This is The Title of Your Dissertation

University of the Aegean
School of Sciences
Department of Statistics and Actuarial - Financial Mathematics

Nick Papadopoulos

February 12, 2022

Contents

Acknowledgements

This is an **optional** appreciation section for the writer who wishes to express her/his gratitude to specific people.

Abstract

This is a simple one-paragraph abstract template. Please keep the length at one page. An abstract is an outline/brief summary of your paper and your whole project. It should have a sufficiently informative intro, body and conclusion, so the reviewers are able to judge the nature, and significance of the topic, the adequacy of the investigative strategy, the nature of the results, and the concluding remarks. The abstract should summarize the substantive results of the work and not merely list topics to be discussed. If the title/abstract includes scientific notation, Greek letters, bold, italics, or other special characters/symbols, please make sure they appear correctly.

Περίληψη

Η συγκεκριμένη ενότητα αποτελεί το πρότυπο της Περίληψης που πρέπει να ακολουθηθεί. Ανεξάρτητα της γλώσσας συγγραφής της εργασίας, η ενότητα Περίληψη/Abstract πρέπει να υπάρχει και στα ελληνικά αλλά και στα αγγλικά. Αυτή η ενότητα είναι μια σύντομη ανασκόπηση της εργασίας σας. Θα πρέπει να έχει μια επαρκώς ενημερωτική εισαγωγή, κύριο θέμα και συμπεράσματα, ώστε οι αναγνώστες να είναι σε θέση να κατανοούν τη σημασία του θέματος, την επάρκεια της ερευνητικής στρατηγικής, τη φύση των αποτελεσμάτων και τα συμπεράσματα. Η περίληψη πρέπει να συνοψίζει τα ουσιαστικά αποτελέσματα της εργασίας και όχι απλώς να απαριθμεί θέματα προς συζήτηση. Εάν ο τίτλος/περίληψη περιλαμβάνει αναφορές, έντονους/πλάγιους χαρακτήρες, ή άλλους ειδικούς χαρακτήρες/σύμβολα, βεβαιωθείτε ότι εμφανίζονται σωστά.

Chapter 1

Introduction

Each Thesis must contain an introduction chapter about the subject to be discussed.

1.1 Lists in latex

Sections and Subsections could be used to separte different topics of each chapter.

You can use bullets as follows in order to list things:

- This is the first item of the list.
- This is the second item of the list.

Alternative you can label each item of your list as follows:

step 1: This is the first item of the list.

step 2: This is the second item of the list.

If you wish to number the items of the list use the following:

1. This is the first item of the list.
2. This is the second item of the list.

You can give emphasis on words or paragraphs as follows: *italics*, **bold**.

For more about lists, read here: https://www.overleaf.com/learn/latex/Lists

1.2 Graphs

This is an example of how to include a graph in the manuscript.

Figure 1.1: This is the caption describing your image

This is a way to reference your image: In Figure 1.1 the logo of the University of the Aegean is provided.

For more about graphs, read here: https://www.overleaf.com/learn/latex/InsertingImages

1.3 Mathematical expressions

Numbered and unnumbered mathematical equations can be created as follows:

$$\mathrm{Var}(X) = \mathrm{Cov}(X, X) = \mathrm{E}\left[(X - \mu)^2\right] = \mathrm{E}\left[X^2\right] - \mathrm{E}[X]^2 \tag{1.1}$$

$$\mathrm{Var}(X) = \mathrm{Cov}(X, X) = \mathrm{E}\left[(X - \mu)^2\right] = \mathrm{E}\left[X^2\right] - \mathrm{E}[X]^2$$

This is a simple math expression without numbering

$$\mathrm{Var}(X) = \mathrm{Cov}(X, X) = \mathrm{E}\left[(X - \mu)^2\right]$$

This is also the same:

$$\mathrm{Var}(X) = \mathrm{Cov}(X, X) = \mathrm{E}\left[(X - \mu)^2\right]$$

You can site a numbered Equation as follows: Equation (1.1) is the numbered equation of the manuscript.

For more about mathematical expressions, read here:
https://www.overleaf.com/learn/latex/Mathematicalexpressions

Chapter 2

Creating a Simple Table in LaTeX

You can use any table format as long as it is interpretable. This is a simple example of a correlation matrix between 4 variables.

	X_1	X_2	X_3	X_4
X_1	1	-0.3457	-0.3176	-0.0656
X_2	-0.3457	1	0.2853	0.0253
X_3	-0.3176	0.2853	1	-0.7983
X_4	-0.0656	0.0253	-0.7983	1

Table 2.1: Correlation between variables

This is the way to reference the content of the table: Table 2.1 displays the correlation between the 4 variables of a dataset.

For more about tables, read here: https://www.overleaf.com/learn/latex/Tables

Chapter 3

About References

3.1 Guidelines for references

References must be formed in the APA style (other styles are also available - the same style should be used throughout). Please try to adapt to the following:

1. List authors by last name, first name initial, and middle name initial (e.g., Jolliffe, I.T.).
2. Do not spell out first or middle name(s).
3. Capitalize only the first letter of the title and subtitle of the article or book.
4. Italicize titles of journals or books.
5. Use "and" before the final author on works with multiple authors.
6. Include volume, issue, and pages for a journal. Additionally, include chapter number and pages for a chapter of a book.

3.1.1 Calling a LaTex reference

You should cite any source within your manuscript:

1. For a single author: Jolliffe [2] suggested the use of...
2. For two authors: Draper and Smith [1] suggested the use of...
3. For more than two authors: Lay et al. [3] suggested the use of...
4. To quote a reference: Sheather [5] states on page 5 that "A modern approach to regression..."

Chapter 4

Conclusions

This is a mandatory section/chapter that summarizes the aforementioned theory and the results that the researcher produced. Future work could also be included.

Bibliography

[1] Draper, N.R., and Smith, H. (1998). Applied regression analysis, Third Edition, *John Wiley and Sons*.

[2] Jolliffe, I.T. (1972). Discarding variables in a principal component analysis. I: Artificial Data, *Journal of the Royal Statistical Society: Series C*, 21(2), 160-173.

[3] Lay, C.D., Lay, S.R., and McDonald, J.J. (2015). Linear algebra and its applications, *Pearson Education*.

[4] Pearson, K. (1901). On lines and planes of closest fit to systems of points in space, *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 2(11), 559-572.

[5] Sheather, S. (2009). A modern approach to regression with R, *Springer Science and Business Media*.