

**A L^AT_EX TEMPLATE FOR PAPERS SUBMITTED TO THE TRANSPORTATION
RESEARCH BOARD**

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Word Count: 1053 words + 1 figure(s) + 1 table(s) = 1553 words

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1 ABSTRACT

2 The Transportation Research Board has unique and seemingly arbitrary requirements for manuscripts
3 submitted for review. These requirements make it difficult to write the manuscripts quickly, and
4 no existing \LaTeX style comes close to fooling the guidelines. This represents an initial effort at
5 creating a template to meet the requirements of TRB authors using \LaTeX , Sweave, or other literate
6 programming software.

1 INTRODUCTION

2 The Transportation Research Board (*I*) has unique and somewhat arbitrary requirements for papers
3 submitted for review and publication. While the initial submission is required to be in PDF format,
4 submissions for publication in Transportation Research Record must be in Microsoft Office format.
5 On top of this, the manuscripts must be line-numbered, captions are bolded and employ atypical
6 punctuation, and the references must be numbered when cited and then printed in order.

7 It is assumed that the readers of this document have some significant level of experience in
8 \LaTeX and `bibtex`. As use of literate programming becomes more widespread in engineering and
9 planning, it is possible that this template may need to be made more robust.

10 History

11 David Pritchard posted the original versions of this template in 2009 and updated it in 2011, soon
12 after TRB began allowing PDF submissions. Gregory Macfarlane made significant adaptations to it
13 in March 2012, allowing for Sweave integration and automatic word and table counts. Ross Wang
14 automated the total word count and made some formatting modifications in July 2015. Version
15 2.1.1 has been made available on Github in January, 2016.

16 FEATURES

17 The template has a number of features that enable quick and painless manuscript authoring.

18 Title Page

19 The standard \LaTeX `\maketitle` command is not very versatile, so we have replaced it with a
20 `titlepage` environment. This means that the writers will be required to manually enter spacings
21 based on the number of contributors, but the current settings (12pt between authors, 36pt before,
22 and 60pt after them) seems to work well.

23 Near the bottom of the title page, TRB requires a count of the manuscript's words, figures,
24 and tables. This template generates these counts automatically. The figure and table counts are
25 simply pulled from the \LaTeX counters using the `totcount` package. The word count feature is
26 not as straight-forward, as it utilizes a call to the system command `texcount`. Thus to compile the
27 document writers must enable `\write18` in their `pdflatex` call.

28 In the newest version of this template, we added the total count automatically. The total
29 count basically adds not only the word count, but also the equivalent count (250 words) for each
30 figure and table. This is implemented using a customized command `\totalwordcount`. Please see
31 the original code for more information.

32 Page Layout

33 The document has 1 inch margins as required, with the author's names in the left heading and the
34 page number in the right. The authors heading will need to be edited by the writers; automating this
35 from the title page command is not currently possible. Paragraphs leading sections and subsections
36 are not indented, while all subsequent paragraphs in that section are. Section types are defined as
37 outlined by the Transportation Research Board (*I*)

38 The document is single-spaced in 12 point Times font. Times New Roman is a proprietary
39 font and is therefore not available by installation in open-source software. While the differences
40 between Times variants are negligible, Times New Roman itself can be used in Mac OSX by
41 compiling under `xelatex`.

