.22589783 | -1.225897831 | -0.22332 |  | 95.04854369 | 38 |  |  |  |
| 491 | 27.22589783 | -2.225897831 | -0.40548 |  | 95.24271845 | 38 |  |  |  |
| 492 | 30.58352264 | -4.583522635 | -0.83496 |  | 95.4368932 | 38 |  |  |  |
| 493 | 27.22589783 | -1.225897831 | -0.22332 |  | 95.63106796 | 38 |  |  |  |
| 494 | 27.22589783 | 1.774102169 | 0.323178 |  | 95.82524272 | 39 |  |  |  |
| 495 | 29.46431437 | -1.464314367 | -0.26675 |  | 96.01941748 | 39 |  |  |  |
| 496 | 28.3451061 | -1.345106099 | -0.24503 |  | 96.21359223 | 39 |  |  |  |
| 497 | 26.10668956 | -1.106689563 | -0.2016 |  | 96.40776699 | 39 |  |  |  |
| 498 | 28.3451061 | 0.654893901 | 0.119298 |  | 96.60194175 | 39 |  |  |  |
| 499 | 27.22589783 | -0.225897831 | -0.04115 |  | 96.7961165 | 39 |  |  |  |
| 500 | 27.22589783 | -2.225897831 | -0.40548 |  | 96.99029126 | 39 |  |  |  |
| 501 | 27.22589783 | -0.225897831 | -0.04115 |  | 97.18446602 | 39 |  |  |  |
| 502 | 28.3451061 | -3.345106099 | -0.60936 |  | 97.37864078 | 39 |  |  |  |
| 503 | 27.22589783 | -2.225897831 | -0.40548 |  | 97.57281553 | 40 |  |  |  |
| 504 | 30.58352264 | -4.583522635 | -0.83496 |  | 97.76699029 | 40 |  |  |  |
| 505 | 28.3451061 | 0.654893901 | 0.119298 |  | 97.96116505 | 40 |  |  |  |
| 506 | 27.22589783 | -2.225897831 | -0.40548 |  | 98.15533981 | 40 |  |  |  |
| 507 | 28.3451061 | -3.345106099 | -0.60936 |  | 98.34951456 | 40 |  |  |  |
| 508 | 29.46431437 | -0.464314367 | -0.08458 |  | 98.54368932 | 41 |  |  |  |
| 509 | 27.22589783 | -1.225897831 | -0.22332 |  | 98.73786408 | 41 |  |  |  |
| 510 | 28.3451061 | -2.345106099 | -0.4272 |  | 98.93203883 | 41 |  |  |  |
| 511 | 29.46431437 | -4.464314367 | -0.81324 |  | 99.12621359 | 41 |  |  |  |
| 512 | 27.22589783 | -0.225897831 | -0.04115 |  | 99.32038835 | 42 |  |  |  |
| 513 | 27.22589783 | -1.225897831 | -0.22332 |  | 99.51456311 | 42 |  |  |  |
| 514 | 30.58352264 | -3.583522635 | -0.65279 |  | 99.70873786 | 42 |  |  |  |
| 515 | 27.22589783 | -1.225897831 | -0.22332 |  | 99.90291262 | 43 |  |  |  |

ANÁLISIS NO. 8: ÍNDICE DE DESEMPLEO

## REPORTE PREELIMINAR

Base de Datos ‘DESEMPLEO’

