Package 'DataSetsUni'

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Type Package

Title A Collection of Univariate Data Sets

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Author Muhammad Imran [aut, cre],
M.H Tahir [ctb],
Farrukh Jamal [ctb]

Maintainer Muhammad Imran <imranshakoor84@yahoo.com>

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Description A collection of widely used univariate data sets of various applied domains on applications of distribution theory. The functions allow researchers and practitioners to quickly, easily, and efficiently access and use these data sets. The data are related to different applied domains and as follows: Bio-medical, survival analysis, medicine, reliability analysis, hydrology, actuarial science, operational research, meteorology, extreme values, quality control, engineering, finance, sports and economics. The total 100 data sets are documented along with associated references for further details and uses.

License GPL (>= 2)

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Contents

DataSetsUni-package *A collection of widely used univariate data sets*

Description

A collection of widely used univariate data sets of various applied domains on applications of distribution theory. The functions allow researchers and practitioners to quickly, easily, and efficiently access and use these data sets. The data are related to different applied domains and as follows: Biomedical, survival analysis, medicine, reliability analysis, hydrology, actuarial science, operational research, meteorology, extreme values, quality control, engineering, finance, sports and economics. The total 100 data sets are documented along with associated references for further details and uses.

Details

Package:	DataSetsUni
Type:	Package
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Maintainers

Muhammad Imran <imranshakoor84@yahoo.com>

Author(s)

Muhammad Imran <imranshakoor84@yahoo.com>, M.H Tahir <mht@iub.edu.pk> and Farrukh Jamal <farrukh.jamal@iub.edu.pk>.

Actual Taxes *The monthly actual taxes revenue in Egypt*

Description

The function allows to provide the monthly actual taxes revenue in Egypt from January 2006 to November 2010.

Usage

```
data_Taxes
```

Arguments

`data_Taxes`	A vector of (non-negative integer) values.

Details

The data set consists of the monthly actual taxes revenue in Egypt from January 2006 to November 2010. Recently, it is used by Ali et al. (2022) and fitted the odd Burr-III Lomax distribution.

Value

data_Taxes gives the monthly actual taxes revenue in Egypt.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ali, M., Khalil, A., Mashwani, W. K., Alrajhi, S., Al-Marzouki, S., & Shah, K. (2022). A novel fréchet-type probability distribution: its properties and applications. Mathematical Problems in Engineering, 2022, 1-14.

Jamal, F., Nasir, M. A., Tahir, M. H., & Montazeri, N. H. (2017). The odd Burr-III family of distributions. Journal of Statistics Applications and Probability, 6(1), 105-122.

Owoloko, E. A., Oguntunde, P. E., & Adejumo, A. O. (2015). Performance rating of the transmuted exponential distribution: an analytical approach. SpringerPlus, 4, 1-15.

Nassar, M. M., & Nada, N. K. (2011). The beta generalized Pareto distribution. Journal of Statistics: Advances in Theory and Applications, 6(1/2), 1-17.

See Also

`data_bank`

Examples

```
x<-data_Taxes
summary(x)
```

`Actuarial data` *The mortality of retired people*

Description

The function allows to provide the distributional behavior of the mortality of retired people on disability of the Mexican Institute of Social Security.

Usage

```
data_actuarialm
```

Arguments

`data_actuarialm`
: A vector of (non-negative integer) values.

Details

The data describes the distributional behavior of the mortality of retired people on disability of the Mexican Institute of Social Security. Recently, it is used by Tahir et al. (2021) and fitted the Kumaraswamy Pareto IV distribution.

Value

data_actuarialm gives the mortality of retired people.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Cordeiro, G. M., Mansoor, M., Zubair, M., & Alzaatreh, A. (2021). The Kumaraswamy Pareto IV Distribution. Austrian Journal of Statistics, 50(5), 1-22.

Balakrishnan, N., Leiva, V., Sanhueza, A., & Cabrera, E. (2009). Mixture inverse Gaussian distributions and its transformations, moments and applications. Statistics, 43(1), 91-104.

See Also

`data_healthinsur`

Examples

```
x<-data_actuarialm
summary(x)
```

Acute Bone Cancer *The survival times of 73 patients with acute bone cancer*

Description

The function allows to provide the survival times (in days) of 73 patients who diagnosed with acute bone cancer.

Usage

```
data_acutebcancer
```

Arguments

data_acutebcancer	A vector of (non-negative integer) values.

Details

The data represents the survival times (in days) of 73 patients who diagnosed with acute bone cancer. Recently, the data set is used by Klakattawi, H. S. (2022) and fitted a new extended Weibull distribution.

Value

data_acutebcancer gives the survival times (in days) of 73 patients who diagnosed with acute bone cancer.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Klakattawi, H. S. (2022). Survival analysis of cancer patients using a new extended Weibull distribution. Plos one, 17(2), e0264229.

Alanzi, A. R., Imran, M., Tahir, M. H., Chesneau, C., Jamal, F., Shakoor, S., & Sami, W. (2023). Simulation analysis, properties and applications on a new Burr XII model based on the Bell-X functionalities.

Mansour, M., Yousof, H. M., Shehata, W. A., & Ibrahim, M. (2020). A new two parameter Burr XII distribution: properties, copula, different estimation methods and modeling acute bone cancer data. Journal of Nonlinear Science and Applications, 13(5), 223-238.

See Also

data_Bcancer, data_bloodcancer

Examples

```
x<-data_acutebcancer
summary(x)
```

`Acute Myelogenous` *Survival times of patients suffering from acute myelogenous*

Description

The function allows to provide the survival times in weeks, of 33 patients suffering from acute myelogenous leukemia.

Usage

```
data_Myelogenous
```

Arguments

`data_Myelogenous`
: A vector of (non-negative integer) values.

Details

The data represents the survival times in weeks, of 33 patients suffering from acute myelogenous leukemia. Recently, it is used by Jamal et al. (2017) and fitted the odd Burr-III Lomax distribution.

Value

data_Myelogenous gives the survival times in weeks, of 33 patients suffering from acute myelogenous leukemia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Jamal, F., Nasir, M. A., Tahir, M. H., & Montazeri, N. H. (2017). The odd Burr-III family of distributions. Journal of Statistics Applications and Probability, 6(1), 105-122.

Feigl, P., & Zelen, M. (1965). Estimation of exponential survival probabilities with concomitant information. Biometrics, 826-838.

See Also

`data_acutebcancer`, `data_leukemia`, `data_bloodcancer`, `data_airborne`

Examples

```
x<-data_Myelogenous
summary(x)
```

`Air Conditioning Failure`

The data set consists of the failure times of the air conditioning system of an airplane (in hours)

Description

The function allows to provide the failure times of the air conditioning system of an airplane (in hours).

Usage

```
data_acfailure
```

Arguments

`data_acfailure`	A vector of (non-negative integer) values.

Details

The data set consists of the failure times of the air conditioning system of an airplane (in hours). Recently, it is used by Bantan et al. (2020) and fitted the unit-Rayleigh distribution.

Value

data_acfailure gives the failure times of the air conditioning system of an airplane (in hours).

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Chesneau, C., Jamal, F., Elgarhy, M., Tahir, M. H., Ali, A., ... & Anam, S. (2020). Some new facts about the unit-Rayleigh distribution with applications. Mathematics, 8(11), 1954.

Linhart, H., & Zucchini, W. (1986). Model selection. John Wiley & Sons.

See Also

`data_failureairc`, `data_electronicf`

Examples

```
x<-data_acfailure
summary(x)
```

`Air Conditioning Failure Unit Interval`

The unit interval data set consists of the failure times of the air conditioning system of an airplane (in hours)

Description

The function allows to provide the unit interval failure times of the air conditioning system of an airplane (in hours).

Usage

```
data_acfailureunit
```

Arguments

`data_acfailureunit`
: A vector of (non-negative integer) values.

Details

The unit interval data set consists of the failure times of the air conditioning system of an airplane (in hours). Recently, it is used by Bantan et al. (2020) and fitted the unit-Rayleigh distribution.

Value

data_acfailureunit gives the failure times of the air conditioning system of an airplane (in hours).

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Chesneau, C., Jamal, F., Elgarhy, M., Tahir, M. H., Ali, A., ... & Anam, S. (2020). Some new facts about the unit-Rayleigh distribution with applications. Mathematics, 8(11), 1954.

Linhart, H., & Zucchini, W. (1986). Model selection. John Wiley & Sons.

See Also

data_failuretc

Examples

```
x<-data_acfailureunit
summary(x)
```

`Air Pollution` *The data represents the daily ozone measurements in New York, May–September 1973*

Description

The function allows to provide the daily ozone measurements in New York, May–September 1973.

Usage

```
data_airpollution
```

Arguments

`data_airpollution`
: A vector of (non-negative integer) values.

Details

The data represents the daily ozone measurements in New York, May–September 1973. Recently, it is used by Nadarajah (2008) and fitted a truncated inverted beta distribution.

Value

data_airpollution gives the daily ozone measurements.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nadarajah, S. (2008). A truncated inverted beta distribution with application to air pollution data. Stochastic Environmental Research and Risk Assessment, 22, 285-289.

Examples

```
x<-data_airpollution
summary(x)
```

`Airborne Variations` *Variations in airborne exposure on the concentration of urinary metabolites*

Description

The function allows to provide the effects of variations in airborne exposure on the concentration of urinary metabolites.

Usage

```
data_airborne
```

Arguments

`data_airborne`	A vector of (non-negative integer) values.

Details

The data relates to the effects of variations in airborne exposure on the concentration of urinary metabolites. Recently, it is used by Peter et al. (2021) and fitted the Gamma odd Burr III-G family of distributions.

Value

data_airborne gives the effects of variations in airborne exposure on the concentration of urinary metabolites.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Peter, P. O., Oluyede, B., Bindele, H. F., Ndwapi, N., & Mabikwa, O. (2021). The Gamma Odd Burr III-G Family of Distributions: Model, Properties and Applications. Revista Colombiana de Estadística, 44(2), 331-368.

Kumagai, S., & Matsunaga, I. (1995). Physiologically based pharmacokinetic model for acetone. Occupational and environmental medicine, 52(5), 344-352.

See Also

`data_analgesic`, `data_dpatients`

Examples

```
x<-data_airborne
summary(x)
```

`Analysis of Video Tapes`

The measurements by the analysis of video tapes

Description

The function allows to provide the 30 patients were assessed at baseline, post treatment, and a 6-month follow-up using the Wolf Mo- tor Function Test as primary outcome measure. The test consists of 17 tasks with two strength and 15 timed tasks which vary from gross shoulder movements to complex finger grips. The measurement was done by the analysis of videotapes.

Usage

```
data_videotapes
```

Arguments

`data_videotapes`
: A vector of (non-negative integer) values.

Details

The 30 patients were assessed at baseline, post treatment, and a 6-month follow-up using the Wolf Mo- tor Function Test as primary outcome measure. The test con- sists of 17 tasks with two strength and 15 timed tasks which vary from gross shoulder movements to complex finger grips. The measurement was done by the analysis of videotapes. Recently, it is used by Nassar and Elmasry (2012) and fitted the generalized logistic distribution.

Value

data_videotapes gives the measurements by the analysis of video tapes.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nassar, M. M., & Elmasry, A. (2012). A study of generalized logistic distributions. Journal of the Egyptian Mathematical Society, 20(2), 126-133.

Examples

```
x<-data_videotapes
summary(x)
```

`Annual Maximum Rainfall` *The data represents the ordered annual maximum antecedent rainfall claim*

Description

The function allows to provide the 52 ordered annual maximum antecedent rainfall measurements in mm from Maple Ridge in British Columbia, Canada.

Usage

```
data_rainfall
```

Arguments

`data_rainfall`	A vector of (non-negative integer) values.

Details

The data represents the 52 ordered annual maximum antecedent rainfall measurements in mm from Maple Ridge in British Columbia, Canada. Recently, it is used by Nadarajah and Eljabri (2014) and fitted the chen et al.'s extreme value distribution.

Value

data_rainfall gives the annual maximum antecedent rainfall measurements.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nadarajah, S., & Eljabri, S. (2014). On chen et al.'s extreme value distribution. Journal of Data Science, 12(1), 87-106.

See Also

`data_MPrecipitation`, `data_precipitation`

Examples

```
x<-data_rainfall
summary(x)
```

`Annual Maximum Temperatures` *Annual maximum temperatures at Oxford and Worthing*

Description

The function allows to provide annual maximum temperatures at Oxford and Worthing (England), for the period 1901 to 1980.

Usage

```
data_AnnualMaxT
```

Arguments

`data_AnnualMaxT` A vector of (non-negative integer) values.

Details

The data describes annual maximum temperatures at Oxford and Worthing (England), for the period 1901 to 1980. Recently, it is used by Tahir et al. (2021) and fitted the Kumaraswamy Pareto IV distribution.

Value

data_AnnualMaxT gives the annual maximum temperatures.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Cordeiro, G. M., Mansoor, M., Zubair, M., & Alzaatreh, A. (2021). The Kumaraswamy Pareto IV Distribution. Austrian Journal of Statistics, 50(5), 1-22.

Weisberg S (2005). Applied Linear Regression. Wiley, New York. ISBN 978-0-471-70409-6.

Examples

```
x<-data_AnnualMaxT
summary(x)
```

`Annual Water Level` *Annual water level behind the high dam during the flood time*

Description

The function allows to provide the annual water level behind the high dam during the flood time from 1980 to 2010. The highest water level of the dam is 182 meters (m) above the mean sea level.