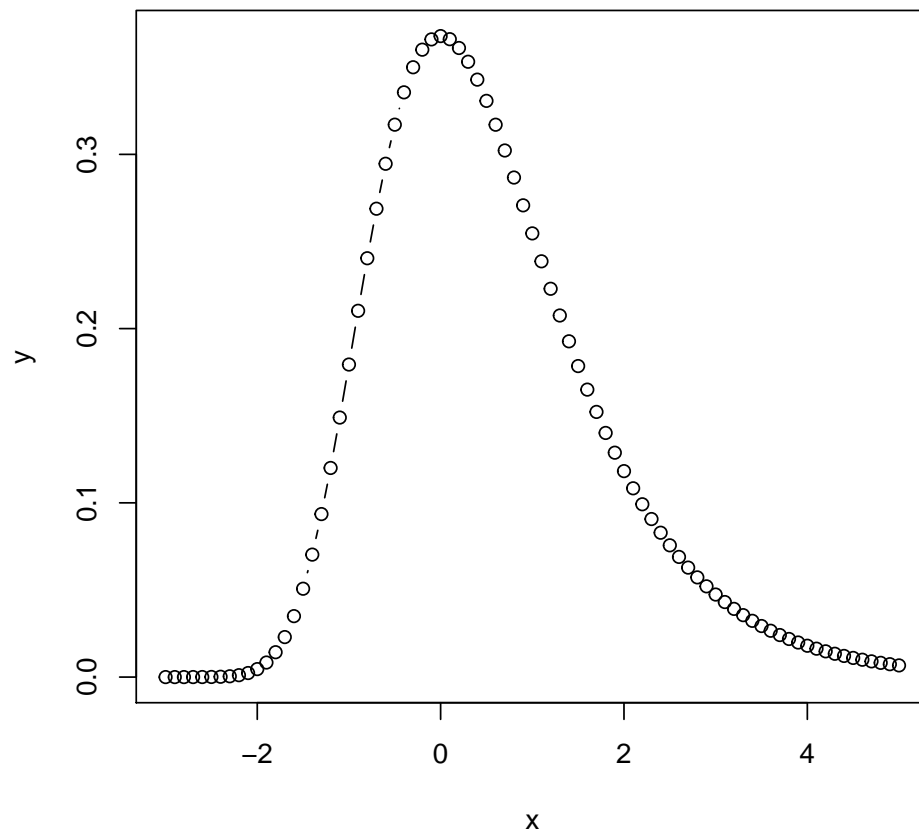


FIGURE 1 This is a random figure to test the counting functionality on the title page. It shows a Gumbel distribution with mode 0 and scale 1. The multinomial logit model assumes that the error terms are distributed identically and independently following this pattern.

1 *Line Numbers*

2 Manuscript line numbering is implemented using the `lineno` package. There are options to change
 3 the font style and type, but the current settings work well. Note that the line numbers refresh each
 4 page, and that blank lines do not receive a number. Currently, line numbers and headers are not
 5 shown on the title page, but can be easily added by adding `\pagewiselinenumbers` command
 6 right before the beginning of the title page.

7 **CAPTIONS**

8 Figure 1 shows a Gumbel distribution as an example of captioning. As demonstrated, figure cap-
 9 tions ought to be sentence capitalized, bolded, and can be somewhat longer than in other journals.

10 Table captions are somewhat different, requiring initial capitals and are more of a title. An
 11 example of this is given in Table 1, showing the history of this template.

TABLE 1 A History of this Template

| Version | Date | Author | Contributions |
|---------|----------|------------|--|
| 1.0 | Sep 2009 | Pritchard | Initial work |
| 1.1 | Mar 2011 | Pritchard | Captions |
| 2.0 | Mar 2012 | Macfarlane | Automation, documentation |
| 2.1 | Jul 2015 | Wang | More automation and formatting |
| 2.1.1 | Jan 2016 | Wang | Minor modifications and uploaded to Github |

1 Bibliography

2 The TRB bibliography style is defined in the `trb.bst` file which should be in your document
3 folder. A new command is specified, `\trbcite{}` which will print the authors and the number
4 of the reference in the order in which it is supplied. Note that `\trbcite{}` prints both the author
5 names and the reference number, if you simply need the number of the reference, use command
6 `\cite{}`. The References section will be appended to the end of the document.

7 It is very easy to add reference to papers programs written by Bierlaire (2) and Bierlaire (3)
8 or to papers like those written by Garrow et al. (4) and Koppelman and Garrow (5). You can even
9 go back and refer to Biogéme by Bierlaire (3) a second time. You can also cite a group of similar
10 references without printing author names (1, 2). This template also groups multiple reference
11 numbers together if there are three or more consecutive numbers (2–5).

12 TO DO'S

13 There is still work to be done on this template. Currently, the word count feature includes text in
14 the abstract.

15 There may be other important features in the template that we have not considered. Ideally,
16 we would make a `trb.sty` style class that could be called and we would not have to expose the
17 user to so much TeX-ese. This could be forthcoming, but not for this TRB cycle.

18 CONCLUSION

19 To make this document from source in a Unix-like OS, issue the following commands:

```
20 R CMD SWEAVE 'document.rnw'
21 pdflatex --shell-escape document.tex
22 bibtex document
23 pdflatex --shell-escape document.tex
24 pdflatex --shell-escape document.tex
```

25 The `--shell-escape` option is required to access the command line for the word count. Normally
26 this feature is disabled because it is a route of entry for malicious software. We promise that there
27 is no such debilitating code in this document, and we encourage you to examine any scripts for
28 suspicious code before permitting `pdflatex` from accessing your system.

29 For R-Studio users using Sweave and `.rnw` files, you may enable shell escape command in
30 the Global Options > Sweave settings. Moreover, if your computer does not have a Perl interpreter
31 you will need one, such as the ActivePerl, for the wordcount to work properly.

REFERENCES

- [1] Transportation Research Board, *Information for Authors: a guide for preparing and submitting manuscripts for presentation at the TRB Annual Meeting and for Publication in TRB's Journal*. Washington, D.C., 2012.
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- [5] Koppelman, F. S. and L. A. Garrow, Efficiently Estimating Nested Logit Models with Choice-Based Samples: Example Applications. *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 1921, No. 1, 2005, pp. 63–69.