Package 'NMVANOVA'

July 21, 2025

Type Package

Title Novice Model Variation ANOVA

Version 1.1.0

Author Joseph V. Lipoff, Will Pauls, Kaylin C. Dobbs, Jordan L. Jensen, Kevin Woods, Evan T. Johnson, Benjamin F. Timson, Scott D. Zimmerman,and Paul Plummer

Maintainer Joseph Lipoff <josephlipoff@msn.com>

Description Due to 'Rstudio's' status as open source software, we believe it will be utilized frequently for future data analysis by users whom lack formal training or experience with 'R'. The 'NMVANOVA' (Novice Model Variation ANOVA) a streamlined variation of experimental design functions that allows novice 'Rstudio' users to perform different model variations one-way analysis of variance without downloading multiple libraries or packages. Users can easily manipulate the data block, and needed inputs so that users only have to plugin the four designed variables/values.

License GPL-2 | GPL-3

Encoding UTF-8

LazyData true

NeedsCompilation no

Repository CRAN

Date/Publication 2019-10-06 12:10:06 UTC

Contents

Block Design	*Block Design*

Description

Due to 'Rstudio's' status as open source software, we believe it will be utilized frequently for future data analysis by users whom lack formal training or experience with 'R'. The block design is a linear modeling which accounts for blocking with a one-way analysis of variance without downloading multiple libraries or packages. Users can easily manipulate the data block, n-value, k-value, and factor to optimize analysis for any data set.

Usage

```
BlockD(r,k,f,n)
```

Arguments

r	The dataset or source you want to examine
k	The parameter for the model to help account for blocking
f	The factor,subject, and/or category that is being examined.
n	The sample size number

Details

This function has a built in model were we create the treatment response with also including the blocking of the data(response~treatment) and (response~treatment+blocking). This allows you to see if the baseline model is the best or if blocking truly indeed helps. Also, this gives you diagnostics residual plots, and a TUKEY HSD so you can go past the anova table.

Value

Anova analysis of the model with a TukeyHSD with diagnostic plots

Note

More Packages to come to accommadate all models and designs in library called Novice ANOVA.

Author(s)

Joseph V. Lipoff, Will Pauls, Kaylin C. Dobbs, Jordan L. Jensen, Kevin Woods, Evan T. Johnson, Wyatt Fowler, Scott D. Zimmerman,and Paul Plummer

Examples

```
House<-as.character(c(1,1,1,1,2,2,2,2,3,3,3,3,4,4,4,4))
life<-c(100:115)
data<-cbind.data.frame(House,life)
data(BostonHousing)
r=data$life
k=4
f=c("Person A", "Person B", "Person C", "Person D")
n=4

BlockD(r,k,f,n)
```

```
Complete Random Design
```
Complete Random Design

Description

Due to 'Rstudio's' status as open source software, we believe it will be utilized frequently for future data analysis by users whom lack formal training or experience with 'R'. The CRD is a complete random design with a one-way analysis of variance without downloading multiple libraries or packages. Users can easily manipulate the data block, n-value, k-value, and factor to optimize analysis for any data set.

Usage

```
CRandom(r,k,f,n)
```

Arguments

r	The dataset or source you want to examine
k	The parameter for the model
f	The factor,subject, and/or category that is being examined.
n	The sample size number

Details

This function has a built in model were we create the treatment response with also including the blocking of the data(reponse~treatment). Also gives you diagnostics residual plots, and a TUKEY HSD so you can go past the anova table.

Value

Anova analysis of the model with a TukeyHSD with diagnostic plots

Note

More Packages to come to accommadate all models and designs in library called Novice ANOVA.

