Determinants of User Adoption of eGovernment Services: The Case of Greek Local Government

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Anastasia Voutinioti
(M00251181)

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ABSTRACT

Various theories and models exist on new technology and eGovernment adoption and explain the phenomenon. eGovernment acceptance though depends on various factors that differentiate among different groups, particularly regarding expectations, cultural variations, the level of use and interaction, commitment to the eGovernment initiatives. Furthermore, in Greece, there are third parties (Citizen Service Centres-CSCs) that operate and play a significant role in the eGovernment context. Nevertheless, their roles in eGovernment acceptance have to be investigated, in addition to other factors. Hence, further research is needed.

The ultimate aim of this Research Project is to contribute to the understanding of the user's intention drivers or barriers for e-services usage at the local government level that has not been sufficiently explored. It succeeds it, by extending the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model and proposing a validation research framework. The enhanced model incorporates 'trust in the Internet' and 'trust in the government' and the roles of CSCs in the Greek eGovernment, by using 'Habit of going to CSCs' and 'Trust in the CSCs' factors. The model is empirically tested, using Structural Equation Modelling (SEM). The data (843 participants) came from two cities' citizens, in Greece. First, the model is being refined by conducting exploratory factor analysis, followed by confirmatory factor analysis and finally the hypothesised structural model is assessed. Ten out of the fifteen hypotheses (relationships and interrelationships among the factors) were confirmed.

The findings revealed 'trust in the Internet', 'trust in the government', and 'performance expectancy' to be the primary drivers of behavioural intention to use e-services. Also 'habit of going to CSCs' is negatively related to behavioural intention to use e-services.

Findings contribute to theory by understanding the drivers of eGovernment adoption in Greece. At the practical level, the research provides guidelines and recommendations that will help eGovernment policy decision makers and web designers in better planning and implementing eGovernment policies and strategies to increase e-services take-up. Furthermore, the questionnaire will be freely available for government organisations in Greece, along with simple directions and recommendations to assess their initiatives.

LIST OF ABBREVIATIONS

AGF	Adjusted Goodness of Fit Index
ATM	Automated Teller Machine
ATT	Attitude
AVE	Average Variance Extracted
CFI	Comparative Fit Index
chi-square/DF	Relative chi-square
CMB	Common Method Bias
CmR	Composite Reliability
CR	Critical Ratio
CRM	Customer Relationship Management
CSCs	Citizen Service Centres
CSF	Community Support Framework
C-TPBTAM	Combined TPB and TAM Model
DF	Degrees of Freedom
DOI	Diffusion of Innovation Model
DBOA	Department of Business & Organisation Administration
DTPB	Decomposed Theory of Planned Behaviour
E-commerce	Electronic Commerce
EE	Effort Expectancy
EFA	Exploratory Factor Analysis
eGovernment	Electronic Government
e-Intermediary	Electronic Intermediary
EMU	Economic and Monetary Union
E-services	Electronic Service
EU	European Union
FAQ	Frequently Asked Questions
FC	Facilitating Conditions
FORTH	Foundation for Research and Technology
G2C	Government to Citizen
GFI	Goodness of Fit Index
GIS	Geographical Information Systems
GOF	Goodness of fit
HBC	Habit of going to CSCs
HM	Hedonic Motivation
ICT	Information and Communication Technology
IDV	Individualism
IMF	International Monetary Fund
INT	Behavioural Intention
IS	Information Systems

IT/IS	Information Technology / Information Systems
KMO	Kaiser-Meyer-Olkin test
LTO	Long-Term Orientation
MAS	Masculinity
Mbps	Megabytes per second
MIs	Modification Indices
MIS	Management Information Systems
MLE	Maximum Likelihood Estimation
MM	Motivational Model
MoU	Memorandum of Understanding
MPCU	Model of PC Utilisation
MSA	Measure of Sampling Adequacy
NFI	Normed Fit Index
NGO	Non-government Organisation
OECD	Organisation for Economic Co-operation and Development
PBC	Perceived Behavioural Control
PC	Personal Computer
PCA	Principal Component Analysis
PD	Power Distance
PE	Performance Expectancy
PEOU	Perceived Ease of Use
PLS	Partial Least Squares
PNFI	Parsimony Normed Fit Index
PPP	Public-Private Partnership
PU	Perceived Usefulness
PV	Price Value
R&D	Research and Development
RMSEA	Root Mean Square Error of Approximation
RMSR	Root Mean Square Residual
SBN	Subjective Norms
SCT	Social Cognitive Theory
SEM	Structural Equation Modelling
SI	Social Influence
SMC	Squared Multiple Correlations
SPSS	Statistical Package for Social Sciences (IBM Corp.)
SRC	Standardised Residual Covariance
SRW	Standardised Regression Weight
TAM	Technology of Acceptance Model
TAM2	Technology of Acceptance Model2
TEI	Technological Educational Institute

TEIPel	Technological Educational Institute of the Peloponnese
TLI	Tucker-Lewis index
TOC	Trust in CSCs
TOG	Trust in the Government
TOI	Trust in the Internet
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UA	Uncertainty Avoidance
UAI	Uncertainty Avoidance Index
UTAUT	Unified Theory of Acceptance and Use of Technology
UTAUT2	Unified Theory of Acceptance and Use of Technology2
VAT	Value Added Tax
VIF	Variance Inflation Factor
VSM	Value Survey Model
ΔCFI	Difference between the CFI
Δchi-square	Chi-square Difference
ΔDF	DF Difference

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Acknowledgements

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CHAPTER 1: INTRODUCTION

1.1 Introduction to my Research

Governments around the world have launched electronic Government (eGovernment) initiatives because of its many benefits. eGovernment is a means of transforming government by increasing government efficiency and productivity in exercising governance, improves service quality, and offers higher government accountability. It enhances responsiveness to citizens' needs and facilitation of greater access to information and services for government officials, citizens, and business, thus wider inclusiveness. It also helps citizens' empowerment by engaging them in decision making and participating in the democratic processes. At the same time, it increases transparency and helps in reducing corrupt activities in public service delivery. Additional resulting benefits of eGovernment are cost reductions, revenue growth, and economic growth for the whole economy (The World Bank, 2015). Because of its benefits, governments have spent a significant amount of resources on eGovernment projects with high expected 'Return on Investment'. However, despite the investments, there are considerable variations in the success of eGovernment implementation and adoption (Heeks, 2003; Moon, 2002). The success of such initiatives depends on government supply, but mainly on citizens' willingness to accept and adopt these (Carter and Bélanger, 2005). Around the world, the success rates of eGovernment initiatives have been reported to be low (Heeks, 2005) and that means that a significant amount of taxpayer's money goes to waste.

Many studies have reported the factors impeding eGovernment adoption. They identified usefulness, usability, low trust in government and technology (Al-Shafi and Weerakkody, 2010; Bélanger and Carter, 2008). Moreover, demographics, e.g. low educational levels, low skills and experiences of using new technology (Sein, 2009; Pan et al., 2006; Bélanger and Carter, 2006; AlAwadhi and Morris, 2009) have been reported. In addition to these in developing countries the limited Information Computer Technology (ICT) infrastructure, and the lack of Internet access impedes eGovernment take up (Heeks, 2003; Bélanger and Carter, 2008). Nevertheless, the user adoption level of eGovernment services differs from country to country for different reasons.

There is a general agreement that governments to overcome factors that impede eGovernment adoption must develop strategies. One of these involves electronic

services (e-services) delivered through different channels, i.e. web portals, kiosks, digital TV, mobile phones, and third parties. Specifically, the third parties that have been widely used worldwide for years act as intermediaries. They support different governmental agencies in the delivery of e-services, serve as mediators for citizens who require access to government e-services, and also provide a trusted channel gateway to users for help and support (Al-Sobhi et al., 2010; Janssen and Klievink, 2009).

In Greece, although the investments in eGovernment initiatives are considerable, there have been varying results and delayed outcomes. Despite the marked progress in the online availability of public services, Greece still ranks below the EU28 average (European Commission, Digital Agenda Scoreboard, 2016). From the demand side (i.e. the level of usage by the citizens), results from the same survey show that the eGovernment use by citizens' index is 35% while the EU28 average index is 41%. As far as the local government is concerned, their websites have been mainly evolved to valuable information or basic transactions channels among the stakeholders. Nevertheless, the level of usage is shallow.

In 2002, the national eGovernment modernisation agenda, besides the other initiatives, included the establishment of the Citizen Service Centres (CSCs). This way, the Greek government would be able to take steps forward to the electronic age bridging the digital divide and encouraging Greek citizens to participate and use e-services. Nowadays 1,060 CSCs are operating all over the country and mostly work on behalf of citizens as a front-end of government agencies to deliver seamless e-services. Therefore, there is an increased convenience for both citizens and businesses in using the CSCs, as a multi-service vending facility. So far, they have provided mostly face-to-face contact with citizens. From the 61,093 total eGovernment transactions conducted in 2015, the 41.69% were conducted via CSCs manually, the 57.99% were conducted via CSCs electronically, and only the 0.32% were performed via 'Hermes' online (http://kepstats.yap.gov.gr). So far CSCs have enjoyed citizens' trust (Voutinioti, 2015). On the contrary Greeks (88%) do not trust the government (Eurobarometer 85, 2016). All the above, strongly suggest that Greece needs to increase its efforts to encourage citizens to make use of the available eGovernment services, and my academic interests and background enables me to address some of the critical issues in eGovernment take up.

As mentioned above, although there have been significant investments in eGovernment implementation, the results are not in line with the spending. All the indicators are lower than the EU average. Also, in Greece's bad economic situation it has been estimated that eGovernment will save 380 billion euros every year (IOBE, 2015). On the other hand, many services shown in the indices to be electronic, are not fully electronic in the sense that they have been conducted via CSCs and not by the actual citizens. In these cases, people still have to go in person to CSCs for performing them. Taking into account that CSCs operation is costly, shifting people's behaviour from CSCs to self-conducting government e-services, would save the government money.

In the literature, researchers argue that eGovernment adoption, as well as trust in the government, can be enhanced via intermediaries (CSCs) (Al-Sobhi, 2011). These arguments do not seem to apply in the Greek case, despite CSCs' operation for more than fifteen years. All these years I have been professionally involved with and studied the Greek eGovernment implementation and diffusion, I am convinced that Greece is an idiographic case. All the above discussed reasons, in addition to my professional interests, motivated me to examine in depth the Greek eGovernment adoption issues in this Research Project.

My research aims to address the issue of what influences or obstructs user adoption of eGovernment services in local government taking into account the CSCs in Greece, a country example where eGovernment is not very high. As a practitioner on eGovernance, I have been witnessing numerous occasions of eGovernment ineffectiveness in Greece. To understand the problem, I studied the literature on the eGovernment adoption and also on the intermediaries and CSCs. I processed the extensive material available on the issues to the point that I reached a critical stance. I realised then that there were critical multidisciplinary approaches and that recently the eGovernment issue has been the subject of academic and practical debate. Accordingly, it became apparent to me that the eGovernment acceptance issues in Greece were not researched adequately.

My project is unique in that a study of validating a rigorous evaluation instrument for local government eGovernment adoption has never been done so far in Greece. It follows a quantitative approach using a survey to understand citizens' perspectives in eGovernment intention to use the services. Consequently, the purpose of my project is

threefold. First, to build a model for identifying the factors that mostly affect citizens' intention to use eGovernment services and thus strengthening eGovernment evolution. My findings contribute to the existing body of knowledge on eGovernment adoption, especially in the context of the users' perception. Second, I have developed an instrument (i.e., questionnaire) for assessing citizens' intention to use the e-services; and third, I have contributed to practice by providing real managerial implications for policymakers, practitioners, and web designers. Written materials with guidelines to how eGovernment users would increase their willingness to interact online are included, as well as recommendations for policymakers about CSCs' operations. Furthermore, the product (questionnaire) will be freely available for government organisations in Greece along with simple directions and recommendations for revising their initiatives and strategies. Specifically, the product is at the leading edge of my profession. I anticipate that my work will stimulate discussion among the eGovernment research community, particularly in Greece but also in other countries with similar characteristics across critical variables, in the planning of eGovernment uptake

1.2 My Professional Journey

The advanced integrated developments in professional practice that I have achieved up to now are all related to this research project about more acceptable eGovernment services developed by local government organisations. They refer to some aspects of eGovernment and its evolution from simple database development for administrative tasks to Management Information Systems (MIS) and electronic services to citizens. I carried out this research project as a researcher and a practitioner who is well versed in eGovernment. My experience for almost thirty years in Information Systems (IS) and specifically on their applications in the local administration have underpinned this research project.

My 'Advanced Professional Learning' started in 1988 as a system administrator and a computer programmer in the Urban Planning Department and later on as a Director of the Information Technology Department of the Municipality of Kalamata. Since 1995 I serve as a full-time assistant professor in IS specialised in local government in the Technological Educational Institution of the Peloponnese (TEIPel). In all these projects

that I have been involved professionally, I had a primary concern to make my suggestions and products as acceptable as possible by the users.

Before 2010, I directed/monitored and been involved in the programming for the development of more than fifteen software applications related to local government. The first stimulus for every application came from real administrative-type problems local government agencies face and communicated to my colleagues, or to me by them. By working on these projects, I acquired experiential learning in computer software programming using DBMS and GIS software technology for specific applications for use by local government agencies.

This advanced experiential learning I acquired during the previews years in IS, was intergraded into two peer-reviewed books for the benefit of the students of the ex-Local Government Administration Department and currently of the Business & Organisation Administration Department (DBOA). The writing of my two books ('eGovernment and IS in Local Government' and 'GIS applications in Local Government'), which were regularly updated, helped me keep up with the technological advancements and changes in the fields.

For these 'advanced developments in professional practice', I have successfully submitted a Recognition and Accreditation of Learning claim at level 8 for 120 credits for my work on different projects. The work presented for my RAL claim has direct relevance to this project, which deals with IS in local Government for better eGovernment implementation, and can be considered to have laid major part of the basis of the present Research Project.

1.3 Projects Developed After 2010

I have long studied the issues of content and e-services that the local administration websites should deliver, as well as the seeking tasks the website users should accomplish. After 2010, I directed or monitored and even been involved in different projects' development of eGovernment implementation, evolution and acceptance at the local government level, in the Information Systems Laboratory of the TEIPel. At the early stages of this DProf programme, I realised that the previous work done by the creators of the IS/ICT acceptance models, e.g. DTPB and the UTAUT model. In parallel, in meetings with actual eGovernment users during the undertaken exploratory

studies, I sensed that users feel highly uncertain and risky to use e-services, due to the uncertain electronic environment and to the lack of trust in government agencies. Hence it was inevitable to incorporate the trust factors into the analysis. As I researched further, the lack of trust and its consequences and the role of CSCs in eGovernment, I realised the critical aspect of people's habit to get serviced in CSCs. I am firmly convinced that this habit has adverse results in eGovernment services usage. Then the highly-risky averse Greek culture that impedes eGovernment take up caught my attention. Those were the main influences that shaped the rationale for my research approach, and I used this prior knowledge and experience to underpin my current research, throughout its phases.

A few of these projects have been presented in five International Conferences with peer reviewers, i.e. Conference of the EuroMed Academy of Business (Voutinioti 2012; 2013a; 2014b; 2015) and The Conference in New Technology, Economy and Business - PASYTOD, (Voutinioti, 2016). My research has led to three publications in international journals (Voutinioti, 2013b; 2014a). Also, I have been a co-author of a book contributing to a Chapter in eGovernment acceptance (in Greek), sponsored by the DBOA, TEIPel. All this previews work has been served as an exploratory study towards my current Research Project Report.

While my prior learning and professional experience in eGovernment was essential for the successful completion of this innovative research project, my continued professional and academic involvement in eGovernment adoption will have a positive impact on its evolution through this Research Project Report, which also advances my professional interests.

CHAPTER 2: TERMS OF REFERENCE/AIMS OBJECTIVES AND REVIEW OF RELEVANT LITERATURE

2.1 Introduction

This Chapter gives a short introduction to Greek administration, its eGovernment status and explores the roles of CSCs in Greek eGovernment strategy. Next, the aims and objectives of this Research Project are presented. Then the definition of eGovernment, its benefits and challenges as well as the foundation of the eGovernment adoption models are discussed. It reviews in more detail the UTAUT2 model adopted in this research and highlights the importance of the factors that facilitate or impede the adoption of eGovernment services. Next, the intermediaries in the new ICT environment are defined and reviewed as well as their roles in the e-services context. Finally the issue of national culture and how it affects new technology and eGovernment adoption is examined.

2.2 Background and Context Information

2.2.1 Greece's Administration

The administration of the Greek state is organised by the principle of decentralisation. According to the recent 'Kallikratis' administrative reform of 2011, the Greek administrative organisation comprises 7 decentralised authorities, 13 administrative regions (peripheries) and 325 local government administrative units (municipalities). The peripheries and municipalities are entirely self-governed and thus responsible for the administration of local matters, including their eGovernment strategy.

2.2.2 eGovernment in Greece

All these years I have been professionally involved with and studied the initiatives that have been deployed by the Greek government to assist eGovernment implementation and diffusion. These efforts were driven mostly by EU funding[1], on several actions through the Community Support Framework (CSF) periods.

[1] According to the Information Society, Chief Executive Tsakogiannis G. (2014), up to 2013 the European Union funded different e-projects with 6.4 billion euros. This is 80% of the total cost while the other 20% came from national funding.

Since the late 1990s, Greek government agencies have cultivated their web presence by establishing websites. Although their numbers are increasing, they are even today mostly restricted to information and limited services, presenting the inefficiency of e-services provided to the general public and businesses. As far as local government is concerned, every local authority being constitutionally distinct retained its independence in its eGovernment strategy and its web presence covers mostly informative services too (Voutinioti, 2013b; 2014a).

Although there have been significant investments in eGovernment implementation, there have been varying results and delayed outcomes. My opinion is strengthened by the European Commission's, Digital Agenda Scoreboard (2015) empirical findings for Greece, presented in Chapter one. Table V.1 also presents data for ICT and the eGovernment indicators for 2015 for Greece, compared to the EU average. The majority of the Greek households (67%) have an Internet speed of below 30 MBps, while the country's average broadband connection speed is 8.93 mbps, against an EU average of 8.79 mbps. Greece has a negligible 0.4% rate in ultra-high-speed connections, ranking bottom among the 28 EU states (http://ec.europa.eu/newsroom/document.cfm?doc_id=44389). The DSL market unbundling reduced the dominance of one Internet provider. There are 4 main Internet providers and the speed of the Internet on fixed connections depends on the provider and the location of the connection. In cases where the speed is very low or there are problems with the connection, consumers can change to a different provider. It is a comparatively cheap country for low-speed broadband Internet connections, 20% cheaper than the EU average, and expensive for high-speed ones.

It should be mentioned here that he Greek transparent eGovernment index is 22%, while the EU28 average is 49% (Table V.1). The transparency that is, the implementation of trustworthy, clear and transparent processes, results in reducing corruption. Corruption, which is the abuse of public office for private gain (The World Bank, 1997), is associated with two essential features, public authority and morality (Transparency International, 2011). It is often characterised as a 'disease' inherent to public power and is an indication of bad governance (Tiihonen, 2003). It is a vital issue for Greece as it ranks fourth on the list of most corrupt developed nations (Business Insider, 2016)[2].

[2]A study conducted in 2016, by Business Insider using data from Transparency International and OECD.

These are the primary reasons that the Greeks do not trust the government as previously mentioned.

Even after the establishment of the Central Government portal 'Hermes', a few services have been linked and shared through it, e.g. birth and marriage certificates. Many departmental sites remained, to handle critical services, e.g. personal and business taxation. E-taxation was one of the first e-services launched by the Ministry of Finance. Its website (www.sgis.gr) is the portal for citizens and businesses to file and process their tax obligations, as well as the VAT declarations and lately property taxes. Taxpayers can submit declarations, review their profiles, check for due amounts, and receive notification emails. Since 2013 the e-taxation services became mandatory for all, except the senior citizens. However, all the payments are conducted through the banks. E-commerce or online purchase still lags behind, despite the fact that the banks in Greece are providing consumers with credit cards to be usable in everyday life and online transactions. Banks also offer e-banking services in conducting e-transactions and paying bills online.

Numerous training projects, i.e. seminars, workshops, and conferences have been employed to promote ICT in all sectors. Full quality service though, for leveraging the ICT base has not been available to the public, and appropriate infrastructure has not been established yet to improve e-commerce and ICT in general.

2.2.3 CSCs Concept in Greece

In 2002, the national eGovernment modernisation agenda included the establishment of the Citizen Service Centers (CSCs, KEP in Greek), to facilitate government service delivery and seamless interaction with citizens. They have been seen as an initial model of one-stop government strategy for eGovernment service delivery. In 2011, the reform program 'Kallikratis' aiming to achieve budgetary savings and more efficient provision of public services, led to consolidation into fewer and larger municipalities (http://kallikratis.ypes.gr/). The strategic use of CSCs was expressed by establishing CSCs centres in the old municipal structures. These new CSCs are the decentralised access points to the public sector, set up to lessen the perception of the loss of proximity that occurred when local entities increased in size. They are centrally regulated, running under the supervision of Greek municipalities, and mostly work on behalf of citizens

as a front-end of government agencies to deliver seamless e-services (Voutinioti, 2014b). They provide face-to-face contact with citizens, mostly perform services on citizens' behalf, and they control the transactions flow between government and citizens, in both directions. Hence, they are considered trusted entities. As people are used to going on site, their webpage (www.kep.gov.gr), providing information on different government services, does not have much traffic.

The main reasons CSCs were introduced to Greek eGovernment strategy was to establish a link between government and citizens and provide new ways more convenient to deliver services to citizens and to assist ICT inexperienced citizens to adopt eGovernment systems (Pateli and Philippidou, 2008). As I have found in my study (Voutinioti, 2014b), their establishment was also powered by the difficulty of verifying the identity of citizens, as up to now there is limited e-identification and e-signature provision in Greece. Other reasons included issues such as low level of trust in government, and in e-services, information privacy and security concerns. Although self-access of e-services in CSCs, was the central initial principle, it is not currently available due to their limited resources and capabilities. In my opinion, providing visitors with the opportunity to self-access e-services in CSCs would be a powerful way to boost digital literacy and uptake of online interactions and transactions.

There should also be noted that the Greek government considers CSCs operation very expensive. This was clearly stated in the speech of the Deputy Minister, of the Ministry of Administrative Reform and eGovernment in the annual Conference of ICT Plus for 2012 (Voudoudakis, 2012) which took place in Athens. Nevertheless, there was no thought of doing anything at that time because they help people with communication with government. As an inside researcher and practitioner, I do not entirely agree with the position of the Deputy Minister, especially nowadays that the Economy of the country is wounded by the financial crisis. I firmly believe that CSCs roles have to be reconsidered in the way they operate and get a different more dynamic role in the Greek eGovernment take up society.

2.3 Aims and Objectives/Expected Outcomes

To combat low adoption problem issue, there is a need to understand better the user's intention drivers or barriers to adopting the eGovernment services. This is the ultimate

aim of this Research Project. I feel that this has not been sufficiently explored. I would also like to frame ways for eGovernment adoption and propose a validation research framework to theorise eGovernment adoption. My work seeks to identify the most important determinants that affect citizens' behaviour towards the intention to use the eGovernment services, taking into account the role of the CSCs that operate in the Greek eGovernment context.