Usage

```
data_floodtime
```

Arguments

`data_floodtime`	A vector of (non-negative integer) values.

Details

The data set consists of the annual water level behind the high dam during the flood time from 1980 to 2010. The highest water level of the dam is 182 meters (m) above the mean sea level. Recently, it is used by Khalid and Aslam (2021) and fitted unit Lindley mixture model.

Value

data_floodtime gives the annual water level behind the high dam during the flood time from 1980 to 2010.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Khalid, M., & Aslam, M. (2022). Bayesian Analysis of 3-Component Unit Lindley Mixture Model with Application to Extreme Observations. Mathematical Problems in Engineering, 2022.

Abdel-Latif, M. M., & Yacoub, M. (2011). Effect of change of discharges at Dongola station due to sedimentation on the water losses from Nasser Lake. Nile Basin Water Science & Engineering Journal, 4(1), 86-98.

El-Deen, M. S., Al-Dayian, G. R., & El-Helbawy, A. A. (2014). Statistical inference for Kumaraswamy distribution based on generalized order statistics with applications. British Journal of Mathematics & Computer Science, 4(12), 1710.

See Also

`data_floodSus`, `data_flood`, `data_floodpeak`,

Examples

```
x<-data_floodtime
summary(x)
```

`Annual Wheat Yield` *The annual wheat yield data set consists of annual yield for the period from 1951 to 2010.*

Description

The function allows to provide the annual yield for the period from 1951 to 2010. The units are tons per hectares.

Usage

```
data_annualyld
```

Arguments

`data_annualyld`	A vector of (non-negative integer) values.

Details

The annual yield data set consists of annual yield for the period from 1951 to 2010. The units are tons per hectares. Recently, it is used by Ristić et al. (2015) and fitted the generalized beta exponential distribution.

Value

data_annualyld gives the annual wheat yield.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ristić, M. M., Popović, B. V., & Nadarajah, S. (2015). Libby and Novick's generalized beta exponential distribution. Journal of Statistical Computation and Simulation, 85(4), 740-761.

Examples

```
x<-data_annualyld
summary(x)
```

Arthritis Relief *The data consists of 50 individuals with arthritis relief time*

Description

The function allows to provide the arthritis relief time (in hours). Joint stiffness and pain are the main signs and symptoms of arthritis, and these symptoms usually get worse as people aged.

Usage

```
data_arthritis
```

Arguments

data_arthritis	A vector of (non-negative integer) values.

Details

The data consists of 50 individuals with arthritis relief time (in hours). Joint stiffness and pain are the main signs and symptoms of arthritis, and these symptoms usually get worse as people age. Recently, it is used by Alanzi et al. (2023) and fitted a new Burr XII model based on the Bell-X functionalities.

Value

data_arthritis gives the arthritis relief time (in hours).

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alanzi, A. R., Imran, M., Tahir, M. H., Chesneau, C., Jamal, F., Shakoor, S., & Sami, W. (2023). Simulation analysis, properties and applications on a new Burr XII model based on the Bell-X functionalities. Okasha, H. M., & Shrahili, M. (2017). A new extended Burr XII distribution with applications. Journal of Computational and Theoretical Nanoscience, 14(11), 5261-5269.

See Also

data_relieftime

Examples

```
x<-data_arthritis
summary(x)
```

Ball Bearings *A test on the endurance of deep groove ball bearings*

Description

The function allows to provide a test results on the endurance of deep groove ball bearings.

Usage

```
data_blbearing
```

Arguments

data_blbearing	A vector of (non-negative integer) values.

Details

The data resulted from a test on the endurance of deep groove ball bearings. Recently, it is used by Badr and Sobahi (2022) and fitted the exponentiated exponential-inverse Weibull model.

Value

data_acfailureunit gives the test results on the endurance of deep groove ball bearings.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Badr, M. M., & Sobahi, G. (2022). The Exponentiated Exponential-Inverse Weibull Model: Theory and Application to COVID-19 Data in Saudi Arabia. Journal of Mathematics, 2022.

Tripathi, H., Dey, S., & Saha, M. (2021). Double and group acceptance sampling plan for truncated life test based on inverse log-logistic distribution. Journal of Applied Statistics, 48(7), 1227-1242.

Lawless, J. F. (2011). Statistical models and methods for lifetime data. John Wiley & Sons.

Examples

```
x<-data_blbearing
summary(x)
```

Bitcoin Exchange Rates

The data represent the Bitcoin exchange rates

Description

The function allows to provide the Bitcoin exchange rates.

Usage

```
data_Bitcoin
```

Arguments

data_Bitcoin	A vector of (non-negative integer) values.

Details

The data represent the Bitcoin exchange rates. Recently, it is used by Wang et al. (2023) and fitted a new Dagum model.

Value

data_Bitcoin gives the Bitcoin exchange rates.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Wang, Y., Ahmad, Z., Khan, F., Alnagar, D. K., Alsuhabi, H., Alkhairy, I., & Yusuf, M. (2023). Analysis of cryptocurrency exchange rates vs USA dollars using a new Dagum model. Alexandria Engineering Journal, 64, 645-658.

See Also

data_Ethereumer

Examples

```
x<-data_Bitcoin
summary(x)
```

Bladder Cancer *The remission times of 128 patients suffering from bladder cancer*

Description

The function allows to provide the remission times (in months) of 128 patients suffering from bladder cancer.

Usage

```
data_bldercancer
```

Arguments

data_bldercancer	A vector of (non-negative integer) values.

Details

The remission times (in months) of 128 patients suffering from bladder cancer. Recently, the data set is used by Bhatti et al. (2019) and fitted the Burr III-Marshal Olkin-Weibull distribution.

Value

data_bldercancer gives the remission times (in months) of 128 patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bhatti, F. A., Hamedani, G. G., Korkmaz, M. C., Cordeiro, G. M., Yousof, H. M., & Ahmad, M. (2019). On Burr III Marshal Olkin family: development, properties, characterizations and applications. Journal of Statistical Distributions and Applications, 6, 1-21.

Klakattawi, H. S. (2022). Survival analysis of cancer patients using a new extended Weibull distribution. Plos one, 17(2), e0264229.

Lemonte, A. J., & Cordeiro, G. M. (2013). An extended Lomax distribution. Statistics, 47(4), 800-816.

Lee, E. T., & Wang, J. (2003). Statistical methods for survival data analysis (Vol. 476). John Wiley & Sons.

Muhammad, M., Muhammad, I., & Yaya, A. M. (2018). The Kumaraswamy exponentiated U-quadratic distribution: Properties and application. Asian Journal of Probability and Statistics, 1(3), 1-17.

Kemaloglu, S. A., & Yilmaz, M. (2017). Transmuted two-parameter Lindley distribution. Communications in Statistics-Theory and Methods, 46(23), 11866-11879.

Elbatal, I., & Muhammed, H. Z. (2014). Exponentiated generalized inverse Weibull distribution. Applied Mathematical Sciences, 8(81), 3997-4012.

See Also

data_Bcancer, data_bloodcancer

Examples

```
x<-data_bldercancer
summary(x)
```

`Blood Cancer` *The life time of 40 blood cancer (leukemia) patients*

Description

The function allows to provide the lifetime (in years) of 40 blood cancer (leukemia) patients from one of Ministry of Health hospitals in Saudi Arabia.

Usage

```
data_bloodcancer
```

Arguments

`data_bloodcancer`
: A vector of (non-negative integer) values.

Details

This data consist of the lifetime (in years) of 40 blood cancer (leukemia) patients. Recently, the data set is used by Klakattawi, H. S. (2022) and fitted a new extended Weibull distribution.

Value

data_bloodcancer gives the lifetime (in years) of 40 blood cancer (leukemia) patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Klakattawi, H. S. (2022). Survival analysis of cancer patients using a new extended Weibull distribution. Plos one, 17(2), e0264229.

Al-Saiary, Z. A., & Bakoban, R. A. (2020). The Topp-Leone generalized inverted exponential distribution with real data applications. Entropy, 22(10), 1144.

See Also

data_Bcancer, data_bloodcancer

Examples

```
x<-data_bloodcancer
summary(x)
```

Breakdown Times *The breakdown times of electrical insulating fluid*

Description

The function allows to provide the breakdown times (in minutes) of the electrical insulating fluid subject to a 30 KV voltage stress.

Usage

```
data_breakdown
```

Arguments

data_breakdown	A vector of (non-negative integer) values.

Details

The data represent the breakdown times (in minutes) of the electrical insulating fluid subject to a 30 KV voltage stress. Recently, it is used by Tripathi. (2021) and fitted the inverse log-logistic distribution.

Value

data_breakdown gives the breakdown times (in minutes) of the electrical insulating fluid subject.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tripathi, H., Dey, S., & Saha, M. (2021). Double and group acceptance sampling plan for truncated life test based on inverse log-logistic distribution. Journal of Applied Statistics, 48(7), 1227-1242.

Lawless, J. F. (2011). Statistical models and methods for lifetime data. John Wiley & Sons.

See Also

data_breakdownt, data_Stress

Examples

```
x<-data_breakdown
summary(x)
```

Breaking Stress *The breaking stress of carbon fibres*

Description

The function allows to provide the 100 breaking stress of carbon fibres (in Gba).

Usage

```
data_carfibres
```

Arguments

data_carfibres	A vector of (non-negative integer) values.

Details

The data set consists of 100 breaking stress of carbon fibers (in Gba). Recently, it is used by Tripathi. (2021) and fitted the inverse log-logistic distribution.

Value

data_carfibres gives the breaking stress of carbon fibers.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tripathi, H., Dey, S., & Saha, M. (2021). Double and group acceptance sampling plan for truncated life test based on inverse log-logistic distribution. Journal of Applied Statistics, 48(7), 1227-1242.

Nichols, M. D., & Padgett, W. J. (2006). A bootstrap control chart for Weibull percentiles. Quality and reliability engineering international, 22(2), 141-151.

See Also

data_carbonf

Examples

```
x<-data_carfibres
summary(x)
```

`Breast Cancer` *The data represents the 242 breast cancer patients*

Description

The function allows to provide the incidence of 1,000 breast cancer patients within a period of 5 years starting from beginning of 2009 to end of 2013. The survival times for those patients were computed. Among them, 703 people were still alive at the end of 2013 and 55 patients had a zero lifetime and were believed to be wrongly reported or their records were absent upon death and thus excluded from the analysis. The remaining 242 patients have included.

Usage

```
data_brcancer
```

Arguments

`data_brcancer`	A vector of (non-negative integer) values.

Details

The data represents the 242 breast cancer patients. Recently, it is used by Okasha and Matter (2015) and fitted the Burr type XII distribution.

Value

data_brcancer gives the breast cancer patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Okasha, M. K., & Matter, M. Y. (2015). On the three-parameter Burr type XII distribution and its application to heavy tailed lifetime data. Journal: Journal of Advances in Mathematics, 10(4), 3429-3442.

See Also

data_breastcan

Examples

```
x<-data_brcancer
summary(x)
```

`Breast Cancer Nigeria` *The data set consists of 300 lifetime of the breast cancer patients*

Description

The function allows to provide 300 lifetime of the breast cancer patients reported by the UITH (University of Ilorin Teaching Hospital) of Nigeria.

Usage

```
data_breastcancer
```

Arguments

`data_breastcancer`
: A vector of (non-negative integer) values.

Details

The data set consists of 300 lifetime of the breast cancer patients reported by the UITH (University of Ilorin Teaching Hospital) of Nige- ria. Recently, it is used by Shen et al. (2022) and fitted a new generalized rayleigh distribution.

Value

data_breastcancer gives the lifetime of the breast cancer patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Shen, Z., Alrumayh, A., Ahmad, Z., Abu-Shanab, R., Al-Mutairi, M., & Aldallal, R. (2022). A new generalized rayleigh distribution with analysis to big data of an online community. Alexandria Engineering Journal, 61(12), 11523-11535.

Oguntunde, P. E., Adejumo, A. O., & Okagbue, H. I. (2017). Breast cancer patients in Nigeria: data exploration approach. Data in brief, 15, 47-57.

See Also

data_breastcan, data_brcancer

Examples

```
x<-data_breastcancer
summary(x)
```

Breast Cancer Survival

The data represents the survival times of 121 patients with breast cancer

---

Description

The function allows to provide the survival times of 121 patients with breast cancer obtained from a large hospital in a period from 1929 to 1938.

Usage

```
data_breastcan
```

Arguments

data_breastcan	A vector of (non-negative integer) values.

Details

The data represents the 242 breast cancer patients. Recently, it is used by Tahir et al. (2014) and fitted the McDonald log-logistic distribution.

Value

data_breastcan gives the survival times of 121 patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Mansoor, M., Zubair, M., & Hamedani, G. (2014). McDonald log-logistic distribution with an application to breast cancer data. Journal of Statistical Theory and Applications.

Hamedani, G. (2013). The Zografos-Balakrishnan log-logistic distribution: Properties and applications. Journal of Statistical Theory and Applications.

Lee, E.T. (1992) Statistical Methods for Survival Data Analysis. John Wiley: New York.

See Also

data_brcancer

Examples

```
x<-data_breastcan
summary(x)
```

Canadain Mortality *The data based on the mortality rates of COVID-19 in Canada*

Description

The function allows to provide the mortality rate of COVID-19 patients in Canada from 1 November to 26 December 2020.

Usage

```
data_mortalityCan
```

Arguments

data_mortalityCan	A vector of (non-negative integer) values.

