

# Package: UGarima (via r-universe)

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**Type** Package

**Title** The Unit-Garima Distribution

**Version** 0.1.0

**Description** Density, distribution function, quantile function, and random generating function of the Unit-Garima distribution based on Ayuyuen, S., & Bodhisuwan, W. (2024)<[doi:10.18187/pjsor.v20i1.4307](https://doi.org/10.18187/pjsor.v20i1.4307)>.

**License** GPL-3

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**Encoding** UTF-8

**Imports** graphics, stats, lamW

**RoxygenNote** 7.3.2

**Suggests** testthat (>= 3.0.0)

**Config/testthat/edition** 3

**NeedsCompilation** no

**Author** Atchanut Rattanalertnusorn [aut, cre], Sirinapa Ayuyuen [aut], Winai Bodhisuwan [aut]

**Maintainer** Atchanut Rattanalertnusorn <[atchanut\\_r@rmutt.ac.th](mailto:atchanut_r@rmutt.ac.th)>

**Config/pak/sysreqs** make

**Repository** <https://atchanut.r-universe.dev>

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plotUGa	<i>Plot the pdf and cdf of Unit-Garima distribution (UGa)</i>
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**Description**

To show the pdf (or the cdf) of UGa distribution by specified parameter theta.

**Usage**

```
plotpdfUGa(x, theta)
```

```
plotcdfUGa(x, theta)
```

**Arguments**

x	vector of quantile.
theta	shape parameter, where $\theta > 0$ .

**Value**

No return value, called for side effects

**Examples**

```
# library(lamW) is required for rUGa() function
x <- rUGa(101, theta=1.5)
x
plotpdfUGa(x, theta = 1.5)

plotcdfUGa(x, theta = 1.5)
```

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UGa	<i>The Unit-Garima distribution (UGa)</i>
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**Description**

Density, distribution function, quantile function, and random generation function for UGa distribution with one parameter (theta). See details in references.

**Usage**

```
dUGa(x, theta, log = FALSE)

pUGa(q, theta, lower.tail = TRUE, log.p = FALSE)

qUGa(p, theta = 0.5)

rUGa(n, theta)
```

**Arguments**

x, q	vector of quantile.
theta	shape parameter, where $\theta > 0$ .
log, log.p	logical; (default = FALSE), if TRUE, then probabilities are given as $\log(p)$ .
lower.tail	logical; if TRUE (default), probabilities are $P[X \leq x]$ , otherwise, $P[X > x]$ .
p	vector of probabilities.
n	number of observations.

**Value**

dUGa gives the density, pUGa gives the distribution function, qUGa gives the quantile function, and rUGa generates random samples.

**References**

Ayuyuen, S., & Bodhisuwan, W. (2024). A generating family of unit-Garima distribution: Properties, likelihood inference, and application. *Pakistan Journal of Statistics and Operation Research*, 20(1), 69-84. doi:10.18187/pjsor.v20i1.4307.

**Examples**

```
NULL

x <- seq(0.1,1,by=0.1)
dUGa(x,theta=0.5)          #f(x)
dUGa(x,theta=0.5,log=TRUE) #log(f(x))

pUGa(x,theta=1.5)          #P(X<x)
pUGa(x,theta=1.5,lower.tail = FALSE ) #P(X>x)

# library(lamW) is required for qUGa() function
x <- seq(0.1,1,by=0.1)
x
p <- pUGa(x,theta=2.5)
p
require(lamW)
q <- qUGa(p,theta=2.5)
q      # q equal to x
```

```
# library(lamW) is required for rUGa() function
require(lamW)
x <- rUGa(100,theta=1)
x    # 0<x<1, for all x
```

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