Empirical research strongly suggests that it is vital to evaluate eGovernment acceptance at the local government level because succeeding at the local level is imperative for the total eGovernment success (Sarikas and Weerakkody, 2007; Fan, 2014; Huang, 2007). Additionally, Fan (2014) argues that 80% of the services people require are offered at the local level. Besides, being a staff member of the ex-local government Department and instructor of eGovernment and IS in local government for fourteen years, my interests have been in eGovernment and particular at the local level. I have been working with my colleagues and students on projects evaluating the municipal websites for usability, accessibility and the services provided. After these studies and personal interest as a researcher and practitioner, I have concluded that it is imperative in the case of Greece to evaluate eGovernment acceptance at the local level.

To achieve the above aim, the primary objectives of my research are:

1. To develop an information base at the national and the local level on eGovernment adoption and the roles of the CSCs.

2. To construct a hypothetical eGovernment theoretical model and develop research hypotheses, primarily based on an already established model, to study eGovernment adoption in Greece, and by incorporating the roles of CSCs.
3. To design an appropriate research framework to study the Greek citizens' behavioural intention to use e-services, making an informed decision about the appropriate research methods and analytical tools to be adapted.
4. To empirically assess the research model and hypotheses by using a quantitative approach.
5. To describe implications that arise from the research for future eGovernment planning. Provide guidelines and recommendations that would help

eGovernment policy makers and web designers to plan their eGovernment services better, design and implement strategies and policies to increase the eGovernment services take-up.

6. Equip municipalities and government organisations with a tool (questionnaire) to identify the particular factors that facilitate or impede their e-services usage.

The first objective was carried out in the exploratory research phase in 2012 - 2015 (Voutinioti, 2012; 2013b; 2014a; 2014b), by reviewing the literature in eGovernment adoption, trust and, the roles of CSCs. Afterwards, I reviewed the national culture issues, as suggested by Hofstede (1997; 2011) that affect eGovernment take up. Having conducted exploratory studies with different constructs and by applying an investigation process, the final research constructs and the hypothesised model were identified, and hence the first and second objectives were carried out.

By adopting a quantitative research framework, and the survey method, data from two cities' citizens, were collected, in 2015. With the adopted methodological framework, and by using SEM, it was possible to assess the strength of the models and the final theoretical model was developed. The data samples were examined separately and afterwards, were segmented into groups by demographical and uncertainty avoidance (UA) variable levels. This categorisation of the data samples allowed the understanding of the effects of the different variables on behavioural intention to adopt, within the Greek context and thus achieving the third objective.

I carried out the fourth objective in the second phase of the research framework in two stages (i.e., the confirmatory and the structural). The statistical methods used allowed modifications of the models and retesting for the goodness of fit, with the final goal to construct a research instrument for measuring eGovernance intention. The variable estimators produced by the statistical analyses in this research phase made possible the formulation of recommendations to policymakers, which is the fifth objective of the research project. The tool along with guidelines for use will be freely available to municipalities and other governmental agencies in Greece, to identify the specific factors that facilitate or impede their e-services take up, and thus increasing e-services adoption, which is the sixth research objective.

By meeting the first five research objectives, the adoption model has been enriched to be used for any sector, although the scope of my research was restricted to study one particular sector (local government). Additionally, by meeting the fifth and sixth objectives, a contribution to the eGovernment take-up has been made.

The scope of this investigation was to apply an already established model of the concepts of interest (i.e. IS adoption model), rather than seeking a new one from scratch. The IS models for citizen adoption have been successfully used in a particular context but do not take into account country and societies' specific constraints. By enriching an adoption model with the trust factors, CSCs and the national cultural variable UA, and creating a research framework for testing and modifying it for a specific sector and cultural setting, the model can be used in any area, as well as in other countries that have similar eGovernment situations. This is the benefit gained by having country informed adoption model.

2.4 Research Questions

My study investigates the most salient factors that affect eGovernment adoption in Greece, within an eGovernment setting using the UTAUT2[3] adoption model (Venkatesh et al., 2012), as its theoretical base (Refer to section 2.6.7). Hence, the first four research questions address the nature of these relations on behavioural intention.

1. Do the established relationships among the primary constructs in the UTAUT2 model that measure user behavioural intention to use eGovernment, prevail at the local government level in Greece?
2. Are there any other country-specific factors (e.g., trust) that might facilitate or obstruct the adoption and dissemination of eGovernment in Greece?
3. What impact does trust perceptions (trust in the government, trust in the Internet, and trust in the CSCs) have on the eGovernment adoption behaviour?
4. Which of the dimensions of the eGovernment adoption model is the most significant in the Greek local government context?

[3] The UTAUT2 is an amended and extended UTAUT model. It consists of seven constructs to measure behavioural intention and use. Its difference with UTAUT lie that it is suited to measure consumers' intention and actual use behaviour, while the latter was designed to assess employees' behaviour.

In Greece, the CSCs operate in the eGovernment realm in helping citizens with all government services and perform them on their behalf. Greeks are used to visit the CSCs to conduct their transactions with government. Hence this research investigates the role of the citizens' habit of getting serviced in the CSCs in eGovernment adoption. Consequently, the next research question is related to this issue.

5. Does the habit of going to CSCs influence or impede citizens' intention to adopt the eGovernment services?

Studying the literature on the subject, I have discovered that demographic and cultural variables have shown moderating impacts on the online behaviour (AlShihi, 2006; Warkentin et al., 2002; Venkatesh et al., 2003; McCoy et al., 2007). Therefore, the next research question is related to the implications of the demographics and the UA cultural variable as moderators.

6. Do demographics and UA moderate the relationships among the proposed model constructs and how?

The above aim and objectives enable my research to explore the factors that facilitate or impede eGovernment services in Greece. My research after gaining a good understanding of eGovernment take up in a real-life context offers a new perspective on the challenges of eGovernment adoption in Greece is facing, as well as across other countries with similar situations. From a theoretical perspective, my research examines the sustainability of the model hypothesised, in Greece. From a practical viewpoint, by using the questionnaire, the government agencies would benefit from having actual users' perceptions, as it provides insight into areas of improvement. By using two cases which are considered high in eGovernment implementation and, higher than other local authorities in take up, the results can be used as benchmarks for evaluating other websites and public organisations. Also, policymakers following the recommendations will be helped to design and implement their strategic planning. From an academic perspective, my research establishes a base for future research to build on, extending the model and its application to other contexts. This research not only gives some solid answers concerning the topics under investigation, but it also contributes to the improvement in the area of eGovernment adoption, which is the key to success for the whole eGovernment. Finally, I would like to state that, in my view, through this

research, I managed to become a better academic and professional in the field of eGovernment.

2.5 An Overview of eGovernment

2.5.1 eGovernment Definition

Many governments around the world have recognised the importance of eGovernment for better governance and the delivery of services to citizens, businesses and other government agencies. Researchers such as Tolbert and Mossberger (2006) state that eGovernment is a global phenomenon that many countries worldwide are aiming to settle. There are numerous reasons behind it, including the need for public sector reform, external pressures (i.e. the recognition of the government being an eGovernment agency), the demand for a citizen-centric administration and the availability of the necessary telecommunication infrastructure. Moreover, the many benefits eGovernment offers to different stakeholders. Therefore, eGovernment establishment is not optional for governments anymore but a main essential activity (Rocha and Sá, 2013; Sá and Rocha, 2016).

eGovernment is a multidimensional and complex concept in nature, and there is no agreement on its definition. Different views about it reflect various focuses on interest by governments, organisations and researchers. Hence, there are multiple definitions of eGovernment among researchers and specialists (OECD, 2003; Carter and Belanger, 2005). For this research, the definition of The World Bank (2015) is chosen (http://www.worldbank.org/en/topic/ict/brief/e-government) which is more detailed:

> *'E-Government refers to the use of information and communications technologies (ICT) to improve the efficiency, effectiveness, transparency and accountability of government. E-Government can be seen simply as moving citizen services online, but in its broadest sense it refers to the technology-enabled transformation of government - governments' best hope to reduce costs, whilst promoting economic development, increasing transparency in government, improving service delivery and public administration, and facilitating the advancement of an information society.'*

While definitions of eGovernment may vary, eGovernment involves the use of ICT, and especially the Internet, to upgrade the delivery of government services to citizens, businesses, and other government agencies. eGovernment enables citizens to interact and receive services anytime, by using different electronic media. It is also about how government organises itself: its administration, rules, regulations and frameworks set out to carry out service delivery and to coordinate, communicate and integrate processes within itself and with its stakeholders.

2.5.2 Stages of eGovernment Implementation

eGovernment represents a paradigm shift from the traditional government, and its evolution happens in stages (WASEDA - IAC, 2016). These stages are a method for quantifying progress, and are based primarily on the content and deliverable services available through official websites; the interactive features (e-mail), quality and timeliness of information and the capacity to conduct online transactions. This eGovernment categorisation is included in different stage models, proposed by various authors and organisations (Layne and Lee, 2001; UNDESA, 2010; Lee, 2010; European Commission, 2012). Although some differences exist in these models (e.g. in the number of proposed stages), most of them bear the same basic characteristics, including some 'linear' stages: presence/information provision, interaction, transaction and transformation, through vertical and horizontal integration.

In this Research Project the stage model presented by UNDESA (2010)[4], and accepted by European Commission (2012), has been adopted, which includes five stages that may not all be achieved at the same time. The stages of the model are:

Stage one (**Emerging Presence):** A regular but limited web presence is established through independent government websites, which provide users with static information, like contact information (i.e. telephone numbers and addresses of government departments). In some cases, special features like FAQs may be found.

[4] UNDESA: United Nations Department of Economic and Social Affairs. Every two years it presents an updated *e-Government Survey* with rankings among 196 counties all over the world.

Stage two (Enhanced Presence): Websites' content consists more of dynamic and specialised information. Government publications, legislation, newsletters are available as well as search features, and e-mail addresses. There are links to other government webpages and forms can be downloaded and submitted offline (i.e. by mail) and on-line via e-mail.

Stage three (Interactive Presence): Government websites offer a more sophisticated level of formal interactions between citizens and service providers, like e-mail and post comments area. The capacity to search specialised databases and download forms and e-submission of them are also available.

Stage four (**Transactional Presence**): Websites support some fully electronic and secure transactions, such as payments or submitting information. The transactions could be obtaining birth and marriage certificates, passports, renewing the driving licenses, permits where a user can pay on-line for the services. A central government portal is usually present, which provides a broad range of information and services to users without the need for dealing directly with various departments. Secure sites and user passwords are present, while digital signatures may be used to facilitate doing business with the government.

Stage five (Seamless or Fully Integrated): Websites offer the capacity to access the services in a 'unified package'. Agency lines of differentiation are removed, and services are well suited to citizens' and business's needs.

Having achieved the fifth or even the fourth stage, i.e. the more mature ones, it presupposes that an absolute level of technical sophistication is present in government. It requires at least integration of the multiple departments in the agency. Governments thought face challenges in deploying transactional services, reflected in the low success rate of their implementation (Al-Sebie and Irani, 2005; Irani et al., 2006).

2.5.3 eGovernment Benefits

It is well accepted in the literature that eGovernment offers many advantages to its stakeholders (Irani et al., 2006; Alanezi et al., 2010; The World Bank, 2015). As, e-business, and e-commerce, which provide many benefits to their stakeholders, eGovernment delivers services to citizens, businesses, and governments. The benefits

can be categorised into two groups; those that are government-oriented, and those that are citizen and business oriented.

One of the main advantages of eGovernment, for the government itself, is improving administrative efficiency. Using ICT within government departments results in the reduction of bureaucracy and errors which improve the quality of services (Irani et al., 2006; Alanezi et al., 2010). It also enables public sector agencies to increase their service processing and delivery capabilities while requiring less time and staff and thus saving time and money. Also, by facilitating the exchange of information between government departments, the effectiveness is increased. Furthermore, by enabling the more efficient monitoring and controlling of the government policies (i.e. the ability to produce results matching the objectives), the accountability of the government itself is enhanced. It can also lead to increasing economic competitiveness, as by reducing bureaucratic procedures and improving public sector efficiency, productivity levels in the economy raise as well (Irani et al., 2006).

From citizen perspectives, eGovernment implementation reduces the costs, expenditures and time due to the elimination of the physical contact between people and government employees in the delivery of services. In comparison to the traditional way eGovernment enables different stakeholders to access government services any time and from anywhere (Irani et al., 2006). Even more reduced costs will be gained through direct channel communication by integrating not only the government organisation's systems but the systems of different government agencies through a single government portal (UNDESA, 2012; Al-Khouri and Bal, 2007).

Furthermore, eGovernment increases the responsiveness to citizens' needs and requirements (Moon, 2003; Chen et al., 2006), and provide opportunities to citizens to submit their suggestions and ideas online via forums and online communities. eGovernment by making the interactions easier, friendlier and more efficient gives the opportunity to establish a proper relationship between government agencies, citizens, and businesses (Lee et al., 2011). By increasing public participation in decision-making, eGovernment improves the transparency to the public, enhances government accountability and also e-democracy (Lee et al., 2011; The World Bank, 2015). After all, knowledge equity, transparency, and accountability that are part of democracy constitute the main dimensions in fighting corruption (Fakhoury and Baker, 2016).

2.5.4 eGovernment Challenges

2.5.4.1 eGovernment Implementation Challenges

Many researchers have discussed the challenges governments face on successful eGovernment implementation. The limit of ICT infrastructure is considered a challenge that prevents successful eGovernment implementation (Al-Khouri and Bal, 2007; Irani et al., 2007; Choudrie et al., 2005). In this case, the electronic and the other channels of service delivery are not collaborating, resulting in low success rates. Improvements in the ICT infrastructure positively affect government organisations as far as technologies and business processes are concerned.

Delays of eGovernment implementation are also caused by and lack of standardisation of eGovernment systems. Since eGovernment projects are typically on a national scale, the government should endeavour to meet all the needs and goals of various departments to improve integration and cooperation within the eGovernment environment (Lam, 2005; Ciborra and Navarra, 2005; Irani et al., 2007). Nevertheless, establishing integrated eGovernment systems is a major challenge that many government agencies are facing worldwide because it is a severe problem to combat, especially in developing countries (Virili and Sorrentino, 2009).

Moon and Norris, (2005) argue that lack of hardware and software, financial resources, and lack of personnel specified technical knowledge pose impediments to eGovernment implementations. It has been shown by the literature that technical and organisational aspects are typically costly and lack of economic resources is one of the most significant barriers to the eGovernment implementation (Sarikas and Weerakkody, 2007; Irani et al., 2007). Lack of money could take other forms besides project funding. For instance, a shortage of skills needed to implement various technologies of eGovernment could result in extra funding needed to recruit skilled ICT staff (Lam, 2005; Moon and Norris, 2005). As eGovernment requires secure solutions and applications, the high cost of them is considered a financial barrier too (Gefen et al., 2002; Warkentin et al., 2002).

However, Irani et al. (2007), and Sarikas and Weerakkody (2007), highlight that broader issues of technical, political, and organisational origin are of equal importance but tend to be overlooked in practice. They argue that a strong emphasis is required on organisational structure and business processes to gain a better position regarding

eGovernment implementation. Additionally, they posit that a strong focus is needed on cultural change and the degree of commitment. The employees' resistance to the new way of working has been considered by Choudrie et al. (2005), to be one of the significant barriers to the eGovernment implementation too. Greater training is needed to combat the resistance to change, by increasing awareness of the possible benefits eGovernment services offer (Karavasilis et al., 2010).

Lack of strategic leadership and project management skills are considered as very important impediments to successful implementation of eGovernment projects as well (Chatfield and Alhujran, 2009; Lam, 2005). As eGovernment has long-term challenges, strong leadership commitment is a crucial success factor of eGovernment implementation and is needed to minimise the effects of different barriers that may emerge. Finally, reviewing the above factors, it appears that several of these barriers (e.g. resistance to change and leadership) have a human dimension. Human issues have been found to be critical in adopting the technology by researchers (Welch, 2005).

My personal opinion is that all the factors mentioned above cause delays and impediments to Greece's eGovernment implementation that need to be addressed.

2.5.4.2 eGovernment Adoption Challenges

I have identified many barriers being in line with other researchers that impede adoption of eGovernment services. First, lack of availability, usability, and accessibility of eGovernment services are considered as significant barriers (Al-Shafi and Weerakkody, 2010; Carter and Weerakkody, 2008; Alanezi et al., 2010). Availability of eGovernment services is critical, as it indicates the number of the available services. Next, usability, referring to the ease of use and learn the government websites, enhances the service quality, increases trust in eGovernment, and it is engaged with the take-up of electronic services (Roy et al., 2001; Bedi and Banati, 2006; McKnight et al., 2002). eGovernment usage take-up could also be achieved by improving the accessibility of e-services (Sarikas and Weerakkody, 2007; UNDESA, 2012). By offering different ICTs and channels (multichannel delivery) such as web portals, mobile phones, digital TV, kiosks and Citizen Service Centres, are good practices in eGovernment service delivery (UNDESA, 2012; Sarikas and Weerakkody, 2007). It has been shown that accessibility and usability are improving the efficiency and effectiveness of different systems and

technologies implemented and they can be a rating standard of eGovernment take up success (Papadomichelaki and Mentzas, 2009).

Access problems have been identified regarding the digital divide, which is the gap between citizens that have access and skills needed to use the new technologies and those who do not have (Bélanger and Carter, 2006; Pan et al., 2006; Sein, 2009). Even if more citizens are utilising eGovernment services, the digital divide is still considered as a significant impediment for many individuals. Also, other barriers such as high age, low level of education and computer and the Internet experience, low income, language barriers, disability to accessing the new technologies have been detected (Bélanger and Carter, 2006; Pan et al., 2006; AlShihi, 2006).

Many researchers have determined the importance of the awareness of gained benefits in using e-services (AlShihi, 2006; Delitheou and Maraki, 2010; Voutinioti, 2013b; 2014a; Sá et al., 2016). Hence, the more benefits people know about, such as saving effort, time, and money, the more eGovernment services will be used.

2.6 Theories in IS/ICT Acceptance and eGovernment Adoption

2.6.1 Introduction to Theories in IS/ICT Acceptance

Various theories and models (e.g. TAM, TPB, DOI, and UTAUT) have emerged on new technology acceptance and eGovernment adoption behaviour and explain the phenomenon under investigation. Many IS studies build their arguments on a theoretical base (Carter and Bélanger, 2005; AlAwadhi and Morris, 2009; Carter and Weerakkody, 2008; Al-Shafi and Weerakkody, 2010). Hence, it is essential to present the existing theories and in parallel to criticise their relevance to my study, based on my professional experience. For reasons of clarity, I have separated the following sections into eGovernment adoption models, habit, trust, intermediaries, as well as cultural issues on eGovernment take up.

2.6.2 The Theory of Reasoned Action (TRA)

The TRA theory (Ajzen and Fishbein, 1972), which is derived from psychology, predicts one's actions from 'behavioural intention' (INT) which in turn is influenced

by 'attitude' (ATT)[5] and 'subjective norms' (SBN)[6]. Then, 'beliefs and evaluations' affect ATT, and 'normative beliefs' affect SBN (Figure 2.1).

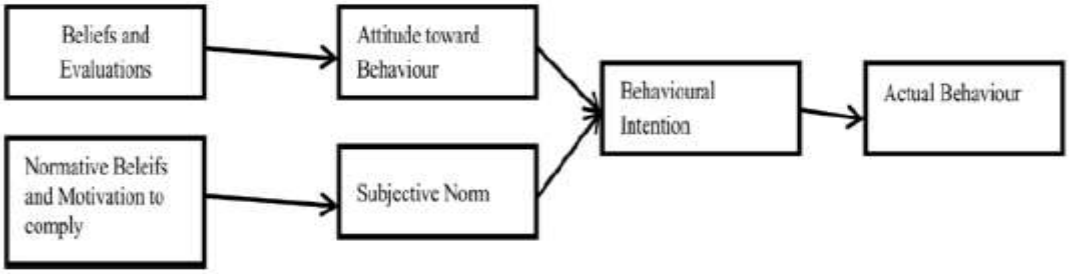

Figure 2.1: The TRA Model. Source: Ajzen and Fishbein, (1972).

2.6.3 The Technology Acceptance Model (TAM)

TAM (Davis, 1989), which is derived from the TRA, is based on 'intention' and is suitable for the ICT research (Davis et al., 1989). In TAM model, compared with TRA, the SBN construct is not present, but there are two additional constructs, 'perceived usefulness' (PU), and 'perceived ease of use' (PEOU). TAM states that PU and PEOU influence one's ATT towards system usage, which in turn influences INT to use a system; finally, the latter determines actual system 'usage' (Figure 2.2).

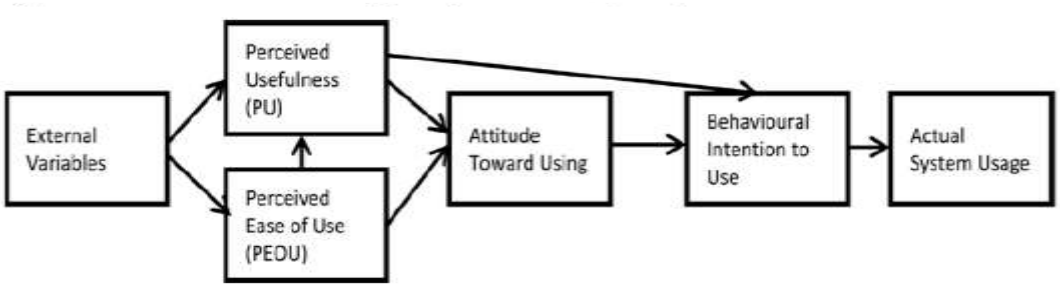

Figure 2.2: The TAM Model. Source: Davis, (1989).

According to Davis (1989, p. 320), PU is '*the degree to which a person believes that using a particular system would enhance his or her job performance.'* PEOU refers to '*the degree to which a person believes that using a particular system would be free of effort.'* Technology adoption literature has consistently found PU and PEOU to be salient factors in technology adoption, and they also have been empirically proven to

[5] ATT is defined '*as a learned predisposition to respond to an object in a consistently favorable or unfavorable manner.' (*Ajzen and Fishbein, 1972, p. 336).
[6] SBN concerns the influence of perceived opinions of other groups important to an individual (Ajzen and Fishbein, 1972).

be reliable and valid dimensions (Burton-Jones and Hubona, 2006; Rana et al., 2014).

TAM has been validated over a wide range of studies in different contexts, and many of them have their foundation in it. It has received extensive support for its power to predict usage of IS (Davis and Venkatesh, 1996; Lu et al., 2003) and eGovernment usage as well (Gefen et al., 2002; Carter and Bélanger, 2005; Carter and Weerakkody, 2008; Rana et al., 2014). Nevertheless, it has been found that TAM excludes some significant source of variance and does not consider challenges, such as time or money, or factors that would prevent an individual from using an IS. For instance, the SBN and the 'perceived behavioural control' (refer to TPB model next) constructs, are not included. According to Venkatesh and Davis (2000), TAM explains 40%–50% of technology acceptance. Hence, many researchers have extended the model with new variables in an attempt to increase its explanatory power (Carter and Bélanger, 2005; Wangpipatwong et al., 2009). Specifically, Wangpipatwong et al. (2009), explored the factors that influence the citizen's continuance 'intention' to use eGovernment websites, in Thailand. They integrated the concept of computer 'self-efficacy' to the TAM to form their model. The results showed that PU together with PEOU, and also citizen's computer 'self-efficacy' directly influence INT to use eGovernment websites.

