INSTITUTO
UNIVERSITÁRIO
DE LISBOA

Consumers Acceptance Of Artificial Intelligence Virtual Try-On systems when shopping apparel online

Maria Inês Gouveia de Almeida

MSc in Business Administration

Supervisors:
PhD, Renato Jorge Lopes da Costa, Assistant Professor,
ISCTE-IUL

PhD, Rui Alexandre Henriques Gonçalves, Invited Auxiliar Professor,
ISCTE-IUL

May, 2021

PREVIEW

PREVIEW

BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

Consumers Acceptance Of Artificial Intelligence Virtual Try-On systems when shopping apparel online

Maria Inês Gouveia de Almeida

MSc in Business Administration

Supervisors:
PhD, Renato Jorge Lopes da Costa, Assistant Professor,
ISCTE-IUL

PhD, Rui Alexandre Henriques Gonçalves, Invited Auxiliar Professor,
ISCTE-IUL

May, 2021

PREVIEW

PREVIEW

Acknowledgments

This investigation was the result of a personal effort to achieve one of my most important academic objectives, to obtain a Master's degree in an area that, despite being totally different from my initial background, I believe is the basis for an optimal functioning of any other sector. I confess that this was a particularly difficult year, not only because of the pandemic, but also because I had to reconcile work with the thesis, which allowed me not only to explore and learn more about my interests but also to grow as a human and professional. Nevertheless, none of this would be possible without the great support of the people who accompanied me in the most diverse phases without ever letting me give up, and to whom I owe a deep thanks.

I would first like to thank my Supervisors, Professor Renato Jorge Lopes da Costa, and Professor Rui Alexandre Henriques Gonçalves for the support they have given me over the months and who have patiently answered to my questions and concerns, always leading me in the necessary direction to achieve my goals.

To my parents, Paulo e Ana, siblings Manuel e Joana and family for their unconditional support, belief in me and under no circumstances let me give up.

To my friends, who I consider a second family, for their respect and moments of relaxation they have provided me throughout this difficult period.

To my college group, for their support, empathy, and companionship over these two years, which I hope to take with me for the rest of my life.

Finally, I would like to thank my grandparents, António, Maria Inês, Adelino and Manuela, who have always encouraged me to want more and better for myself, without ever forgetting who I am. This thesis is dedicated to them.

PREVIEW

PREVIEW

Resumo

A Inteligência Artificial está cada vez mais presente na maior parte da vida de cada um de nós. Frequentemente, as interações ocorrem inconscientemente entre os indivíduos e a tecnologia. Por ser uma tecnologia cada vez mais presente no quotidiano, é frequente encontrá-la e aplicá-la em diversas áreas de negócios, uma das quais é sem dúvida o mundo do retalho virtual. É assim que a Inteligência Artificial se torna relevante para as empresas que desejam ganhar através de vantagem competitiva. Uma das formas que as empresas podem utilizar e aplicar a Inteligência Artificial é, sem dúvida, através do melhor entendimento dos seus consumidores, estabelecendo uma relação de empatia e diferenciando-se dos seus concorrentes oferecendo experiências únicas e personalizadas, baseadas nas necessidades individuais. Uma das formas de proporcionar essa experiência virtual aos seus consumidores é por meio de Virtual Try-On.

Esta Investigação procura compreender o estado atual de aceitação do consumidor em relação aos sistemas Virtual Try-On na indústria de vestuário online através da análise de 5 parâmetros que pretendem avaliar primeiro a aceitação dos consumidores e depois as suas intenções comportamentais. Para isso, foram escolhidas 5 variáveis independentes, *Perceived Usefulness, Perceived Ease of Use, Perceived Time Consumption, Perceived Accuracy and Ethical Concerns.*

O estudo dessas variáveis foi desenvolvido por meio de um questionário online. Após a análise dos resultados, concluiu-se que, em geral, os consumidores têm uma atitude positiva em relação ao uso do Virtual Try-On e, consequentemente, a sua intenção comportamental também é positiva, podendo-se afirmar que os consumidores tendem a aceitar essa tecnologia.

Palavras-chave: Inteligência Artificial; Virtual Try-On; Technology Acceptance Model; Comportamento do Consumidor.

Classificação JEL:
D71 - Social Choice
M31 – Marketing

PREVIEW

PREVIEW

Abstract

Artificial Intelligence is a technology that is present in most of each of us today daily lives. Often, interactions occur unconsciously between individuals and technology. Since it is a technology that is increasingly present in people's daily lives, it is frequent to find and apply it in many business areas, one of which being the virtual retail world. It is in this way that Artificial Intelligence becomes relevant for companies that want to gain by competitive advantage. One of the ways that companies can use and apply Artificial Intelligence is undoubtedly through better understanding of their consumers, establishing a relationship of empathy and understanding out from that of their competitors offering unique and personalized experiences, based on individual needs. One of the ways to provide this virtual experience to consumers is through Virtual Try-On.

This investigation seeks to understand the current state of consumer acceptance in relation to Virtual Try-On systems in the online clothing industry through the analysis of 5 parameters that intend to evaluate first the consumers' acceptation and then their behavioral intentions. For this, 5 independent variables were chosen, *Perceived Usefulness, Perceived Ease of Use, Perceived Time Consumption, Perceived Accuracy and Ethical Concerns*.