ANALÍTICA VISUAL

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country Name** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **% de aumento(2019-2020)** |
| *Mexico* | 5.3 | 5.17 | 4.89 | 4.91 | 4.81 | 4.31 | 3.86 | 3.42 | 3.28 | 3.48 | 4.45 | 4.38 | 27.87% |
| *Chile* | 8.42 | 7.34 | 6.66 | 6.21 | 6.66 | 6.51 | 6.74 | 6.96 | 7.23 | 7.29 | 11.18 | 9.13 | 53.36% |
| *Uruguay* | 7.16 | 6.31 | 6.45 | 6.44 | 6.55 | 7.49 | 7.84 | 7.89 | 8.34 | 8.88 | 10.35 | 10.45 | 16.55% |
| *Panama* | 3.72 | 2.38 | 2.39 | 2.29 | 2.71 | 2.98 | 3.26 | 3.86 | 3.83 | 4.73 | 18.85 | 16.09 | 298.52% |
| *Colombia* | 11 | 10.11 | 9.74 | 9.05 | 8.57 | 8.3 | 8.69 | 8.87 | 9.11 | 9.96 | 15.04 | 14.34 | 51.00% |
| *Costa Rica* | 7.17 | 10.14 | 9.78 | 8.77 | 9.06 | 9 | 8.6 | 8.14 | 9.63 | 11.49 | 17.41 | 17.95 | 51.52% |

OBSERVACIONES

Al comparar los datos de distintos países con un nivel de desarrollo similar al de Panamá, podemos observar el significativo impacto que la pandemia del COVID-19 ha tenido en las tasas de desempleo a nivel internacional. Durante el análisis de las variaciones porcentuales entre los años 2019 y 2020, se ha podido constatar que la tasa de desempleo en 2020 aumentó en más del 298%, representando casi cinco veces la tasa del año anterior. A pesar de que la situación ha mejorado y actualmente, en 2023, la tasa de desempleo se encuentra en un 9.9%, este incremento drástico del desempleo se atribuye a diversos factores, como la contracción económica a nivel global, la estructura laboral desequilibrada y las medidas de contención y salud pública implementadas durante la pandemia.

DESCRIPCIÓN DE VARIABLES

Country Name: El nombre del país o región.

Country Code: El código del país o región, generalmente una combinación de letras.

Años (2010-2021): Estos son los años en los que se recopilaron los datos para cada país o región.

DESCRIPCIÓN DE LA APROXIMACIÓN

*El índice de desempleo es una medida clave para evaluar la situación laboral de una población en un determinado período de tiempo.* Se recopilan datos sobre el número de personas que están en edad de trabajar y buscan empleo activamente pero no pueden encontrarlo. El objetivo es proporcionar una visión clara de la salud económica y del mercado laboral, permitiendo identificar tendencias y fluctuaciones en el desempleo a lo largo del tiempo.

FRECUENCIAS E HISTOGRAMAS

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tabla de frecuencias | | | | | |  |  | Desviacion estandar |
| Intervalo | **Frecuencia absoluta** | **Frecuencia absoluta acumulada** | **Frecuencia relativa** | **Frecuencia relativa acumulada** | | **Media** | **Varianza** |
| 2-4 | 20 | 20 | 0.28 | 0.28 |  | 7.69 | 13.41 | 3.66 |
| 5-7 | 20 | 40 | 0.28 | 0.56 |  |  |  |  |
| 8-10 | 24 | 64 | 0.33 | 0.89 |  |  |  |  |
| 11-13 | 2 | 66 | 0.03 | 0.92 |  |  |  |  |
| 14-16 | 3 | 69 | 0.04 | 0.96 |  |  |  |  |
| 17-19 | 3 | 72 | 0.04 | 1.00 |  |  |  |  |

## ANÁLISIS DE CORRELACIÓN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2010 | 3.72 |  | I | *Año* | *Indice desempleo* |
| 2011 | 2.38 |  | Año | 1 |  |
| 2012 | 2.39 |  | Indice desempleo | 0.699176374 | 1 |
| 2013 | 2.29 |  |  |  |  |
| 2014 | 2.71 |  |  |  |  |
| 2015 | 2.98 |  |  |  |  |
| 2016 | 3.26 |  |  |  |  |
| 2017 | 3.86 |  |  |  |  |
| 2018 | 3.83 |  |  |  |  |
| 2019 | 4.73 |  |  |  |  |
| 2020 | 18.85 |  |  |  |  |
| 2021 | 16.09 |  |  |  |  |