Aggelidis and Chatzoglou (2009), examined Health Information Systems acceptance by Greek hospital personnel, by extending the TAM model with some exogenous variables. The results indicated that PU, PEOU, 'social influence' (SI), ATT, 'facilitating conditions' (FC) and 'self-efficacy' affected hospital personnel's INT. Training had a strong indirect impact on INT through the mediators FC and PEOU. In my opinion, their extended model includes so many factors that seem to be based on the model TPB (section 2.6.4) than the TAM.

These concerns made me not to consider testing the model with real data. Instead, I was convinced that I would be better off with a model that includes more factors and at the same time being parsimonious.

2.6.4 The Theory of Planned Behaviour (TPB)

TPB (Ajzen, 1991) is also an extension of TRA, in which the factor 'perceived behavioural control' (PBC) has been added. It predicts behaviour across many setting. It delivers more specific information, measuring system's performance on various

outcomes (i.e. factors that might be barriers to system use). In this model (Figure 2.3), three factors determine the formation of a person's intention. ATT, which reflects feelings of favourableness or not, towards performing a behaviour. As in TAM, PU and PEOU influence ATT towards system 'behavioural intention'. The other factors, SBN concerns '*the influence of perceived opinions of other groups important to an individua*l' and PBC focuses on *'the extent to which people believe that they are capable of, or have control over, performing a given behaviour'* (Ajzen, 1991, p. 446). These are vital in determining behaviour concerning usage of technology or service.

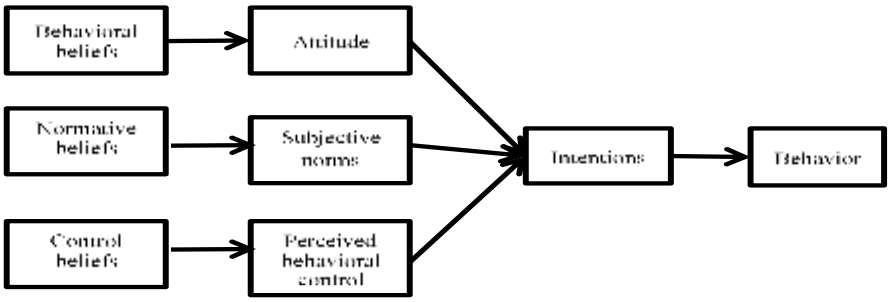

Figure 2.3: Theory of Planned Behaviour. Source: Ajzen, (1991).

Later Taylor and Todd (1995b), extended the TPB model and formulated the DTPB model. It retains the major factors of TPB (PU, PEOU, ATT), and decomposes the SBN and PBC into more detailed belief constructs.

According to Taylor and Todd (1995b), SBN includes: (a) 'external influence' (news reports and mass media), and (b) 'inter-personal influence' (word of mouth between friends, family members, colleagues, and people in power). The PBC consists of (a) FC, which captures cost of access to a computer communication (purchase of equipment and communication fees); and (b) 'self-efficacy' (SEF), which is the perceptions related to the individuals' judgments of their abilities to master the end-user devices, typically PCs and the Internet. The decomposed model identifies specific salient beliefs that may influence ICT usage and can be implemented across different settings. As it introduces a larger number of factors, it may provide a more comprehensive and complete understanding of ICT usage. Nevertheless, it is more complicated, relative to the more parsimonious models, such as the TAM, TPB (Rana et al., 2015a). According to Rana et al. (2013), who extensively searched the literature, none of these two models (TPB, DTPB) is considered well utilised in eGovernment adoption.

Hung et al. (2006) investigated the public's acceptance of the online tax filing and payment system (OTFPS) in Taiwan, by using a model based on the DTPB model. They concluded that PU, PEOU, 'perceived risk', 'trust', and 'compatibility', 'external influence', 'interpersonal influence', SEF and FC are critical factors in the adoption of the system. Nevertheless, they came out with a very complex model.

Being in line with the above, I have (Voutinioti, 2012), conducted a study as part of my professional interests and practice in the New Technology Lab of the TEIPel, using an eGovernment adoption model based on the theory of DTPB. The study was conducted in 2011 and used data from Heraklion city residents. I was interested to see the results from the participants of this medium-sized city that scored high in eGovernment implementation. In the base model, the trust factors were aggregated in an attempt to explain citizens' adoption behaviour. The model explained 64.1% of the variance of 'behavioural intention' and identified ATT, TRU, SBN and PBC as the strongest salient factors related to citizens' low adoption of e-services. ATT was explained by PU, the most influential factor and 'trust'; the latter' s role was partially mediated over ATT, as it preceded both the ATT and the INT. 'Trust', revealed an essential construct due to its large total effect and proved its importance in the eGovernment setting. My findings indicated that although the DTPB model was very explicit and complex, its exploratory power did not increase much. This is probably the reason that it has not been extensively used in ICT and eGovernment adoption. Hence I was convinced that it was not very suitable for my current study.

2.6.5 Diffusion of Innovation Theory (DOI)

DOI, another popular model, used in IS seeks to explain how, why and at what rate new ideas and technology (innovation) spread through cultures (Rogers, 1995). According to Rogers (1995), the rate of diffusion[7] is affected by an innovation's 'relative advantage', 'compatibility', 'complexity', 'trialability' and 'observability'[8] (Figure

[7] Diffusion is defined as '*the process by which an innovation is communicated through certain channels over time among the participants in a social system*' (Rogers, 1995, p. 81).

[8] The constructs are defined as follow (Rogers 2003, pp. 250-251): 'Relative advantage' is the '*degree to which an innovation is perceived as better than the idea it supersedes*'. 'Compatibility' is '*the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters*'. 'Complexity', similar to TAM's PEOU construct, is '*the degree to which an innovation is perceived as difficult to understand and use'.* 'Trialability' is '*the degree to which an innovation may be experimented with on a limited basis'*. 'Observability' is '*the degree to which the results of an innovation are visible to others'*.

2.4). Innovations that are perceived by individuals as having greater 'relative advantage', 'compatibility', 'trialability', 'observability', and less 'complexity' will be adopted more rapidly than others (Rogers, 1995).

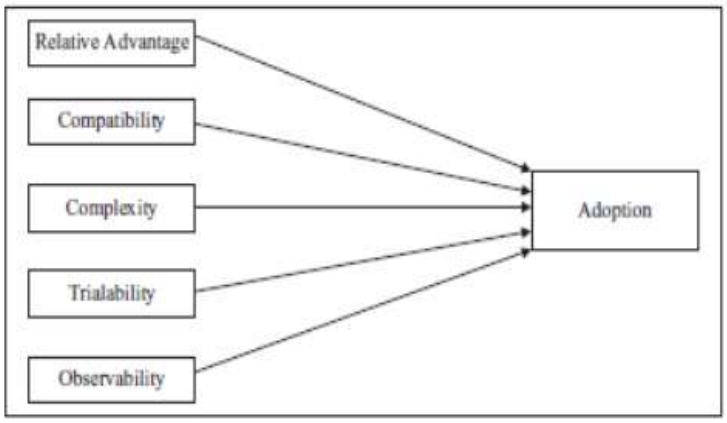

Figure 2.4: The Diffusion of Innovation Theory. Source: Rogers, (1995).

Carter and Bélanger (2005), presented an integrated model for studying citizen adoption of eGovernment services, in the USA. In their model, they included constructs from TAM (PU, PEOU), DOI ('image', 'relative advantage' and 'compatibility') and 'trust in the internet', and 'trust in the government'. They found that PEOU, 'compatibility' and the 'trust' factors significantly affected citizens' INT to use eGovernment services. Dimitrova and Chen (2006), integrated TAM and DOI models for examining the effects of socio-psychological factors on the adoption of eGovernment in the USA. Their findings showed that PU, 'perceived uncertainty' and prior interest in government significantly affected the adoption of eGovernment.

In Greece, Vrana et al. (2010), extended the previously conducted survey by the Karavasilis et al. (2010), using a model based on DOI. They found that 'compatibility' and 'relative advantage' have a stronger effect on INT, compared to 'trust' and 'perceived risk'. They examined an educational website though, which did not include much risk and uncertainty.

Nevertheless, in an extensive literature review in eGovernment adoption conducted by Rana et al. (2013), none of the independent variables of the model (i.e. 'compatibility', 'relative advantage', 'complexity', and 'image') was able to be classified as best predictors of INT. Also, other variables such as 'trialability', and 'observability' were not even used in the studies investigated.

For the reasons mentioned above, I was firmly convinced that the model was not very appropriate to use in my current research.

2.6.6 The Unified Theory of Acceptance and Use of Technology (UTAUT) Model

The researchers in technology acceptance experimented with the base models mentioned above, and as a result, new models were established and presented in the literature. Hence researchers up to 2003, had to face a choice among a plethora of models. These are summarised in Table V.2.

Venkatesh et al. (2003), introduced a new model, the UTAUT, to address this issue. They developed their model by integrating eight other significant models in technology acceptance[9]. The aggregated model combined different perspectives in the field of ICT acceptance and use. Its developers posited that there are three core variables, 'performance expectancy' (PE), 'effort expectancy' (EE), and 'social Influence' (SI), which relate to INT to adopt new technology. INT along with 'facilitating conditions' (FC), in turn, influence the actual 'use behaviour' (Figure 2.5).

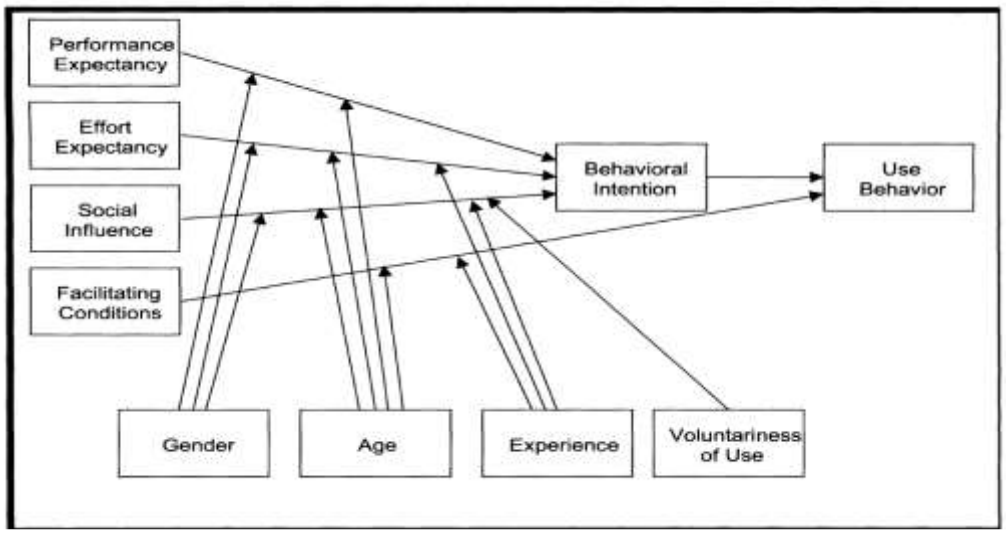

Figure 2.5: The UTAUT Model. Source: Venkatesh, Morris, Davis and Davis, (2003).

According to Venkatesh et al. (2003), PE concerns the belief of an individual whether the technology helps to boost performance. EE relates to the perceived degree of effort that the existing technical and organisational infrastructure is suited to use the

[9] The models are: TRA, TAM, TPB, Motivational Model (MM), combined TPB and TAM (C-TPB-TAM), Model of PC Utilisation (MPCU), DOI and Social Cognitive Theory (SCT).

technology. SI is related to the perception of an individual that others think she/he should use the technology. FC concerns whether the individual believes that the existing technical and organisational infrastructure is suited to use the technology. FC does not mediate INT, but directly influences actual 'use behaviour'.

Moderators in the model include the demographic characteristics gender, age, experience and voluntariness of use. As can be seen by the arrows in the model (Figure 2.5), gender and age moderate the relationships between PE, EE, SI, and INT. Moreover, age and experience moderate the relationship between FC and 'use behaviour'. Experience moderates the relationship between EE, SI, and INT, and FC 'use behaviour', while voluntariness of use moderates the relationship between SI and INT.

The UTAUT improved the explained variance of technology acceptance behaviour to 70% over the previous models, which explained only about 40% (Venkatesh et al., 2003). Hence, the UTAUT being unified in nature is considered to be an enhanced model with robust characteristics and parsimonious set of factors that could better explain the individual's INT and 'usage' (Lean et al., 2009). Venkatesh et al. (2003), extensively tested and cross-validated their model using different technologies in different organisations, and in mandatory and voluntary settings (Sundaravej, 2010; Rana et al., 2011). The model has received significant acceptance in the scientific literature despite that it was initially developed in an organisational use setting.

AlAwadhi and Morris (2008), studied G2C eGovernment services adoption in Kuwait, based on an amended version of the UTAUT model. Their findings revealed that PE, EE, FC and 'peer influence' were significant determinants of eGovernment services adoption. The authors suggested investigating other factors such culture and 'trust' as a basis for future research. A year later, AlAwadhi and Morris (2009), presented another amended version of the UTAUT and identified other factors that affect users' adoption of eGovernment services. These factors besides PE, EE, were reforming bureaucracy, cultural and social influences, technology issues and lack of awareness.

Kourouthanassis et al. (2010), examined a mobile Internet application, in Greece by integrating UTAUT, TPB, and DOI models. They found significant relationships between PE, SI, and INT, but not between EE-INT.

Al-Sobhi (2011), using an extended UTAUT model studied the roles of intermediaries run by entrepreneurs, in Saudi Arabia. His study included the 'trust in the internet' and 'trust in the intermediaries' in addition to the UTAUT constructs. He found significant relationships between the factors PE, EE, and 'trust in the intermediary'. Furthermore, the results showed a positive relationship between the functions of these e-offices and eGovernment adoption. Also, a significant relationship between FC, incorporating the roles of intermediaries, and 'usage behaviour' was present, proving that intermediaries can influence adoption of eGovernment services.

My study (Voutinioti, 2013b) was influenced by Al-Sobhi's research (2011), and following the previews one (Voutinioti, 2012), examined the viability of the UTAUT model in the Greek local government context. The study was conducted in the Heraklion City again to examine Heraklion city residents' intention as well as the performance of the model. In the base model, the trust factors in addition to 'trust in the CSCs' were incorporated, as I intended to focus on the importance of CSCs, in the Greek context. The model revealed that all the major constructs (PE, EE, TOC, TOG, TOI, and FC) significantly affected INT to adopt eGovernment services. The model explained 65.1% of 'behavioural intention' and emphasised besides the importance of the 'trust' factors, the CSCs, as a trusted gateway towards e-services. Also, the UTAUT model was proved to be a more parsimonious model in comparison to the DTPB, while it increased in performance (explained variance). Hence it seemed an appropriate model for my research. Furthermore, UTAUT2, its update, designed to study technology acceptance in a consumer use context, seemed to be even better.

2.6.7 The UTAUT2 Model

In 2012, Venkatesh et al. developed the UTAUT2 model, which examines the consumer acceptance of the technology. More specifically it was developed and empirically tested to understand the concepts that determine the intention and actual use behaviour of watching mobile videos and playing online games, in Hong Kong. By changing the context (from organisational to consumer) new constructs and relationships got introduced in the model, resulting in the UTAUT2 model. Figure 2.6 depicts the 'use behaviour' for adopting e-services construct and the accompanied relationships between the concepts.

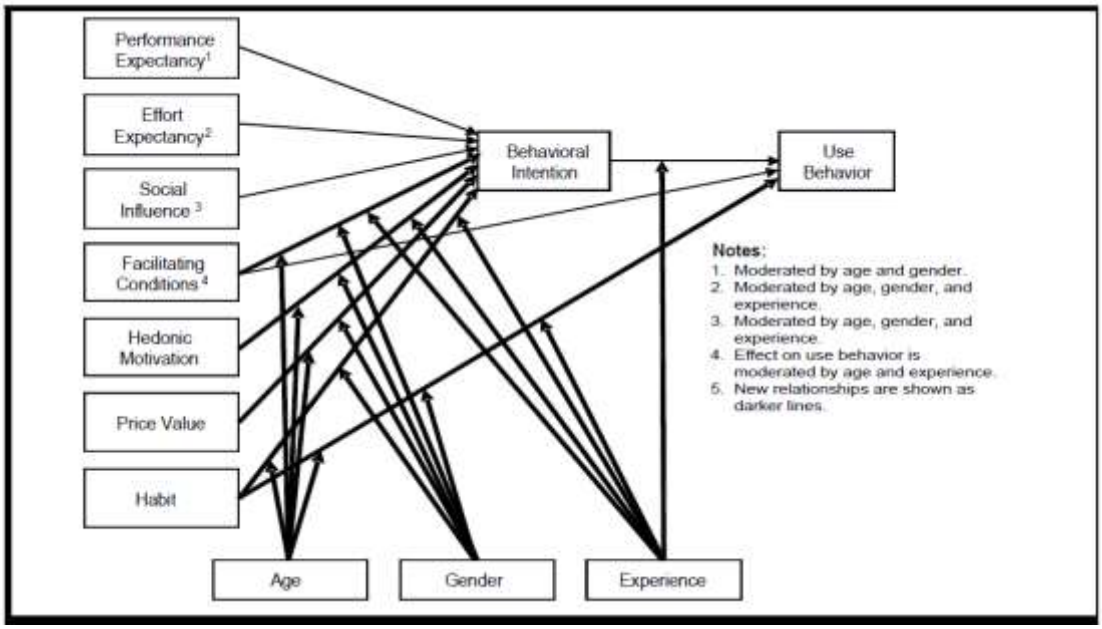

Figure 2.6: The UTAUT2 Model. Source: Venkatesh, Thong and Xu, (2012).

The newly integrated concepts to UTAUT2 model, are 'hedonic motivation' (HM), 'price value' (PV)[10] and 'habit' of consumers. The concept of 'habit' is emphasised in the following section. Individual differences (age, gender, and experience) were found to moderate the relationships between INT and technology 'use' of consumers. The fact that consumers can freely decide whether to adopt a new technology had the consequence that the moderating factor voluntariness of use was dropped. All other concepts and relations, present in the original UTAUT remained in UTAUT2, with the slight difference that FC revealed a direct effect on both INT and actual 'use behaviour'.

Susanto and Goodwin (2013), argued that the results from many studies point out that the seven variables in UTAUT2 captured about 42 different variables used in all previous adoption theories. These variables influence directly or indirectly consumer 'intention' and 'use' in various contexts, e.g. eGovernment. As the above argumentations make clear, these concepts are appropriate to consider in approaching the research questions of my study.

[10] Venkatesh et al. (2012, p.161) define 'hedonic motivation' as '*the fun or pleasure derived from using a technology'*, and 'price value' as '*consumers' cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them*'.

2.7 Habit

Research on technology acceptance has considered two similar and related constructs, 'experience' and 'habit'. 'Experience' refers to an opportunity to use a target technology and is operationalised '*as the passage of time from the initial use of technology by an individual*' (Venkatesh et al., 2012, p.161). 'Habit' is defined as '*the extent to which people tend to perform behaviours automatically because of learning*' (ibid). Other researchers equate 'habit' with automaticity (Kim et al., 2005). Although conceptualised similarly, the experience is a prerequisite but not a sufficient condition for the formation of 'habit' and the passage of chronological time (i.e. experience and practice) can result in the creation of differing levels of 'habit' depending on the extent of interaction and familiarity developed with a target technology. Researchers argue that prior use may become a habit once it has been repeatedly and satisfactorily executed (Verplanken, 2006). Ajzen and Fishbein (2005), claim that feedback from previous experiences would influence various beliefs and, consequently, future behavioural attitude and intention. Therefore 'habit' is a perceptual construct that reflects the results of prior experiences.

Studies argue that 'habit' is a strong predictor of technology adoption (Kim and Malhotra, 2005; Ally and Gardiner, 2012; Lewis et al., 2013). Venkatesh et al. (2012), found 'habit' to be a key driver of both INT and actual 'use'. Furthermore, they found it to be a more important driver of INT than PE when interaction terms were excluded.

Having studied the literature, I concluded that it is important to consider 'habit' in my study, for the following reasons: The first is that before the emergence of e-services, or even after their lunches, citizens had to handle bureaucratic procedures with government by personally going to the local agencies or CSCs. Now, by intending to adopt eGovernment services, the 'new behaviour' competes with the 'incumbent behaviour' to personally go to local agencies. Therefore the inhibiting effect of 'habit' should be taken into account when eGovernment e-services are at stake. A second aspect is that the described habitual patterns can explain citizens' resistance to use e-services.

In my current research, the concept of 'habit' seems irrelevant because e-services are very little in use that is, in an initial acceptance context, which is a prerequisite for the formation of 'habit'. As the formation of 'habit' can only arise when citizens use e-

services, it is impossible for initial users to have formed a 'use habit'. Hence it is impossible to measure 'habit' in the sense Venkatesh et al. (2012) intended. As citizens are used to going to CSCs to get serviced and have already adopted on a much wider scale, 'habit of using CSCs' can be examined. As the scope of this research is on actual citizens' perceptions, I modified the construct 'habit' described by Venkatesh et al. (2012), to 'habit of citizens going to CSCs', and I examined how it affected INT of citizens to use e-services.

For my proposed model, the other factors operationalised in the UTAUT2 ('hedonic motivation'- HM and 'price value'- PV), were excluded as not relevant. In IS research, and specifically in the consumer context, HM refers to the fun or pleasure derived from using technology, and it has been shown to play an important role in determining technology acceptance and use (Brown and Venkatesh 2005; van der Heijden 2004). It is conceptualised as the perceived enjoyment of using a particular technology and these hedonic features that might include music, games, and entertainment do not apply in the government websites. The focus of the government websites is currently covering practical aspects of the web services. Hence HM is irrelevant in the context of my study. PV refers to consumers' cognitive tradeoff between the perceived benefits of the applications and the monetary cost of using them (Dodds et al. 1991). In a local government setting, citizens are not liable for the cost of using the e-services. Thus, PV is assumed to be irrelevant too.

Therefore, I have adapted the UTAUT2 model, modified and extended (improved) it to examine Greek citizens deciding upon whether to adopt e-services. The extension employed by integrating 'habit of going to CSCs' and the 'trust' factors to form a unique model that assesses citizen adoption of eGovernment services.

2.8 Trust

The concept of trust has been discussed in many areas, i.e. philosophy, psychology, sociology, economics, and organisational theory (Colesca, 2009). Trust is a social connection by individuals to surmount the complexity and uncertainty in interacting with another party (Dashti et al., 2010). Trust has been defined differently in numerous research studies because it is a highly complex, multi-dimensional and context-specific phenomenon (Papadopoulou et al., 2010; Colesca, 2009). Nevertheless, a well-referenced definition of trust, rooted in social learning theory, is the one of Rotter's.

Rotter (1967, p. 652) defined trust as '*an expectancy that the promise of an individual or group can be relied upon.*' This definition suggests that experiences of promised negative or positive reinforcements vary for different individuals and, as a result, people develop different expectancies that would occur when promised by other people. Rotter's research is referenced in numerous studies of trust (Gefen et al., 2002; Belanger and Carter, 2008; Mayer et al., 1995; McKnight et al., 2002; Zucker, 1986). A definition by Aljazzaf et al. (2010, p. 165) defined trust as '*the willingness of a party to be vulnerable to the action of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective to the ability to monitor or control that other party*.' According to Ridings et al. (2002), the definition of trust in an online environment is even more complicated because people do not meet in a face-to-face setting.