Details

The data set represents the mortality rate of COVID-19 patients in Canada from 1 November to 26 December 2020. Recently, it is used by Almetwally (2022) and fitted the odd Weibull inverse Topp–Leone distribution.

Value

data_mortalityCan gives the mortality rate of COVID-19 patients in Canada.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Almetwally, E. M. (2022). The odd Weibull inverse topp–leone distribution with applications to COVID-19 data. Annals of Data Science, 9(1), 121-140.

Nasiru, S., Abubakari, A. G., & Chesneau, C. (2022). New Lifetime Distribution for Modeling Data on the Unit Interval: Properties, Applications and Quantile Regression. Mathematical and Computational Applications, 27(6), 105.

See Also

`data_COVIDDeath`, `data_COVIDfat`, `data_COVID19MH`

Examples

```
x<-data_mortalityCan
summary(x)
```

`Carbon Fibers` *The breaking stress of carbon fibers*

Description

The function allows to provide a sample of 50 observed values of breaking stress of carbon fibers, the unit is Gba.

Usage

```
data_carbonf
```

Arguments

`data_carbonf`	A vector of (non-negative integer) values.

Details

The data consists of a sample of 50 observed values of breaking stress of carbon fibers, the unit is Gba.

Recently, it is used by Alanzi et al. (2023) anda fitted a new Burr XII model based on the Bell-X functionalities.

Value

data_carbonf gives the breaking stress of carbon fibers.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Almarashi, A. M., Khan, K., Chesneau, C., & Jamal, F. (2021). Group Acceptance Sampling Plan Using Marshall–Olkin Kumaraswamy Exponential (MOKw-E) Distribution. Processes, 9(6), 1066.
Alanzi, A. R., Imran, M., Tahir, M. H., Chesneau, C., Jamal, F., Shakoor, S., & Sami, W. (2023). Simulation analysis, properties and applications on a new Burr XII model based on the Bell-X functionalities.

Fayomi, A., Tahir, M. H., Algarni, A., Imran, M., & Jamal, F. (2022). A new useful exponential model with applications to quality control and actuarial data. Computational Intelligence and Neuroscience, 2022.

Nichols, M. D., & Padgett, W. J. (2006). A bootstrap control chart for Weibull percentiles. Quality and reliability engineering international, 22(2), 141-151.

See Also

data_carfibres

Examples

```
x<-data_carbonf
summary(x)
```

Chemotherapy Treatment

Survival times of 46 patients given chemotherapy treatment

Description

The function allows to provide the survival times (in years) for the group of 46 patients given chemotherapy treatment.

Usage

```
data_chemotherapy
```

Arguments

data_chemotherapy	A vector of (non-negative integer) values.

Details

The data set relates to the survival times (in years) for the group of 46 patients given chemotherapy treatment. Recently, it is used by Nwezza and Ugwuowo(2022).

Value

data_chemotherapy gives the survival times (in years) for the group of 46 patients given chemotherapy treatment.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nwezza, E. E., & Ugwuowo, F. I. (2022). An extended normal distribution for reliability data analysis. Journal of Statistics and Management Systems, 25(2), 369-392.

Alizadeh, M., Tahir, M. H., Cordeiro, G. M., Mansoor, M., Zubair, M., & Hamedani, G. (2015). The Kumaraswamy marshal-Olkin family of distributions. Journal of the Egyptian Mathematical Society, 23(3), 546-557.

Bekker, A., Roux, J. J. J., & Mosteit, P. J. (2000). A generalization of the compound Rayleigh distribution: using a Bayesian method on cancer survival times. Communications in Statistics-Theory and Methods, 29(7), 1419-1433.

See Also

data_Bcancer, data_bldercancer

Examples

```
x<-data_chemotherapy
summary(x)
```

Coal Mining

The data represents the intervals in days between 109 successive coal mining disasters

---

Description

The function allows to provide the intervals in days between 109 successive coal mining disasters in Great Britain during the period 1875-1951.

Usage

```
data_coalmin
```

Arguments

data_coalmin	A vector of (non-negative integer) values.

Details

The data represents the intervals in days between 109 successive coal mining disasters in Great Britain during the period 1875-1951. Recently, it is used by Bhatti et al. (2018) and fitted the modified Burr XII-inverse exponential distribution.

Value

data_coalmin gives intervals in days between 109 successive coal mining disasters.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bhatti, F. A., Hamedani, G., Yousof, H. M., Ali, A., & Ahmad, M. (2018). On Modified Burr XII-Inverse Exponential Distribution: Properties, Characterizations and Applications. Journal of Biostatistics & Biometrics.

Examples

```
x<-data_coalmin
summary(x)
```

Component Failure *Time to failure of an electronic component*

Description

The function allows to provide the time to failure in hours of an electronic component subjected to an accelerated life test.

Usage

```
data_electronicf
```

Arguments

data_electronicf	A vector of (non-negative integer) values.

Details

The data represent the time to failure in hours of an electronic component subjected to an accelerated life test. Recently, it is used by Tripathi. (2021) and fitted the inverse log-logistic distribution.

Value

data_electronicf gives the time to failure in hours of an electronic component.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tripathi, H., Dey, S., & Saha, M. (2021). Double and group acceptance sampling plan for truncated life test based on inverse log-logistic distribution. Journal of Applied Statistics, 48(7), 1227-1242.

Montgomery, D. C. (2010). Managing, controlling, and improving quality. Wiley Global Education.

See Also

data_failureairc, data_windshieldf, data_breakdown

Examples

```
x<-data_electronicf
summary(x)
```

COVID-19 Chile

The data represents the incidence rate per every 10,000 inhabitants affected by COVID-19, with and without symptoms

---

Description

The function allows to provide the incidence rate per every 10,000 inhabitants affected by COVID-19, with and without symptoms, in the first two months of the pandemic, these data were recorded starting on 2 March 2020.

Usage

```
data_COVID19Chile
```

Arguments

data_COVID19Chile	A vector of (non-negative integer) values.

Details

The data represents the incidence rate per every 10,000 inhabitants affected by COVID-19, with and without symptoms, in the first two months of the pandemic, these data were recorded starting on 2 March 2020. Recently, it is used by Santoro et al. (2022) and fitted the extended half-power exponential distribution.

Value

data_COVID19Chile gives the incidence rate per every 10,000 inhabitants affected by COVID-19.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Santoro, K. I., Gómez, H. J., Barranco-Chamorro, I., & Gómez, H. W. (2022). Extended Half-Power Exponential Distribution with Applications to COVID-19 Data. Mathematics, 10(6), 942.

See Also

data_COVIDDeath, data_COVIDfat, data_COVIDmor, data_COVIDChile

Examples

```
x<-data_COVID19Chile
summary(x)
```

COVID-19 Fatality *The daily fatality confirmed cases attributable to COVID-19*

Description

The function allows to provide the daily fatality confirmed cases attributable to COVID-19. The data consists of 89 observed values, with 18.72 reported deaths on average every day.

Usage

```
data_COVIDfat
```

Arguments

data_COVIDfat	A vector of (non-negative integer) values.

Details

The data revealed the daily fatality confirmed cases attributable to COVID-19. The data consists of 89 observed values, with 18.72 reported deaths on average every day. Recently, the data set is used by Alyami et al.(2022) and fitted the Topp–Leone modified Weibull model.

Value

data_COVIDfat gives the daily fatality confirmed cases attributable to COVID-19.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alyami, S. A., Elbatal, I., Alotaibi, N., Almetwally, E. M., Okasha, H. M., & Elgarhy, M. (2022). Topp–Leone Modified Weibull Model: Theory and Applications to Medical and Engineering Data. Applied Sciences, 12(20), 10431.

Abdullah Alahmadi, A., Alqawba, M., Almutiry, W., Shawki, A. W., Alrajhi, S., Al-Marzouki, S., & Elgarhy, M. (2022). A new version of weighted Weibull distribution: Modelling to COVID-19 data. Discrete Dynamics in Nature and Society, 2022.

See Also

data_COVIDDeath, data_COVID19MH, data_COVIDmor

Examples

```
x<-data_COVIDfat
summary(x)
```

`COVID-19 France` *The data set represents mortality rate due to COVID-19 from 3 November 2021 to 11 November 2021 in France*

Description

The function allows to provide mortality rate due to COVID-19 from 3 November 2021 to 11 November 2021 in France.

Usage

```
data_COVIDFrance
```

Arguments

`data_COVIDFrance`	A vector of (non-negative integer) values.

Details

The data set represents mortality rate due to COVID-19 from 3 November 2021 to 11 November 2021 in France. Recently, it is used by Almetwally et al. (2023) and fitted a unit-Weibull based on progressive type-II censored.

Value

data_COVIDFrance gives the mortality rate due to COVID-19.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Almetwally, E. M., Jawa, T. M., Sayed-Ahmed, N., Park, C., Zakarya, M., & Dey, S. (2023). Analysis of unit-Weibull based on progressive type-II censored with optimal scheme. Alexandria Engineering Journal, 63, 321-338.

Moutinho Cordeiro, G., & dos Santos Brito, R. (2012). The beta power distribution.

See Also

data_COVID19MH, data_COVIDfat, data_COVIDmor

Examples

```
x<-data_COVIDFrance
summary(x)
```

COVID-19 Holland *The mortality rate of the COVID-19 infected persons in Holland*

Description

The function allows to provide the mortality rate of the COVID-19 infected persons in Holland between March 31, 2020, and April 30, 2020.

Usage

```
data_COVID19MH
```

Arguments

data_COVID19MH	A vector of (non-negative integer) values.

Details

The mortality rate of the COVID-19 infected persons in Holland between March 31, 2020, and April 30, 2020. Recently, it is used by Almongy et al. (2021) and fitted a new extended Rayleigh distribution.

Value

data_COVID19Chile gives the mortality rate of the COVID-19 infected persons in Holland.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Zhou, Y., Ahmad, Z., Almaspoor, Z., Khan, F., Tag-Eldin, E., Iqbal, Z., & El-Morshedy, M. (2023). On the implementation of a new version of the Weibull distribution and machine learning approach to model the COVID-19 data. Mathematical biosciences and engineering: MBE, 20(1), 337-364.

Almongy, H. M., Almetwally, E. M., Aljohani, H. M., Alghamdi, A. S., & Hafez, E. H. (2021). A new extended Rayleigh distribution with applications of COVID-19 data. Results in Physics, 23, 104012.

See Also

data_COVIDDeath, data_COVIDfat, data_COVIDmor

Examples

```
x<-data_COVID19MH
summary(x)
```

COVID-19 Mortality *COVID-19 mortality rate of Saudi Arabia*

Description

TThe function allows to provide a COVID-19 mortality rate belonging to Saudi Arabia of 32 days, which is recorded from 15 September 2020 to 16 October 2020.

Usage

```
data_COVIDmor
```

Arguments

data_COVIDmor	A vector of (non-negative integer) values.

Details

The data represent a COVID-19 mortality rate belonging to Saudi Arabia of 32 days, which is recorded from 15 September 2020 to 16 October 2020. Recently, it is used by Badr and Sobahi (2022) and fitted the exponentiated exponential-inverse Weibull model.

Value

data_COVIDfat gives the COVID-19 mortality rate belonging to Saudi Arabia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Badr, M. M., & Sobahi, G. (2022). The Exponentiated Exponential-Inverse Weibull Model: Theory and Application to COVID-19 Data in Saudi Arabia. Journal of Mathematics, 2022.

Almetwally, E. M. (2021). Extended odd weibull inverse Nadarajah-Haghighi distribution with application on COVID-19 in Saudi Arabia. Mathematical Sciences Letters, 10(3), 1-15.

See Also

data_COVIDDeath, data_COVIDfat, data_COVID19MH

Examples

```
x<-data_COVIDmor
summary(x)
```

COVID-19 New Deaths *Daily new deaths caused by COVID-19 in the UK*

Description

The function allows to provide the number of daily new deaths caused by COVID-19 in the UK from 15 February 2020 to 7 September 2021.

Usage

```
data_COVIDDeath
```

Arguments

data_COVIDDeath	A vector of (non-negative integer) values.

Details

The data set is the number of daily new deaths caused by COVID-19 in the UK from 15 February 2020 to 7 September 2021. Recently, it is used by Abbas et al. (2023) and fitted new extended Kumaraswamy exponential distribution.

Value

data_COVIDDeath gives the daily new deaths caused by COVID-19 in the UK.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Abbas, S., Muhammad, M., Jamal, F., Chesneau, C., Muhammad, I., & Bouchane, M. (2023). A New Extension of the Kumaraswamy Generated Family of Distributions with Applications to Real Data. Computation, 11(2), 26.

See Also

data_COVID19MH, data_COVIDfat, data_COVIDmor

Examples

```
x<-data_COVIDDeath
summary(x)
```

COVID-19 Recovery *The recovery rates of COVID-19 patients in Spain*

Description

The function allows to provide the recovery rates of COVID-19 patients in Spain from 3 March to 7 May 2020.

Usage

```
data_RR
```

Arguments

data_RR	A vector of (non-negative integer) values.

Details

The data sets represent the recovery rates of COVID-19 patients in Spain from 3 March to 7 May 2020. Recently, it is used by Nasiru et al. (2022) and fitted the new lifetime distribution for modeling data on the unit interval.

Value

data_RR gives the recovery rates of COVID-19 patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nasiru, S., Abubakari, A. G., & Chesneau, C. (2022). New Lifetime Distribution for Modeling Data on the Unit Interval: Properties, Applications and Quantile Regression. Mathematical and Computational Applications, 27(6), 105.