ANÁLISIS DE REGRESIÓN LINEAL

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Regression Statistics* |  |  |  |  |  |  |  |  |  |
| Multiple R | 0.699176374 |  |  |  |  |  |  |  |  |
| R Square | 0.488847602 |  |  |  |  |  |  |  |  |
| Adjusted R Square | 0.437732362 |  |  |  |  |  |  |  |  |
| Standard Error | 4.219860807 |  |  |  |  |  |  |  |  |
| Observations | 12 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |  |
| Regression | 1 | 170.3018393 | 170.3018393 | 9.563637069 | 0.011395071 |  |  |  |  |
| Residual | 10 | 178.0722523 | 17.80722523 |  |  |  |  |  |  |
| Total | 11 | 348.3740917 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95%* | *Upper 95%* |  |
| Intercept | -2193.911632 | 711.2356985 | -3.084647799 | 0.01154882 | -3778.643518 | -609.1797458 | -3778.643518 | -609.1797458 |  |
| X Variable 1 | 1.091293706 | 0.352882488 | 3.092513067 | 0.011395071 | 0.305022527 | 1.877564885 | 0.305022527 | 1.877564885 |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  | PROBABILITY OUTPUT | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted Y* | *Residuals* |  | *Percentile* | *Y* |  |  |  |  |
| 1 | -0.411282052 | 4.131282052 |  | 4.166666667 | 2.29 |  |  |  |  |
| 2 | 0.680011655 | 1.699988345 |  | 12.5 | 2.38 |  |  |  |  |
| 3 | 1.771305361 | 0.618694639 |  | 20.83333333 | 2.39 |  |  |  |  |
| 4 | 2.862599067 | -0.572599067 |  | 29.16666667 | 2.71 |  |  |  |  |
| 5 | 3.953892774 | -1.243892774 |  | 37.5 | 2.98 |  |  |  |  |
| 6 | 5.04518648 | -2.06518648 |  | 45.83333333 | 3.26 |  |  |  |  |
| 7 | 6.136480186 | -2.876480186 |  | 54.16666667 | 3.72 |  |  |  |  |
| 8 | 7.227773893 | -3.367773893 |  | 62.5 | 3.83 |  |  |  |  |
| 9 | 8.319067599 | -4.489067599 |  | 70.83333333 | 3.86 |  |  |  |  |
| 10 | 9.410361305 | -4.680361305 |  | 79.16666667 | 4.73 |  |  |  |  |
| 11 | 10.50165501 | 8.348344989 |  | 87.5 | 16.09 |  |  |  |  |
| 12 | 11.59294872 | 4.497051282 |  | 95.83333333 | 18.85 |  |  |  |  |

ANÁLISIS NO. 9: VISITAS A PÁGINA WEB

## REPORTE PREELIMINAR

Base de Datos ‘PÁGINA WEB’

ANALÍTICA VISUAL

**OBSERVACIONES**

La gráfica muestra que solo el 37.8% de las visitas a la página web son la primera vez que los usuarios acceden a ella. Esto sugiere una audiencia recurrente y fiel, lo que puede indicar interés o satisfacción con el contenido o servicios ofrecidos. Sin embargo, es importante investigar las razones detrás de la baja proporción de visitas iniciales para mejorar la captación de nuevos usuarios. Utilizar esta información puede ayudar a desarrollar estrategias de marketing y mejorar la experiencia del usuario en el sitio web.

DESCRIPCIÓN DE VARIABLES

Day: El día del mes.

Day.Of.Week: El día de la semana, donde 1 corresponde al domingo, 2 al lunes y así sucesivamente.

Date: La fecha en formato mes/día/año.

Page.Loads: El número total de páginas cargadas en el sitio web durante el día.

Unique.Visits: La cantidad de visitas únicas al sitio web en ese día.

First.Time.Visits: El número de visitas de usuarios que acceden al sitio web por primera vez.

Returning.Visits: El número de visitas de usuarios que regresan al sitio web.