Based on the results of my previews studies (Voutinioti, 2013b; 2014a), I have concluded that trust is a critical factor in ICT acceptance in Greece. My findings are in line with prior research in eGovernment, which has highlighted the importance of trust on citizen adoption (Gefen et al., 2002; Warkentin et al., 2002; AlAwadhi and Morris, 2009; Carter and Bélanger, 2005; Bélanger and Carter, 2008; Horst et al., 2007). I have adopted the argument that trust is a complex and context-dependent construct. My study focuses on users' initial trust in an eGovernment service, and it refers to trust in an unfamiliar trustee. Initial trust is required in a relationship in which the citizen does not yet have credible or meaningful information about the e-service provider (McKnight et al., 2002). In initial relationships, people use whatever information they have, such as perceptions of the website or the government agency, to assess the trustworthiness of the trustee (McKnight et al., 2002). During initial encounters, trust is mostly based on assumptions made about the traits of the trustee (trust in the government), and institutional factors (trust in the Internet) (Grazioli and Jarvenpaa, 2000). Being in line with the above, McKnight et al. (2002), and Bélanger and Carter (2008), agree that 'trust' includes: (a) 'party-based trust' or 'trust in the government' that refers to trust in a certain trustee. In G2C setting refers to trust in the government institution providing the e-service; (b) 'institutional trust' or 'trust in the Internet', which is trust in the electronic channel through which these services are delivered.

'Trust in the government' (TOG) is defined as '*one's perceptions regarding the integrity and ability of the agency providing the service*' (Bélanger and Carter, 2008, p. 167). It is an adamant determinant of the technology adoption and is correlated with more intensive e-service usage (Bélanger and Carter, 2008; Carter and Weerakkody, 2008; Karavasilis et al., 2010; Voutinioti, 2013b; 2014a; Fakhoury and Baker, 2016). The level of individual trust depends on the actual performance of the government and the citizen's perception of this performance. Candid, non-fraudulent interaction with e-service provider will enhance citizen trust and acceptance of e-services. On the contrary, dishonesty from government officials and employees will decrease trust and engagement in these initiatives (Bélanger and Carter, 2008). Citizens' trust in government agencies also depends on the citizens' perceptions that these organisations have the will and possess the technical resources necessary to implement and secure the e-services, which are crucial for endorsing eGovernment initiatives (Bélanger and Carter, 2008).

'Trust in the internet' (TOI) refers to '*to an individual's perceptions of the institutional environment, including the structures and regulations that make an environment feel safe* (Bélanger and Carter, 2008, p. 167). The Internet – the medium of eGovernment – is still a source of uncertainty especially for some countries and the citizens' lack of trust in the Internet is a barrier to citizens' adoption of e-services (McKnight et al., 2002; Carter and Bélanger, 2005; Karavasilis et al., 2010; Fakhoury and Baker, 2016; Lee et al., 2011). People usually have concerns about security and privacy of their personal information, when it is shared over the Internet (Alanezi et al., 2010; Papadomichelaki and Mentzas, 2009; Papadopoulou et al., 2010). Then they will limit them to looking up for information only and not engaging in transactions (Webber et al., 2006). Therefore, the government agencies should secure the data and establish a safer environment for citizens' transactions; also, citizens should be aware of the secure gateways used (Carter and Weerakkody, 2008; Li and Suomi, 2009; Al-Sobhi et al., 2010).

In my studies, I have identified the 'trust' factors as critical determinants of eGovernment adoption in Greece. Delitheou and Maraki (2010), conducted a study regarding citizens' interaction with electronic services in the municipalities, in the Athens Metropolitan area. They reported that people's interactions with municipal

websites are mostly restricted to sourcing information, and it is due to citizens' concern for the safety of their personal data.

Karavasilis et al. (2010), analysed the impact of trust and risk perceptions on the intention of teachers in Greece to use an educational eGovernment website. Their findings showed that TOG, TOI, perceived risk are key constructs influencing INT to use eGovernment websites. They suggest that governments must acknowledge and enhance citizens' views concerning trust and risk in eGovernance, by increasing awareness and training users on ICT.

The different impediments caused by different technologies and other social aspects pose the need for a third party (intermediary) to reduce the gap and to facilitate the eGovernment take up (Janssen and Kilevink, 2009; AlSobhi, 2010; UNDESA, 2010). Third parties contribute in materialising the multichannel delivery and in the inclusion of more people to the e-services provided (AlSobhi et al., 2009). Hence they contribute to e-services dissemination and have the potential to make eGovernment adoption more successful. These third parties and their roles in eGovernment are discussed in section 2.10.

2.9 Literature Review on eGovernment Adoption Using the UTAUT2 Model

Researchers have used UTAUT2 model's constructs and investigated their influence on INT and 'use behaviour' on different contexts, i.e. smart mobile (Ally and Gardiner, 2012), broadband Internet (LaRose et al., 2012), mobile payments (Slade et al., 2015), mobile social networks (Nikou and Bouwman, 2013), and e-prescribing technology (Cohen et al., 2013). Table V.3 shows the applicability of the UTAUT2 model in various contexts and the significance or insignificance of its constructs. Next, the most important studies in eGovernment adoption using this model, are presented.

Krishnaraju et al. (2013), examined the influence of web personalisation on citizen eGovernment acceptance. They found significant relationships between INT and SI, PV and 'habit' but insignificant between INT and the factors PE, EE, FC and HM. Similar results were reported by Vinodh and Mathew (2013), who examined the UTAUT2 model in a similar setting. They found significant relationships between INT and PE, SI, PV and 'habit' but insignificant between INT and EE, FC and HM.

Fakhoury and Baker **(**2016), using UTAUT2 model, investigated the acceptance of eGovernment services utilisation and adoption in Lebanon. They identified PE as the strongest predictor of INT, followed by 'habit', FC and EE, 'trust in the internet' and 'trust in the government'.

2.10 The Role of Third Parties (Intermediaries) in e-Services

In my professional practice, I paid much attention to the CSCs, and I studied the literature on intermediaries, their presence in the European countries' eGovernment and Greece.

The concept of intermediaries has been initially used in e-commerce. They are positioned in the middle of the transactions between the service providers and their customers and enhance their relationships (Pavlou and Gefen, 2004). They may be Internet applications, e.g. PayPal, Amazon, and eBay, or physical organisations, e.g. estate agents, travel agents, and the Post Office (Janssen and Kilevink, 2009; Bailey and Bakos, 1997). Because of the different conditions and changes (environmental, social), the relationships between parties change over time. Chircu and Kauffman (1999), reported many strategies that appear in these relationships that change from intermediation to disintermediation and re-intermediation[11]. Specifically, in the new electronic environment, the intermediaries by establishing a new position in e-transactions resulted in increasing their roles and added value for the service provider and service requester in many aspects. Roman and Colle (2002), argued that intermediaries have to change (re-intermediation) because of the environmental changes, must go beyond their initiatives and emphasise the need for community assessments.

According to Janssen and Kilevink (2009), intermediaries that operate in an electronic environment act as mediators who transfer and pass services on to others. Besides facilitating communication between parties, they work as a partner for helping a service requester access services provided electronically (Janssen and Kilevink, 2009; Al-Sobhi et al., 2010). In other cases, they result in increasing their roles when factors, such as trust issues arise (Al-Sobhi, 2011; Al-Sobhi et al., 2010; Datta and Chatterjee,

[11] According to Chircu and Kauffman (1999), disintermediation refers to the removal of the physical intermediary, while re-intermediation refers to the emergence of the new roles of intermediaries, which are facilitated with information technology in the electronic service environment.

2008). They eliminate the uncertainty and risk of transactions and enhance trust, by making sure that all transactions between parties have been completed, and by keeping both parties up to date with the transactions (Al-Sobhi et al., 2010). Other times they may provide legal and security services between providers and requesters, enabling the authentication needed in these transactions. Furthermore, Datta and Chatterjee (2008), posit that nowadays in the electronic markets, intermediaries are needed due to the inefficiencies of the electronic mediums in providing services, and also that intermediaries enhance consumers' trust in the provider.

In eGovernment, when the delivery of e-services to different stakeholders are not met due to barriers, e.g. lack of infrastructure, digital divide, low trust, the third party entities (intermediaries) may play a fundamental role in helping stakeholders to engage with government services. They increase accessibility of e-services, by offering more points of availability for the public and thus enhancing the dissemination of information and also facilitate the exchanges within e-services (Howells, 2008; Janssen and Kilevink, 2009). They act as mediators for citizens who require access to government e-services because of the digital divide; support different government agencies in the delivery of e-services, as their tasks involve management of electronic service delivery and operations on related systems. Other roles suggested by Al-Sobhi et al. (2010), include the ease of transferring information between parties where there is no standardisation of e-services, and they help in verifying the identity of citizens, where lack of e-identification exists. In other cases, they support the promotion of e-services as well as the training and education needs of citizens (Sein, 2009). In most cases, they provide citizens with a useful access gateway for eGovernment services, primarily if they are facilitated by information technology (Furuholt and Kristiansen, 2007; European Commission, 2016).

These third party entities under different names (Internet or Cyber cafés, or Telecentres, or Citizen Service Centres) have been widely used for years all over the world (Furuholt and Kristiansen, 2007). They can be government organisations or NGOs, concerned citizens (activists), religious voluntary bodies, as well as aid organisations (Bailey, 2009; Wahid et al., 2011). They operate in a physical space, their premises are equipped with ICT, and their officers have skills and knowledge on critical government factors that are necessary for successful government-to-citizen (G2C) relationships. In all

cases, reported CSCs are local and close to citizens to address their particular needs. Citizens are more likely to trust a local intermediary than the government, especially in developing countries, where there is general distrust in government (Sein et al., 2008).

2.11 Government Third Parties (Citizen Service Centres) in Europe

In my research (Voutinioti, 2015), I have examined the CSCs in the European countries. There government organisations under different names materialise the multichannel service delivery and the one-stop shop services for the public. The results of my study are summarised below.

In the Netherlands, the one-stop shops started operating in the early 90s, offer integrated services using ICT (UNDESA, 2012). Similarly, in Germany 'Citizen Centres' operating at the local government level by public officers using ICT, integrate government services in one office offering information, guidance and help with them. In Spain, since the mid-90s, the '060' one-stop shop offices have been run by local and autonomous Community governments. They support citizens in obtaining information and guidance on government services and conduct bureaucratic transactions at a single window, e.g. obtaining certifications, licenses, paying bills, applying for entitlements, and registrations (UNDESA, 2012).

In Ireland, the establishment of 'Citizens' Information Centres' in the mid-90s, offer local authority council and government information and services. These operations besides the physical locations might be processed by telephone, kiosk, and websites too (UNDESA, 2012). It has to be mentioned here that these offices depend their operations on volunteers and on students doing their internships.

In the Scandinavian countries, which score high in all eGovernment indices (European Commission, Digital Agenda Scoreboard, 2015), there is little need for physical CSCs. Government, back-offices are integrated, government portals are well designed and functional, and e-identification is widely used; adoption of public e-services is high as well (UNDESA, 2010). Nevertheless, they all operate CSCs, except Norway. Specifically, in Denmark, a country that operates CSCs at the municipal level, the number of these centres increased as a result of an amalgamation process in local government (Bhatti et al., 2010). Then new CSCs were established in the former town

halls, in an attempt to create equality among the old municipalities and the new ones and the concern for the citizens' needs in the rural areas.

In Portugal, there were very few 'Citizens' Shops' till 2013, when following guidelines of the signed 'Memorandum of Understanding', their number increased, proving their importance in the administrative modernisation strategy. Their network materialises the one-stop service for many government administrative tasks, e.g. taxation, health services, residency, car registration, driving licenses, and other private organisations services. Their tasks involve the simplification of procedures as well. Up to now, there are not enough offices operating nationwide, and there is also a lack of qualified staff to man them, resulting in long waiting lines (https://joinup.ec.europa.eu/node/134907#100).

In Italy, the 'Friendly Nets' ('Reti Amiche') initiative, by utilising the existing in the private sector networks and channels (post offices, tobacconists, shopping centres, companies, and ATMs), provide government services at user-friendly and easily found access points (UNDESA, 2012). They mostly issue documents such as passports, birth, marriage and death certificates and residence permits; and also payment transactions, such as social contributions, taxes, and fines (ibid.). More than 70% of these front desks are a lottery, betting offices and tobacconists. This initiative, a Public-Private Partnership (PPP) between entrepreneurs and government organisations, significantly increased the contact points for the delivery of public services and brought administration closer to the citizens.

In a few countries in Europe, PPPs have been established in the delivery of public services too, e.g. the UK. The Netherlands reconsidered its one-stop public shops and allowed private authorised partners to step in, thus achieving greater access to public services.

Having studied the CSCs in Greece, I have found that a PPP has already been set up between the Ministry of Interior and the Greek Post Office, in a few rural areas. In villages, where a Post Office already existed, and there is the difficulty of establishing a CSC due to staff or premises limitation, the CSCs operations are being delivered in Post Offices. I addition, when the taxation services became mandatory, another PPP has been established between the Ministry of Finance and the accountants. The

authorised third parties (e.g. certified accountants) offer taxation and relevant services to the people, at a cost. These PPPs have helped in increasing the access of eGovernment services in Greece.

2.12 Culture

While I was going through the literature, the national cultural issues and how they affect IT/IS adoption caught my attention. The literature points to both national and organisational culture as being a contributing factor in the IT/IS transfer and adoption (Al-Gahtani et al., 2007; Twati, 2006; Zain et al., 2005). These studies stressed the importance of the culture in consumers' and citizens' behaviour, when transferring ICT applications across cultures and how it is linked to the success of IT/IS use and adoption.

For Hofstede (2011, p. 3), national culture or simply culture is defined as the *'Collective programming of the mind which distinguishes the member of one group or category of people from another'*. He posits that culture is not inherited, but learned and individuals learn patterns of thinking, feeling, and acting, which are retained throughout their lives. Kroeber and Parsons (1985), posit that culture creates a set of common rules that shape the human behaviour, which may be applied to societies or groups of people within the same country.

There are some existing models, aiming to classify cultures according to particular variables that organise cultural data. These cultural models, compare the similarities and differences of cultures or sub-cultures (Hoft, 1996), by using cultural variables.

2.12.1 Hofstede's Cultural Model

The most popular cultural model has been that of Geert Hofstede (1997; 2011). In his model, he describes culture along six dimensions, which are (Hofstede, 2011, pp. 9-13): Power Distance (PD): *'the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally'.* Uncertainty Avoidance (UA): *'the extent to which the members of a group*

or society feel threatened by unknown situations'. The other variables are Individualism, Masculinity, Long-Term, Indulgence[12].

Hofstede's national culture framework has been criticised due to some methodological weaknesses (Baskerville, 2003). Nevertheless, Leidner and Kayworth (2006), after an extensive literature review of national culture studies, found that over 60% utilised one or more of Hofstede's dimensions. Most of the literature concerned with national culture in the field of IS has used Hofstede's national cultural variables (Myers and Tan, 2002). In fact, Hofstede's work has a significant impact even today. Based on the reasons mentioned above, I decided to work with Hofstede cultural variables.

2.12.2 Culture and ICT Adoption

While research indicates significant relationships between cultural variables and the adoption decisions of new technologies across countries, more detailed studies ascertained that by all factors, PD and UA have the most influential role in the adoption of new technologies and eGovernment adoption as well (Erumban and Jong, 2006; Twati, 2006; Al-Hujran et al., 2011). Countries with high scores in UA and low scores in PD have a lower rate of ICT adoption than countries with low UA and high PD scores (Vreede et al., 1998; Warkentin et al., 2002). Nevertheless, for the PD variable, the studies showed mixed results. Other researchers found that successful adoption of IT/IS application is more likely to happen in lower PD environments (Erumban and Jong, 2006; Mumford and Licuanan, 2004; Al-Hujran et al., 2011).

All the researchers who studied the relationship between UA and IT/IS adoption agreed that UA is a significant impediment. The reason is that ICT is risky and those who are less comfortable with uncertainty will be less likely to experience new technologies and adopt them (Cabinakova et al., 2013; Leidner and Kayworth, 2006; McCoy et al., 2007; Al-Hujran et al., 2011).

[12] Individualism vs. Collectivism (IDV): *'the extent to which individuals are integrated into groups or not'*. Masculinity vs. Feminity (MAS): *'the extent to which gender roles are assigned in a culture, or not'*; Long-Term vs. Short Term Orientation (LTO): *'a society's preference to be more forward looking or future oriented'*. Indulgence vs. Restraint: a newly inserted variable is related to the '*gratification versus control of basic human desires related to enjoying life'* (Hofstede, 2011, pp. 9- 13).

2.12.3 Cultural Variables and the Greek Culture

Each country in Hofstede's national cultural model is characterised by a score on each of the above mentioned six variables (dimensions). Hofstede (1997; 2008; 2011) specifically considered the Greek culture. According to his cultural dimensions, Greeks have a perfect score of 100 in the UA dimension, explaining why they tend to perceive unknown situations as threatening. Greeks do not keenly accept changes, and they are classified as less risk-taking. Table V.4 provides the most recent Hofstede's ranking for the Greeks with their explanations[13].

My interest in UA was intrigued even more after I studied the consequences of high UA and when I noticed the highest score in UA for Greeks. Then, I decided to explore UA even further and to include it in my study. Taking into consideration Hofstede's (2011) almost average ranking in PD for Greeks, I am personally convinced that its inclusion in my study will not produce safe results. Thus I decided to ignore it for now.

Although the national culture about IT/IS adoption is a well-researched topic worldwide, to date, and to the best of our knowledge, prior research on eGovernment service adoption in Greece, has ignored the influence of national culture has on it. Thus, it is vital to explore the role of the UA variable has on eGovernment acceptance.

2.13 Summary and Conclusions

In Chapter one, the problem of the low eGovernment services adoption in Greece was made evident. This Chapter gave a detailed description and a critical overview of the theoretical background, and provided the aim, the objectives and the research questions of this Research Project. It discussed the background of eGovernment, its definition, its significant advantages and the challenges that might be faced during its implementation and adoption. It presented and discussed the literature on technology acceptance theories and models, as a means to explain individuals' online behaviour about

[13] As the Table V.4 reveals, Greeks have a medium-high ranking in the PD dimension, which means that people in this region tend to expect and accept, that leaders will separate themselves from the group. IDV is low for the Greeks, indicating that people in this region place importance on groups and families. The ranking for MAS is medium to high, pointing out that there is a slight difference between males and females in the Greek society. The other two variables, LTO, and Indulgence have median scores for Greeks, thus conclusions cannot be drawn.

eGovernment service usage. A general overview of the previous studies revealed that a variety of models were employed to examine eGovernment adoption behaviour in various locations and contexts worldwide. It paid particular emphasis in the UTAUT and the UTAUT2 models. They are considered better models than any of their predecessor models, since they can explain more of the variance in usage intentions. It also set out to apply the UTAUT2 to enable a better understanding of technology acceptance behaviour in the online environment. Furthermore, the literature review and the exploratory studies have revealed trust and its two significant antecedents, 'trust in the government' and 'trust in the internet' as important determinants of eGovernment adoption in Greece. Hence these factors in online adoption were investigated in more depth. The supposition is that it is partially due to the risk and uncertainty in the online environment, and to distrust in the government that Greeks exhibit.

Although many researchers have investigated eGovernment adoption, there is a shortage of research exploring CSCs' roles in eGovernment adoption and specifically in Greece. Chapter two highlighted the central significance of the third parties in the eGovernment context in different countries, and in Greece. It also set out the link of CSCs to eGovernment diffusion and adoption in Greece. However, it would be beneficial to include citizens' perspective about CSCs' roles in eGovernment adoption, i.e., whether 'habit of going to CSCs', and also 'trust in the CSCs' influence Greek citizens' intention towards using eGovernment services. This is the motivational reason that led my study to include these two factors as important determinants of eGovernment usage and adoption at citizens' level, in Greece.

Then based on Hofstede's cultural model, the cultural influence on the IS discipline and the impact on acceptance and use of technology was briefly reviewed. From this review, it was evident that by all other variables, the UA variable mostly impedes technology adoption and specifically eGovernment adoption. When taken into account the perfect score of Geeks exhibit for UA, another impediment of eGovernment take-up in Greece was been revealed.

While the literature review has helped to draw the main concepts that constitute eGovernment adoption in Greece, the next Chapter discusses the theoretical framework to study these concepts. It is devoted to different research approaches, research methods and design and addresses in more depth the one adopted by my research to accomplish

its aim and objectives. They are also used as a basis for the empirical study of the issue under investigation in Chapters four and five. The main concepts that constitute the hypothetical model, the relationships and interrelationships between intention to use eGovernment services and the other factors are discussed in Chapter four, where the hypotheses are raised as well. They are empirically assessed in Chapter five using data from two cities' citizens.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This Chapter provides the approach used in my research to investigate the main concepts that constitute citizens adoption of eGovernment. It discusses paradigms, their ontological, epistemological and methodological assumptions, and the different research approaches. It concentrates on the research philosophy and approaches employed in IS research which, form the basis of my study. It proceeds by discussing the research framework, which includes the research phases, the data gathering instruments and analysis techniques used in each phase. It also discusses sampling and generalisation, and how these issues are dealt with. The Chapter ends with ethical considerations of the research and explores my role as a researcher.

3.2 Research Framework and Approaches

The nature of the problem to be investigated guided the choice for the research approach. The main aim of my research is to examine the causal relationships among factors and eGovernment behavioural intention. To address this requires a specific methodological framework.

As mentioned in Chapter two, there is a shortage in the literature addressing eGovernment adoption for certain national cultures, i.e. the Greek one. There is also little research on how Greek citizens perceive eGovernment behaviour. Therefore, there are apparent difficulties in generating the research hypotheses based only on the available literature. An in-depth understanding of the phenomenon was needed at the beginning to generate mature testable hypotheses which considered the Greek context and culture. Then it was possible to formulate the problem regarding the hypotheses. Hence, to get a better understanding of Greek eGovernment acceptance, I explored further the Greek context by contextualising the research design and model.

At the early stages of this DProf programme (2011), the previous work done by the creators of the DTPB model influenced my research design. In parallel, in meetings with actual eGovernment users during the undertaken exploratory studies, I sensed that users felt highly uncertain and risky using e-services due to the uncertain electronic environment, and the lack of trust in government agencies. Hence it was inevitable to incorporate the trust factors into the analysis. My DTPB model performed well, proved

the importance of the trust factors, but it included many factors and the questionnaire measuring users' intention was very long and exhaustive for the users to complete. Hence, a more parsimonious model was needed.

In 2013, I decided to experiment with the more focused UTAUT model (Venkatesh et al., 2003). Despite originally designed to measure ICT usage in an organisational context, it was also used to assess eGovernment acceptance at the citizens' level. As I researched further, the lack of trust and its consequences and the role of CSCs in eGovernment, I realised the importance of the critical aspect of people's trust in CSCs, and I included this construct in my model. Then I tested my new model (based on UTAUT) with real data. Despite the satisfactory results from the study, I sensed thought that I had to research further into the CSCs in Greece.

In 2014 (Voutinioti, 2014b), I conducted a qualitative study on the roles of CSCs, and I delved deeper into the roles of CSCs and into people's habit to use CSCs, as it comprises a reality in the Greek eGovernment society. In the meantime, I was aware of the establishment of UTAUT2 suited for customers using mobile applications. It included 'habit' as a major construct that influences both behavioural intention and use. But there was no established habit of using e-services in Greece. Thus I switched it to `habit of citizens going to CSCs'. This is the reason, 'habit of CSCs' was introduced to this research, in addition to the critical components of trust. Searching the literature further into national culture issues, and specifically, the UA and its adverse effects on ICT adoption, as well as the highly UA Greek culture caught my attention. Hence, I decided to include it in my research as well. Those were the main influences that shaped my research approaches.