Afify, A. Z., Nassar, M., Kumar, D., & Cordeiro, G. M. (2022). A new unit distribution: Properties, inference, and applications. Electronic Journal of Applied Statistical Analysis, 15(2), 460-484.

See Also

data_COVIDDeath, data_COVIDfat, data_COVIDmor

Examples

```
x<-data_RR
summary(x)
```

Cutting Layers *The failure time of cutting layers machine*

Description

The function allows to provide the failure time of cutting layers machine.

Usage

```
data_failuretc
```

Arguments

data_failuretc	A vector of (non-negative integer) values.

Details

The failure time of cutting layers machine. Recently, it is used by Shah et al. (2022) and fitted a new member of the T-X family with applications in different sectors.

Value

data_failuretc gives the failure time of cutting layers machine.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Shah, Z., Ali, A., Hamraz, M., Khan, D. M., Khan, Z., EL-Morshedy, M., & Almaspoor, Z. (2022). A New Member of TX Family with Applications in Different Sectors. Journal of Mathematics, 2022.

Algamal, Z. Y. (2008). Exponentiated exponential distribution as a failure time distribution. IRAQI Journal of Statistical science, 14, 63-75.

See Also

data_failureairc, data_electronicf

Examples

```
x<-data_failuretc
summary(x)
```

Devices Breakdown *The times of breakdown of a sample of 25 devices*

Description

The function allows to provide the times of breakdown of a sample of 25 devices at 180C.

Usage

```
data_breakdownt
```

Arguments

data_breakdownt	A vector of (non-negative integer) values.

Details

The data consist of the times of breakdown of a sample of 25 devices at 180C. Recently, it is used by Alotaibi et al. (2022) and fitted a new three-parameter inverse Weibull distribution.

Value

data_breakdownt gives the breakdown times of devices.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alotaibi, R., Okasha, H., Rezk, H., & Nassar, M. (2023). A New Three-Parameter Inverse Weibull Distribution with Medical and Engineering Applications. CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, 135(2), 1255-1274.

Pham, H. (2003). Handbook of reliability engineering (Vol. 1). H. Pham (Ed.). London: Springer.

See Also

data_breakdown, data_Stress

Examples

```
x<-data_breakdownt
summary(x)
```

Diabetes Patients *The survival times of diabetes patients*

Description

The function allows to provide the survival times (life lengths in years) until the onset of diabetes from a random sample of 105 patients obtained from the Bolgatanga Regional Hospital in the Upper East region of Ghana.

Usage

```
data_dpatients
```

Arguments

data_dpatients	A vector of (non-negative integer) values.

Details

The dataset represents the survival times (life lengths in years) until the onset of diabetes from a random sample of 105 patients obtained from the Bolgatanga Regional Hospital in the Upper East region of Ghana. Recently, it is used by Zamanah et al. (2022) and fitted the harmonic mixture Weibull-Weibull family of distributions.

Value

data_dpatients gives the survival times (life lengths in years) until the onset of diabetes.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Zamanah, E., Nasiru, S., & Luguterah, A. (2022). Harmonic Mixture Weibull-G Family of Distributions: Properties, Regression and Applications to Medical Data. Computational and Mathematical Methods, 2022.

See Also

data_hpatients

Examples

```
x<-data_dpatients
summary(x)
```

Drilling — *Drilling of holes having a diameter of 12mm and thickness of sheet 3.15mm*

Description

The function allows to provide the 50 observations of holes having a diameter of 12mm and a thickness of the sheet of 3.15mm.

Usage

```
data_drilling
```

Arguments

data_drilling	A vector of (non-negative integer) values.

Details

The data set is based on 50 observations of holes having a diameter of 12mm and a thickness of the sheet of 3.15mm. Recently, it is used by Alanzi et al. (2022) and fitted a new modified Kumaraswamy distribution.

Value

data_drilling gives the data of holes having a diameter of 12mm and a thickness of the sheet of 3.15mm.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alanzi, A. R., Rafique, M. Q., Tahir, M. H., Sami, W., & Jamal, F. (2022). A New Modified Kumaraswamy Distribution: Actuarial Measures and Applications. Journal of Mathematics, 2022.

Dasgupta, R. (2011). On the distribution of burr with applications. Sankhya B, 73, 1-19.

See Also

data_drillingh

Examples

```
x<-data_drilling
summary(x)
```

Ethereum Exchange Rates

The data set represent the Ethereum exchange rates

Description

The function allows to provide the Ethereum exchange rates data set.

Usage

```
data_Ethereumer
```

Arguments

data_Ethereumer	A vector of (non-negative integer) values.

Details

The Ethereum exchange rates data set. Recently, it is used by Wang et al. (2023) and fitted a new Dagum model.

Value

data_Ethereumer gives the Ethereum exchange rates.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Wang, Y., Ahmad, Z., Khan, F., Alnagar, D. K., Alsuhabi, H., Alkhairy, I., & Yusuf, M. (2023). Analysis of cryptocurrency exchange rates vs USA dollars using a new Dagum model. Alexandria Engineering Journal, 64, 645-658.

See Also

data_Bitcoin

Examples

```
x<-data_Ethereumer
summary(x)
```

Failure and Run Times *The failure and run times from a sample of 30 devices*

Description

The function allows to provide the failure and run times from a sample of 30 devices.

Usage

```
data_runtimes
```

Arguments

data_runtimes	A vector of (non-negative integer) values.

Details

The values are the failure and run times from a sample of 30 devices. Recently, it is used by Abbas et al. (2023) and fitted new extended Kumaraswamy exponential distribution.

Value

data_runtimes gives the failure and run times from a sample of 30 devices.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Abbas, S., Muhammad, M., Jamal, F., Chesneau, C., Muhammad, I., & Bouchane, M. (2023). A New Extension of the Kumaraswamy Generated Family of Distributions with Applications to Real Data. Computation, 11(2), 26.

William, Q. M., & Escobar, L. A. (1998). Statistical methods for reliability data. A. Wiley Interscience Publications, 639.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_runtimes
summary(x)
```

`Failure Times` *The failure times of 84 Aircraft Windshield*

Description

The function allows to provide the failure times of 84 aircraft windshield.

Usage

```
data_windshieldf
```

Arguments

`data_windshieldf` A vector of (non-negative integer) values.

Details

The data refer to the failure times of 84 aircraft windshields. Recently, it is used by Tahir et al. (2015) and fitted the Weibull-Lomax distribution.

Value

data_windshieldf gives the failure times of 84 aircraft windshields.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Cordeiro, G. M., Mansoor, M., & Zubair, M. (2015). The Weibull-Lomax distribution: properties and applications. Hacettepe Journal of Mathematics and Statistics, 44(2), 455-474.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_windshieldf
summary(x)
```

Failures of Repairable

The failures times of repairable items

Description

The function allows to provide the time between failures for repairable 30 items.

Usage

```
data_repairable
```

Arguments

data_repairable	A vector of (non-negative integer) values.

Details

The data refer to the time between failures for repairable 30 items. Recently, it is used by Cordeiro et al. (2016) and fitted an extended Birnbaum–Saunders distribution.

Value

data_repairable gives the time between failures for repairable 30 items.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Cordeiro, G. M., Lima, M. D. C. S., Cysneiros, A. H., Pascoa, M. A., Pescim, R. R., & Ortega, E. M. (2016). An extended Birnbaum–Saunders distribution: Theory, estimation, and applications. Communications in Statistics-Theory and Methods, 45(8), 2268-2297.

Murthy, D.N.P., Xie, M., Jiang, R. (2004). Weibull Models. Hoboken, NJ: John Wiley.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_repairable
summary(x)
```

Fatality COVID-19 *The data consists of COVID-19 fatality rates in Saudi Arabia*

Description

TThe function allows to provide the COVID-19 fatality rates in Saudi Arabia. These measurements were taken over 37 days, beginning on June 27 and ending on August 2, 2021.

Usage

```
data_morCOVID
```

Arguments

data_morCOVID	A vector of (non-negative integer) values.

Details

The data consists of the COVID-19 fatality rates in Saudi Arabia. These measurements were taken over 37 days, beginning on June 27 and ending on August 2, 2021. Recently, it is used by Alshanbari et al. (2022) and fitted the novel type I half-logistic Burr-Weibull distribution.

Value

data_morCOVID gives the COVID-19 fatality rates in Saudi Arabia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alshanbari, H. M., Odhah, O. H., Almetwally, E. M., Hussam, E., Kilai, M., & El-Bagoury, A. A. H. (2022). Novel Type I Half Logistic Burr-Weibull Distribution: Application to COVID-19 Data. Computational and Mathematical Methods in Medicine, 2022.

See Also

data_COVIDDeath, data_COVIDfat, data_COVID19MH

Examples

```
x<-data_morCOVID
summary(x)
```

Fatality Rates *The data consists of COVID-19 falality rates of Saudi Arabia*

Description

The function allows to provide the COVID-19 fatality rates in Saudi Arabia. These measurements were taken over 37 days, beginning on June 27 and ending on August 2, 2021.

Usage

```
data_fatCOVID
```

Arguments

data_fatCOVID	A vector of (non-negative integer) values.

Details

The data consists of the COVID-19 fatality rates in Saudi Arabia. These measurements were taken for 37 days, beginning on June 27 and ending on August 2, 2021. Recently, it is used by Alshanbari et al. (2022) and fitted the novel type I half-logistic Burr-Weibull distribution.

Value

data_fatCOVID gives the COVID-19 fatality rates in Saudi Arabia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alshanbari, H. M., Odhah, O. H., Almetwally, E. M., Hussam, E., Kilai, M., & El-Bagoury, A. A. H. (2022). Novel Type I Half Logistic Burr-Weibull Distribution: Application to COVID-19 Data. Computational and Mathematical Methods in Medicine, 2022.

See Also

data_COVIDDeath, data_COVID19MH, data_COVIDmor

Examples

```
x<-data_fatCOVID
summary(x)
```

Flood Discharges *Annual flood discharges (in units of 1000 cubic feet per second)*

Description

The function allows to provide the maximum annual flood discharges (in units of 1000 cubic feet per second) of the North Saskachevan River at Edmonton, over 48 years.

Usage

```
data_flood
```

Arguments

data_flood	A vector of (non-negative integer) values.

Details

The data represent the maximum annual flood discharges (in units of 1000 cubic feet per second) of the North Saskachevan River at Edmonton, over 48 years. Recently, it is used by Tahir et al. (2020) and fitted the new Kumaraswamy-Weibull (NKwW) distribution.

Value

data_flood gives the the maximum annual flood discharges.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Hussain, M. A., Cordeiro, G. M., El-Morshedy, M., & Eliwa, M. S. (2020). A new Kumaraswamy generalized family of distributions with properties, applications, and bivariate extension. Mathematics, 8(11), 1989.

Asgharzadeh, A., Bakouch, H. S., & Habibi, M. (2017). A generalized binomial exponential 2 distribution: modeling and applications to hydrologic events. Journal of Applied Statistics, 44(13), 2368-2387.

See Also

`data_floodSus`, `data_floodtime`, `data_floodpeak`,

Examples

```
x<-data_flood
summary(x)
```

`Flood Peaks` *This data set represents 72 excrescences of flood peaks*

Description

The function allows to provide the 72 excrescences of flood peaks for the years 1958–1984 (rounded to one decimal place) of flood peaks (in m3 per s) of the Wheaton River near Carcross in Yukon Territory, Canada.

Usage

```
data_floodpeak
```

Arguments

`data_floodpeak`	A vector of (non-negative integer) values.

Details

This data set represents 72 excrescences of flood peaks for the years 1958–1984 (rounded to one decimal place) of flood peaks (in m3 per s) of the Wheaton River near Carcross in Yukon Territory, Canada. Recently, it is used by Mohamed et al. (2022) and fitted a Marshall-Olkin extended Gompertz Makeham model.

Value

data_floodpeak gives the 72 excrescences of flood peaks for the years 1958–1984.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Mohamed, R. A., Al-Babtain, A. A., Elbatal, I., Almetwally, E. M., & Almongy, H. M. (2022). Classical and Bayesian Inference of Marshall-Olkin Extended Gompertz Makeham Model with Modeling of Physics Data. Journal of Mathematics, 2022.

See Also

data_floodSus, data_flood, data_floodtime

Examples

```
x<-data_floodpeak
summary(x)
```

Food and Drink Wholesaling

The data set represents the food and drink wholesaling in the United Kingdom

---

Description

The function allows to provide the food and drink wholesaling in the United Kingdom from 2000 to 2019 as one factor of FTP.

Usage

```
data_wholesale
```

Arguments

data_wholesale	A vector of (non-negative integer) values.

Details

The data set represents the food and drink wholesaling in the United Kingdom from 2000 to 2019 as one factor of FTP. Recently, it is used by Alyami et al. (2022) and fitted the sine-exponentiated Weibull exponential (SEWEx), the sine-exponentiated Weibull Rayleigh (SEWR) and sine-exponentiated Weibull Burr X (SEWBX) distributions.

Value

data_wholesale gives the food and drink wholesaling in the United Kingdom.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alyami, S. A., Elbatal, I., Alotaibi, N., Almetwally, E. M., & Elgarhy, M. (2022). Modeling to Factor Productivity of the United Kingdom Food Chain: Using a New Lifetime Generated Family of Distributions. Sustainability, 14(14), 8942.

See Also

data_foodchain

Examples

