DEVELOPMENT AND EVALUATION OF AN [CUSTOMIZABLE MOBILE] APPLICATION FOR BEHAVIORAL RESEARCH IN DATA ANALYTICS

Master Thesis
of

MAX DARMSTADT

June 27, 2023

Matriculation Number
1820000

Submitted at the Chair of Enterprise Systems
University of Mannheim

Reviewer: Prof. Dr. Hartmut Höhle
Supervisor: Jan Schilpp

Contents

List of Figures

List of Tables

List of Abbreviations

IT	Informationstechnologie

Abstract

Over the past few years, data analytics has become increasingly important for companies across all industries. With the massive amount of data that is now available, companies can use data analytics to gain valuable insights into consumer behavior, market trends, and internal operations, among other things. As a result, data analytics has become a critical tool for companies looking to gain a competitive edge in today's rapidly evolving business environment. However, while data analytics has become an essential tool for businesses, there has been relatively little research done in the area of behavioral research. Specifically, there is a lack of research on the decision-making process involved in data analytics, and how individuals and organizations use data analytics to inform their decisions. One of the major challenges in conducting research in this area is the high cost of developing custom applications for each study. The development of such applications can be time-consuming, expensive, and often requires specialized expertise. To address this challenge, this master thesis develops a generic application that streamlines the process of conducting studies in the field of data analytics. This application enables researchers to design, conduct, and analyze studies more efficiently and cost-effectively, allowing them to explore the field in greater depth. This will be accomplished by using the design science research approach. Firstly, the problem of a lack of behavioral research in data analytics is identified. Then, the objectives for a solution are defined through a literature review and the use of requirement engineering to gather requirements for the application. Next, the application is design, implemented prototypically and its functionality demonstrated. Finally, solution is evaluated through the usages of the requirements.

1 Introduction

1.1 Background and Motivation

1.2 Research Problem and Objectives

1.3 Contribution and Scope of the Study

The role of information systems in Informationstechnologie (IT) modern business solutions is indisputable, [...] Developing such a solution is the goal of this work (Venkatesh et al., 2014).

Process mining needs to access [...] and used by many large-scale companies (Hoehle et al., 2015) across the world.

And here we demonstrate like (Hoehle et al., 2015) how citations look alike in this LaTeXfile. You can also list all authors (Venkatesh et al., 2014). And click any of the references and see what happens in your PDF reader, like here: Hoehle and Venkatesh (2015).

2 Theoretical foundations

2.1 Definition of terms

2.1.1 Data Analytics

2.1.2 Information Value Chain

2.1.3 ETC.

2.2 Design Science Research Methodology

2.3 Requirement Engineering

3 Identification of the Problem

3.1 Previous Studies and Gaps in the Literature

3.1.1 Literature Review: Behavioral Research in Data Analytics (on the basis of the Information Value Chain)

3.2 Applications (Anwendungen) for Behavioral Research

4 Definition of Objectives for a solution

4.1 Literature Review Studies in Data Analytics and General

4.2 requirements elicitation

4.2.1 Functional requirements

4.2.2 Functional requirements

4.2.3 Non-functional Requirements

4.3 Requirements analysis

5 Design and Dev artefacts

5.1 System Architecture and Components

5.2 User Interface Design and Implementation

5.3 Prototype Development

6 Demonstration of the Artifact

7 Evaluation of the solution

7.1 Prototype Testing

7.2 Requirements validation

7.3 (App Performance and Usability / User Feedback and Satisfaction)

8 Conclusion

8.1 Summary of the Study

8.2 Contributions and Implications

8.3 Future Work and Recommendations

Bibliography

Hoehle, H., & Venkatesh, V. (2015). Mobile Application Usability: Conceptualization and Instrument Development. *MIS Quarterly*, *39*(2), 435–472. https://doi.org/10.25300/MISQ/2015/39.2.08

Hoehle, H., Zhang, X., & Venkatesh, V. (2015). An espoused cultural perspective to understand continued intention to use mobile applications: A four-country study of mobile social media application usability. *European Journal of Information Systems*, *24*(3), 337–359. https://doi.org/10.1057/ejis.2014.43

Venkatesh, V., Hoehle, H., & Aljafari, R. (2014). A usability evaluation of the Obamacare website. *Government Information Quarterly*, *31*(4), 669–680. https://doi.org/10.1016/j.giq.2014.07.003

Appendix

All tables, results, interview data, collected data, used in the report, could be presented here.

Survey	Construct	Item Used	Source
Job (Survey 1)	***		
	***		
General (Survey 2)	***		
	***		
	***		

Table 1: Items Used to Measure Each Construct

Affidavit

I hereby declare that I have developed and written the enclosed master thesis entirely on my own and have not used outside sources without declaration in the text. Any concepts or quotations applicable to these sources are clearly attributed to them. This master thesis has not been submitted in the same or a substantially similar version, not even in part, to any other authority for grading and has not been published elsewhere. This is to certify that the printed version is equivalent to the submitted electronic one. I am aware of the fact that a misstatement may have serious legal consequences.

I also agree that my thesis can be sent and stored anonymously for plagiarism purposes. I know that my thesis may not be corrected if the declaration is not issued.

Mannheim, June 27, 2023

Max Darmstadt