DESCRIPCIÓN DE LA APROXIMACIÓN

*Obtener datos sobre las visitas a una página web.* El objetivo es analizar y comprender el comportamiento de los usuarios en la página, cuántas veces ha sido visitada y cuánto tiempo pasan en ella. Esta información nos permitirá evaluar la eficacia de la página web, identificar áreas de mejora y ajustar estrategias para aumentar la satisfacción de los visitantes y mejorar la experiencia general en el sitio web.

MEDIAS, DESVIACIÓN ESTÁNDAR, ETC

|  |  |
| --- | --- |
|  | **% de primera vez / cargadas** |
|  | 0.368666978 |
|  | 0.372782944 |
|  | 0.375879666 |
|  | 0.371751185 |
|  | 0.373220708 |
|  | 0.397436441 |
|  | 0.392578633 |
| **Media** | 0.378902365 |

|  |  |  |
| --- | --- | --- |
|  | cantidad de Carga | Primera visita |
| Media | 54373.42857 | 33853.14286 |
| Mediana | 59785 | 37472 |
| Varianza | 188918491 | 78488415.14 |
| Desv. Estandar | 13744.76231 | 8859.368778 |

FRECUENCIAS E HISTOGRAMAS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Frecuencia | Frecuencia relativa | Frecuencia acumulativa | Frecuencia acumulativa relativa |
| Sunday | 44943 | 0.11808026 | 44943 | 0.11808026 |
| Monday | 66135 | 0.173758716 | 111078 | 0.291838976 |
| Tuesday | 67213 | 0.176590982 | 178291 | 0.468429958 |
| Wednesday | 64562 | 0.16962592 | 242853 | 0.638055878 |
| Thursday | 59785 | 0.157075147 | 302638 | 0.795131025 |
| Friday | 47200 | 0.124010152 | 349838 | 0.919141177 |
| Saturday | 30776 | 0.080858823 | 380614 | 1 |
|  | 380614 | 1 |  |  |

ANÁLISIS DE DISTRIBUCIÓN

|  |  |
| --- | --- |
| x | F(x) |
| -14350.38298 | 1.08166E-10 |
| -605.6206677 | 9.73682E-09 |
| 13139.14164 | 3.22439E-07 |
| 26883.90395 | 3.92811E-06 |
| 40628.66626 | 1.76046E-05 |
| 54373.42857 | 2.9025E-05 |
| 68118.19088 | 1.76046E-05 |
| 81862.95319 | 3.92811E-06 |
| 95607.7155 | 3.22439E-07 |
| 109352.4778 | 9.73682E-09 |
| 123097.2401 | 1.08166E-10 |

Observando los datos, se puede notar que la mayoría de las visitas a la página web se concentran en los valores más bajos, ya que la probabilidad de tener un número de visitas menor es más alta. A medida que avanzamos hacia los valores más altos, la probabilidad acumulada disminuye gradualmente, lo que sugiere que hay menos visitas a la página web en esos intervalos. Esto indica que la distribución de las visitas a la página web presenta un sesgo hacia valores más bajos y una disminución progresiva hacia valores más altos.