```
x<-data_wholesale
summary(x)
```

Food Chain *The dataset represents the food chain in the United Kingdom from 2000 to 2019*

Description

The function allows to provide the food chain in the United Kingdom from 2000 to 2019.

Usage

```
data_foodchain
```

Arguments

data_foodchain	A vector of (non-negative integer) values.

Details

The dataset represents the food chain in the United Kingdom from 2000 to 2019. Recently, it is used by Alyami et al. (2022) and fitted the sine-exponentiated Weibull exponential (SEWEx), the sine-exponentiated Weibull Rayleigh (SEWR) and sine-exponentiated Weibull Burr X (SEWBX) distributions.

Value

data_foodchain gives the food chain in the United Kingdom from 2000 to 2019.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alyami, S. A., Elbatal, I., Alotaibi, N., Almetwally, E. M., & Elgarhy, M. (2022). Modeling to Factor Productivity of the United Kingdom Food Chain: Using a New Lifetime Generated Family of Distributions. Sustainability, 14(14), 8942.

See Also

data_wholesale

Examples

```
x<-data_foodchain
summary(x)
```

`Fracture Toughness` *The data represents the fracture toughness MPa m1/2 data from the material Alumina*

Description

The function allows to provide the fracture toughness MPa m1/2 data from the material Alumina.

Usage

```
data_fracture
```

Arguments

`data_fracture`	A vector of (non-negative integer) values.

Details

The data represents the fracture toughness MPa m1/2 data from the material Alumina. Recently, it is used by Bhatti et al. (2018) and fitted the modified Burr XII-inverse exponential distribution.

Value

data_fracture gives the fracture toughness MPa m1/2 data from the material Alumina.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bhatti, F. A., Hamedani, G., Yousof, H. M., Ali, A., & Ahmad, M. (2018). On Modified Burr XII-Inverse Exponential Distribution: Properties, Characterizations and Applications. Journal of Biostatistics & Biometrics.

See Also

data_breakdownt, data_Stress

Examples

```
x<-data_fracture
summary(x)
```

Guinea Pigs *The survival times of guinea pigs infected*

Description

The function allows to provide the survival times (in days) of 72 guinea pigs infected with virulent tubercle bacilli.

Usage

```
data_guineapigs
```

Arguments

data_guineapigs	A vector of (non-negative integer) values.

Details

The data set represents the survival times (in days) of 72 guinea pigs infected with virulent tubercle bacilli. Recently, the data set is used by Alyami et al.(2022) and fitted the Topp–Leone modified Weibull model.

Value

data_guineapigs gives the survival times (in days) of 72 guinea pigs.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bjerkedal, T. (1960). Acquisition of Resistance in Guinea Pies infected with Different Doses of Virulent Tubercle Bacilli. American Journal of Hygiene, 72(1), 130-48.

Chesneau, C., & El Achi, T. (2020). Modified odd Weibull family of distributions: Properties and applications. Journal of the Indian Society for Probability and Statistics, 21, 259-286.

Khosa, S. K., Afify, A. Z., Ahmad, Z., Zichuan, M., Hussain, S., & Iftikhar, A. (2020). A new extended-f family: properties and applications to lifetime data. Journal of Mathematics, 2020, 1-9.

Alyami, S. A., Elbatal, I., Alotaibi, N., Almetwally, E. M., Okasha, H. M., & Elgarhy, M. (2022). Topp–Leone Modified Weibull Model: Theory and Applications to Medical and Engineering Data. Applied Sciences, 12(20), 10431.

Kemaloglu, S. A., & Yilmaz, M. (2017). Transmuted two-parameter Lindley distribution. Communications in Statistics-Theory and Methods, 46(23), 11866-11879.

See Also

data_analgesic, data_dpatients

Examples

```
x<-data_guineapigs
summary(x)
```

Head and Neck Cancer *Survival time of patients diagnosed with Head and neck cancer*

Description

The function allows to provide the survival time for 44 patients diagnosed with Head and Neck cancer disease.

Usage

```
data_hdneckcancer
```

Arguments

data_hdneckcancer	A vector of (non-negative integer) values.

Details

Survival time for 44 patients diagnosed with head and neck cancer disease. Recently, the data set is used by Klakattawi, H. S. (2022) and fitted a new extended Weibull distribution.

Value

data_hdneckcancer gives the survival time for 44 patients diagnosed with Head and Neck cancer disease.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Klakattawi, H. S. (2022). Survival analysis of cancer patients using a new extended Weibull distribution. Plos one, 17(2), e0264229.

Cordeiro, G. M., Ortega, E. M., & da Cunha, D. C. (2013). The exponentiated generalized class of distributions. Journal of data science, 11(1), 1-27.

See Also

data_Bcancer, data_bloodcancer

Examples

```
x<-data_hdneckcancer
summary(x)
```

Health Insurance *The average annual percent change in private health insurance*

Description

The function allows to provide of average annual percent change in private health insurance premiums.

Usage

```
data_healthinsur
```

Arguments

data_healthinsur	A vector of (non-negative integer) values.

Details

The data set represents of average annual percent change in private health insurance premiums. Recently, it is used by Mukhtar et al. (2019) and fitted the c-Donald modified Burr-III distribution.

Value

data_healthinsur gives the average annual percent change in private health insurance premiums.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Mukhtar, S., Ali, A., & Alya, A. M. (2019). Mc-Donald modified Burr-III distribution: properties and applications. Journal of Taibah University for Science, 13(1), 184-192.

Kibria, B. G., & Shakil, M. (2011). A new five-parameter Burr system of distributions based on generalized Pearson differential equation. Proceedings, Section on Physical and Engineering Sciences.

See Also

data_vehicleinsur

Examples

```
x<-data_healthinsur
summary(x)
```

Holes Drilling — *The dataset is based on 50 observations of holes having a diameter of 9mm*

Description

TThe function allows to provide the 50 observations of holes having a diameter of 9mm and a thickness of the sheet of 2mm.

Usage

```
data_drillingh
```

Arguments

data_drillingh	A vector of (non-negative integer) values.

Details

The dataset is based on 50 observations of holes having a diameter of 9mm and a thickness of the sheet of 2mm. Recently, it is used by Alanzi et al. (2022) and fitted a new modified Kumaraswamy distribution.

Value

data_drillingh gives the data of holes having a diameter of 9mm and a thickness of the sheet of 2mm.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alanzi, A. R., Rafique, M. Q., Tahir, M. H., Sami, W., & Jamal, F. (2022). A New Modified Kumaraswamy Distribution: Actuarial Measures and Applications. Journal of Mathematics, 2022.

Dasgupta, R. (2011). On the distribution of burr with applications. Sankhya B, 73, 1-19.

See Also

data_drilling

Examples

```
x<-data_drillingh
summary(x)
```

Hypertension Patients *The survival times of hypertension patients*

Description

The function allows to provide the survival times (life lengths in years) until the onset of hypertension from a random sample of 119 patients obtained from the Bolgatanga Regional Hospital in the Upper East region of Ghana.

Usage

```
data_hpatients
```

Arguments

data_hpatients	A vector of (non-negative integer) values.

Details

The data set represents the survival times (life lengths in years) until the onset of hypertension from a random sample of 119 patients obtained from the Bolgatanga Regional Hospital in the Upper East region of Ghana. Recently, it is used by Zamanah et al. (2022) and fitted the harmonic mixture Weibull-Weibull family of distributions.

Value

data_hpatients gives the survival times (life lengths in years) until the onset of hypertension.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Zamanah, E., Nasiru, S., & Luguterah, A. (2022). Harmonic Mixture Weibull-G Family of Distributions: Properties, Regression and Applications to Medical Data. Computational and Mathematical Methods, 2022.

Examples

```
x<-data_hpatients
summary(x)
```

Image Data *The database extracted from an image of Foulum (Denmark)*

Description

The function allows to provide the image of Foulum (Denmark) obtained by the EMISAR sensor, jointly built by the ElectroMagnetics Institute (EMI), the Technical University of Denmark (TUD), and its Danish Centre for Remote Sensing (DCRS), operated at C- and L-bands (though not simultaneously) with quad-polarizations.

Usage

```
data_image
```

Arguments

data_image	A vector of (non-negative integer) values.

Details

The database extracted from an image of Foulum (Denmark) obtained by the EMISAR sensor, jointly built by the ElectroMagnetics Institute (EMI), the Technical University of Denmark (TUD), and its Danish Centre for Remote Sensing (DCRS), operated at C- and L-bands (though not simultaneously) with quad-polarizations. Recently, it is used by Alizadeh et al. (2017) and fitted the odd-Burr normal distribution.

Value

data_image gives the image of Foulum (Denmark) obtained by the EMISAR sensor.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alizadeh, M., Cordeiro, G. M., Nascimento, A. D., Lima, M. D. C. S., & Ortega, E. M. (2017). Odd-Burr generalized family of distributions with some applications. Journal of statistical computation and simulation, 87(2), 367-389.

Examples

```
x<-data_image
summary(x)
```

Incidence Rate COVID-19

The data represents the incidence rate per 10,000 inhabitants affected by the virus without symptoms during the second quarter of 2020

Description

The function allows to provide the COVID-19 incidence rate per 10,000 inhabitants affected by the virus without symptoms during the second quarter of 2020.

Usage

```
data_COVIDChile
```

Arguments

`data_COVIDChile` A vector of (non-negative integer) values.

Details

A real dataset related to COVID-19 in Chile, the data represent the incidence rate per 10,000 inhabitants affected by the virus without symptoms during the second quarter of 2020. Recently, it is used by Santoro et al. (2022) and fitted the extended half-power exponential distribution.

Value

data_COVIDChile gives the incidence rate per 10,000 inhabitants affected by the virus without symptoms.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Santoro, K. I., Gómez, H. J., Barranco-Chamorro, I., & Gómez, H. W. (2022). Extended Half-Power Exponential Distribution with Applications to COVID-19 Data. Mathematics, 10(6), 942.

See Also

data_COVIDDeath, data_COVIDfat, data_COVIDmor

Examples

```
x<-data_COVIDChile
summary(x)
```

Insurance claim *The data represents the minimum insurance claim*

Description

The function allows to provide the minimum insurance claim for every six month period from the 3rd of January 1980 to the 31 of December of 1990.

Usage

```
data_insurclaim
```

Arguments

data_insurclaim	A vector of (non-negative integer) values.

Details

The data represents the minimum insurance claim for every six month period from the 3rd of January 1980 to the 31 of December of 1990. Recently, it is used by Asgharzadeh et al. (2014) and fitted the Burr Poisson–Lindley distribution.

Value

data_insurclaim gives the minimum insurance claim for every six month.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Asgharzadeh, A., Bakouch, H. S., Nadarajah, S., & Esmaeili, L. (2014). A new family of compound lifetime distributions. Kybernetika, 50(1), 142-169.

See Also

data_vehicleinsur, data_healthinsur

Examples

```
x<-data_insurclaim
summary(x)
```

---

kidney Dialysis Patients

The data set consists of times to infection of kidney dialysis patients in months

---

Description

The function allows to provide the times to infection of kidney dialysis patients in months.

Usage

```
data_kidney
```

Arguments

data_kidney	A vector of (non-negative integer) values.

Details

The data set consists of times to infection of kidney dialysis patients in months. Recently, it is used by Bantan et al. (2020) and fitted the unit-Rayleigh distribution.

Value

data_kidney gives the times to infection of kidney dialysis patients in months.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Chesneau, C., Jamal, F., Elgarhy, M., Tahir, M. H., Ali, A., ... & Anam, S. (2020). Some new facts about the unit-Rayleigh distribution with applications. Mathematics, 8(11), 1954.

Klein, J. P., & Moeschberger, M. L. (2003). Survival analysis: techniques for censored and truncated data (Vol. 1230). New York: Springer.

Examples

```
x<-data_kidney
summary(x)
```

---

kidney Patients Unit Interval Data

The unit intervel data set consists of times to infection of kidney dialysis patients in months

---

Description

The function allows to provide the unit intervel data set consists of times to infection of kidney dialysis patients in months.

Usage

```
data_kidneyunit
```

Arguments

`data_kidneyunit`
: A vector of (non-negative integer) values.

Details

The unit intervel data set consists of times to infection of kidney dialysis patients in months. Recently, it is used by Bantan et al. (2020) and fitted the unit-Rayleigh distribution.

Value

data_kidneyunit gives the times to infection of kidney dialysis patients in months.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Chesneau, C., Jamal, F., Elgarhy, M., Tahir, M. H., Ali, A., ... & Anam, S. (2020). Some new facts about the unit-Rayleigh distribution with applications. Mathematics, 8(11), 1954.

Klein, J. P., & Moeschberger, M. L. (2003). Survival analysis: techniques for censored and truncated data (Vol. 1230). New York: Springer.

Examples

```
x<-data_kidneyunit
summary(x)
```

`Leaves Data` *The phosphorus concentration in the leaves*

Description

The function allows to provide the 128 plants which are measures of the phosphorus concentration in the leaves.

Usage

```
data_leaves
```

Arguments

`data_leaves`	A vector of (non-negative integer) values.

Details

The data describe the 128 plants which are measures of the phosphorus concentration in the leaves. Recently, it is used by Silva et al. (2015) and fitted The compound class of extended Weibull power series distributions.

Value

data_leaves gives the phosphorus concentration in the leaves.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Silva, R. B., Bourguignon, M., Dias, C. R., & Cordeiro, G. M. (2013). The compound class of extended Weibull power series distributions. Computational Statistics & Data Analysis, 58, 352-367.

Examples