The study of these variables was further developed through an online questionnaire. After analyzing the results, it was concluded that, in general, consumers have a positive attitude towards the use of Virtual Try-On, and consequently, their behavioral intention is also positive, thus being able to affirm that consumers tend to accept this technology.

PREVIEW

Key concepts: Artificial Intelligence; Virtual Try-On; Technology Acceptance Model; Consumer Behavior.

Classificação JEL:

D71 - Social Choice

M31 - Marketing

PREVIEW

Contents

Acknowledgments xi

Resumo vii

Abstract ix

Figures List xiii

Tables List xv

Abbreviations List xvii

Introduction 1

Contextualization 1

Problem Discussion 2

Purpose and Delimitations 3

Investigation Structure 3

Chapter 1 - Literature Review 5

1.1. The importance of Artificial Intelligence Virtual Try-On apparel systems 5

1.1.1. Artificial Intelligence 5

1.1.2. Virtual Try-On Apparel System 6

1.2. Consumer behavior when shopping online apparel 8

1.2.1. Shopping online apparel 9

1.2.2. The influence of consumer behavior towards online shopping 10

1.3. Consumer's acceptance and intention towards Virtual Try-On apparel systems 12

Chapter 2 - Conceptual Framework 17

2.1. Technology Acceptance Model 17

2.2. Perceived Usefulness 18

2.3. Perceived Ease of Use 18

2.4. Perceived Time Consumption 19

2.5. Perceived Accuracy 19

2.6. Ethical Concerns 20

2.7. Attitude Towards Usage 20

2.8. Behavioral Intention 21

2.9. Conceptual Model 21

Chapter 3 - Methodology 23

3.1. Research Approach and Design 23

3.2. Survey Content 26

3.3. Sample Characterization 27

PREVIEW

3.4. Data Analysis Method 32
3.4.1. Quality Criteria 32
Chapter 4 - Results 35
4.1. Validity and Reliability 35
4.2. Structural Model 36
4.3. Quantitative Results 36
4.4. Hypotheses Testing 37
Chapter 5 - Discussion 39
5.1. Hypotheses 39
5.1.1. H1: Perceived Usefulness influences online consumers' Attitude Towards Usage of Virtual Try-On system for apparel 39
5.1.2. H2: Perceived Ease of Use influences online consumers' Attitude Towards Usage of Virtual Try-On system for apparel 40
5.1.3. H3: Perceived Time Consumption influences online consumers' Attitude Towards Usage of Virtual Try-On system for apparel 40
5.1.4. H4: Perceived Accuracy influences online consumers' Attitude Towards Usage of Virtual Try-On system for apparel 41
5.1.5. H5: Consumer's Ethical Concerns influences online consumers' Attitude Towards Usage of Virtual Try-On system for apparel 41
5.1.6. H6: Attitude Towards Usage of Virtual Try-On system for apparel influences consumers' Behavioral Intention 42
5.2. Research Questions 43
5.2.1. Q1 - Do consumers accept Virtual Try-On Systems? 43
5.2.2. Q2 – Do consumers intend to use Virtual Try-On System? 43
Conclusion 45
References 47
Appendixes 53
Appendix A – Survey 53
Appendix B – Concept, Question, Theory and Measurement 59

PREVIEW

Figures List

Figure 2.1. – Conceptual Framework. 211
Figure 3.1. - Distribution of respondents by gender. .....**Error! Bookmark not defined.**
Figure 3.2. - Distribution of respondents by age group. 28
Figure 3.3. - Distribution of respondents by academic qualifications..... 29
Figure 3.4. - Distribution of respondents by marital status. 29
Figure 3.5. - Distribution of respondents by online purchases 30
Figure 3.6. - Distribution of respondents by frequency of online shopping. 30
Figure 3.7. - Distribution of respondents by whether they use the Try-On Virtual System. 31
Figure 3.8. - Distribution of participants' reasons of not using the Virtual Try-On..... 31
Figure 4.1. - Research Model with PLS-algorithm and bootstrapping results..... 36

PREVIEW

PREVIEW

Tables List

Table 1.1. – Main differences between utilitarian consumers and hedonic consumers (Sanchez-Franco & Roldan, 2005)..... 11
Table 1.2. – Relation between Literature Revision and Research Questions. 15
Table 2.1. – Relation between the hypotheses and literature revision. 222
Table 3.1. - Methodology overview. 33
Table 4.1. - Cronbach Alpha, Composite Reliability, Average Variance, Correlations and Discriminant Validity..... 35
Table 4.2. - Structural model assessment. 37
Table 4.3. - Bootstrap results for indirect effects. ..... 37Table 4.4. - Hypotheses testing. 37
Table B - Relation between the variables, respective questions, theory, and measurement applied. 59

PREVIEW

PREVIEW

Abbreviations List

AI	Artificial Intelligence
AVE	Average Variance
ATU	Attitude Towards Usage
BI	Behavioral Intention
CA	Cronbach Alpha
CR	Composite Reliability
EC	Ethical Concerns
PA	Perceived Accuracy
PEU	Perceived Ease of Use
PTC	Perceived Time Consumption
PU	Perceived Usefulness
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
VTO	Virtual Try-On

PREVIEW

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.