ANÁLISIS DE REGRESIÓN LINEAL

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SUMMARY OUTPUT | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Regression Statistics* | |  |  |  |  |  |  |  |
| Multiple R | 0.99888 |  |  |  |  |  |  |  |
| R Square | 0.997761 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.997313 |  |  |  |  |  |  |  |
| Standard Error | 459.202 |  |  |  |  |  |  |  |
| Observations | 7 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |  |  |  |
| Regression | 1 | 4.7E+08 | 4.7E+08 | 2228.312 | 8.06E-08 |  |  |  |
| Residual | 5 | 1054332 | 210866.4 |  |  |  |  |  |
| Total | 6 | 4.71E+08 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
| Intercept | -1154.72 | 761.6523 | -1.51607 | 0.189942 | -3112.61 | 803.1724 | -3112.61 | 803.1724 |
| X Variable 1 | 0.643841 | 0.013639 | 47.205 | 8.06E-08 | 0.60878 | 0.678902 | 0.60878 | 0.678902 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| RESIDUAL OUTPUT | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| *Observation* | *Predicted Y* | *Residuals* |  |  |  |  |  |  |
| 1 | 27781.44 | 592.5567 |  |  |  |  |  |  |
| 2 | 41425.73 | 55.27146 |  |  |  |  |  |  |
| 3 | 42119.79 | -170.789 |  |  |  |  |  |  |
| 4 | 40412.97 | 148.0339 |  |  |  |  |  |  |
| 5 | 37337.34 | 134.6638 |  |  |  |  |  |  |
| 6 | 29234.59 | -793.593 |  |  |  |  |  |  |
| 7 | 18660.14 | 33.85672 |  |  |  |  |  |  |

ANÁLISIS NO. 10: FOB EN LAS PRINCIPALES EXPORTACIONES

## REPORTE PREELIMINAR

Carpeta ‘EXPORTACIONES

Texto

Descripción generada automáticamente

ANALÍTICA VISUAL

Gráfico, Gráfico circular

Descripción generada automáticamente

Observando la gráfica, podemos concluir que China es el principal país exportador hacia Panamá, seguido de Estados Unidos. Estas dos naciones destacan claramente en el panorama de las exportaciones panameñas, representando una parte significativa del comercio exterior del país. La posición destacada de China como el mayor exportador revela la creciente importancia de las relaciones comerciales entre ambas naciones, mientras que Estados Unidos se mantiene como un socio comercial sólido y relevante para Panamá en su intercambio de bienes y servicios.

DESCRIPCIÓN DE VARIABLES

Países: País exportador

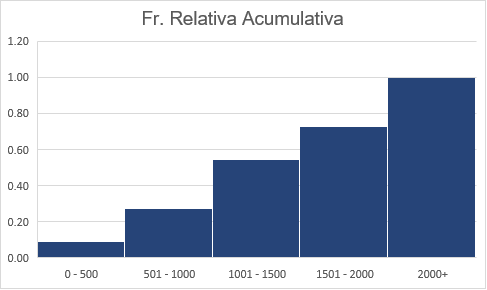
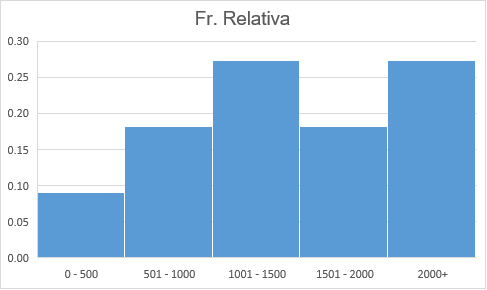
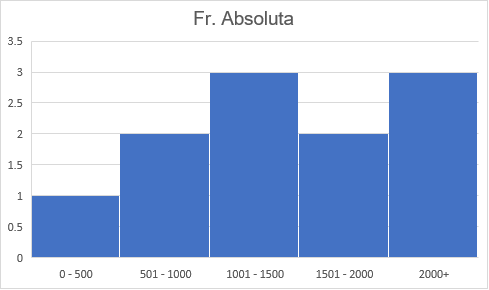
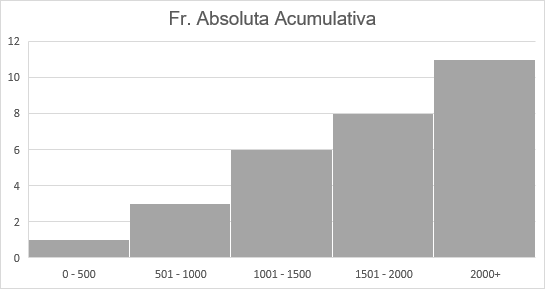
FOB: Es un término comercial que indica el punto en el que el vendedor completa la entrega de bienes exportados, transfiriendo la responsabilidad al comprador en el punto de carga al medio de transporte acordado.