3.3 Philosophical Paradigms

The primary paradigms[14] in social science research are positivism, post-positivism, critical theory and interpretivism or constructivism (Guba and Lincoln, 1994). For them, paradigms structure and organise social science and include three major beliefs: Ontology, Epistemology, and Methodology, defined as follow (Guba and Lincoln, 1994): Ontology studies the nature of reality and answers the core questions about the

[14] Paradigm is '*a basic set of beliefs that guide action*'. *'Paradigms are theories about how the world works, what is the character of humankind and what it is feasible to know and not know.'* (Guba, 1990, p. 17).

reality. Epistemology focuses on how people know the world and what the relationship between the enquirer and the known is. Methodology deals with the way people acquire knowledge about the world and points to the appropriate research techniques for gathering valid empirical evidence.

Positivists and interpretivists have opposing beliefs about how researchers may obtain valid knowledge (Denzin, 2000). From the ontological position, positivists, suggest that the researcher and reality are separate. In addition, positivists argue that objective reality exists and can be measured numerically independently of the researcher's and instrument's biases (Neuman, 2006). In contrast, interpretivists posit that knowledge is intentionally built through lived experiences or social construction of the world and also assume that the researcher and reality cannot be separated. Methodologically, positivists tend to use as research methods laboratory experiments, field experiments, surveys, simulation, and formal theorem proof. They usually obtain quantities of data and apply statistics and content analysis. Interpretivists usually use action research, case studies, grounded theory, ethnographic, phenomenographic, and ethnomethodological as research methods (Hart, 2002).

A significant advantage of the positivist research is that the findings can be replicated in different studies or different contexts (Winfield, 1991). Hence it is considered unprejudiced. However, there is an argument that it is inadequate and misleading for conducting social science research, because of its assumption that an objective external reality exists (Hirschheim, 1992). On the other hand, the interpretivist approach is capable of generating rich insights into social phenomena. The criticism here is that discoverings in the interpretivist approach cannot be generalised to larger populations (Winfield, 1991).

Despite the differences in the two approaches, many advocates favour more practical approaches that do not pay that much attention to these differences but recognise the existence of common beliefs in both approaches. Weber (2004), states that the differences between positivism versus interpretivism lie in the choice of methods. He concludes that the researcher's goal is to improve knowledge recognising that there exist different research methods and data analysis techniques, which have their strengths and weaknesses. Nevertheless, a complementary approach (post-positivism) that makes the most of them has emerged (Hart, 2002; Weber, 2004).

3.4 Post-Positivism and Information Systems Research

For Guba and Lincoln (1994), post-positivism that stands between positivism and interpretivism overcomes some drawbacks of positivism and posits that reality cannot be perfectly understood (Lincoln and Guba, 2000; Winfield, 1991). In this paradigm, the people see the world imperfectly as it is and it must be under critical examination for apprehending it (Lincoln and Guba, 2000); the researcher is biased, and all observations might be affected. According to Guba and Lincoln (1994), reproduced findings might be true, but they should always be examined for falsification. Hence, to achieve objectivity, there is a need for multiple approaches (Hirschheim, 1992). Furthermore, the post-positivist approach, i.e. the use of multiple methods, is suitable for the IS studies (Hirschheim, 1992). In this insight, post-positivism is continually used in the field of IS (Winfield, 1991).

Philosophy usually guides actual practice in the sense that it influences the selection of the most appropriate techniques for the research assumptions (Bryman, 1998). Hence, it is helpful to be informed of the 'philosophical' methodology, given by the paradigms, and the methodology, regarding the choice of the data gathering techniques, i.e. quantitative or qualitative (Bryman, 1998).

The next sections discuss the choice of the appropriate research approach for my research and how it guides the data gathering techniques used.

3.5 Methodological Research Design

3.5.1 The Selection of Post-Positivist Research Approach

IS research is a complex multidisciplinary field, and its study usually involves many disciplines and employs different methods (Galliers, 1992). Hence, there are more than one frameworks, appropriate for the study of IS. In this insight, Orlikowski and Baroudi (1991) posit that different methods and techniques might effectively be employed. Accordingly, an IS researcher should be aware of the different research approaches and techniques to choose the most appropriate ones in his research. Therefore, for a researcher studying IS, selecting the proper research approach is a very challenging decision. Nevertheless, awareness of the research paradigms, assumptions, methods, and techniques result in informed choices.

My project research approach is the post-positivist. There are epistemological and technical reasons for selecting this approach. The two most important are: (a) My research explores the different contexts of the phenomenon under investigation and establishes cause and effect relationships among the constructs, which are initially assumed to be false. This goal matches the post-positivistic approach. (b) My techniques employed were drawn from both the positivism and the interpretivism, which means that it falls under the post-positivist approach.

3.5.2. The Framework of the Research

The research assumptions and the objectives of my research guided its framework, which included two main phases: the exploratory, and the model testing. The research philosophy that guided it is influenced by Giddens (1984), levels of understanding. According to Giddens (1984), post-positivist paradigm informs social theorising and allows empirical investigation. He also argues for the existence of three levels of understanding for social phenomena (i.e. subjective, interpretivist, and positivist). Other researchers agree with Giddens's approach by acknowledging the need to start with an exploratory phase, to be followed by a confirmatory phase (Krathwohl, 1997). This is also appropriate for IS research. Subsequently, the framework of this research included the following methodological steps:

- ***The Exploratory Phase (Subjective and Interpretivist Understanding)***

Investigation process: First, a subjective understanding of the phenomenon based on the literature review of research within the scope of my study, and insights from my previous studies (Voutinioti, 2012; 2013b, 2014b), identified the research constructs.

Model designing process: The results of the investigation process formed the basis of the identification of the constructs, and constructs inter-relationships, research hypotheses, and thus the hypothetical research model was designed.

- ***The Model Testing Phase (Positivist Understanding)***

Testing process: The research hypotheses were tested formally by conducting an empirical assessment for confirming or disconfirming the hypothesised research model. The strength of the measurement model was examined through measures of validity and reliability. Finally, based on preliminary exploratory findings (i.e. employing

Exploratory Factor Analysis), the assessment of the measurement model was carried out.

Analysis process: The analysis of the data took place, then the validation of the results, and last the provision of conclusions. Structural Equation Modelling (SEM) was the main data analysis method used in this research project. Table 3.1 summarises the methodological processes employed in accordance with the research philosophy and the objectives of my research.

Table 3.1: Research Philosophy, Methodological Processes, Objectives

Methodological Processes	**Objective**
I. Exploratory Phase	
Investigation Process	
Review of literature covering more than one discipline	Get a subjective understanding of the phenomenon under investigation, and thus an interpretive understanding of the research scope. Give insights on relevant previous research within the hypotheses and constructs.
Exploratory Studies	
Model Designing Process	
Identify research constructs and hypotheses	Identify research constructs, hypotheses, and constructs inter-relationships, and thus building the hypothetical research model.
Design of the research model	
II. Model Testing Phase	
Testing Process	
Instrument and sample design	Design of data gathering instrument and sample. Collect quantitative data and empirically test the research model. Get a positivist understanding of the phenomenon.
Instrument piloting	
Analysis Process	
Descriptive analysis	Analyse the data, assess validity and reliability of findings, empirically test the model, validate results, and provide conclusion and recommendations. Demonstrate research contributions and limitations.
SEM analysis of the measurement and structural models	
Final model assessment and conclusions	

The following sections discuss the implications of the selection of the post-positivist research approach in relation to the quantitative and qualitative research methods.

3.5.3 The Choice of Quantitative or Qualitative Research Family

The two methods of inquiry are the quantitative and qualitative (Krathwohl, 1997). The quantitative research methods establish hypotheses and verify cause-effect relationships between constructs, which are assessed using empirical tests via statistics.

They typically use a deductive approach and concentrate on the significance of the results (Maykut and Morehouse, 1998). As opposed to qualitative research methods, which usually use an inductive approach. In them, the explanation comes out of the data through observations and analyses (Rubin and Rubin, 1995).

A main concern in quantitative methods thought is that they summarise complex information. They depend on measures, ignore the hard quantified information. Hence they are not best suited to provide insights of human behaviour (Rubin and Rubin, 1995). On the other hand, qualitative methods are suited to analyse human behaviour, as they provide contextual findings of the phenomena, rather than measuring or quantifying. A drawback of qualitative research though is that its findings are difficult to be generalised (Krathwohl, 1997); and also require skilful interpretation of data since they are usually built on someone's verbal skills (Maykut and Morehouse, 1998). The quantitative research methods tend to support the positivist epistemology, while the qualitative the interpretivist (Krathwohl, 1997). Nevertheless, positivists treat qualitative data as complementary to support statistical findings obtained from the research instruments (Coolican, 2009).

According to Rana et al. (2011), who studied published research on eGovernment adoption over the years 2005-2010, almost 90% (N=61) of them employed a quantitative method. It was appropriately used when there was a need to generalise and apply the sample data to the population to find the patterns and drifts. As the sample data for eGovernment adoption research is taken from a large population and the trend of validating the data using existing models has increased, the more research studies are reaping the benefits of quantitative methods.

My study investigates how citizens' attitude affects e-service behaviour. It started with an exploratory phase to gain an in-depth understanding of the phenomenon, identified the relevant constructs and raised the research hypotheses. At a point, it used qualitative research to complement the research process. This falls into the interpretivist approach. Since my final research problem called for the identification of factors that influence an outcome, and for testing theories or explanations, it used statistics to describe and measure the degree of association between the variables. Therefore, a quantitative approach was suited. Also, my personal training and experiences in statistics, and

statistical computer programs, plus the time limitations to collect qualitative data influenced toward this choice of the research approach.

3.5.4 The Choice of Survey

Since the post-positivist approach was selected in my research and it is associated with setting hypotheses and seeking to test them empirically, the survey strategy was adopted as appropriate to reach the research aims and objectives.

Surveys usually gather data from a sample that represents the study population (Hakim, 2000). They are widely used because of their many advantages. They provide transparency and accountability (Hakim, 2000). They can also be repeated and reused to enable comparison of different groups, places, or times and thus allowing theory testing objectively (Newsted et al., 1998). Because of surveys various advantages, the selection of them seemed appropriate in my study.

3.6 Data Collection Techniques Adopted - The Questionnaire

In the instrument design, a researcher has to specify the survey method, the way the data will be collected, i.e. personally administered surveys (telephone or face-to-face), mail surveys, or on-line surveys (Sekaran, 2003; Fink, 2006). Each method has its advantages and disadvantages, and the selection of the most appropriate method depends on the cost, the available time, the characteristics of the participants, and the expertise of the researcher (Sekaran, 2003). In my research, an on-line administered questionnaire was the approach employed, which collected quantifiable data relating to a number of variables. Then, by using statistics and following the processes described in Chapter four, examined the data to discover associations and possible patterns or trends and identified the research constructs, to measure behavioural intention to use e-services.

The questions of the questionnaire were of closed Likert-type scales, and they have been previously validated. This decision was made because such a scale can conveniently show the responses from very strongly positive, to very strongly negative, with the midpoint indicating neutral responses. Likert scales are treated as interval scales, and they are the most frequently used in IS research (Sekaran, 2003). The most commonly used scales are the five-point and the seven-point scales. While on a five-point scale it is easier for the participants to read out the list of scale descriptors, with a

seven-point scale this clarification is lengthier but more detailed (Malhotra and Peterson, 2006). Since the seven-point Likert scale was used in the UTAUT2, I utilised the same scale. The other demographic variables' anchors were of the five-point scale ranged from 'Rarely' or 'Never' to 'Everyday'.

Sekaran (2003) stressed the importance of choosing the questionnaire language that approximates the level of understanding of the respondents. Hence, my questionnaire was administered in Greek because Greeks are communicating in Greek. First, I created a questionnaire in English that was reviewed for content validity by a group of university staff (IS academics). Then the questionnaire items were translated into Greek and then back to English to ensure translation equivalence (Brislin, 1970). The English version of the questionnaire was translated into Greek by two independent professional translators. The Greek version of the questionnaire, which was translated by the first translator, translated back to English by the second translator. The same was repeated in the second translator's version. Then the two versions in both languages have been compared to each other by native speakers of English and fluent in the Greek language to resolve any differences. They came to an agreement on the final version of the questionnaire. The questionnaire statements were then translated back into English by another professional translator to confirm translation equivalence. This final translated version was used in the pilot research. The translation of the questionnaire statements was conducted during the months of spring 2015.

3.7 Study's Population and Sample

Since my research's purpose was to measure citizens' intention to use eGovernment at the municipal level in Greece, my population was the citizens who had Internet access[15] in municipalities that offered fully functional e-services. I identified criteria before selecting the municipalities. The criteria used for selecting the appropriate municipalities were based on my research's objectives, which called for the ability of the cases to provide information on the offered e-services in the higher stages of eGovernment maturity.

[15] According to Communications and Information Technology Commission (2015), in the second half of 2015, only 66% of the total 10.812.467 Greek population (almost 7,136,230) had Internet access. An exact number of the Internet users cannot be found.

First, I reviewed publications related to eGovernment in Greece, and afterwards, I conducted an in-depth website analysis of the largest municipalities (up to 50,000 inhabitants) to find different stages regarding eGovernment maturity. In general, the smaller and rural municipalities were in initial stages of eGovernment development, while the larger ones were in more advanced stages. Finally, the well-established were chosen as cases representing successful municipalities in eGovernment implementation. First, the city of Athens, the Heraklion city (South Greece) and Thessaloniki city in the North, were identified.

Afterwards, the municipalities' website traffic was examined. According to Citybranding blogspot (2015)[16], using data from www.alexa.com traffic statistics, all three webpages were the most broadly utilised among the other municipal webpages and also by the time of the survey administration (September 2015). It gave the cities of Thessaloniki, Athens, and Heraklion the highest website traffic records, while the others were far left behind. As the municipal webpages are underutilised in Greece, there was a need to assess those that were the most used.

Furthermore, Athens, Thessaloniki, and Heraklion were the three Greek cities that were deemed 'smart cities of Europe' (ITRE, 2014)[17], among 468 cities with a population of at least 100,000. All three were mentioned smart in at least three of the six axes. Only Athens and Heraklion thought were mentioned as smart in the 'Governance', and 'People', axes that were of my research's interest. Additionally, Athens was considered smart in the 'Living' and 'Environment', axes and Heraklion in the 'Smart Economy'. These achievements showed not only the results of the activities in these cities in eGovernment maturity but indicated their potential to become truly 'smart cities'. More information on 'Smart cities' and their characteristics-axes are provided in Table V.5.
The next criterion was the provision of transactional services. Researchers that reviewed different eGovernment stage models argued that the transaction stage is a critical one and posited the need for government organisations to reach that stage (Al-Sebie and Irani, 2005; Irani et al., 2006; Al-Sebie, 2014). This stage enables two-way communication, i.e. 'push/pull eGovernment' where government e-services are pushed by government organisations to citizens, and they can be pulled from citizens. As a

[16] These three municipality webpages had the highest traffic among the other municipal webpages in 2016 too (Citybranding blogspot, 2016).
[17] In the European Parliament document 'Mapping Smart Cities in the EU'.

result, citizens are able to conduct complete transactions online, enhances the interactivity among government organisations and citizens and helps in reducing both costs and time.

This criterion was met by the two municipalities of Athens and Heraklion, as Thessaloniki did not offer transactional services at the time of the survey. Hence my selection was narrowed down to these two cities. In fact, these two were the only ones in Greece that offered at least one transactional service, by the time of the survey administration.

The first one, the Athens city is the country's capital, located in the centre of Greece. It is a large city in population terms (around 650,000 inhabitants), located in the greater metropolitan area of Attica. Athens is, also, the country's commercial capital. Important sectors are trading, financial services, the food industry and tourism. Athens is the educational capital of Greece, as many of its most prestigious universities are located in the area.

The second one, the city of Heraklion, has a medium size population (173,450 inhabitants) and is located in the southern part of Greece, in the Crete Island (the largest island in Greece). The city of Heraklion is the biggest urban centre, the capital, and the economic centre of the Island. It is considered a 'university city', as a large and prestigious University with many departments is located there, as well as a Technological Educational Institute (TEI). In addition, both municipalities share some similarities:

- Both cities also score high in Research and Development (R&D). Besides the Universities with Computer Science departments located in these cities, famous R&D Centres operate there as well. Many experts and hi-tech companies offer advanced services and training on computers and the Internet to both citizens and public officials.
- The procedures for adopting and implementing eGovernment initiatives by the local authorities have been taken into consideration. They both have well-established ICT departments staffed with highly trained employees capable of implementing different eGovernment projects. Their websites were updated (Heraklion city) or redeveloped (Athens city) six months prior to the survey.

The city of Athens redesigned its webpage with its own resources, while Heraklion city outsourced to FORTH[18] located there. In both cases though, the involvement of their ICT departments was very extent.

Besides, the municipality of Heraklion has already received worldwide recognition. For three consecutive years (2012, 2013 and 2014) was announced ‘smart21 community' of the world, by Intelligent Communities Forum Organization[19] (https://www.intelligentcommunity.org/smart21). In recent years it strengthens the ICT and communications 'ecosystem', accelerating the continuous change towards a ‘smart city’.

Furthermore, these municipalities expressed their interest in participating in the research over telephone conversations, and during a scheduled on site visit with the administrators of the websites agreed to publicise the questionnaire on their websites.

In order to pose the issues on a national scale, these two cities were selected for this experiment based on their population, location, and eGovernment maturity. The presence of two cities does not invalidate the causal model because the analysis unit is at the individual level. Each person assessed the e-services of his/her municipality and exhibited an intention towards using them. On the other hand, the selection of these two cases provided more realistic assessment results, and the generalisation of results was increased.

3.8 Sampling Technique

As it is impossible to include in any research the entire population, researchers are using sampling techniques. By employing them, research can build upon a subset of the population assumed to represent the whole population under study. Then statistical methods are used to examine whether the pattern observed in the sample is a replication of the population pattern and thus an indication for research generalisation is provided (Krathwohl, 1997). Sampling techniques are divided into probability and non-probability techniques.

[18] Foundation for Research and Technology Centre.

[19] Each year, the Intelligent Community Forum, based in New York, presents an awards program for Intelligent Communities. It evaluates communities based on the Intelligent Community Indicators, and announces the Smart21 Communities of the Year, which are the initial group of honourees (the semi-finalists) for the Intelligent Community of the Year (www.intelligentcommunity.org/).

Probability sampling *'involves random sampling of units from the population at some stage in the sampling process'* (Krathwohl, 1997, p.163). It enables to draw inferences about the characteristics of the population. Simple random, stratified, systematic, and cluster sampling methods are included in this technique. On the other hand, the non-probability sampling techniques, the ones that do not include random sampling are common because of their convenience (Krathwohl, 1997, p.171). They include judgmental, purposive, quota, sequential, snowball, and convenience sampling methods. The judgmental and purposive samplings involve judgment by the researcher of which characteristics of the population should be included in the sample. In contrast, the convenience sampling method gives the researcher the opportunity to select some cases, which depend on ease of data collection and participants' availability. It is the most commonly used non-probability sampling technique (Krathwohl, 1997, p.171). The convenience sampling technique was utilised in my research.

Although random sampling techniques were not employed in my study, it was found (see Chapter five) that the sample characteristics met the criteria for the targeted population. This indicates that the participants shared many similarities with the actual population. My research targeted users of the Internet and CSCs and acquired a subset of the actual users to participate. Also young, experienced and educated were sought, as they were more likely to use eGovernment services (Sun and Zhang, 2006; Rogers, 2003).

The required sample size for the population of the two selected cities was calculated using the Krejcie and Morgan's (1970) formula, for known population (Table V.6). The calculated sample size provided according to the equation is 384 for the Athens and 383 for the Heraklion city. This means that 384 participants (Athens residents) were needed and 383 Heraklion city participants to achieve 95% confidence in the results (P=0.5 and X=1.96), with an error margin of 0.05. My aim was at acquiring as the much higher number of responses as possible, which would enable stronger validity and reliability of the results.

In my research, I tried to get a representative sample of the Greek Internet and CSCs users using different ethical methods for obtaining responses. There was a great difficulty though thus I tried different methods. The President of the TEIPel gave permission for the pilot survey to be conducted in the Institute, and students from all

departments participated. To ensure an adequate number of volunteers, the survey was carried out as a part of seminars on the topic of eGovernment in the IS Laboratory and an attendance certification was provided. After the end of each seminar, the participants that were coming from Athens city, and Heraklion city, participated in the survey. The main purpose of this piloting session was to get real users' feedback on the survey and highlight any problems before the final survey. I wanted to recognise beforehand any problem that the participants would have in understanding the survey items, or if there were any other problems, e.g. with the survey layout. Participants in this session were encouraged to provide their feedback on the tasks, the procedures, and the survey. Soliciting students of the TEIPel to conduct the pilot session was a convenient way to get real users feedback at the early stages.

Approval from the TEIPel was also obtained, to have access to the students and alumni emails to target the Heraklion and Athens, citizens. An email notifying for the survey with a link to the appropriate webpage providing the questionnaire (Appendix V.8) was sent to a sample of 103 students drawn from the faculties of the TEIPel[20], and also to 282 alumni of the same Institute, who were Athens city or Heraklion city residents. Officials from the two municipalities agreed to put the questionnaire on their webpage for five weeks. Then it was advertised through their social media presence.

I also submitted the link of the municipal webpages to different groups: to general topic email newsgroups (www.lifo.gr, http://aftodioikisi.gr/, http://www.myota.gr, www.2810.gr, www.cretalive.gr, www.cretanews.gr), to the voluntary agencies operated in the two cities (i.e. www.synathina.gr, www.athenistas.gr, www.minoistas.gr). Also, it was posted to local government blogspots (http://www.citybranding.gr, https://polis2020.wordpress.com/). Emails were also sent to different government and non-government employees in both cities, as well as to faculty and staff of the centrally located Universities and TEIs in Athens and the University and TEI of Crete. To enable as much representation as possible, the use of multiple groups was necessary. To eliminate multiple responses by the same person, all had to sign up in their municipality webpage and provide their username at the end of the questionnaire. Another reminder email was sent after two weeks. I stopped the on-

[20] These participants did not participate in the pilot study.

line survey after five weeks when the deadline given in the questionnaire was reached and when the response rate started to become feeble.

According to Leedy and Ormrod (2010), the most important two elements in survey research, are randomization and bias. The methods I used to acquire responses might not have guaranteed an entirely representative sample of the Internet and CSCs users; but it came close, especially after collecting a sample of more than 420 participants. Furthermore, this method was considered as there was no other way to get representative email lists. At the end of the survey administration procedure, a total of 903 responses were obtained from the two surveys.

The sample I obtained, reflected the characteristics of those who were most likely to have access to the Internet and were CSC users. It also served as a good sample for eGovernment service users in general, and it comprised an integral part of the population of e-service users. Furthermore, participants from two different cities were targeted, as participants from one city would not be sufficient to generalise (Malhotra and Peterson, 2006).

