Chair of Service Operations Management

Prof. Dr. Cornelia Schön

Supervisor: *Titel prename surname*



Master-Thesis

**Title**

Candidate in the ”XXX“ program

*Prename surname*

University E-Mail *XXXXXXXXX*

Matr. No. *XXXXXXXXX*

*Place, handover date*

# Abstract

Table of Contents

List of Figures IV

List of Tables V

List of Abreviations VI

List of Symbols VII

1 Introduction 1

1.1 Problem definition and motivation 1

1.2 Thesis structure 1

2 Fundamentals 1

2.1 Basic terms 1

2.1.1 A1 1

2.1.1.1 A11 1

2.1.1.2 A12 1

2.1.1.3 A13 1

2.1.2 A2 1

2.2 Approaches in the literature 1

3 A model for optimal pricing 1

3.1 Model assumptions 1

3.2 Data basis 1

3.2.1 B1 2

3.2.2 B2 3

3.3 Optimisation model 3

3.4 Structure analysis 3

3.5 Solution procedure and aspects of implementation 3

3.6 Model evaluation 3

4 Case Study 3

5 Discussion of results 3

6 Conclusion and future outlook 3

Appendix A: Sozio-demography of praticipants VIII

Appendix B: Source code VIII

List of References IX

# List of Figures

Figure 1: Procedure of FMR 2

# List of Tables

Table 1: Indices and variables in the modell of FMR 2

# List of Abreviations

*Examples:*

C/D Confirmation/Disconfirmation

EM Expectation-Maximization

FM Finite Mixture

FMR Finite Mixture Regression

# List of Symbols *(Optional)*

*Examples:*

σ standard deviation

μ mean

C correlation matrix

#

# 1 Introduction

## Problem definition and motivation

## Ambition of the thesis

## Thesis structure

# Fundamentals

## Basic terms

### A1

#### A11

#### A12

#### A13

### A2

## Approaches in the literature

# A model for optimal pricing

## Model assumptions

## Data basis

### B1

**Spezifizierung des Modells / Überprüfung der Datenbasis**

**Parameterschätzung (Softwareeinsatz)**

Newton-Raphson

EM-Algorithmus

**Bestimmung der Anzahl an Segmenten**

Informationskriterien

Klassifikationsfehler

Stabilität

Interpretierbarkeit

**Interpretation der Segmente (ergebnisabhängig)**

Koeffizienten

Demographika

Figure 1: Procedure of FMR (self-provided)

### B2

Indices and variables used within FMR are listed below in table 1.



Table 1: Indices and variables in the modell of FMR

Source: Following DeSarbo/Cron (1988, p. 250ff.)

## Optimisation model

 $\left(x+a\right)^{n}=\sum\_{k=0}^{n}\left(\genfrac{}{}{0pt}{}{n}{k}\right)x^{k}a^{n-k}$ (3.1)

## Structure analysis

## Solution procedure and aspects of implementation

## Model evaluation

# Case Study

# Discussion of results

# Conclusion and future outlook

#

# Appendix A: Sozio-demography of praticipants

…

# Appendix B: Source code

…

# List of References

**Caimi, G. (2009)**: Algorithmic decision support for train scheduling in a large and highly

utilized railway network. Dissertation, ETH Zürich. *// dissertation & habilitation*

**Helber, S., K. Schimmelpfeng, and R. Stolletz (2011)**: Setting inventory levels of CONWIP

lines via linear programming. *Business Research* 4 (1), 98-115. *// article*

**Irnich, S., and G. Desaulniers (2005)**: Shortest Path Problems with Resource Constraints,

in: Desaulniers, G., J. Desrosiers, and M. M. Solomon (Eds.): Column Generation. Springer, Berlin, 33-36. *// collected edition*

**Jalil, M.N., R.A. Zuidwijk, M. Fleischmann, and J.A.E.E. van Nunen (2011)**: Spare parts

logistics and installed base information. *Journal of the Operational Research Society* 62

(3), 442-457. *// article*

**Nickel, S., O. Stein, and K.-H. Waldmann (2014)**: Operations Research (2nd edition).

Springer, Berlin. // monography

**Sampson, S. E. (2012)**: Essentials of Service Design. Assessed June 07, 2014, [available at

services.byu.edu]. //online-source

# Eidesstaatliche Erklärung (Affidavit)

*Hiermit versichere ich, dass diese Abschlussarbeit von mir persönlich verfasst ist und dass ich keinerlei fremde Hilfe in Anspruch genommen habe. Ebenso versichere ich, dass diese Arbeit oder Teile daraus weder von mir selbst noch von anderen als Leistungsnachweise andernorts eingereicht wurden. Wörtliche oder sinngemäße Übernahmen aus anderen Schriften und Veröffentlichungen in gedruckter oder elektronischer Form sind gekennzeichnet. Sämtliche Sekundärliteratur und sonstige Quellen sind nachgewiesen und in der Bibliographie aufgeführt. Das Gleiche gilt für graphische Darstellungen und Bilder sowie für alle Internet-Quellen.*

*Ich bin ferner damit einverstanden, dass meine Arbeit zum Zwecke eines Plagiatsabgleichs in elektronischer Form anonymisiert versendet und gespeichert werden kann.*

Place, Date

SIGNATURE

Prename lastname

**Affidavit (translated version for information, not legally binding)**

*I hereby declare that the paper presented is my own work and that I have not called upon the help of a third party. In addition, I affirm that neither I nor anybody else has submitted this paper or parts of it to obtain credits elsewhere before. I have clearly marked and acknowledged all quotations or references that have been taken from the works of others. All secondary literature and other sources are marked and listed in the bibliography. The same applies to all charts, diagrams and illustrations as well as to all Internet resources.*

*Moreover, I consent to my paper being electronically stored and sent anonymously in order to be checked for plagiarism. I am aware that the paper cannot be evaluated and may be graded "failed" ("nicht ausreichend") if the declaration is not made.*