```
x<-data_leaves
summary(x)
```

Leukemia *The survival times of 40 patients suffering from leukemia*

Description

The function allows to provide the survival times (days) of 40 patients suffering from leukemia.

Usage

```
data_leukemia
```

Arguments

data_leukemia	A vector of (non-negative integer) values.

Details

The data consists of the survival times (days) of 40 patients suffering from leukemia. Recently, the data set is used by Bhatti et al. (2019) and fitted the Burr III-Marshal Olkin-Weibull distribution.

Value

data_leukemia gives the survival times (days) of 40 patients suffering from leukemia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bhatti, F. A., Hamedani, G. G., Korkmaz, M. C., Cordeiro, G. M., Yousof, H. M., & Ahmad, M. (2019). On Burr III Marshal Olkin family: development, properties, characterizations and applications. Journal of Statistical Distributions and Applications, 6, 1-21.

Elbatal, I., & Muhammed, H. Z. (2014). Exponentiated generalized inverse Weibull distribution. Applied Mathematical Sciences, 8(81), 3997-4012.

Kemaloglu, S. A., & Yilmaz, M. (2017). Transmuted two-parameter Lindley distribution. Communications in Statistics-Theory and Methods, 46(23), 11866-11879.

See Also

data_Bcancer, data_bloodcancer

Examples

```
x<-data_leukemia
summary(x)
```

`March Precipitation` *Data consists of 30 observations of the March precipitation*

Description

The function allows to provide the 30 observations of the March precip- itation (in inches) in Minneapolis/St Paul.

Usage

```
data_MPrecipitation
```

Arguments

`data_MPrecipitation`
: A vector of (non-negative integer) values.

Details

Data consists of 30 observations of the March precip- itation (in inches) in Minneapolis/St Paul. Recently, it is used by Usman and Haq (2020) and fitted the Marshall-Olkin extended inverted Kumaraswamy distribution.

Value

data_MPrecipitation gives the March precip- itation (in inches) in Minneapolis/St Paul.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Usman, R. M., & ul Haq, M. A. (2020). The Marshall-Olkin extended inverted Kumaraswamy distribution: Theory and applications. Journal of King Saud University-Science, 32(1), 356-365.

Hinkley, D. (1977). On quick choice of power transformation. Journal of the Royal Statistical Society: Series C (Applied Statistics), 26(1), 67-69.

See Also

data_precipitation

Examples

```
x<-data_MPrecipitation
summary(x)
```

`Maximum Flood` *The maximum flood level for the Susquehanna River at Harrisburg, Pennsylvania*

Description

The function allows to provide the maximum flood level for the Susquehanna River at Harrisburg, Pennsylvania.

Usage

```
data_floodSus
```

Arguments

`data_floodSus`	A vector of (non-negative integer) values.

Details

The maximum flood level for the Susquehanna River at Harrisburg, Pennsylvania. Recently, it is used by Marinho (2016).

Value

data_floodSus gives the maximum flood level for the Susquehanna River.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Marinho, P. R. D., Bourguignon, M., & Marinho, M. P. R. D. (2016). Package 'AdequacyModel'.

Dumonceaux, R., Antle, C. E., & Haas, G. (1973). Likelihood ratio test for discriminagon between two models with unknown location and scale parameters. Technometrics, 15(1), 19-27.

See Also

`data_flood`, `data_floodtime`, `data_floodpeak`,

Examples

```
x<-data_floodSus
summary(x)
```

`Mexico COVID-19` *COVID-19 mortality rates in Mexico*

Description

The function allows to provide the COVID-19 mortality rate data belonging to Mexico of 108 days, which is recorded from 4 March to 20 July 2020.

Usage

```
data_MorR
```

Arguments

`data_MorR`	A vector of (non-negative integer) values.

Details

The data represents a COVID-19 mortality rate data belonging to Mexico of 108 days, which is recorded from 4 March to 20 July 2020. Recently, it is used by Almongy et al. (2021) and fitted a new extended Rayleigh distribution.

Value

data_MorR gives the COVID-19 mortality rate data belonging to Mexico.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Almongy, H. M., Almetwally, E. M., Aljohani, H. M., Alghamdi, A. S., & Hafez, E. H. (2021). A new extended Rayleigh distribution with applications of COVID-19 data. Results in Physics, 23, 104012.

See Also

`data_COVIDDeath`, `data_COVIDfat`, `data_COVID19MH`

Examples

```
x<-data_MorR
summary(x)
```

`Milk Production` *The overall yield production of 107 cows at first birth*

Description

The function allows to provide the overall yield production of 107 cows at the first birth of the SINDI race.

Usage

```
data_Milkp
```

Arguments

`data_Milkp`	A vector of (non-negative integer) values.

Details

The data revealed the overall yield production of 107 cows at the first birth of the SINDI race. Recently, it is used by Alanzi et al. (2022) and fitted a new modified Kumaraswamy distribution.

Value

data_Milkp gives the overall yield production of 107 cows at the first birth.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alanzi, A. R., Rafique, M. Q., Tahir, M. H., Sami, W., & Jamal, F. (2022). A New Modified Kumaraswamy Distribution: Actuarial Measures and Applications. Journal of Mathematics, 2022.

Moutinho Cordeiro, G., & dos Santos Brito, R. (2012). The beta power distribution.

Examples

```
x<-data_Milkp
summary(x)
```

Natural Increase Rates

The data set consists of natural increase rates for the period from 1951 to 2010

Description

The function allows to provide the natural increase rates for the period from 1951 to 2010. The rate of natural increase is calculated as difference of the crude birth rate and the crude death rate of a population.

Usage

```
data_increaserate
```

Arguments

`data_increaserate` A vector of (non-negative integer) values.

Details

The data set consists of natural increase rates for the period from 1951 to 2010. The rate of natural increase is calculated as difference of the crude birth rate and the crude death rate of a population. Recently, it is used by Ristić et al. (2015) and fitted the generalized beta exponential distribution.

Value

data_increaserate gives the natural increase rates for the period from 1951 to 2010.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ristić, M. M., Popović, B. V., & Nadarajah, S. (2015). Libby and Novick's generalized beta exponential distribution. Journal of Statistical Computation and Simulation, 85(4), 740-761.

Examples

```
x<-data_increaserate
summary(x)
```

New Claims *The data set represents the unemployment claims from July 2008 to April*

Description

The function allows to provide the unemployment claims from July 2008 to April, reported by the Department of Labour, Licencing, and Regulation, USA.

Usage

```
data_insurun
```

Arguments

data_insurun	A vector of (non-negative integer) values.

Details

The data set represents the unemployment claims from July 2008 to April, reported by the Department of Labour, Licencing, and Regulation, USA. Recently, it is used by Fayomi et al. (2022) and fitted a new useful exponential model.

Value

data_insurun gives the unemployment claims from July 2008 to April.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Fayomi, A., Tahir, M. H., Algarni, A., Imran, M., & Jamal, F. (2022). A new useful exponential model with applications to quality control and actuarial data. Computational Intelligence and Neuroscience, 2022.

See Also

data_insuranceun

Examples

```
x<-data_insurun
summary(x)
```

P3 Computation Times *computation time of P3 algorithms*

Description

The function allows to provide the computation time of P3 algorithms.

Usage

```
data_P3
```

Arguments

data_P3	A vector of (non-negative integer) values.

Details

The data providing computation time of P3 algorithms. Recently, it is used by Bantan et al. (2022) and fitted using a new univariate and bivariate statistical model.

Value

data_P3 gives the computation time of P3 algorithms.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Shafiq, S., Tahir, M. H., Elhassanein, A., Jamal, F., Almutiry, W., & Elgarhy, M. (2022). Statistical Analysis of COVID-19 Data: Using A New Univariate and Bivariate Statistical Model. Journal of Function Spaces, 2022.

Biswas, A., & Chakraborty, S. (2021). A new method for constructing continuous distributions on the unit interval. arXiv preprint arXiv:2101.04661.

See Also

data_SC16

Examples

```
x<-data_P3
summary(x)
```

`Patients Relief Times` *The relief times for patients receiving an analgesic*

Description

The function allows to provide the lifetime's data relating to relief times (in minutes) for 20 patients receiving an analgesic.

Usage

```
data_analgesic
```

Arguments

`data_analgesic`	A vector of (non-negative integer) values.

Details

The data set represents the lifetime's data relating to relief times (in minutes) for 20 patients receiving an analgesic. Recently, it is used by Peter et al. (2021) and fitted the Gamma odd Burr III-G family of distributions.

Value

data_analgesic gives the relief times (in minutes).

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Peter, P. O., Oluyede, B., Bindele, H. F., Ndwapi, N., & Mabikwa, O. (2021). The Gamma Odd Burr III-G Family of Distributions: Model, Properties and Applications. Revista Colombiana de Estadística, 44(2), 331-368.

Gross, A. J., & Clark, V. A. (1975). Survival distributions: reliability applications in the biomedical sciences (Vol. 11). New York: Wiley.

See Also

`data_relieftime`

Examples

```
x<-data_analgesic
summary(x)
```

`Permeability Data` *The data presents the permeability measured in millidarcies*

Description

The function allows to provide the permeability measured in millidarcies, only the shallow permeability values are presented.

Usage

```
data_permeability
```

Arguments

`data_permeability`
: A vector of (non-negative integer) values.

Details

The data presents the permeability measured in millidarcies, only the shallow permeability values are presented. Recently, it is used by Ricciardi et al. (2005) and fitted the beta generalized inverted exponential distribution.

Value

data_permeability gives the permeability measured in millidarcies.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ricciardi, K. L., Pinder, G. F., & Belitz, K. (2005). Comparison of the lognormal and beta distribution functions to describe the uncertainty in permeability. Journal of Hydrology, 313(3-4), 248-256.

Law, J. (1944). A statistical approach to the interstitial heterogeneity of sand reservoirs. Transactions of the AIME, 155(01), 202-222.

Examples

```
x<-data_permeability
summary(x)
```

Petroleum Rock *The data set represents the petroleum rock samples from a petroleum reservoir*

Description

The function allows to provide the petroleum rock samples from a petroleum reservoir.

Usage

```
data_petroleum
```

Arguments

data_petroleum	A vector of (non-negative integer) values.

Details

The data set represents the petroleum rock samples from a petroleum reservoir. Recently, it is used by ZeinEldin et al. (2020) and fitted a Type II half logistic Kumaraswamy distribution.

Value

data_petroleum gives the petroleum rock samples from a petroleum reservoir.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

ZeinEldin, R. A., Haq, M. A. U., Hashmi, S., Elsehety, M., & Elgarhy, M. (2020). Type II half logistic Kumaraswamy distribution with applications. Journal of Function Spaces, 2020, 1-15.

Moutinho Cordeiro, G., & dos Santos Brito, R. (2012). The beta power distribution.

Examples

```
x<-data_petroleum
summary(x)
```

Polished Window *The data represents polished window strength*

Description

The function allows to provide the strength lifetime for a glass airplane window.

Usage

```
data_airplanewin
```

Arguments

data_airplanewin	A vector of (non-negative integer) values.

Details

The data represents the strength lifetime for a glass airplane window. Recently, it is used by Bakoban and Zinadah (2017) and fitted the beta generalized inverted exponential distribution.

Value

data_airplanewin gives the lifetime for a glass airplane window.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bakoban, R. A., & Abu-Zinadah, H. H. (2017). The beta generalized inverted exponential distribution with real data applications. REVSTAT-Statistical Journal, 15(1), 65-88.

Fuller Jr, E. R., Freiman, S. W., Quinn, J. B., Quinn, G. D., & Carter, W. C. (1994, September). Fracture mechanics approach to the design of glass aircraft windows: A case study. In Window and dome technologies and materials IV (Vol. 2286, pp. 419-430). SPIE.

Examples

```
x<-data_airplanewin
summary(x)
```

`Precipitation` *The annual maximum precipitation for one rain gauge*

Description

The function allows to provide the annual maximum precipitation (inches) for one rain gauge in Fort Collins, Colorado from 1900 through 1999.

Usage

```
data_precipitation
```

Arguments

`data_precipitation`
: A vector of (non-negative integer) values.

Details

The data represents the annual maximum precipitation (inches) for one rain gauge in Fort Collins, Colorado from 1900 through 1999. Recently, it is used by Tahir et al. (2020) and fitted the new Kumaraswamy-Weibull distribution.

Value

data_precipitation gives the annual maximum precipitation (inches).

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Hussain, M. A., Cordeiro, G. M., El-Morshedy, M., & Eliwa, M. S. (2020). A new Kumaraswamy generalized family of distributions with properties, applications, and bivariate extension. Mathematics, 8(11), 1989.

Katz, R. W., Parlange, M. B., & Naveau, P. (2002). Statistics of extremes in hydrology. Advances in water resources, 25(8-12), 1287-1304.

See Also

`data_MPrecipitation`

Examples

```
x<-data_precipitation
summary(x)
```

Reddit Advertising *The data set consists of 150 observations and is related to the Reddit advertising*

Description

The function allows to provide the 150 observations and is related to the Reddit advertising.

Usage