3.9 Data Analysis Methods Adopted

As my research adopted a quantitative data gathering approach, the data analysis was driven by quantitative methods. The main quantitative analysis of the data was conducted through the Structural Equation Modelling (SEM) technique. SEM is a theory-based approach that can bring theory and data together (Tabachnick and Fidell, 2013). It performs simultaneous analysis on the relationships among multiple independent and dependent factors. This makes it differ from correlation or regression (first generation statistics), which have the ability to analyse only one linkage between independent and dependent factors at a time (Chin, 1998). SEM in the same analysis evaluates the loadings of measurements on their factors (measurement model analysis); it also analyses the causation among the dependent and independent factors (structural model analysis). Also, in SEM, factor analysis and hypotheses are tested in one step (Gefen et al., 2011). Consequently, it conducts a more accurate analysis and, is considered a better methodological approach. In addition, it analyses the measurement errors of the observed variables as an integral part of the model, in the two analyses (measurement and structural models).

The theory supporting my research model is derived from the literature. Literature predefines items and their reflecting factors and hypothesises relations among them. However, in SEM it is usual to re-specify the hypothesised model when it does not fit the data, i.e. to modify the model to yield significant findings, which should be supported by theory (Kline, 2010).

In SEM analysis there are two distinct statistical techniques via which it is conducted: The Covariance analysis (used in LISREL, EQS, and AMOS), and Partial Least Squares (used in PLS, Smart-PLS, and PLS-Graph). These two SEM techniques differ in the objectives of their analyses, the statistical assumptions they are based on, and the nature of the fit statistics they produce (Gefen et al., 2011). The statistical objective of covariance-based SEM, applied in my research is to reveal the goodness of fit of the hypothesised research model. Hence, my research was conducted via the AMOS Graphics package V.18, as the analysis tool. From this point on it will be referred simply as AMOS.

3.9.1 The Reasons for Adopting Structural Equation Modelling

SEM is used as the main analysis technique in the model testing phase of my Research Project. As discussed above, SEM is suitable for the mathematical modelling of complex processes to serve both theory and practice. In my research, using first generation statistics, e.g. regression analysis, a significant number of multiple analyses would be needed, due to the complex modelling, i.e. investigating citizens' behaviours. This would make the statistical analysis very complicated. Furthermore, as my research looked at perception issues in human behaviour, most of the variables were unobserved that could only be approximated by measured variables. When data is analysed in SEM, the models take into account potential errors of measurement by including an error term for each measure and by estimating it (Byrne, 2010). The evaluation of the extent a particular questionnaire measures the latent variables that it is supposed to assess is facilitated by the SEM software (Raykov and Marcoulides, 2006). Then, once the theory was developed about the phenomenon of interest, the theory was tested against empirical data to confirm or reject it. SEM employs confirmatory analysis (Tabachnick and Fidell, 2013), and the objective of my research was to confirm the hypothesised relationships among the model's constructs.

3.10 The Credibility of the Research

The credibility of any research is always a major concern and is usually based on the validity, the reliability of the research findings, and also on their capability for generalisation (generalisability) (Krathwohl, 1997).

The post-positivist approach, which I adopted in my research, supports research validity and reliability (Hirschheim, 1992). Furthermore, all factors' measures used were drawn from previous research where they were reported valid and reliable measures to the factor they were supposed to measure. Nevertheless, they were assessed again because of the translation. Chapter five provides statistical assurance for the validity and reliability of measures via the AMOS assessment of the measurement and structural models. It also discusses how the findings from the analyses contributed in assessing the final research model. Nevertheless, the post-positivist paradigm also provides the capability for scientific generalisation. Specifically, Winfield (1991) posits that the research findings in the post-positivist approach can be generalised to a larger population.

3.11 Ethical Considerations

I used the common ethical practices to ensure that participants were encouraged to respond, but they were not pressured to do so. Their confidentiality was assured, and they were protected from misrepresentation and exploitation (Fink, 2006). No sensitive issues were touched nor were vulnerable groups involved in it. There were no names of participants identified and all individuals engaged in their free will. Potential participants were informed by a front-page letter in the questionnaire to the nature and process of the research. It described the project aims, it explained the purpose of the research, and what was expected from them. It indicated that participation was voluntary and participants were able to withdraw from the study at any point. My contact details were given in the cover letter, in case respondents have any questions or ethical considerations. Being in line with the ethical considerations, all identifying information was removed from subsequent analysis. During the research, the completed questionnaires and any computer-based data were securely stored. Therefore my research met all the ethical criteria needed for all the phases by following the standard ethical practices.

As far as eGovernment ethics are concerned, I found that my Research Project does not

create critical issues. On the contrary, it was set out to propose recommendations that will enhance the Greek eGovernment take-up, with more benefits for all stakeholders. I propose changes that would be better adapted to the actual context, and they are expected to have positive effects on the eGovernment adoption and eGovernment implementation as well. It is my strong belief that eGovernment has many benefits to its stakeholders. It is a means of transforming government by enhancing efficiency in exercising governance, improves service quality, and offers higher government accountability. It enhances responsiveness to clients and facilitation of greater access to information and services for both government officials, citizens and business thus wider inclusiveness. It also makes the citizens to engage in decision making and participate in democratic processes collaboratively. Hence it helps the citizens' empowerment and ushers them in a new era of deliberative democracy. At the same time, it increases transparency and helps in reducing corrupt activities in public service delivery (The World Bank, 2015). Lastly, additional resulting benefits of eGovernment are considered cost reductions and revenue growth (The World Bank, 2015). Hence besides the other benefits, economic implications for the governments are expected.

3.12 My Role in the Research

In post-positivism, '*the inquirer's voice is that of the disinterested scientist informing decision makers, and change agents, who independently use this scientific information, at least in part, to form, explain, and justify actions, policies, and change proposals'* (Guba and Lincoln, 1994, p. 115). In my current research, I was involved as an outside observer with no intention to influence any variables, but only to measure them. Nevertheless, my background as a researcher and practitioner in IS and eGovernment aided to develop a better understanding of the perceptions of participants.

3.13 Summary and Conclusions

This Chapter presented mainly the theoretical foundations of the post-positivist approach (ontological, epistemological and methodological), that formed my research's basis. It discussed the appropriateness of post-positivism, which emphasises the use of multiple research methods, in investigating the multidiscipline phenomenon of eGovernment adoption.

Then it presented my research's framework. Giddens's (1984), levels of understanding, reflected in the two main phases, needed for investigating the phenomenon in the

research. This was translated into three methodological steps providing a subjective understanding, followed by an interpretivist understanding, and finally a positivist understanding of the phenomenon under investigation. These steps were reflected in the research's framework, as two main research phases, the exploratory phase, targeting an interpretive understanding of the research constructs and the hypothetical research model. Next, the model testing phase (positivist understanding) followed, where the hypothetical research model would be empirically tested.

The chapter argued the importance of adopting a quantitative approach and the use of electronic survey as a data gathering instrument. The justification for the selection of the instrument is given, as well as the justification of the selection of two cities' citizens to participate in the research and form the data samples, to assess the instrument. Particular emphasis was given to the adopted SEM data analysis technique. The use of SEM (AMOS Graphics tool) as the main quantitative analysis technique, over the first generation statistical tools, was justified.

The Chapter discussed the research's credibility, based on validity, reliability issues, and also on the generalisability of the research findings. All factors measures used were drawn from previous research where they were reported valid and reliable measures to the factors they were supposed to measure. Nevertheless, because of the translation, they were assessed again. Furthermore, the AMOS assessments provide statistical assurance for the validity and reliability of the measures. It also discussed how the post-positivist approach provides the capability for scientific generalisability of the research findings and justified the use of convenience non-probability sampling technique.

In Chapter four, the findings of the exploratory studies, together with the suggestions from relevant literature, will lead to raising research constructs, the formulation of research hypotheses and the hypothetical model. It also presents in detail the data estimation methods used in Chapter five.

CHAPTER 4: RESEARCH ACTIVITY

4.1 Introduction

In this Chapter, a description of the methods of my research is presented. The suggestions from relevant literature together with the findings from the exploratory studies revealed the research constructs, the research hypotheses and thus the hypothetical model. Afterwards, a detailed description of the data estimation methods and the way the instrument was designed and implemented is provided.

4.2 Identification of Variables and Formulation of Hypotheses

To meet the second objective of my research, which is to hypothesise an eGovernment adoption model, the literature review, and the exploratory studies helped in delineating the issues that need to be taken into account for studying the factors that affect eGovernment adoption, in Greece. In this section, the formulation of the research hypotheses is presented, including the impacts of the demographics and the UA cultural variable, as moderators to the relationships among the variables. Next, a conceptual eGovernment adoption model is established, based on the UTAUT2 model, extending it with the 'trust' factors and taking into account the CSCs.

The research hypotheses, which most of them are based on the existing literature, are presented next.

4.2.1 Hypotheses Development

As discussed in Chapter two, an amended UTAUT2 model was adopted. Five of its seven fundamental constructs were used. HM and PV, were excluded as not relevant. Also, the construct 'habit' has been changed to 'habit of going to CSCs' (HBC). 'Use behaviour' was not used in my research model. In the literature, there is the assumption that there exists a causal relationship between INT and 'use behaviour'. A few studies discussed the actual 'use behaviour', after assessing the INT of using eGovernment services (Lu et al., 2010; Hung et al., 2006; Chang et al., 2007). Most of them used INT as an indicator of users' acceptance of new systems, as it is acknowledged that INT is a proxy for actual 'use behaviour' (Venkatesh and Davis 2000; Venkatesh and Morris 2003; Carter and Bélanger, 2005). In this research, based on my previews studies (Voutinioti 2013b; 2014b) and, on the preliminary results of the two samples' respondents, e-service users were very few, especially for transactions. Hence it would

be impossible to measure their actual 'use behaviour'. Therefore, my model measures the adoption of the eGovernment systems in question, using INT as the ultimate dependent variable.

Venkatesh et al. (2003), operationalised INT as the level of strength of a user's intention to do a particular behaviour. They also assumed it to be the immediate antecedent of the use behaviour. They measured INT by three items. In this research, one more item was added adapted from Al-Sobhi (2011**)**, referring to the likelihood to use CSCs (INT2: '*I have to interact with government organisations through the CSCs in the future')* (negative). Finally, this item loaded on the construct referring to CSCs, the HBC, leaving INT with three items (refer to Chapter five). My research defines INT to use eGovernment services, as '*the individual's willingness to use eGovernment services'*. All the constructs with their corresponding items are presented in Table V.7.

'Performance expectancy' (PE) is defined as '*the degree to which an individual believes that using the system will help him/her to attain gains in job performance'* (Venkatesh et al., 2003, p. 447). PE resembles other models' constructs, e.g. TAM's 'perceived usefulness' (PU), 'job-fit', 'relative advantage' and 'outcome expectation', as it was adapted from them. In the UTAUT model, PE was found to be the strongest predictor of INT, whereas in the UTAUT2 model PE was considered the most important driver of INT when interaction terms were included. In the UTAUT model, PE variable comprised of four indicators and they were adopted in my research (Venkatesh et al., 2003). One more item thought was initially added, addressing the favourableness of using e-services, instead of the CSCs. The proposed item was PE5: '*It would be preferable interacting with the local government organisation through its website, than interacting through its CSCs*, adapted from Al-Sobhi (2011**)**. This item finally loaded on the HBC too, leaving PE with four constructs (refer to Chapter five). PE then refers '*to citizens' perspectives regarding eGovernment services by benefits offered, reduced service time, saving money, and effort required to access the e-services*'. Therefore, the first hypothesis assesses this relation in the proposed model:

H1: 'Performance expectancy' will have a positive direct significant influence on 'behavioural intention'.

The 'effort expectancy' (EE) construct in UTAUT2 (Venkatesh et al., 2012, p. 159) is defined as '*the degree of ease associated with consumers' use of technology'*. The EE variable resembles other factors in the models aggregated in the UTAUT, e.g. TAM's PEOU, DOI's and MPCU's, 'complexity'. Venkatesh et al. (2012), found that EE had a significant effect on INT when interaction terms were both included and excluded. In UTAUT2, EE comprised of four items measuring the degree of ease in using mobile applications. These items measure the effort required by the users, their skillfulness, and their ability to use and learn the system and its interactions. In my research, all four items were adapted from Venkatesh et al. (2012) and refer to '*the degree of ease associated with the use of the eGovernment website interface for information and services*'. Then, it is likely that the perceived degree of ease associated with their use will positively affect INT. Hence, the second hypothesis in the proposed model reads as follows:

H2: 'Effort expectancy' will have a positive direct significant effect on 'behavioural intention'.

In previous research, explicitly based on TAM model, there is a link between PU and PEOU (Davis, 1989; Davis et al., 1989; Taylor and Todd, 1995b; Wangpipatwong et al., 2009). PEOU has a significant impact on PU, suggesting that the easier the new technology is to use, the more useful citizens would perceive it. Other researchers using the UTAUT have also found a significant relationship between PE-EE (Zhou et al., 2010; Gao and Deng, 2012; Voutinioti, 2013b; Slade et al., 2015). Nevertheless, there are other studies, i.e. Venkatesh et al., 2003; Venkatesh et al., 2012, where this relationship is statistically insignificant. My research examines the EE-PE path, grounded in the literature and based on my previous findings (Voutinioti, 2013b), as part of the research model.

H3: 'Effort expectancy' will have a positive direct significant effect on 'performance expectancy'.

Venkatesh et al. (2012, p. 159), defined 'social influence' (SI) in the consumer context as '*the extent to which consumers perceive that important others (e.g. family and friends) believe they should use a particular technology*'. It is considered as similar to the 'social norms' factor of TRA, TPB and TAM2 models. In both models, UTAUT

and UTAUT2, SI, represented by friends, family, colleagues, and peers, has a positive effect on INT. The same holds true in other studies, e.g. Irani et al., 2009; Burton-Jones and Hubona, 2005; Sun and Zhang, 2006. In my research, SI is defined as '*the extent to which citizens perceive that important others (e.g. family and friends) believe they influence their intentions to use eGovernment services*'. It is measured by three items, adapted from Venkatesh et al. (2012). Based on the present findings the following hypothesis is proposed:

H4: 'Social influence' will have a positive direct significant effect on 'behavioural intention'.

Venkatesh et al. (2012, p. 159), defined 'facilitating conditions' (FC) in the consumer context as '*the consumers' perceptions of the resources and support available to perform a behaviour*'. While in the organisational setting, Venkatesh et al. (2003) found FC to affect only 'use behaviour', in the UTAUT2, FC affected both INT and 'use behaviour'.

In our context in which the adoption takes place, e-services are new and might involve payment systems using different technologies; it is reasonable to assume that if FC is supportive and rated high by users, they will most likely affect citizens' intentions to use e-services. In UTAUT2, FC is comprised of 4 items (Venkatesh et al., 2012). This research adopts UTAUT2's conceptual definition for FC, which refers to '*citizens' perceptions of the resources and support available to affect 'intention' to use e-services'*. It is assumed that FC will have a positive influence on whether citizens intend to adopt e-services. Hence, the fifth hypothesis is formulated as follows:

H5: 'Facilitating conditions' will have a positive direct significant effect on 'behavioural intention'.

Venkatesh et al. (2012) introduced 'habit' as a predictor of both INT and technology 'use', and operationalised it as the tendency to automatically use the technology as a result of the learned behaviour. When interaction terms were excluded, 'habit' was found to have the most significant effect on INT than any other variable, including PE.

My research changed the 'habit' construct to 'habit of going to CSCs' (HBC), as there is an initial acceptance context and no habit of using e-services has been established, in

Greece. On the other hand, CSCs are operating in e-society for many years, where citizens have largely adopted their use. The construct HBC is measured by three items, adapted from Venkatesh et al. (2012). As mentioned previously in this section, in the investigation process two more items were loaded into this construct adapted from Al-Sobhi (2011**)**. Hence, finally, it is measured by five items, referring to CSCs. In my research, HBC is defined as '*the tendency to use the CSCs as a result of learned behaviour and convenience offered'.* As people are used to going to CSCs to interact with government, they do not use e-services by themselves. Therefore, based on the above argument and limited evidence in the context of eGovernment services, it is proposed that HBC will be negatively related to INT to use e-services. Consequently, the next hypothesis reads as follows:

H6: 'Habit of CSCs' will have a negative direct significant effect on 'behavioural intention'.

My research also hypothesises relations between PE, EE, FC and the construct HBC. If users perceive increased accessibility and more usefulness, by using eGovernment services, that is, increased performance, they will be less willing to go to CSCs to get serviced (Al-Sobhi et al., 2010; Janssen and Klievink, 2009). The same implies for EE and FC. When citizens perceive e-services easy to use, or the resources or conditions that facilitate their use, are available to them, they will be more willing to interact directly with the government. Hence they will be less willing to visit CSCs to get serviced, and they will gradually leave their habit of going to them. Then it is proposed that PE, EE, and FC will negatively affect HBC. Therefore, the next three hypotheses read as follow:

H7: 'Performance expectancy' will have a negative direct significant influence on 'habit of CSCs'.

H8: 'Effort expectancy' will have a negative direct significant influence on 'habit of CSCs'.

H9: 'Facilitating conditions' will have a negative direct significant influence on 'habit of CSCs'.

As discussed in Chapter two, in literature trust includes two types: (a) 'trust in the

government', trust in the provider of the e-services (TOG), and (b) 'trust in the internet' (TOI).

The focus of my research is users' initial trust in eGovernment services, which is required in a relationship in which citizens do not yet have credible or meaningful information about the e-services. According to McKnight et al. (2002), in this context, people use whatever information they have, such as perceptions of the government agency or its website, to assess the trustworthiness of the trustee. Literature suggests that the greater the trust in the supplying organisation, the stronger the citizen's intentions to use e-services will be (Gefen and Straub, 2003; Bélanger and Carter, 2008; Carter and Weerakkody, 2008). Hence TOG plays a primary role in the formation of the initial relationship between citizens and eGovernment. TOG of an e-service user refers '*to one's perceptions regarding the integrity and ability of the government entity providing the service'* (Bélanger and Carter, 2008, p. 167), which is the definition used for 'trust in the government' in my research. It is measured by four items adapted by Bélanger and Carter, (2008).

In the Greek context, 'trust in the government' is crucial to consider because 88% of the Greeks do not trust the government and local government organisations (Eurobarometer 85, 2016). On the contrary, Greeks trust the CSCs (Voutinioti, 2014b). In the case where people do not trust the government, they go to CSCs to get serviced, as opposed to, when the government is regarded as a reliable entity, people would not need to visit CSCs to get serviced and would be more willing to use e-services.

As public e-services are offered by different organisations (municipalities), then I propose that the examination of the effect of 'trust in the government' (municipality) will have on INT, as well as on HBC. Based on the above findings, I am formulating the following hypotheses:

H10: 'Trust in the government' will have a positive direct significant effect on 'behavioural intention'.

H11: 'Trust in the government' will have a negative direct significant effect on 'habit of CSCs'.

'Trust in the internet' (TOI) is acknowledged as a significant factor that positively affects eGovernment adoption. When interacting with government online, it depends on the level of trust in the Internet applications, and there are always issues in this communication, such as privacy, security, and risk, particularly when financial e-transactions are involved (Carter and Weerakkody, 2008). Citizens' lack of trust would negatively affect the use of e-services (Carter and Bélanger, 2005) and increase citizens' desires of going to CSCs to get serviced, as they are perceived as a safe environment. The opposite also holds true; higher levels of citizens' TOI decrease their willingness to go to CSCs to get serviced.

'Trust in the Internet' refers '*to an individual's perceptions of the institutional environment, including the structures and regulations that make an environment feel safe'* (Bélanger and Carter, 2008, p. 167). The above definition is used in my research. TOI is measured by four items adapted from McKnight et al., (2002) and Bélanger and Carter, (2008). Hence, building on the above arguments, the following hypotheses are proposed:

H12: 'Trust in the internet' will have a positive direct significant effect on 'behavioural intention'.

H13: 'Trust in the internet' will have a negative direct significant influence on 'habit of CSCs'.

CSCs, being the intermediaries in Greek eGovernment, have been established for years and up to now, they are widely accepted and enjoy peoples' trust. Al-Sobhi et al. (2010), claim that trust in third parties enhances trust in eGovernment services since citizens provide their personal information to the government portals through an authorised third party. They also argue that in turn, trust in eGovernment build citizens' intention to use eGovernment services.

In this research, TOC is defined similarly to TOG, as CSCs are government agencies too. It refers *to 'one's perceptions regarding the integrity and reliability of the CSCs providing the e-service'*. It is measured by four items adapted by Al-Sobhi, (2011). This research also suggests that TOC could positively affect citizens' 'intention to use' eGovernment services; and also, TOC positively influences HBC. Then the next hypotheses are proposed:

H14: 'Trust in the CSCs' will have a positive direct significant effect on 'behavioural intention' in using e-services.

H15: 'Trust in the CSCs' will have a positive direct significant influence on 'habit of going to CSCs'.

4.3 Hypotheses Related to the Moderators

4.3.1 The Moderators Used in this Research

My research also investigates the impact of demographics and the UA cultural variable as moderators to the relationships among the factors in the proposed model. Researchers in eGovernment are usually investigating the role of demographics such as gender, age, educational level, prior experience and income (Rana et al., 2014). Both UTAUT and UTAUT2 models include gender, age, and experience as moderators, but not education. Prior research has revealed a positive correlation between higher levels of education with attitude and increased e-services adoption (Sun and Zhang, 2006; Rogers, 2003). Hence education can be considered a similar moderator to experience. The same applies to my research. The relations concerning the moderators of gender, age, and experience in the UTAUT and UTAUT2 model between INT and the constructs PE, EE, SI and, FC are assumed to be applicable, as these independent variables are similarly operationalised in my research.

eGovernment studies also, besides the demographic moderators have reported an investigation of cultural variables (Warkentin et al., 2002; McCoy et al., 2007). As discussed in Chapter two, researchers agreed upon the adverse impact UA has on eGovernment acceptance. Correspondingly, based on the above argument, this research is investigating UA's moderating effects.

4.3.2 'Performance Expectancy' - 'Behavioural Intention'

Both Venkatesh et al. (2003) and Venkatesh et al. (2012), found the effect of PE on INT to be moderated by gender and age, in the sense that the relationship was stronger for males and younger individuals. These findings were in line with Venkatesh and Morris (2000) who argued that males are more driven by PU[21]. Alawadhi and Morris (2009), though did not find any influence of gender on the adoption of ICT in the field

[21] PU resembles PE in the UTAUT2 model

of eGovernment, while Morris et al., (2005) posited, that gender differences tend to disappear with increased experience and continued usage.

In eGovernment adoption research, the experience is reported to have a positive impact on PU, which in turn is positively associated with INT and use (Tan and Teo, 2000; Shih and Venkatesh, 2004). While Agarwal and Prasad (1999), did not find that educational level is associated with PU (in the TAM model), other researchers (Sun and Zhang, 2006; AlShihi, 2006) found a positive relationship between them. My research hypothesises that higher educational level leads to positive association with PE, like experience, as the more educated persons usually are more computer literate. McCoy et al. (2007), argued that people from countries with low UA are willing to take risks and make individual decisions, hence UA is negatively related to PU.

Thus, I can propose the next hypothesis, building primarily into the UTAUT2 findings and on previous research.

H1m: The influence of 'performance expectancy' on 'behavioural intention' will be moderated by gender, age, education, experience and uncertainty avoidance in the sense that the effect will be stronger for men, younger persons, persons with higher levels of education, higher levels of experience and, lower levels of uncertainty avoidance.