DESCRIPCIÓN DE LA APROXIMACIÓN

Curiosidad por comprender el comercio internacional. Buscamos identificar patrones y tendencias en las relaciones económicas entre naciones, destacando los principales exportadores y sectores económicos relevantes. Este análisis nos brindará información valiosa para tomar decisiones informadas en el ámbito comercial y político, además de identificar oportunidades de crecimiento económico para diversas economías.

MEDIAS, DESVIACIÓN ESTÁNDAR, FRECUENCIAS, HISTOGRAMAS, ETC

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Intervalo de Valor FOB (en millones)** | **Fr. Absoluta** | Fr. Absoluta acumulativa | **Fr. Relativa** | **Fr. Relativa Acumulada** | **Suma de los intervalos** | **Media por intervalo** | **Desviación estándar** | | | |
|
| 0 - 500 | 1 | 1 | 0.09 | 0.09 | 451212023 | 451212023 | 0 | 0 | 0 | **0** |
| 501 - 1000 | 2 | 3 | 0.18 | 0.27 | 968516642 | 484258321 | 484258321 | 2.34506E+17 | 1.17253E+17 | **342422342.6** |
| 1001 - 1500 | 3 | 6 | 0.27 | 0.55 | 1010057920 | 336685973.3 | 673371946.7 | 4.5343E+17 | 1.51143E+17 | **388771474.7** |
| 1501 - 2000 | 2 | 8 | 0.18 | 0.73 | 1812309244 | 906154622 | 906154622 | 8.21116E+17 | 4.10558E+17 | **640748078** |
| 2000+ | 3 | 11 | 0.27 | 1.00 | 3774642966 | 1258214322 | 2516428644 | 6.33241E+18 | 2.1108E+18 | **1452860755** |
| Total | 11 | 29 | 1.00 | 2.64 |  |  |  |  |  |  |
| Media | 2.2 | 5.8 | 0.2 | 0.527 |  |  |  |  |  |  |



Los siguientes puntos fueron desarrollados con Python.

ANÁLISIS DE DISTRIBUCIÓN

import pandas as pd

# Datos de la tabla de frecuencia

datos = {

    'Intervalo de Valor FOB (en millones)': ['0 - 500', '501 - 1000', '1001 - 1500', '1501 - 2000', '2000+'],

    'Fr. Absoluta': [1, 2, 3, 2, 3],

    'Fr. Absoluta acumulativa': [1, 3, 6, 8, 11],

    'Fr. Relativa': [0.09, 0.18, 0.27, 0.18, 0.27],

    'Fr. Relativa Acumulada': [0.09, 0.27, 0.55, 0.73, 1.00]

}

# Crear un DataFrame con los datos

df = pd.DataFrame(datos)

# Calcular los valores representativos (puntos medios) de cada intervalo

def obtener\_valor\_representativo(*intervalo*):

    if '+' in *intervalo*:

        return int(*intervalo*.split('+')[0])

    else:

        return (int(*intervalo*.split('-')[0]) + int(*intervalo*.split('-')[1])) / 2

df['Valor Representativo'] = df['Intervalo de Valor FOB (en millones)'].apply(obtener\_valor\_representativo)

# Interpolar linealmente para obtener valores continuos

def interpolacion\_lineal(*x*, *x0*, *x1*, *y0*, *y1*):

    return *y0* + (*y1* - *y0*) \* (*x* - *x0*) / (*x1* - *x0*)

valores\_continuos = []

for i in range(len(df)-1):

    x0 = df['Valor Representativo'][i]

    x1 = df['Valor Representativo'][i+1]

    y0 = df['Fr. Absoluta acumulativa'][i]

    y1 = df['Fr. Absoluta acumulativa'][i+1]

    for x in range(int(x0)+1, int(x1)+1):

        valor\_continuo = interpolacion\_lineal(x, x0, x1, y0, y1)

        valores\_continuos.append(valor\_continuo)