```
data_reddit
```

Arguments

data_reddit	A vector of (non-negative integer) values.

Details

The data set consists of 150 observations and is related to the Reddit advertising. Recently, it is used by Shen et al. (2022) and fitted a new generalized rayleigh distribution.

Value

data_reddit gives the 150 observations and is related to the Reddit advertising.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Shen, Z., Alrumayh, A., Ahmad, Z., Abu-Shanab, R., Al-Mutairi, M., & Aldallal, R. (2022). A new generalized rayleigh distribution with analysis to big data of an online community. Alexandria Engineering Journal, 61(12), 11523-11535.

Examples

```
x<-data_reddit
summary(x)
```

Relief Times *The relief times of patients receiving an analgesic*

Description

The function allows to provide the relief times of 20 patients who are receiving an analgesic.

Usage

```
data_relieftime
```

Arguments

data_relieftime	A vector of (non-negative integer) values.

Details

The dataset represents the relief times of 20 patients who are receiving an analgesic. Recently, it is used by Afify et al. (2021) and fitted a new two-parameter burr-hatke distribution.

Value

data_relieftime gives the relief times of 20 patients who are receiving an analgesic.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Afify, A. Z., Aljohani, H. M., Alghamdi, A. S., Gemeay, A. M., & Sarg, A. M. (2021). A new two-parameter burr-hatke distribution: Properties and bayesian and non-bayesian inference with applications. Journal of Mathematics, 2021, 1-16.

Gross, A. J., & Clark, V. A. (1975). Survival distributions: reliability applications in the biomedical sciences (Vol. 11). New York: Wiley.

See Also

data_relieftime

Examples

```
x<-data_relieftime
summary(x)
```

`Remission Time` *The remission time of 128 bladder cancer patients*

Description

The function allows to provide the remission time of 128 bladder cancer patients.

Usage

```
data_Bcancer
```

Arguments

`data_Bcancer`	A vector of (non-negative integer) values.

Details

The data set consists of the remission time of 128 bladder cancer patients. Recently, it is used by Ijaz et al. (2020) and fitted a Gull alpha power Weibull distribution.

Value

data_Bcancer gives the remission time of 128 bladder cancer patients.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ijaz, M., Asim, S. M., Farooq, M., Khan, S. A., & Manzoor, S. (2020). A Gull Alpha Power Weibull distribution with applications to real and simulated data. Plos one, 15(6), e0233080.

Aldeni M., Lee C., & Famoye F. (2017). Families of distributions arising from the quantile of generalized lambda distribution. Journal of Statistical Distributions and Applications, 4(1), 25.

See Also

`data_Bcancer`, `data_bloodcancer`

Examples

```
x<-data_Bcancer
summary(x)
```

SC16 Computation Times

Computation time of SC16 algorithms

Description

The function allows to provide the computation time of SC16 algorithms.

Usage

```
data_SC16
```

Arguments

data_SC16	A vector of (non-negative integer) values.

Details

The data providing computation time of SC16 algorithms. Recently, it is used by Bantan et al. (2022) and fitted using a new univariate and bivariate statistical model.

Value

data_SC16 gives the computation time of SC16 algorithms.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Bantan, R. A., Shafiq, S., Tahir, M. H., Elhassanein, A., Jamal, F., Almutiry, W., & Elgarhy, M. (2022). Statistical Analysis of COVID-19 Data: Using A New Univariate and Bivariate Statistical Model. Journal of Function Spaces, 2022.

Biswas, A., & Chakraborty, S. (2021). A new method for constructing continuous distributions on the unit interval. arXiv preprint arXiv:2101.04661.

See Also

data_P3

Examples

```
x<-data_SC16
summary(x)
```

`Service Times` *The service times of 63 aircraft windshields*

Description

The function allows to provide the service times of 63 aircraft windshields.

Usage

```
data_windshields
```

Arguments

`data_windshields`
: A vector of (non-negative integer) values.

Details

The data refers to the service times of 63 aircraft windshields. Recently, it is used by Tahir et al. (2015) and fitted the Weibull-Lomax distribution.

Value

data_windshields gives the service times of 63 aircraft windshields.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Cordeiro, G. M., Mansoor, M., & Zubair, M. (2015). The Weibull-Lomax distribution: properties and applications. Hacettepe Journal of Mathematics and Statistics, 44(2), 455-474.

Ramos, M. W. A., Marinho, P. R. D., da Silva, R. V., & Cordeiro, G. M. (2013). The exponentiated Lomax Poisson distribution with an application to lifetime data. Advances and Applications in Statistics, 34(2), 107.

Murthy, D. P., Xie, M., & Jiang, R. (2004). Weibull models. John Wiley & Sons.

Examples

```
x<-data_windshields
summary(x)
```

Shocks Failures *The number of shocks before failure*

Description

The function allows to provide the 20 obervations representing the number of shocks before failure.

Usage

```
data_shocks
```

Arguments

data_shocks	A vector of (non-negative integer) values.

Details

An uncensored data of 20 obervations representing the number of shocks before failure. Recently, it is used by Cordeiro et al. (2016) and fitted an extended Birnbaum–Saunders distribution.

Value

data_shocks gives the number of shocks before failure.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Cordeiro, G. M., Lima, M. D. C. S., Cysneiros, A. H., Pascoa, M. A., Pescim, R. R., & Ortega, E. M. (2016). An extended Birnbaum–Saunders distribution: Theory, estimation, and applications. Communications in Statistics-Theory and Methods, 45(8), 2268-2297.

Murthy, D.N.P., Xie, M., Jiang, R. (2004). Weibull Models. Hoboken, NJ: John Wiley.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_shocks
summary(x)
```

`Somalia COVID-19` *COVID-19 mortality rates in Somalia*

Description

The function allows to provide the COVID-19 mortality rate in Somalia during the time between 1 st March 2021 to 20 th April 2021, with a total of 51 observed values.

Usage

```
data_RateMor
```

Arguments

`data_RateMor`	A vector of (non-negative integer) values.

Details

The data set contains the COVID-19 mortality rate from Somalia during the time between 1 st March 2021 to 20 th April 2021, with a total of 51 observed values. Recently, it is used by Muse et al. (2021) and fitted a new versatile modification of the log-logistic distribution.

Value

data_RateMor gives the COVID-19 mortality rate from Somalia.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Muse, A. H., Tolba, A. H., Fayad, E., Abu Ali, O. A., Nagy, M., & Yusuf, M. (2021). Modelling the COVID-19 mortality rate with a new versatile modification of the log-logistic distribution. Computational Intelligence and Neuroscience, 2021.

See Also

`data_COVIDDeath`, `data_COVID19MH`, `data_COVIDmor`

Examples

```
x<-data_RateMor
summary(x)
```

`Stream Flow` *The data set consists of stream flow amounts (1000 acre-feet) for 35 year*

Description

The function allows to provide the stream flow amounts (1000 acre-feet) for 35 year (1936–70) at the U.S. Geological Survey (USGS) gaging station number 9-3425 for April 1–August 31 of each year.

Usage

```
data_streamflow
```

Arguments

`data_streamflow` A vector of (non-negative integer) values.

Details

The data set consists of stream flow amounts (1000 acre-feet) for 35 year (1936–70) at the U.S. Geological Survey (USGS) gaging station number 9-3425 for April 1–August 31 of each year. Recently, it is used by Nawaz et al. (2020) and fitted the Kumaraswamy generalized Kappa distribution.

Value

Stream Flow gives the stream flow amounts (1000 acre-feet) for 35 year (1936–70) at the U.S.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Nawaz, T., Hussain, S., Ahmad, T., Naz, F., & Abid, M. (2020). Kumaraswamy generalized Kappa distribution with application to stream flow data. Journal of King Saud University-Science, 32(1), 172-182.

MIELKE JR, P. W., & Johnson, E. S. (1973). Three-parameter kappa distribution maximum likelihood estimates and likelihood ratio tests. Monthly Weather Review, 101(9), 701-707.

Examples

```
x<-data_streamflow
summary(x)
```

`Strength of Glass Fibers`

The data consists of 63 observations of strength of glass fibers

Description

The function allows to provide the 63 observations which are generated to simulate the strengths of glass fibers.

Usage

```
data_glassf
```

Arguments

`data_glassf`	A vector of (non-negative integer) values.

Details

The data set consists of 63 observations which are generated to simulate the strengths of glass fibers. Recently, it is used by Afify et al. (2021) and fitted a new two-parameter burr-hatke distribution.

Value

data_glassf gives the 63 observations which are generated to simulate the strengths of glass fibers.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Afify, A. Z., Aljohani, H. M., Alghamdi, A. S., Gemeay, A. M., & Sarg, A. M. (2021). A new two-parameter burr-hatke distribution: Properties and bayesian and non-bayesian inference with applications. Journal of Mathematics, 2021, 1-16.

Mahmoud, M. R., & Mandouh, R. M. (2013). On the transmuted Fréchet distribution. Journal of Applied Sciences Research, 9(10), 5553-5561.

See Also

`data_failuretc`

Examples

```
x<-data_glassf
summary(x)
```

Stress *Life testing of 40 items with change in stress*

Description

The function allows to provide the accelerated life testing of 40 items with a change in stress from 100 to 150 at t = 15.

Usage

```
data_Stress
```

Arguments

data_Stress	A vector of (non-negative integer) values.

Details

The data refers to accelerated life testing of 40 items with change in stress from 100 to 150 at t = 15. Recently, it is used by Cordeiro et al. (2016) and fitted an extended Birnbaum–Saunders distribution.

Value

data_Stress gives the accelerated life testing of 40 items.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Cordeiro, G. M., Lima, M. D. C. S., Cysneiros, A. H., Pascoa, M. A., Pescim, R. R., & Ortega, E. M. (2016). An extended Birnbaum–Saunders distribution: Theory, estimation, and applications. Communications in Statistics-Theory and Methods, 45(8), 2268-2297.

Murthy, D.N.P., Xie, M., Jiang, R. (2004). Weibull Models. Hoboken, NJ: John Wiley.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_Stress
summary(x)
```

`Successive Earthquakes`
The data set represents the time intervals of the successive earthquakes

Description

The function allows to provide the time intervals of the successive earthquakes. The dates of the successive earthquakes with magnitudes greater than or equal to 6 Mw (moment magnitude), which are recorded with their exact locations, magnitudes and depths between the years 1900 and 2000.

Usage

```
data_earthquakes
```

Arguments

`data_earthquakes`
A vector of (non-negative integer) values.

Details

The data set represents the time intervals of the successive earthquakes. The dates of the successive earthquakes with magnitudes greater than or equal to 6 Mw (moment magnitude), which are recorded with their exact locations, magnitudes and depths between the years 1900 and 2000. Recently, it is used by Kuş (2007) and fitted the the exponential–Poisson distribution.

Value

data_earthquakes gives the time intervals of the successive earthquakes.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Kuş, C. (2007). A new lifetime distribution. Computational Statistics & Data Analysis, 51(9), 4497-4509.

Examples

```
x<-data_earthquakes
summary(x)
```

Successive Failures *The successive failures of air conditioning systems of airplanes*

Description

The function allows to provide the successive failures of air conditioning systems for the fleet of 13 Boeing 720 jet airplanes.

Usage

```
data_failureairc
```

Arguments

data_failureairc	A vector of (non-negative integer) values.

Details

The data represent successive failures of air conditioning systems for a fleet of 13 Boeing 720 jet airplanes. Recently, the data set is used by Alsubie. A (2022) and fitted modified Kies–Lomax distribution with Estimation Methods.

Value

data_failureairc gives the successive failure times of the air conditioning system.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alsubie, A. (2021). Properties and Applications of the Modified Kies–Lomax Distribution with Estimation Methods. Journal of Mathematics, 2021, 1-18.

Reyad, H., Korkmaz, M. Ç., Afify, A. Z., Hamedani, G. G., & Othman, S. (2021). The Fréchet Topp Leone-G family of distributions: Properties, characterizations and applications. Annals of Data Science, 8, 345-366.

Aldahlan, M. A., Afify, A. Z., & Ahmed, A. H. N. (2019). The odd inverse Pareto-G class: properties and applications. Journal of Nonlinear Sciences & Applications, 12(5), 278-290.

See Also

data_failuretc

Examples

```
x<-data_failureairc
summary(x)
```

`Sum of Skin Folds` *The data represents 102 male and 100 female athletes collected at the Australian Institute of Sports*

Description

The function allows to provide the 102 male and 100 female athletes collected at the Australian Institute of Sports, courtesy of Richard Telford and Ross Cunningham.

Usage

```
data_skinfolds
```

Arguments

`data_skinfolds`	A vector of (non-negative integer) values.

Details

The data presents 102 male and 100 female athletes collected at the Australian Institute of Sports, courtesy of Richard Telford and Ross Cunningham. Recently, it is used by Tahir et al. (2021) and fitted the Kumaraswamy Pareto IV distribution.

Value

data_skinfolds gives the 102 male and 100 female athletes collected at the Australian Institute of Sports.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Tahir, M. H., Cordeiro, G. M., Mansoor, M., Zubair, M., & Alzaatreh, A. (2021). The Kumaraswamy Pareto IV Distribution. Austrian Journal of Statistics, 50(5), 1-22.

Weisberg S (2005). Applied Linear Regression. Wiley, New York. ISBN 978-0-471-70409-6.

Examples

```
x<-data_skinfolds
summary(x)
```

Survival Time of Animals

The data represents the survival time of animals

Description

The function allows to provide the survival time of animals observed due to different dosage of poison administered.

Usage