4.3.3 'Effort Expectancy' - 'Behavioural Intention'

In both UTAUT and UTAUT2 the effect of EE on INT has been found to be moderated by age, gender, and experience, in the sense that the effect was stronger for older women with limited exposure to technology. It is in line with other studies (Venkatesh and Morris, 2000; Sun and Zhang, 2006), where females as well as older users, are driven by PEOU[22]. Accordingly, less educated should show stronger effects of EE on INT, than the higher educated. Nevertheless, Agarwal and Prasad (1999) reported that levels of education and users' prior computer experience are positively associated with PEOU beliefs. McCoy et al., (2007) showed that UA had an adverse impact on PEOU, which in turn impedes citizens' INT to adopt eGovernment services.

[22] PEOU resembles EE in the UTAUT model.

The moderating effects concerning the relation EE-INT based primarily in Venkatesh et al. (2012) findings, were adopted. Thus, I hypothesised that:

H2m: The influence of 'effort expectancy' on 'behavioural intention' will be moderated by gender, age, education, experience and uncertainty avoidance, in the sense that, the effect will be stronger for women, older persons; persons with lower levels of education, lower levels of experience with technology and, lower levels of uncertainty avoidance.

4.3.4 'Effort Expectancy' – 'Performance Expectancy'

Sun and Zhang, (2006) and Venkatesh and Morris, (2000) argued that the less experienced people tend to transfer their perceptions of ease of use to conclusions about system usefulness. Education is expected to show similar results to experience. Hence the EE influence on PU should be stronger for inexperienced users and less educated. As older persons are usually less experienced with the new technology than the younger ones, it can be assumed that this age group will show stronger moderating effects of EE on PU. McCoy et al., (2007) found the PEOU-PU path was significant only for groups which scored high on the UA cultural dimension.

Based on the current findings, I proposed that:

H3m. The influence of 'effort expectancy' on 'performance expectancy' will be moderated by gender, age, education, experience, and uncertainty avoidance, such that, the effect will be stronger for women, older persons, and persons with lower levels of education, lower levels of experience and, higher levels of uncertainty avoidance.

4.3.5 Social Influence - Behavioural Intention

Venkatesh et al. (2003), argued that the effect of SI on INT was significant and valid for women and older workers in an organisational context and under mandatory conditions; and also, there were no gender differences in the short term usage. SBN-INT path (TPB model) was also found to be stronger for females than males (Morris and Venkatesh, 2000; Sun and Zhang, 2006). In the UTAUT2, the effect of SI on INT was found to be moderated by age, and experience such as stronger for older and less experienced users. Similarly, other researchers found this relationship to be stronger when users are less experienced with the technology or less educated (Venkatesh and Morris, 2000; Burton-Jones and Hubona, 2005; Sun and Zhang, 2006). It is assumed

that higher levels of education and experience empower users and decrease the effect of SI on INT. UA should positively influence SI, as risk-averse individuals would seek reassurance from significant others to make their decision in adopting eGovernment services.

The moderating effects concerning SI primarily due to Venkatesh et al. (2012), will get adopted. Hence I proposed the next hypothesis.

H4m: The effect of 'social influence' on 'behavioural intention' to use e-services will be moderated by age, education, experience and uncertainty avoidance, such that the effect will be stronger for older persons; persons with lower levels of education, lower levels of experience with technology and, higher levels of uncertainty avoidance.

4.3.6 'Facilitating Conditions' - 'Behavioural Intention'

In UTAUT2, the effect of FC on INT was moderated by gender and age but not experience, and specifically, the effect was stronger for older women. The supposition is that women view the availability of resources, knowledge, and support as essential to acceptance of new technology. In an organisational context during sustained usage thought, FC-Use effect was stronger for older employees with increased experience (Venkatesh et al., 2003). In the TPB model, older persons with less experience were driven by PBC[23] toward using technology (Taylor and Todd, 1995b; King and Dennis, 2003). High UA should make FC have a higher impact on INT since risk-averse people rely more on their self-efficacy and facilitating conditions to make their decisions in using e-services.

Then, the moderating effects concerning FC-INT read as follows:

H5m: The influence of 'facilitating conditions' on 'behavioural intention' will get moderated by gender, age, education, experience and uncertainty avoidance, such that the effect will be stronger for women, older persons; persons with lower levels of education, lower levels of experience and, higher uncertainty avoidance.

[23] PBC in the TPB model is similarly conceptualised to FC in UTAUT and UTAUT2 models.

4.3.7 'Habit' - 'Behavioural Intention'

In UTAUT2, when interaction terms were included, the effect of 'habit' on INT became moderated by age, gender, and experience in the sense that older men with high levels of experience with the technology tend to rely more on habit to drive technology use. In this context, those who use less the new systems and get serviced in the CSCs are expected to be women, individuals with higher age, lower levels of education or experience or higher UA. Consequently, these groups might have formed a stronger habit of going to CSCs, which in turn would make the negative effect of HBC on INT to be stronger. Based on the previews findings and limited evidence of the effect of interaction terms, it is suggested that:

H6m: The negative influence of 'habit of CSCs' on 'behavioural intention' to use e-services will be moderated by gender, age, education, experience and uncertainty avoidance, such that the effect will be stronger for women, older persons; persons with lower levels of education, lower levels of experience with the technology and, higher levels of uncertainty avoidance.

4.3.8 'Trust' - 'Behavioural Intention'

The groups of older, less educated and less experienced with the technology would find the technology difficult to use and they would probably rely on their perceptions of other factors, i.e. TOI and TOG to make decisions related to use e-services. Hence in these groups, the estimates of TOI or TOG on INT, are expected to be stronger than the younger, more educated and experienced ones (Burton-Jones and Hubona, 2005). Furthermore, higher levels of UA would strengthen the positive impact of citizens' TOI or TOG on INT to adopt the eGovernment services (Warkentin et al., 2002; Al-Hujran, 2009; McCoy et al., 2007). Based on the existing findings, the next two hypotheses are proposed:

H7m: The influence of 'trust in the government' on 'behavioural intention' to use e-services will be moderated by age, education, experience and uncertainty avoidance, such that the effect will be stronger for older persons; persons with lower levels of education, lower levels of experience with the technology and, higher levels of uncertainty avoidance.

H8m: The influence of 'trust in the internet' on 'behavioural intention' to use e-services will be moderated by age, education, experience and *uncertainty avoidance such that the effect will be stronger for older persons; persons with lower levels of education, lower levels of experience with the technology and, higher levels of uncertainty avoidance.*

4.3.9 The Conceptual Model

Then based on the hypotheses presented above, the conceptual model has been developed (Figure 4.1).

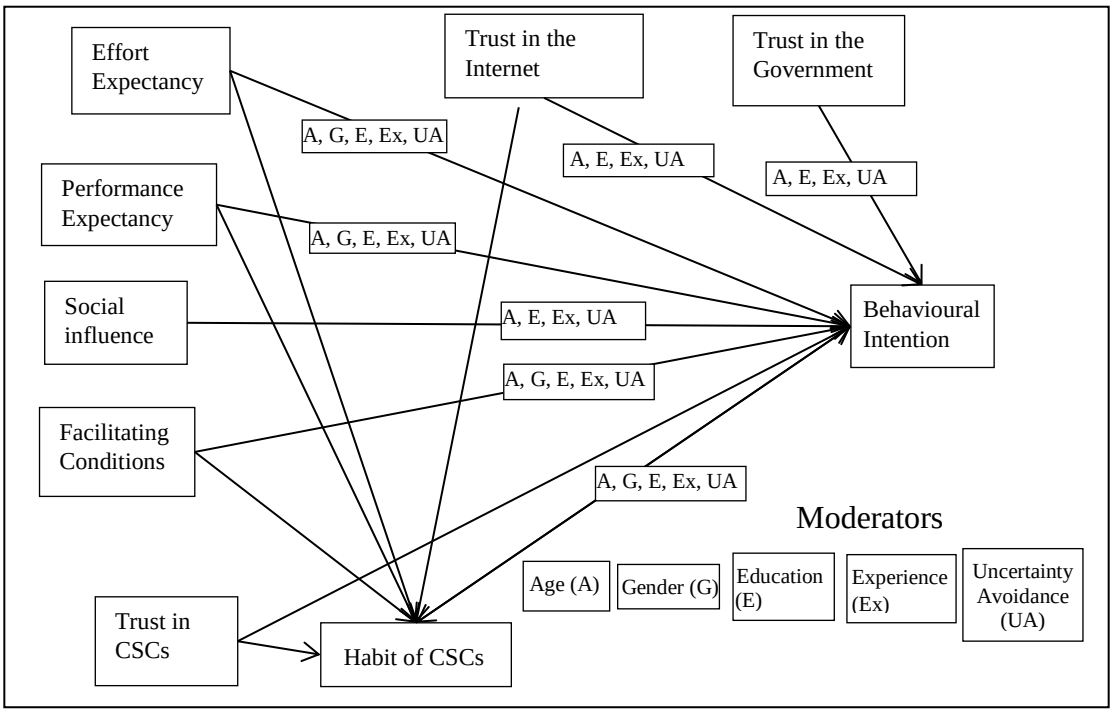

Figure 4.1: The Conceptual Model

4.4 Development of the Draft Instrument

4.4.1 Preparing the Draft Instrument

The next step was to draft the instrument taking into account the objectives of my research, the communication method to be used and the characteristics of the instrument. The length of the instrument had to be considered too. Principles of good question design were adopted to minimise measurement error, which covered issues related to the content, wording, and structure of each question as follow (Cavana et al., 2001):

Brief and relevant questions, no double-barreled or sensitive, and only a reasonable amount of effort was required to complete them. The words had only one meaning, and there were no double negatives, no leading or biased words or phrases, or incomplete sentences. The wording of the questionnaire had to be understood by the participants to tap respondents' perceptions, feelings, and attitudes. Thus the usage of idioms in the culture and frames of references of the participants were considered (Sekaran, 2003). All questions had a clear structure, and the type of the questions was mostly scaled. There were only three multiple choice questions. The model related questions were randomly placed in the questionnaire, while the demographic questions were incorporated on the last page of the instrument. Some scales had negative statements, to avoid the influence of acquiescence and extremity bias.

In Appendix V.7 the draft instrument with its scales is presented. There were nine constructs, and a total of 35 items to measure them. The instrument was pre-tested in the pilot study and adjusted accordingly.

4.5 Pre-testing the Instrument via Pilot Survey Testing

4.5.1 The Need for the Pilot Study

As mentioned in Chapter three, a pilot study was conducted as part of the scale development to ensure measurement error minimisation. The main advantages of a pilot study are (Van Teijlingen and Hundley, 2001):

a. It might provide a warning to the areas where the research protocols may not be followed or where the research project could fail.
b. It might indicate whether the proposed instruments and methods are complicated or unsuitable.

Hence, for this Research Project, conducting a pilot study was considered valuable for increasing the accuracy of the results.

4.5.2 Pilot Research Settings

After each seminar was completed, the participants that were coming from Athens or Heraklion stayed in the laboratory to take part of the survey. The two municipal websites were familiar to them because their navigation was part of the seminar. However, first, they were instructed to attempt in performing specific tasks, i.e. to ask

for a birth or marriage certificate and to pay a fine for illegal parking. After interacting with their relevant municipal website, they filled out the questionnaire. The two questionnaires were identical, and only the name of the municipality was different. The computer-based laboratory setting enabled them to interact with the municipal websites and also fill out the online survey. They all were students of TEIPel, thus familiar with the laboratory. In all sessions, I was acted as an experimenter. Any misunderstanding about the tasks of the survey was cleared up or resolved. I also had the opportunity to document and analyse the participants' comments on the spot. All the participants performed their tasks easily, and no major problem was revealed. Nevertheless, many of them complained that the survey looked condensed. Accordingly, a few adjustments were made to the survey's spacing, and it was also refined according to their comments.

4.5.3 Pilot Research Sample

For a pilot survey, researchers recommend different sample sizes. In general, the larger the sample, the more accurate the results are. A sample size between 12 and 30 is recommended (Emory and Cooper, 1991). Therefore, for the pilot study, my population was comprised of 50 TEIpel students, Athens and Heraklion city residents (25 of each city). The questionnaire after the translation was pilot tested using these groups which were not included in the main survey. All 50 students returned their surveys achieving a 100% survey response rate. There were no incomplete surveys, but one was considered unengaged. Hence, 49 returned surveys were usable responses. Of the surveys analysed, 25 respondents (52.3%) were females and 24 (47.7%) males, while 76.3% had more than three years of computer use, 79.2% used the Internet daily, and 27.8% weekly. They all were CSCs users. These results indicated that the students of the TEIPel have considerable experience in using computers and the Internet.

4.5.4 Evaluating the Reliability and the Validity of the Instrument

Instrument validation is an essential prior process in empirical research (Krathwohl, 1997). First, the reliability of measures was assessed, which refers to the degree to which the instrument is free of random error. It is concerned with the consistency and stability of the measurement items (Sekaran, 2003), that is, the extent to which the group of items is homogeneous. Reliability analysis (Cronbach's alpha) was used to estimate the internal consistency of the measurement and clean up the measures of each

construct (Cronbach's, 1951; Nunnally and Bernstein, 1997). It was conducted via SPSS Statistics 20.0, and if a measurement item was shown to decrease the reliability of the instrument, it was removed. From this point on the SPSS Statistics package, 20.0 will be referred simply as SPSS.

All items in the instrument were 'reflective' to enable measurement of the factor they represented. A factor and its reflective items can be recognised when a change (i.e. increase or decrease) in the factor causes a change in its items (Diamantopoulos and Siguaw, 2006). All adopted factors' items were considered 'reflective', except items for the factor 'use behaviour', which were not used in the model.

Table V.7 presents besides items' wordings, alpha reliabilities for all the factors responded by the 49 participants. They indicated acceptable levels, except for two factors. The PE5 and INT2 items were loaded to construct HBC, and hence they were retained until the final survey. At this point, the instrument consisted of 35 items. The final instrument is presented in Table V.8 (in English) and Table V.9 (in Greek). It has to be noted that there was no need to calculate reliabilities for the 'use behaviour' construct because it was not included in the final instrument, and also for the moderators because they were treated differently.

The majority of the scales were borrowed from established scales that have already been subjected to tests of validity. However, due to the translation, they had to be assessed again. The next step was to evaluate the validity of the instrument. The basic types of validity investigated were face, convergent, and discriminant validity. Face validity is a primary index of content validity and is concerned with the degree to which the scale items represent the domain of the concept under research (Sekaran, 2003). Experts in the field can be solicited to advise on whether scale items have face validity (Straub et al., 2004). Therefore, the instrument was pre-tested by an academically excellent student in the field of IS and by three academics. The student was asked to complete the survey, and afterwards, he was questioned to find out if there were any problems to understand the instrument questions. Based on his feedback, the wording of some questions was modified to improve clarity. After this step, the academics were asked to answer the survey questions and to provide their feedback on whether the questions would accurately measure each construct; whether the questions were vague, ambiguous, difficult to understand, or contained contradictions. The instrument was

then modified to reflect the feedback received from the experts. Preliminary evidence was found that the scales were reliable and valid.

4.6 The Main Study

4.6.1 Preparation of the Survey Data for Statistical Analysis

After the modifications of the instrument had been made, the main survey was conducted. The preparation of the data (the electronically collected responses of the two cities' residents) for analysis took place, and included the following steps:

a. The data file was downloaded directly from Google forms (electronically entered) into the SPSS for analysis.
b. There were no errors or missing data points in the data sheet because of the online survey, where answering all questions was mandatory.
c. The data was numbered in the package and visually checked for legibility to make sure that eligible respondents completed them. For example, if a participant answered all questions the same, the data was considered unengaged response or ineligible.

Of the 903 collected responses, from both cities, twenty-nine were removed because the respondents had no prior experience with CSCs. Only CSCs users could respond to questions referring to them. From the 874 remaining, 31 were unengaged responses leaving us with a final sample of 843 eGovernment users (422 Athenians and 421 Heraklion city residents)**.**

Then the re-coding of the responses of negative statements took place. For example, an initially positive statement 'strongly agree', which had a score of seven after the re-coding process, it got one. Accordingly the initial negative statement, 'strongly disagree' with a score of one, finally got a seven; and the other intermedium statements were calculated accordingly.

4.6.2 Data Analysis Approach

The final data (843 participants) was statically analysed. The logical sequence of the statistical tests was adopted from best practice in previous eGovernment adoption literature (Carter and Bélanger, 2005). First, frequencies were computed using SPSS for each variable. Appendix II, Table II.1 provides frequency statistics of the

respondents for the sets of variables in the research. Descriptive statistics was also used to calculate the frequency of the demographic variables (refer to Chapter five).

As previously discussed in Chapter three, the primary data analysis was conducted by SEM, which included Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), followed by the assessment of the structural model. Finally, multi-group moderation was used to analyse the effect of the demographic variables to the relations in the models, and also to test the hypotheses associated with them.

4.6.3 Statistical Assumptions in SEM - Preliminary Data Analyses

When any statistical technique is applied, it is required certain assumptions to be satisfied (pre-requisite). In SEM these assumptions are large sample size, no systematic missing data, no outliers, multivariate normality and linearity in the data, and proper model specification (Kline, 2010).

Statistical research has suggested that SEM should be applied to a large sample size, higher than 200 (Kline, 2010). Other researchers indicated that sample size should be at least greater than 5 to 10 times the number of estimated parameters. Otherwise, the results cannot be trusted (Byrne, 2010). This rule implied that in this case with 35 items, 350 responses were adequate, while the data sample comprised of 421 responses from each city.

4.6.3.1 Assessment of Normality

A crucial assumption in the conduct of SEM analysis in general, and in the use of AMOS in particular, is that the data is multivariate normal (Arbuckle, 2006). Hence, first, it was essential to check that this criterion was met.

The normality distribution can be assessed by the kurtosis and the skewness[24] of the distribution. Skewness tends to impact tests of means, while kurtosis severely affects tests of variances and covariances. Given that SEM conducted in AMOS is based on the analysis of covariance structures, evidence of kurtosis is always of concern and, in

[24] The kurtosis refers to the height of the distribution, and the skewness to its balance. A balanced skewed distribution is centred and equally symmetrical at the edges (Hair et al., 2010).

particular, evidence of multivariate kurtosis, as it is known to be problematic in SEM analyses (Byrne, 2010).

Prerequisite to the assessment of multivariate normality is to check for univariate normality as the latter is a necessary condition. Hence, univariate and multivariate normality was examined, using the AMOS package. In the produced table univariate estimates and critical ratios (CR) for each variable were estimated and reported, as well as the index of multivariate kurtosis and its critical ratio. Byrne (2010), considers the univariate values calculated by AMOS to be less than 7.0 to be indicative of normality and this value was used as a guide in my research. The index of multivariate kurtosis and its CR value appear at the bottom of the kurtosis and CR columns respectively, at the same table. Of most importance is the CR value, which represents Mardia's (1974) normalised estimate of multivariate kurtosis (Byrne, 2010). In practice, CR values greater than 5.0 are indicative of non-normally distributed data (ibid), and this value was used as a threshold in my survey.

4.6.3.2 Univariate - Multivariate Outliers

In a research sample, outliers are considered the cases which appear to be distinctly different from other participants' cases (Tabachnick and Fidell, 2013). Univariate outliers are cases that have an unusual value for a single variable. In Likert-type scales, univariate outliers do not really exist. Nevertheless, the responses for any of the individual variables may not be univariate outliers, but they might be multivariate outliers, in combination with other variables (Kline, 2010). When tested for normality, AMOS identifies any case in which the observed scores differ markedly from the centroid of scores for all cases and report them in a table with ranked scores in decreasing order. They are called 'Observations farthest from the centroid' (Mahalanobis distance D^2). These values are used as a measure of distance. The higher number indicates that the case is much further from the other cases (Tabachnick and Fidell, 2013; Hair et al., 2010). A threshold for D^2, for D^2/DF[25] of 3 or 4 for large samples and 2 for small samples is recommended by Hair et al. (2010).

[25] DF is the degrees of freedom or the number of constructs.

4.6.3.3 Homoscedasticity

Homoscedasticity is assumed to be present when the variance in the dependent factor(s) is distributed in a balanced way across the independent factors (Hair et al., 2010). Homoscedasticity is desirable in SEM. A reliable method to measure homoscedasticity is Levene's test (Field, 2009). It examines the null hypothesis, that is if the difference in the variances between the factors is zero. This is indicated by significant p-value results ($p<0.05$), as opposed to non-significant p-value results where the homoscedasticity assumption is met.

4.6.3.4 Multicollinearity

Multicollinearity refers to a high intercorrelation between independent factors. In model estimation, multicollinearity is critical because factors are not truly independent. It causes redundancy between highly correlated factors and produces false relationships between dependent and independent factors and, as a result, weakens the analysis (Tabachnick and Fidell, 2013; Hair et al., 2010). It is addressed by testing for bivariate and multivariate collinearity. The assessment of bivariate collinearity is carried out by examining the correlation matrix. Factors are considered highly correlated if correlations are greater than 0.85 (Kline, 2010). Multivariate collinearity is assessed by the Variance Inflation Factor (VIF) and the tolerance measures, using SPSS. The maximum recommended value of VIF is 10 (preferably 5), and the tolerance measures above 0.1 (Kline, 2010).

4.6.3.5 Assessment of Common Method Bias (CMB)

Another assessment is the detection of CMB, which severely affects construct validity (Straub et al., 2004). Harman's single-factor test is usually used to detect whether CMB is present (Gefen et al., 2011). That is, Principal Component Analysis is conducted, and if the results indicate that one single factor does not account for all of the variance detected, then CMB is not an issue.

4.6.4 Exploratory Factor Analysis - Confirmatory Factor Analysis

4.6.4.1 Exploratory Factor Analysis

Having passed the preliminary tests, the model assessment took place. It can be conducted by three approaches: the EFA, the CFA, and the hybrid approach. The recommended approach is the hybrid for its multiple advantages. It combines both approaches, starting with EFA and proceeding with CFA (Hair et al., 2010).

EFA depends on statistical evidence to relate items (observable variables) with their factor. It can be conducted using the SPSS, via factor analysis. In my research, factor analysis with Maximum Likelihood Estimation (MLE) was undertaken to determine unique variance among items and the correlation between factors, and also to remain consistent with the subsequent CFA. MLE provides the goodness of fit test for the factor solution. Promax rotation was chosen because the sample is quite large (n=422) and it could account for the correlated factors.

Before examining the individual path coefficients corresponding to the research hypotheses, testing the relative adequacy of the model fit is essential (Bélanger and Carter, 2008). Hence, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity have to be checked. These tests assess whether the sample is appropriate for conducting factor analysis. Bartlett's test of Sphericity is expected to give a significant p-value. The KMO measure diverges between 0 and 1. Values greater than 0.9 are considered excellent sampling adequacy, while those above 0.60 strong (Kaiser, 1974, as cited in Field, 2009).

Next step is the assessment of the reliability and the validity of the instrument. These evaluations intend to design the scale so that it would accurately and consistently measure what it is supposed to measure (Sekaran, 2003). Validity and unidimensionality of the scales are assessed besides EFA, by examining the correlation coefficients. If an item loads more strongly to a factor other than the factor it is supposed to load on, or if it loads on multiple factors equally, then the item is considered weak (Byrne, 2010). Items that load together on one factor demonstrate convergent validity, while items that do not cross-load on other factors indicate discriminant validity presence (Straub et al., 2004). EFA is also used to explore the number of factors in which items are supposed to load, based on the eigenvalue. This condition is used to

retain only the factors that their value is equal to or greater to 1.0 (Kaiser Criterion). In some cases, though, a less a strict criterion (i.e. greater to 0.9) might be followed (Field, 2009).

