

# Package ‘GmptzCurve’

June 13, 2022

**Type** Package

**Title** Gompertz Curve Fitting

**Version** 0.1.0

**Description** A system for fitting Gompertz Curve in a Time Series Data.

**License** GPL-3

**Encoding** UTF-8

**RoxygenNote** 7.1.2

**NeedsCompilation** no

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**Repository** CRAN

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### Description

This function fits the Gompertz Curve in Time Series Data along with estimates of the parameters and predicted value.

### Usage

```
gmptz(y)
```

**Arguments**

y                      a numeric vector

**Details**

The Gompertz curve is a type of mathematical model for a Time Series. It is a sigmoid function which describes growth as being slowest at the start and end of a given time period. The equation of Gompertz curve is given by ,  $Y=k*a^{(b^x)}$

Taking Logarithm on both sides we get,  $\text{Log}Y=\text{Log}k+(b^x)*\text{Log}a$  ; OR,  $Z=A+B(C^x)$  , where  $Z=\text{Log}Y$  ,  $A=\text{log}k$  ,  $B=\text{log}a$  ,  $C=b$ ; It is a form of Modified Exponential. So ,now we can apply Method Of Group Average.

**Value**

a.hat , b.hat , k.hat : the estimated values of the parameters a,b and k.

predicted.value : the predicted values of y

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**Examples**

```
p=c(12, 15, 16, 18, 16, 21, 25, 27, 29, 30, 35, 36)
gmptz(p)
```

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