Capitalized Title Here

by Author One, Author Two, Author Three

Abstract An abstract of less than 150 words.

TODO:

- Review Q-Q plots and P-P plots, including other arrangements, and what is implemented in other packages
- Write about what the package implements
- Give examples
  - Heike: BRFSS example
- Intro/conclusion
- Abstract

Introduction

From GSoC proposal:

Quantile-quantile (Q-Q) plots are a powerful ways of visually diagnosing distributional assumptions of a random variable. Help with this assessment is provided by a line through points in the first and third quartiles of the empirical and theoretical distributions (commonly known as qqline) as well as by a confidence band or pointwise intervals around the line. It has been shown by Aldor-Noiman et al (2013) and Loy et al (2016) that both the choice of the interval around the line and the design of the Q-Q plot, such as a rotation by 90 degree, have an impact on our ability to use Q-Q plots. In the ggplot2 framework (Wickham, 2009 and 2016) quantile-quantile plots are supported by the stat_qq and the geom geom_qq, which is connected to drawing the points for the quantile-quantile- plot. We are proposing to add extensions to the ggplot2 framework for adding a Q-Q line as well as support for bands around this line. Since ggplot2 version 2.0.0 the way that geoms are support has been completely overhauled, which makes extensions much easier to write.

Q-Q plots have been implemented in various forms in R, starting with qqplot and qqline in the base package. However, the functionality within the ggplot2 package is restricted to stat_qq and geom_qq, both of which are only concerned with the placement of points in a Q-Q plot. By providing functionality for the drawing of the Q-Q line and a confidence region in form of a geom additional ggplot2 tools such as facetting and layering are made available to the analyst.

References to incorporate:

Wilk and Gnanadesikan (1968) for general Q-Q and P-P plot reference

Aldor-Noiman et al. (2013) for TS bands

Loy et al. (2016) for detrended Q-Q plots, etc.

Previously implemented Q-Q or P-P plots:

- `qqnorm` and `qqline` functions in **base** (R Core Team, 2012)
- `qqmath` in **lattice** (Sarkar, 2008)
- `qqPlot` in **car** (Fox and Weisberg, 2011)
- `probplot` in **e1071** (Meyer et al., 2017)
- `geom_qq` and `geom_qq_line` in **ggplot2** (Wickham, 2016)

Section title in sentence case

Examples

In this section, we demonstrate the capabilities of the **qqplotr** package.

```
library(qqplotr)
```

Summary

This file is only a basic article template. For full details of *The R Journal* style and information on how to prepare your article for submission, see the Instructions for Authors.

Bibliography

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