Package 'TF'

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Type Package

Title Technology Forecasting - Growth Curve

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Description
Forecast technological adoption curve including Bass Curve, Gompertz Curve, Pearl Curve

License GPL-2

Lazydata TRUE

RoxygenNote 5.0.1

Suggests knitr, rmarkdown

VignetteBuilder knitr

R topics documented:

Bass_AC *Analogous Bass Curve*

Description

Analogous Bass Curve uses analogy to estimate Bass Curve parameters. In case that there is no data available for technology, parameters of similar cases can be used to forecast growth curve.

Usage

```
Bass_AC(p, q, m, t)
```

Arguments

p	is a number represents coefficient of innovation.
q	ia a number represents coefficient of immitation.
m	is a number represents maximum market size can be reached.
t	is an integer shows the growth periods.

Value

data frame (period, adoption rate, cumulative adoption)

Examples

```
## Not run:
Bass_AC(0.016, 0.304, 100000, 20)

## End(Not run)
```

Bass_AC_Plot *Analogous Bass Curve Plot*

Description

Analogous Bass Curve Plot function plots Historical Bass Curve function results.

Usage

```
Bass_AC_Plot(p, q, m, t)
```

Arguments

p	is a number represents coefficient of innovation.
q	ia a number represents coefficient of immitation.
m	is a number represents maximum market size can be reached.
t	is an integer shows the growth periods.

Value

plot of adoption rate and cumulative adoption

Examples

```
## Not run:
Bass_AC_Plot(0.016, 0.304, 100000, 20)

## End(Not run)
```

CATV *Growth of Cable TV Industriy*

Description

This data shows the Cable TV adoption 1952-1989.

Usage

```
CATV
```

Format

dataframe with two variables:

year year

CATV Cable TV cumulative adoption

References

J. P. Martino, Technological forecasting for decision making. McGraw-Hill, Inc., 1993.

Gompertz_AC *Analogous Gompertz Curve*

Description

Analogous Gompertz Curve uses analogy to determine curve coefficients (b & k) .

Usage

```
Gompertz_AC(b, k, l, t)
```

Arguments

b	is a number represents curve coefficients.
k	is a number represents curve coefficients.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

data frame (period, cumulative adoption)

Examples

```
## Not run:
Gompertz_AC(0.8, 0.2, 10000, 20)

## End(Not run)
```

Gompertz_AC_Plot *Analogous Gompertz Curve Plot*

Description

Analogous Gompertz Curve Plot function plots Analogous Gompertz Curve.

Usage

```
Gompertz_AC_Plot(b, k, l, t)
```

Arguments

b	is a number represents curve coefficients.
k	is a number represents curve coefficients.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

plot of cumulative adoption over certain period of time.

Examples

```
## Not run:
Gompertz_AC_Plot(0.8, 0.2, 10000, 20)

## End(Not run)
```

Gompertz_HC *Historical Gompertz Curve*

Description

Historical Gomperz Curve function estimates the curve parameters (b & k) based on the historical data.

Usage

```
Gompertz_HC(x, l, t)
```

Arguments

x	is data frame with two columns to estimates b & k parameters. First column contains the period and second column contains the associated cumulative adoption.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

data frame (period, best fitted cumulative adoption)

Examples

```
## Not run:
data("PE")
Gompertz_HC(PE, 2.81, 20)

## End(Not run)
```

Gompertz_HC_plot *Historical Gompertz Curve Plot*

Description

Historical Gomperz Curve Plot function plots Historical Gomperz Curve function results.

Usage

```
Gompertz_HC_plot(x, l, t)
```

Arguments

x	is data frame with two columns to estimates b & k parameters. First column contains the period and second column contains the associated cumulative adoption.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

plot of best fitted cumulative adoption.

Examples

```
## Not run:
data("PE")
Gompertz_HC_plot(PE, 2.81, 250)

## End(Not run)
```

PE *Power-Generation Efficiency of Public Utilities*

Description

This data shows the efficiency improvement 1920 - 1987.

Usage

```
PE
```

Format

dataframe with two variables:

year year

Kwhperc Kilowatt.hours per pound of coal

References

J. P. Martino, Technological forecasting for decision making. McGraw-Hill, Inc., 1993.

Pearl_AC *Analogous pearl Curve*

Description

Analogous Pearl Curve uses analogy to determine curve coefficients (a & b) .

Usage

```
Pearl_AC(a, b, l, t)
```

Arguments

a	is a number represents curve coefficients.
b	is a number represents curve coefficients.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

data frame (period, cumulative adoption)

Examples

```
## Not run:
Pearl_AC(1.6, 0.8, 10000, 20)

## End(Not run)
```

`Pearl_AC_Plot` *Analogous pearl Curve Plot*

Description

Analogous Pearl Curve Plot function plots Analogous Pearl Curve.

Usage

```
Pearl_AC_Plot(a, b, l, t)
```

Arguments

`a`	is a number represents curve coefficients.
`b`	is a number represents curve coefficients.
`l`	is a number represents maximum growth can be reached.
`t`	is an integer shows the growth periods.

Value

plot of cumulative adoption over certain period of time.

Examples

```
## Not run:
Pearl_AC_Plot(1.6, 0.8, 10000, 20)

## End(Not run)
```

Pearl_HC *Historical Pearl Curve*

Description

Historical Pearl Curve function estimates the curve parameters (a & b) based on the historical data.

Usage

```
Pearl_HC(x, l, t)
```

Arguments

x	is data frame with two columns to estimates b & k parameters. First column contains the period and second column contains the associated cumulative adoption.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

data frame (period, best fitted cumulative adoption)

Examples

```
## Not run:
data("CATV")
Pearl_HC(CATV,89024390,20)

## End(Not run)
```

Pearl_HC_plot *Historical Pearl Curve Plot*

Description

Historical Pearl Curve Plot function plots Historical Pearl Curve growth function results.

Usage

```
Pearl_HC_plot(x, l, t)
```

Arguments

x	is data frame with two columns to estimates b & k parameters. First column contains the period and second column contains the associated cumulative adoption.
l	is a number represents maximum growth can be reached.
t	is an integer shows the growth periods.

Value

plot of best fitted cumulative adoption.

Examples

```
## Not run:
data("CATV")
Pearl_HC_plot(CATV,89024390,20)

## End(Not run)
```

Index