Author(s)

Joseph V. Lipoff, Will Pauls, Kaylin C. Dobbs, Jordan L. Jensen, Kevin Woods, Evan T. Johnson, Wyatt Fowler, Scott D. Zimmerman,and Paul Plummer

Examples

```
ap1<-c(101:105)
ap2<-c(110:114)
ap3<-c(150:154)

kil<-cbind.data.frame(ap1,ap2,ap3)

data(BostonHousing)
r=c(t(as.matrix(kil)))
k=3
f=c("Ap1", "Ap2", "Ap3")
n=5

CRandom(r,k,f,n)
```

```
Novice Factorial ANOVA
```
Factorial

Description

Due to 'Rstudio's' status as open source software, we believe it will be utilized frequently for future data analysis by users whom lack formal training or experience with 'R'. The factorial design is a streamlined function that allows novice Rstudio users to perform factorial design of the analysis of variance without downloading multiple libraries or packages. Users can easily manipulate the data block, n-value, two k-values, and the two factors to optimize analysis for any data set.

Usage

```
FactD(r,k1,k2,f1,f2,n)
```

Arguments

`r`	The dataset or source you want to examine
`k1, k2`	The non-categorical variables that are used as one of the treatment variables.
`f1, f2`	The factor,subject, and/or category that is being examined.
`n`	The sample size number

Details

This function has a built in model were we create two treatment repsonsesthat built off each other(reponse~treatment1*treatme Also gives you an One-Way Factorial ANOVA table.

Value

Anova analysis of the model with a TukeyHSD with diagnostic plots

Note

More Packages to come to accommadate all models and designs in library called Novice ANOVA.

Author(s)

Joseph V. Lipoff, Will Pauls, Kaylin C. Dobbs, Jordan L. Jensen, Kevin Woods, Evan T. Johnson, Wyatt Fowler, Scott D. Zimmerman,and Paul Plummer

Examples

```
season<-c(1,1,2,2,3,3)
team1<-c(1:6)
team2<-c(1,2,5,6,9,11)
team3<-c(10,5,3,7,1,3)

team<-cbind.data.frame(season,team1,team2,team3)

r = c(t(as.matrix(team[,2:4])));

f1 = c("team1", "team2")
f2 = c("season1", "season2","season3");
k1 = length(f1);
k2 = length(f2);
n = 3;


FactD(r,k1,k2,f1,f2,n)
```

Novice One-way NMVANOVA

NMVANOVA

Description

The 'NRMANOVA' (Novice Repeated Measures ANOVA) is a streamlined function that allows novice 'Rstudio' users to perform repeated measures one-way analysis of variance without downloading multiple libraries or packages. Users can easily manipulate the data block, n-value, k-value, and factor to optimize analysis for any data set.

Usage

```
RManovaNov(r,k,f,n)
```

Arguments

r	The dataset or source you want to examine
k	The number of replications in the experiment or analysis need to perform
f	The factor,subject, and/or category that is being examined.
n	The sample size number

Details

This function has a built in model were we create the treatment response with also including the blocking of the data(reponse~treatment+blocking). Also gives you diagnostics residual plots, and a TUKEY HSD so you can go past the anova table.

Value

Anova analysis of the model with a TukeyHSD with diagnostic plots

Note

More Packages to come to accommadate all models and designs in library called Novice ANOVA.

Also, k is number of a set of factor like a measure of time. N is the sample size while usually you can directly input your data from excel or the data source of your choosing. F which is the factor can also be inputted from the data source.

Self made from University of Kansas Medical Center, Missouri State University, and Central Missouri State. Have any questions email any of the authors listed especially: Joseph Lipoff, Will Pauls, and/or Jordan Jensen. Tested with multiple biological data sets from Missouri State University, Department of Biomedical Sciences.

Author(s)

Joseph V. Lipoff, Will Pauls, Kaylin C. Dobbs, Jordan L. Jensen, Kevin Woods, Evan T. Johnson, Benjamin F. Timson, Scott D. Zimmerman,and Paul Plummer

Examples

```
r=(rnorm(180, mean=23))

f=factor(c(rep("CON",(60)),rep("INT",(45)),rep("SED",(75))))

Data_New=data.frame(r,f)

k=3

n=60

RManovaNov(r,k,f,n)
```

Index