Package ‘runcharter’

November 9, 2021

Title  Automatically Plot, Analyse and Revises Limits of Multiple Run Charts

Version  0.2.0

Description  Plots multiple run charts, finds successive signals of improvement, and revises medians when each signal occurs. Finds runs above, below, or on both sides of the median, and returns a plot and a data.table summarising original medians and any revisions, for all groups within the supplied data.

License  GPL (>= 3)

Encoding  UTF-8

LazyData  true

RoxygenNote  7.1.2

Depends  R (>= 2.10)

Imports  data.table, ggplot2, magrittr, zoo

Suggests  knitr, rmarkdown, covr, pkgdown, testthat, NHSRdatasets

VignetteBuilder  knitr

URL  https://github.com/johnmackintosh/runcharter

BugReports  https://github.com/johnmackintosh/runcharter/issues

NeedsCompilation  no

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Repository  CRAN

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Description

Finds all runs of desired length occurring on desired side of median line. Can also find runs occurring on both sides of the line, though this is of limited use in terms of quality improvement. Re-bases median each time a run is discovered.

Usage

```r
runcharter(
  df,
  med_rows = 13,
  runlength = 9,
  direction = c("above", "below", "both"),
  datecol = NULL,
  grpvar = NULL,
  yval = NULL,
  facet_cols = NULL,
  facet_scales = "fixed",
  chart_title = NULL,
  chart_subtitle = NULL,
  chart_caption = NULL,
  chart_breaks = NULL,
  line_colr = "#005EB8",
  line_size = 1.1,
  point_colr = "#005EB8",
  point_size = 2.5,
  median_colr = "#E87722",
  median_line_size = 1.05,
  highlight_fill = "#DB1884",
  highlight_point_size = 2.7
)
```

Arguments

df data.frame or data table
med_rows number of points to calculate initial baseline median
runlength length of run that will trigger re-phased median
direction should run occur "above", "below" or on "both" sides of median
datecol name of date column
grpvar character vector of grouping variable
yval numeric y value
facet_cols how many columns are required in the plot facets
-runcharter

    facet_scales  defaults to "fixed". Alternatively, "free_y"
    chart_title   title for the final chart
    chart_subtitle subtitle for chart
    chart_caption caption for chart
    chart_breaks  character string defining desired x-axis date / datetime breaks. If the x axis is
                   not a Date or datetime, then this argument is ignored, and ggplot2 will provide
                   default breaks
    line_colr     colour for run chart lines
    line_size     thickness of connecting lines between run chart points
    point_colr    colour for run chart points
    point_size    size of normal run chart points
    median_colr   colour for solid and extended median lines
    median_line_size thickness of solid and extended median lines
    highlight_fill fill colour for highlighting points in a sustained run
    highlight_point_size size of highlighted points in a sustained run

-Details

Facets and axis limits are handled by ggplot, though x-axis breaks can be specified using the appropriate character string e.g. "3 months" if they are either of class dates or datetime

-Value

    list - faceted plot and data.table showing all identified runs

-Examples

    runcharter(signals, med_rows = 13, runlength = 9,
               direction = "above", datecol = date, grpvar = grp, yval = y,
               facet_cols = 2, chart_title = "Automated runs analysis",
               chart_subtitle = "some runs found", chart_caption = "powered by R",
               chart_breaks = "6 months")
signals

# 220 grouped observations over time.

Description
A dataset containing four equal groups of 55 integers simulating signals of improvement in multiple directions relative to their respective baseline medians.

Usage

signals

Format
A data frame with 220 rows and 4 variables:

- **grp**: a grouping variable, representing a specific department
- **y**: integers representing counts of an event over time
- **date**: date of the observation, by month
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