```
data_animals
```

Arguments

data_animals	A vector of (non-negative integer) values.

Details

The data represents the survival time of animals observed due to different dosage of poison administered. Recently, it is used by Kayal et al. (2017) and fitted the Burr XII distribution.

Value

data_animals gives the survival time of animals.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Kayal, T., Tripathi, Y. M., Rastogi, M. K., & Asgharzadeh, A. (2017). Inference for Burr XII distribution under Type I progressive hybrid censoring. Communications in Statistics-Simulation and Computation, 46(9), 7447-7465.

See Also

data_relieftime, data_Bcancer, data_bloodcancer

Examples

```
x<-data_animals
summary(x)
```

`Taxes Revenue` *The data represents the taxes revenue*

Description

The function allows to provide the taxes revenue.

Usage

```
data_taxrevenue
```

Arguments

`data_taxrevenue` A vector of (non-negative integer) values.

Details

The data represents the taxes revenue. Recently, it is used by Ocloo et al. (2023) and fitted the extended Burr XII distribution.

Value

data_taxrevenue gives the taxes revenue.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ocloo, S. K., Brew, L., Nasiru, S., & Odoi, B. (2023). On the Extension of the Burr XII Distribution: Applications and Regression. Computational Journal of Mathematical and Statistical Sciences, 1-30.

Bhatti, F. A., Hamedani, G., Yousof, H. M., Ali, A., & Ahmad, M. (2018). On Modified Burr XII-Inverse Exponential Distribution: Prop¬ erties, Characterizations and Applications. Journal of Biostatistics & Biometrics.

See Also

`data_Taxes`

Examples

```
x<-data_taxrevenue
summary(x)
```

Tensile Strength *The tensile strength for single carbon fibres*

Description

The function allows to provide the tensile strength for single carbon fibres (in GPa).

Usage

```
data_tstrength
```

Arguments

data_tstrength	A vector of (non-negative integer) values.

Details

The data set contains the tensile strength for single carbon fibers (in GPa). Recently, the data set is used by Alyami et al.(2022) and fitted the Topp–Leone modified Weibull model.

Value

data_tstrength gives the tensile strength for single carbon fibers.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alyami, S. A., Elbatal, I., Alotaibi, N., Almetwally, E. M., Okasha, H. M., & Elgarhy, M. (2022). Topp–Leone Modified Weibull Model: Theory and Applications to Medical and Engineering Data. Applied Sciences, 12(20), 10431.

See Also

data_breakdown, data_breakdownt, data_failureairc

Examples

```
x<-data_tstrength
summary(x)
```

Third Violation *Times to each patient's third violation (V3) in ICU for varying periods*

Description

The function allows to provide the times to each patient's third violation (V3) in ICU for varying periods.

Usage

```
data_ICU
```

Arguments

data_ICU	A vector of (non-negative integer) values.

Details

The data present the times of each patient's third violation (V3) in ICU for varying periods. Recently, it is used by Ijaz and Asim (2019) and fitted the odd Burr-III Lomax distribution.

Value

data_ICU gives the times of each patient's third violation (V3) in ICU for varying periods.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Khan, M. S., King, R., & Hudson, I. L. (2017). Transmuted generalized exponential distribution: A generalization of the exponential distribution with applications to survival data. Communications in Statistics-Simulation and Computation, 46(6), 4377-4398.

Kang, I., Hudson, I., Rudge, A., & Chase, J. G. (2013). Density estimation and wavelet thresholding via Bayesian methods: A wavelet probability band and related metrics approach to assess agitation and sedation in ICU patients. Discrete Wavelet Transforms: A Compendium of New Approaches and Recent Applications. 1st ed. Rijeka: IntechOpen, 127-162.

See Also

data_Bcancer

Examples

```
x<-data_ICU
summary(x)
```

`Time to Failure` *Time to failure of kevlar 49/epoxy strands tested at various stress levels*

Description

The function allows to provide the stress-rupture life of kevlar 49/epoxy strands that are subjected to constant sustained pressure at the 90 percent stress level until all have failed, so that the complete data set with the exact times of failure is recorded.

Usage

```
data_Kevlar
```

Arguments

`data_Kevlar`	A vector of (non-negative integer) values.

Details

The data refer to in the 101 data points represent the stress-rupture life of kevlar 49/epoxy strands that are subjected to constant sustained pressure at the 90 percent stress level until all have failed, so that the complete data set with the exact times of failure is recorded. Recently, it is used by Oluyede et al. (2018) and fitted a new Burr XII-Weibull-logarithmic distribution.

Value

data_Kevlar gives the stress-rupture life of kevlar 49/epoxy.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Oluyede, B. O., Makubate, B., Fagbamigbe, A. F., & Mdlongwa, P. (2018). A New Burr XII-Weibull-logarithmic distribution for survival and lifetime data analysis: model, theory and applications. Stats, 1(1), 77-91.

Cooray, K., & Ananda, M. M. (2008). A generalization of the half-normal distribution with applications to lifetime data. Communications in Statistics—Theory and Methods, 37(9), 1323-1337.

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Barlow, R. E., Toland, R. H., & Freeman, T. (1979). Stress-rupture life of kevlar/epoxy spherical pressure vessels (No. UCID-17755 (Pt.3)). California Univ., Livermore (USA). Lawrence Livermore Lab.

See Also

data_failuretc

Examples

```
x<-data_Kevlar
summary(x)
```

Toys Price *The data represents the prices of the 31 different children's wooden toys on sale in a Suffolk craft shop in April 1991*

Description

The function allows to provide the prices of the 31 different children's wooden toys on sale in a Suffolk craft shop in April 1991.

Usage

```
data_toysprice
```

Arguments

data_toysprice	A vector of (non-negative integer) values.

Details

The data represents the prices of the 31 different children's wooden toys on sale in a Suffolk craft shop in April 1991. Recently, it is used by Shafiei et al. (2016) and fitted the inverse Weibull power series distribution.

Value

data_toysprice gives the prices of the 31 different children's wooden toys on sale.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Shafiei, S., Darijani, S., & Saboori, H. (2016). Inverse Weibull power series distributions: properties and applications. Journal of statistical computation and simulation, 86(6), 1069-1094.

Examples

```
x<-data_toysprice
summary(x)
```

`UK mortality rates` *The mortality rate of COVID-19 patients in the United Kingdom*

Description

The function allows to provide the mortality rate of COVID-19 patients in the United Kingdom (UK) from 1 December 2020 to 29 January 2021.

Usage

```
data_mortalityUK
```

Arguments

`data_mortalityUK` A vector of (non-negative integer) values.

Details

The data sets represent the mortality rate of COVID-19 patients in the UK from 1 December 2020 to 29 January 2021. Recently, it is used by Almetwally (2022) and fitted the odd Weibull inverse Lopp–Leone distribution.

Value

data_mortalityUK gives the mortality rate of COVID-19 patients in the UK.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Almetwally, E. M. (2022). The odd Weibull inverse topp–leone distribution with applications to COVID-19 data. Annals of Data Science, 9(1), 121-140.

Nasiru, S., Abubakari, A. G., & Chesneau, C. (2022). New Lifetime Distribution for Modeling Data on the Unit Interval: Properties, Applications and Quantile Regression. Mathematical and Computational Applications, 27(6), 105.

See Also

`data_COVIDDeath`, `data_COVIDfat`, `data_COVID19MH`

Examples

```
x<-data_mortalityUK
summary(x)
```

`Unemployment Claims` *The data set represents the unemployment claims from July 2008 to April*

Description

The function allows to provide the unemployment claims from July 2008 to April, reported by the Department of Labour, Licencing, and Regulation, USA.

Usage

```
data_insuranceun
```

Arguments

`data_insuranceun` A vector of (non-negative integer) values.

Details

The data set represents the unemployment claims from July 2008 to April, reported by the Department of Labour, Licencing, and Regulation, USA. Recently, it is used by Fayomi et al. (2022) and fitted a new useful exponential model.

Value

data_insuranceun gives the unemployment claims from July 2008 to April.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Fayomi, A., Tahir, M. H., Algarni, A., Imran, M., & Jamal, F. (2022). A new useful exponential model with applications to quality control and actuarial data. Computational Intelligence and Neuroscience, 2022.

Afify, A. Z., Gemeay, A. M., & Ibrahim, N. A. (2020). The heavy-tailed exponential distribution: risk measures, estimation, and application to actuarial data. Mathematics, 8(8), 1276.

See Also

`data_vehicleinsur`

Examples

```
x<-data_insuranceun
summary(x)
```

Vehicle Insurance *The complaints upheld against vehicle insurance firms*

Description

The function allows to provide the complaints upheld against vehicle insurance firms as a proportion of their overall business over a two-year period. The study was conducted by DFR (Darla Fry Ross) insurance and investment company (2009–2016), registered in New York State.

Usage

```
data_vehicleinsur
```

Arguments

data_vehicleinsur	A vector of (non-negative integer) values.

Details

The data represent the complaints upheld against vehicle insurance firms as a proportion of their overall business over a two-year period. The study was conducted by DFR (Darla Fry Ross) insurance and investment company (2009–2016), registered in New York State. Recently, it is used by Khan et al. (2021) and fitted the An alternate generalized odd generalized exponential family with applications to premium data.

Value

data_vehicleinsur gives the complaints upheld against vehicle insurance firms.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Khan, S., Balogun, O. S., Tahir, M. H., Almutiry, W., & Alahmadi, A. A. (2021). An alternate generalized odd generalized exponential family with applications to premium data. Symmetry, 13(11), 2064.

See Also

data_healthinsur

Examples

```
x<-data_vehicleinsur
summary(x)
```

`Vinyl Chloride` *The data represent vinyl chloride used for monitoring wells in mg/L*

Description

The function allows to provide the vinyl chloride used for monitoring wells in mg/L.

Usage

```
data_vinyl
```

Arguments

`data_vinyl`	A vector of (non-negative integer) values.

Details

The data represent vinyl chloride used for monitoring wells in mg/L. Recently, it is used by Usman and Haq (2020) and fitted the Marshall-Olkin extended inverted Kumaraswamy distribution.

Value

data_vinyl gives the vinyl chloride used for monitoring wells in mg/L.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Usman, R. M., & ul Haq, M. A. (2020). The Marshall-Olkin extended inverted Kumaraswamy distribution: Theory and applications. Journal of King Saud University-Science, 32(1), 356-365.

Bhaumik, D. K., Kapur, K., & Gibbons, R. D. (2009). Testing parameters of a gamma distribution for small samples. Technometrics, 51(3), 326-334.

See Also

`data_floodtime`

Examples

```
x<-data_vinyl
summary(x)
```

Waiting Time *Bank waiting times before the customers receive their services*

Description

The function allows to provide the 100 observations about waiting times (in minutes) in a bank before the customers receive their services.

Usage

```
data_waitingtime
```

Arguments

data_waitingtime	A vector of (non-negative integer) values.

Details

The data contain 100 observations about waiting times (in minutes) in a bank before the customers receive their services. Recently, the data set is used by Alsubie. A (2022) and fitted modified Kies–Lomax distribution with estimation methods.

Value

data_waitingtime gives the waiting times (in minutes) in a bank before the customers receive their services.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Alsubie, A. (2021). Properties and Applications of the Modified Kies–Lomax Distribution with Estimation Methods. Journal of Mathematics, 2021, 1-18.

Afify, A., Yousof, H., & Nadarajah, S. (2017). The beta transmuted-H family for lifetime data. Statistics and its Interface, 10(3), 505-520.

See Also

data_bank

Examples

```
x<-data_waitingtime
summary(x)
```

`Waiting Time Bank` *The data set waiting time of 100 bank customers*

Description

The function allows to provide the waiting time of 100 bank customers.

Usage

```
data_bank
```

Arguments

`data_bank`	A vector of (non-negative integer) values.

Details

The data set waiting time of 100 bank customers. Recently, it is used by Ijaz et al. (2020) and fitted a Gull alpha power Weibull distribution.

Value

data_bank gives the waiting time of 100 bank customers.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ijaz, M., Asim, S. M., Farooq, M., Khan, S. A., & Manzoor, S. (2020). A Gull Alpha Power Weibull distribution with applications to real and simulated data. Plos one, 15(6), e0233080.

Ghitany, M. E., Al-Awadhi, F. A., & Alkhalfan, L. (2007). Marshall–Olkin extended Lomax distribution and its application to censored data. Communications in Statistics—Theory and Methods, 36(10), 1855-1866.

See Also

`data_waitingtime`

Examples

```
x<-data_bank
summary(x)
```

Wind Catastrophes Losses

The losses due to wind catastrophes recorded in 1977

Description

The function allows to provide the losses due to wind catastrophes recorded in 1977.

Usage

```
data_Losses
```

Arguments

data_Losses	A vector of (non-negative integer) values.

Details

The data set represents the losses due to wind catastrophes recorded in 1977. Recently, it is used by Ijaz and Asim (2019) and fitted the odd Burr-III Lomax distribution.

Value

data_Losses gives the losses due to wind catastrophes recorded in 1977.

Author(s)

Muhammad Imran.

R implementation and documentation: Muhammad Imran <imranshakoor84@yahoo.com>.

References

Ijaz, M., & Asim, S. M. (2019). Lomax exponential distribution with an application to real-life data. PloS one, 14(12), e0225827.

Ihtisham, S., Khalil, A., Manzoor, S., Khan, S. A., & Ali, A. (2019). Alpha-Power Pareto distribution: Its properties and applications. PloS one, 14(6), e0218027.

Hogg, R. V. (1984). S. A. Klugman, Loss Distributions. New York Wiley, 569-574.

See Also

data_vehicleinsur

Examples

```
x<-data_Losses
summary(x)
```

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