# Agregar los valores continuos al DataFrame usando pd.IntervalIndex

intervalos = pd.IntervalIndex.from\_tuples([(0, 500), (501, 1000), (1001, 1500), (1501, 2000), (2000, float('inf'))])

df['Valor Continuo'] = pd.cut(df['Valor Representativo'], *bins*=intervalos, *labels*=valores\_continuos, *right*=False)

# Mostrar el DataFrame resultante con los valores continuos

print(df)

Resultado

A screenshot of a computer

Description automatically generated

ANÁLISIS DE CORRELACIÓN

import pandas as pd

# Datos de la tabla de frecuencia con valores continuos

datos = {

    'Intervalo de Valor FOB (en millones)': ['0 - 500', '501 - 1000', '1001 - 1500', '1501 - 2000', '2000+'],

    'Fr. Absoluta': [1, 2, 3, 2, 3],

    'Fr. Absoluta acumulativa': [1, 3, 6, 8, 11],

    'Fr. Relativa': [0.09, 0.18, 0.27, 0.18, 0.27],

    'Fr. Relativa Acumulada': [0.09, 0.27, 0.55, 0.73, 1.00],

    'Valor Representativo': [250, 750.5, 1250.5, 1750.5, 2000],

    'Valor Continuo': [0.09491525423728814, 0.1694915254237288, 0.23728813559322035, 0.2542372881355932, 0.2711864406779661]

}

# Crear el DataFrame con los datos

df = pd.DataFrame(datos)

# Calcular la correlación entre "Valor Continuo" y "Fr. Absoluta"

correlacion = df['Valor Continuo'].corr(df['Fr. Absoluta'])

# Mostrar el resultado

print("Correlación entre Valor Continuo y Fr. Absoluta:", correlacion)

Resultado



ANÁLISIS DE REGRESIÓN

Archivo: Regresión Lineal 1

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

import statsmodels.api as sm

import scipy.stats as stats

# Datos de la tabla de frecuencia con valores continuos

datos = {

    'Intervalo de Valor FOB (en millones)': ['0 - 500', '501 - 1000', '1001 - 1500', '1501 - 2000', '2000+'],

    'Fr. Absoluta': [1, 2, 3, 2, 3],

    'Fr. Absoluta acumulativa': [1, 3, 6, 8, 11],

    'Fr. Relativa': [0.09, 0.18, 0.27, 0.18, 0.27],

    'Fr. Relativa Acumulada': [0.09, 0.27, 0.55, 0.73, 1.00],

    'Valor Representativo': [250, 750.5, 1250.5, 1750.5, 2000],

    'Valor Continuo': [0.09491525423728814, 0.1694915254237288, 0.23728813559322035, 0.2542372881355932, 0.2711864406779661]

}

# Crear el DataFrame con los datos

df = pd.DataFrame(datos)

# Realizar la regresión lineal

X = sm.add\_constant(df['Valor Representativo'])

y = df['Fr. Absoluta']

modelo = sm.OLS(y, X).fit()

# Obtener los resultados de la regresión

resultados = modelo.summary()

# Imprimir los resultados

print(resultados)

# Gráfica de dispersión de puntos con la regresión de la línea

plt.scatter(df['Valor Representativo'], df['Fr. Absoluta'], *label*='Datos')

plt.plot(df['Valor Representativo'], modelo.predict(X), *color*='red', *label*='Regresión')

plt.xlabel('Valor Representativo')

plt.ylabel('Fr. Absoluta')

plt.legend()

plt.show()

# Gráfica de residuales

residuales = modelo.resid

plt.scatter(df['Valor Representativo'], residuales)

plt.axhline(*y*=0, *color*='red', *linestyle*='--')

plt.xlabel('Valor Representativo')

plt.ylabel('Residuales')

plt.show()

# Gráfica de probabilidad normal

stats.probplot(residuales, *plot*=plt)

plt.show()

# Tabla ANOVA

tabla\_anova = sm.stats.anova\_lm(modelo)

print(tabla\_anova)

# R cuadrado

r\_cuadrado = modelo.rsquared

print("R cuadrado:", r\_cuadrado)

# Pruebas de t y F

prueba\_t = modelo.t\_test([1, 0])

prueba\_f = modelo.f\_test(np.identity(2))

print("Prueba t:", prueba\_t)

print("Prueba F:", prueba\_f)

# Intervalos de confianza para los coeficientes de la regresión

intervalos\_confianza = modelo.conf\_int(*alpha*=0.05)

print(intervalos\_confianza)

Archivo: Regresión Lineal 2

import pandas as pd

import matplotlib.pyplot as plt

import numpy as np

import statsmodels.api as sm

# Datos

intervalos = ['2007-2009', '2010-2012', '2013-2015', '2016-2018', '2019-2020']

frecuencia\_absoluta = [3, 3, 3, 3, 1]

# Transformar datos

valores\_absolutos = [500 \* (i + 1) for i in range(len(frecuencia\_absoluta))]

valores\_relativos = [f / sum(frecuencia\_absoluta) for f in frecuencia\_absoluta]

# Calcular valor representativo

valor\_representativo = [np.mean([int(i) for i in intervalo.split('-')]) for intervalo in intervalos]

# Crear DataFrame

df = pd.DataFrame({

    'Intervalo': intervalos,

    'Frecuencia Absoluta': frecuencia\_absoluta,

    'Frecuencia Relativa': valores\_relativos,

    'Valor Representativo': valor\_representativo,

    'Valor Absoluto': valores\_absolutos

})

# Realizar regresión lineal

X = sm.add\_constant(df['Valor Representativo'])

modelo = sm.OLS(df['Frecuencia Absoluta'], X).fit()

# Resultados de la regresión

slope = modelo.params['Valor Representativo']

intercept = modelo.params['const']

r\_squared = modelo.rsquared

p\_value = modelo.pvalues['Valor Representativo']

# Graficar dispersión de puntos y regresión lineal

plt.scatter(df['Valor Representativo'], df['Frecuencia Absoluta'], *label*='Datos')

plt.plot(df['Valor Representativo'], modelo.fittedvalues, 'r', *label*='Regresión Lineal')

plt.xlabel('Valor Representativo')

plt.ylabel('Frecuencia Absoluta')

plt.title('Regresión Lineal')

plt.legend()

plt.grid(True)

plt.show()

# Imprimir resultados

print("Valor de la pendiente (coeficiente):", slope)

print("Valor de la intersección (intercept):", intercept)

print("Valor R-cuadrado:", r\_squared)

print("Valor p:", p\_value)

# Obtener residuales

residuales = modelo.resid

# Gráfica de residuales

plt.scatter(df['Valor Representativo'], residuales)

plt.axhline(*y*=0, *color*='r', *linestyle*='--')

plt.xlabel('Valor Representativo')

plt.ylabel('Residuales')

plt.title('Gráfica de Residuales')

plt.grid(True)

plt.show()

# Gráfica de probabilidad normal (Q-Q plot)

import scipy.stats as stats

stats.probplot(residuales, *plot*=plt)

plt.title('Gráfica de Probabilidad Normal (Q-Q plot)')

plt.grid(True)

plt.show()

# Intervalos de confianza para pendiente e intercepto

conf\_intervals = modelo.conf\_int()

conf\_intervals.columns = ['Límite inferior', 'Límite superior']

conf\_intervals.index = ['Intercepto', 'Pendiente']

print(conf\_intervals)

# Tabla ANOVA

print(modelo.summary())

Resultados

Una captura de pantalla de un celular con letras

Descripción generada automáticamente con confianza media

Gráfico, Gráfico de dispersión

Descripción generada automáticamente

Gráfico, Gráfico de dispersión

Descripción generada automáticamente

Gráfico, Gráfico de líneas

Descripción generada automáticamente