4.6.4.2 Confirmatory Factor Analysis

CFA depends on theory and then confirms or rejects it, by utilising empirical evidence. It consists of the measurement stage and the structural model assessment. It is based on the model's fit and the factors' convergent and discriminant validity (Hair et al., 2010). For the measurement stage, it is not necessary to distinguish dependent and independent factors. It is run with all variables linked together where factors (latent constructs) are presented in the oval shapes. Items are shown in rectangular shapes by labels that match the statements. Two-headed arrows represent covariance between factors, while one-headed arrows represent a causal path from a factor to an item (Figure IV.1).

4.6.4.3 The Structural Model

After the establishment of measurement model fit and validity, next the structural model has to be assessed, i.e. the hypothesised theoretical model. In the structural model the nature and importance of the relationships among factors are examined (Hair et al., 2010). It has to be specified which factors are related to each other and the nature of each relation (Figure IV.5). Theory suggests the paths (relations) between independent and dependent factors. In my research, the theory is the conceptual research model, presented in section 4.3.9.

Then the structural model can be assessed by examining factors' validity and reliability, the correlation between the factors, the overall model fit, the standardised factor loadings, and critical ratio (CR) (Kline, 2010). First, it is essential for factors to demonstrate convergent and discriminant validity. Then, by checking the model fit indices, there is an indication how well a CFA model fits the data, and in the case of poor fit, the proposed model can be modified and re-estimated. In other words, the model can be re-specified to fit the data (Byrne, 2010) better. The paths between the factors and the items can be assessed using standardised factor loadings. These indices, as well as convergent and discriminant validity assessment, are discussed in sections 4.7.2 and 4.7.3.

SEM is also suited for multiple group analysis. Usually, populations with different characteristics are used as samples to examine for similarities and differences among them (Hair et al., 2010). In this case, the whole sample is divided accordingly to create groups (e.g. gender, age). In the statistical packages, e.g. AMOS, the sample for multigroup analysis can be organised in different ways; one of them is to have the whole sample in one file and include group membership variables (Arbuckle, 2006).

4.7 Model Assessment Criteria

4.7.1 Model Fit Indices

There are different model fit indices[26] to be assessed for model acceptance. Running the AMOS using MLE first the chi-square (χ^2 or CMIN) statistics and the Degrees of Freedom (DF) should be examined. However, the chi-square statistics for assessing model fit is not very reliable, for the following reasons (Byrne, 2010; Hair et al., 2010):

a. When the sample size is large, it is possible to reject the model, i.e. to reject something true (Type II error).
b. In very large samples, even very small differences between the observed model and the perfect fit model may be found significant.
c. It is very sensitive to the violation of the multivariate normality.

Therefore, the chi-square goodness of fit (GOF) is not used as the only indicator of model fit, but several other GOF measures are usually examined (Hair et al., 2010). Another index, which is less dependent on the sample size is the relative chi-square (chi-square/DF). This should be less than 2.0 or less than 3.0 to indicate acceptable fit, while if it less than 1.0 reflects poor model fit (Byrne, 2010).

There are also other GOF indices used by researchers that can be categorised into three categories (Hair et al., 2010):

a. **Absolute fit indices**, which indicate how well the proposed model fits the data (Byrne, 2010). These include Root Mean Square Residual (RMSR), which measures the average of the residuals between individual observed and estimated covariance and variance terms. The Root Mean Square Error of Approximation (RMSEA), is another fit index. It indicates how well the model, with unknown but

[26] They are assessed and reported by AMOS.

optimally chosen parameter values, fits the population covariance matrix if it was available. It also tries to correct model complexity and sample size, by considering the error of approximation in the population. AMOS also estimates the 90% confidence interval around the RMSEA value. These measures jointly indicate how well the model fits the data. A significant p-value (<0.05), with low RMSR and RMSEA values, also, to close interval values around the RMSEA, represent better fit. Values of RMSR and RMSEA less than 0.05 are considered good fit and below 0.08 adequate fit (Hair et al., 2010).

b. **Incremental or comparative fit indices**, which assess how well a model fits the data in comparison to some alternative baseline model, assuming that all observed variables are uncorrelated. These measures represent an improvement in the model fit by the specification of related multi-item constructs. They resolve some of the issues of negative bias and include the Comparative Fit Index (CFI) and the Tucker-Lewis Index **(**TLI) (Tucker and Lewis, (1973). They depend on the average size of the correlations in the data. If the average correlation between variables is not high, then they will not be very high either. They range between 0.0-1.0, with higher values representing better fit. Measures greater than 0.90 are considered a good model fit (Hair et al., 2010).
c. **Parsimony fit indices**, which give information about the best model among competing models, by considering the model fit and its complexity. One such index, the Parsimony Normed Fit Index (PNFI), is derived from the Normed Fit Index (NFI) only adjusted by multiplying it by the Parsimony Ratio[27]. PNFIs with high values represent better fit (Hair et al., 2010).

AMOS produces and reports 25 different goodness-of-fit indices, and the choice depends on the researcher. Hair at al. (2010) recommended reporting the chi-square index, an absolute index, e.g. RMSEA and an incremental index, e.g. CFI. They also recommended adding a Parsimony fit index, when assessing a complex model. Others reported GFI or SRMR.

The model fit indices, e.g. chi-square, chi-square/DF, GFI, AGFI are also employed in CFA to verify convergent and discriminant validity. These together measure the degree

[27] PNFI equals NFI times the DF used by the model or the number of items divided by the total DF (number of variables) available.

to which the data matches the theoretical model (Hair et al., 2010; Gefen et al., 2011). In my research for model assessment, besides chi-square, the chi-square/DF, GFI, AGFI, CFI, PNFI, SRMR, and RMSEA are reported. Another issue that researchers are facing is the cutoff values of these indices. The model fit indices are affected by large sample sizes and the number of items in the models. Hence, researchers (Byrne, 2010; Kline, 2010) suggest using their thresholds as a guideline rather, than a confirmation of the model fit. According to Hair et al. (2010), simple models and smaller sample sizes require stricter model cut-off indices than larger and more complex models, specifically, when sample sizes are higher than 250 and models consist of more than 30 items. As a general rule, the closer GFIs, AGFIs, PNFIs and CFIs to one and the closer SRMR and RMSEA to zero the better the fit of the model to the data. Researchers also advise not to eliminate items to achieve a better model fit at the expense of the theoretical integrity (Hair et al., 2010).

4.7.2 Model Refinement Criteria

Having examined the model fit indices, then checking the output produced by AMOS to achieve a better model fit, is following. This stage includes the model refinement processes by applying the following criteria:

a. The Standardised Regression Weight values (SRWs) (ranging between -1 and 1) represent the level to which an item converges with its factor (Hair et al., 2010). If the loadings of an item on its designated factor is significant (absolute value greater than 0.5, preferably greater than 0.7), that construct demonstrates convergent validity.
b. The Squared Multiple Correlations (SMCs) should be above 0.5.
c. The Standardised Residual Covariances (SRCs)[28] should be in the interval ±2.58, whereas items with values outside the interval ±4.0 indicate higher error levels and they should be eliminated (Hair et al., 2010).
d. The Modification Indices (MIs)[29], should be small, while large MIs indicate the presence of factor cross-loadings and error covariances. Lack of their estimation represents a drop in the chi-square value, as opposed when the parameters are

[28] These residuals refer to the difference between the estimated and the observed covariance terms. They can be negative or positive.
[29] MIs are possible relationships that are not estimated in the model.

identified by the MIs, which indicate a better fit (Byrne, 2010). Also, an item having MIs with high covariance between measurement errors along with high regression weights between these errors should be considered for deletion (Hair et al., 2010). AMOS computes an MI for all parameters implicitly assumed to be zero, as well as for those that are explicitly fixed to zero or some other, nonzero value.

e. Correlated error terms, which refer to situations where knowing the residual of one item helps in knowing the residual associated with another item. For example, in surveys, many people tend to give responses that are socially acceptable. Moreover, if a respondent gave a socially acceptable response to one item, the probability that a socially acceptable response will be placed on another item increases. Such an example exhibits correlated error terms.
f. Then a significant p-value (<0.05) indicates that the relationship is significant.
g. Another fit index, the Critical Ratio (CR) represents an estimated parameter divided by the standardised error. If CR's absolute value is greater than 1.96, indicates that a parameter estimate is significant and further supports the assumption that the loading of the item on its appointed dependent factor is significant (Byrne, 2010). It also comprises an additional indicator of convergent validity.

4.7.3 Constructs' Validity

As mentioned before, in assessing the model it is essential to examine constructs' validity and reliability (Kline, 2010).

Construct's validity is '*the extent to which the measured variables actually represent the theoretical latent construct that is designed to measure.*' (Hair et al., 2010, p. 708). Construct validity can be assessed through convergent and discriminant validity.

Convergent validity of a construct is '*the extent to which items that are indicators of a specific construct converge or share a high proportion of variance in common.'* (Hair et al., 2010 p. 710). It evaluates whether a particular item developed measures the construct it is supposed to measure. Convergent validity can be verified by factor loadings, AVE, and reliability (Hair et al., 2010). A construct's AVE greater of 0.50 implies that its items explain more than 50% of its variance, hence demonstrates adequate convergent validity. Cronbach's alpha values (item reliability) can be assessed

by each item's factor loading and cross-loadings using SPSS. Composite Reliability (CmR) is also used to examine convergent validity. AVE and CmR are calculated according to the formulas shown in Table V.12 and V.13 respectively.

Discriminant Validity '*is the extent to which a construct is truly distinct from other constructs – the higher the discriminant validity, the more evident it is that the construct is unique from other constructs and vice versa.'* (Hair et al., 2010, p.710). A conservative approach to assessing discriminant validity is to compare the $\sqrt{AVE}$ by a construct's scale items with the inter-scale correlations for that construct. If the $\sqrt{AVE}$ is higher than the inter-scale correlations of the construct, discriminant validity is present (ibid.).

4.8 Multi-group Moderation

4.8.1 Conducting Multi-group Moderation

To moderate the model with categorical variables, multi-group moderation was conducted. In my research, the moderators examined are the demographic variables (gender, age, education, and internet experience) and the cultural variable UA.

To test the effects of the moderators on the CFA models, the samples were categorised into levels, and the factor structure and loadings were examined for equivalency across the groups. Specifically for the UA, Hofstede (1997), confirmed that his national culture indices were suitable for the comparison of sub-culture groups within a single country. According to him, his suggested UA indices are reliable at a group level, not at the individual level. He also suggested that the minimum of twenty respondents should be in a group. Otherwise, the influence of single individuals becomes too strong. In my research, after calculating Hofstede's indices for the Athenian and Heraklion city sample (Table V.10, Table V.11), the samples were categorised into two levels (high and low in UA). Then they were segmented into groups to avoid using the Hofstede's indices at the individual level. There was a sufficient number of respondents in both groups (high UA and low UA) and both samples.

After defining the groups, the impact of the moderators on the relations among the variables in the models is assessed next, by conducting multi-group moderation through two phases. In the first phase, the measurement invariance is carried out by testing

whether configural, and metric invariance is present. Then the structural invariance (second phase) investigates group differences using latent means and covariance analysis (Hair et al., 2010).

4.8.2 Measurement Model Invariance

Measurement invariance refers to the extent to which items or subscales have equal meanings across groups (Hair et al., 2010). It examines whether an item is an indicator of the same factor in each group, even if the factor loadings might be different among the groups. For investigating measurement invariance, multiple-group CFA is conducted (Hair et al., 2010). The first step considers if the configural invariance holds. It tests whether the factor structure represented in the CFA achieved adequate fit when both groups were assessed together and freely; that is, without any cross-group path constraints. After representing the CFA measurement model in AMOS, the groups are created (i.e. low and high UA), and then the data is split among groups. Next, model fit is attended, and if a good fit is achieved, then configural invariance is present. If the model does not pass the configural invariance test, then the modification indices are checked at to improve the model fit or to see how to restructure CFA.

Having passed the configural invariance test, the second step was to test for metric invariance. It assesses whether the loadings of each item on their specified factor are equal in the two groups **(**Hair et al., 2010). Metric invariance is conducted by calculating chi-square and DF differences (Δchi-square, ΔDF) for two nested models. In the first model, constraints imposed on all the unstandardised factor loadings simultaneously and the variance of the latent construct equalled to unity between groups. Placing these constraints in AMOS, the values are forced to be equal across groups. This model then is compared to the baseline model where none of the factor loadings is constrained. In this analysis, a calculated significant p-value, for the Δchi-square and ΔDF is evidence of differences between groups or that the meaning of the latent construct is shifting across groups. In the opposite case, where there is no statistical difference between the constrained and unconstrained models, metric invariance is present.

Valid comparisons between groups usually require that stricter conditions are applied, which is referred as strict measurement invariance. Nevertheless, it rarely holds true in

applied context (van De Schoot et al., 2015). There is evidence though that the Δchi-square is sensitive to factors unrelated to changes in invariance targeted constraints (e.g. sample size). Hence, researchers (Cheung and Rensvold, 2002), are recommending to use the difference between the CFIs (ΔCFI) of the two models, to investigate measurement invariance further. When the ΔCFI between the two models of varying levels of measurement invariance (e.g. equal forms versus equal loadings) is lower than 0.01, then invariance in likely tenable (Cheung and Rensvold, 2002), which is desirable to proceed to the next phase (structural invariance).

4.8.3 Structural Invariance

After having achieved metric invariance, assessment of structural invariance is carried out, by comparing the relations among the factors and other external variables, in particular among groups. It is conducted by calculating Δchi-square, ΔDF, p-value, and ΔCFI in the structural model with all the significant paths, between the unconstrained and the same constrained model. A significant p-value and a ΔCFI>0.01 indicate that the two groups are different and structural invariance is not present. Then, the equivalent, non-equivalent paths across the groups are examined. That is the allocation of the path differences, is carried out by constraining one path at a time and by checking the significance of Δchi-square. If the constraining path produces a significant change indicated by the p-value, then the two groups do not demonstrate factorial invariance about that path, representing differences between these two groups.

Based on the above analyses the empirical results presented in Chapter five confirmed or disconfirmed the suppositions about the relations between the different groups and the ‘behavioural intention’ to use e-services.

4.9 Summary and Conclusions

In this Chapter, a description of the methods of my research is presented. It discussed the empirical setting of the model testing phase. The suggestions from relevant literature together with the findings from the exploratory studies revealed the research constructs, the constructs inter-relationships, the research hypotheses and finally the hypothetical model. All constructs of this research were taken from literature. A definition of each construct, its measurement scale, and the modifications done, if any, were reported. Eight constructs were proposed, and fifteen hypotheses were generated

to explore the determinants that seem to mostly affect the citizens' INT (the ninth construct) to use eGovernment services, in Greece. The 35 items were distributed to the constructs: PE, EE, SI, FC, TOI, TOG, TOC, HBC, and INT. The INT and HBC were the dependent variables. The demographic variables (gender, age, educational level, internet experience) and UA, which are known to impact on the adoption of eGovernment were considered. It hypothesises effects of these variables as moderators on the relationships of the hypothesised model and the dependent variables.

The Chapter reported the results of the piloting phase that took place in the survey. The sample was drawn from the TEIPel students being Athens and the Heraklion city residents. None of the tasks revealed any significant problems, but the survey was refined. Exploratory factor analysis of the pilot data confirmed initial reliability, validity, and comprehensibility of the instrument.

Additionally, it presented the processes of the development and validation of the instrument, as well as the data estimating methods and their rationale, to reach the results that are shown in Chapter five. As discussed in Chapter three, a survey, based on an online administered questionnaire, is the data collection method adopted to explore the objectives of my research. The data was primary analysed via SEM. Hence, the preliminary statistical analyses, followed by EFA, CFA and the structural model assessment were presented. It discussed in detail the model assessment criteria, and how constructs' validity and reliability were tested. Finally, the steps for multi-group moderation assessment (measurement invariance and structural invariance tests) were presented. All these processes are followed in Chapter five, by using data from two cities' citizens, where the model is empirically assessed to confirm or disconfirm the hypotheses and meet the goals of this Research Project.

CHAPTER 5: RESEARCH RESULTS AND ANALYSES

5.1 Introduction

Chapter five includes the results of the various analyses conducted for constructing a valid and reliable questionnaire to measure 'behavioural intention' to use local government e-services using data from two cities residents, in Greece. The main section of this Chapter consists, of the EFA, CFA, assessment of the structural model and multigroup moderation tests for the demographic variables and UA. In the beginning, to obtain a baseline model that fits both samples, the two samples were pooled into one working file, but the measurement model did not reach acceptable validity. Therefore the measurement model testing of the two samples were carried out separately, followed by the structural model assessment to investigate the theoretical hypotheses and answer the research questions. Then a model that represented both models was developed. All the various analyses followed have been described and discussed in Chapter four.

5.2 Descriptive Statistics

5.2.1 Demographic Data and the Cultural Variable Uncertainty Avoidance

First, the descriptive analysis of the demographics of the research instrument revealed the characteristics of the samples about gender, age, education, internet experience, UA, and eGovernment service usage. They are presented in Table I.1, while their data plots are depicted in Table I.2. The descriptive statistics for all the items of both samples are shown in Table II.1. They include the mean and the standard deviation of the responses.

The results revealed that the respondents of the two samples mostly used the Internet for gathering information. They used the eGovernment websites more than they used their municipality's site, probably because they are younger than the average age of the Greek population and used their Universities' websites and other e-services, e.g. e-taxation. They did not seem to conduct commercial transactions (e-commerce) in general. A great majority was not aware of the central government portal 'Hermes', and the vast majority had never used it.

Then the comparison of the demographics of the respondents of the two samples with the average Greek population (Table I.3), confirmed that the respondents were younger, more educated, more experienced in using the new technology.

Afterwards, the UA Index (UAI), was assessed through the Hofstede's Values Survey Module (VSM94)[30] (Hofstede, 1994). UA questions means, the index calculation formulas of means and the calculations for the Athens and Heraklion samples are listed in Tables V.10, V.11 respectively. The Athens sample showed a very high UAI (UAI=93.33), which is very close to Hofstede's UAI of 100 for Greece (Hofstede, 2011), confirming Hofstede's categorisation of Greece as scoring highest in this cultural variable. The Heraklion sample scored a little lower in the UAI (85.07), but still very high; not very far either to Hofstede's UAI. The findings supported that the samples' UA characteristics satisfied the cultural criteria of the population.

5.3 Data Analyses

5.3.1 Data Sample

In the beginning, the analysis was carried out using the combined sample (pooled data), to get a baseline model that fits both samples. This sample comprised of 843 participants and 35 questions. The descriptive statistics for the combined data is presented in Table II.2. First, the preliminary tests were conducted.

5.3.2 Assessment of Normality

The evaluation of the univariate and the multivariate normality was carried out using AMOS. Table III.1 includes the univariate statistics and its Critical Ratio (CR) for each of the 35 items. As can be seen in the last two columns of the table, the univariate kurtosis values were lower than 7. Hence no item was substantially kurtotic.

Then the multivariate kurtosis index and CR (at the bottom of the kurtosis and CR columns, respectively) were checked. The CR value, (Mardias (1974), normalised estimate of multivariate kurtosis), was less than 5. Hence, normality was present in the sample.

5.3.2 Univariate - Multivariate Outliers

When tested for normality, AMOS produced a table 'Observations farthest from the centroid' (Mahalanobis distance D^2 values). This table included cases whose scores differed significantly from the centroid of scores for all cases, ranked in decreasing

[30] The VSM94 is a modified version of the original VSM used by Hofstede in his international study.

order (Table III.2). Sixty-seven observations were identified as possible outliers (calculated D^2/DF were above the value of 4), but upon a one by one inspection of all these cases, they proved to be valid data points and, therefore, they were retained in the sample.

5.3.3 Homoscedasticity

The Levene's test was carried out on the combined sample, and the p-value results were insignificant for all the factors. Hence, the null hypothesis[31] was rejected, and the homoscedasticity assumption was met (Table III.3).

5.3.4 Multicollinearity

Bivariate and multivariate correlations were examined using the SPSS. The bivariate collinearity was assessed by examining the correlation matrix. It showed that there was no correlation between any two items above 0.8 (Table III.4). Multivariate correlations were assessed by estimating the Variance Inflation Factors (VIFs), and all the readings were below 3.0 (below the threshold of 5.0), and the tolerance measures were above 0.1 (Table III.5). Thus, multicollinearity was not an issue in the sample.

5.3.5 Assessment of Common Method Bias (CMB)

The results of the Principal Component Analysis using one factor indicated that the largest factor explained only 25.97% of the total variance (Table III.6). There was no single factor accounting all of the variance. Hence it was assumed that CMB was not present (Gefen et al., 2011).

5.3.6 Exploratory Factor Analysis

The combined sample of 843 responses and 35 items was used in the analyses. The sample size far exceeded the requirement of 10 participants per item (Hair et al., 2010). Factor analysis using MLE and Promax rotation was conducted on all of the items. The Analysis KMO measure of sampling adequacy equaled 0.92, and the results of Bartlett's test of Sphericity was also highly significant (p=0.00) (Table III.7), indicating that the sample was adequate for analysis and appropriate for the use of factor analysis (Field, 2009). The inspection of the factors with the eigenvalues greater than 1.0,

[31] The difference in the variances between the constructs is zero

revealed that retaining nine factors was sufficient (Table III.8). These nine factors accounted for 60.14 of the total variance explained. Findings were in line with the expectations. Further inspection of the EFA results was carried out by the factor loading table (Pattern Matrix) (Table III.9). To ease the understanding, the factor loadings below 0.20 are not displayed, and only the loadings of the items to their respective factors are shown. As can be seen in Table III.9, items PE5 and INT2 had strong loadings on the construct HBC. The same results were obtained in the pilot test. The items' wording relevance to HBC explains their loading on it. All other items had strong loadings on their respective constructs. Next, the assessment of the research model is presented.

5.3.7 Confirmatory Factor Analysis

5.3.7.1 Applying the Confirmatory Factor Analysis

The process of measurement model fit and validity were implemented to the pooled data, and if a measurement model with acceptable fit and established validity was reached, then the model would be tested for both sets separately to investigate differences in the two samples. Then the structural model would be examined to determine measurement equality or differences between the two samples.

The measurement model was drawn on the AMOS with all variables linked as shown in Figure IV.1. Running the AMOS for the working file, the indices were: Chi-square=1450.71 with DF=519 and chi-square/DF=2.985, just below the cutoff value of 3; GFI=.933, AGFI=.919, CFI=.968, PNFI=.809, SRMR=.0552 and RMSEA=.031 (low=.028, high=.035) and PCLOSE=.673. These indices indicated that the model should be accepted, but there was room for further model improvement.

5.3.7.2 Model Refinement Criteria

After having achieved acceptable model fit indices for the whole sample, the assessment of the measurement model was followed, by applying the refinement criteria discussed in Chapter four, to figure out the best items–variables representation. That is achieving SRWs and SMCs values higher than 0.5; SRCs with values in-between ±2.58; MIs with low covariance between error measures and low regression weights between their reflecting factors. In the SRWs' output, all values were above 0.6, except for two items (Table III.10.a). The SMCs estimates had some items below

0.5 (Table III.10.b). The SRCs, in Table III.11, revealed that the items TOG4 and TOC4 had a few values outside the range of ±2.58. The MIs readings (Table III.12) also indicated that the measurement model should be refined. The items TOG4 and TOC4 were problematic in most of the criteria, and thus it was decided to be deleted[32].

After the deletion of the TOG4 and TOC4 items, the rerun of CFA depicted in Figure IV.2 gave the following fit indices: Chi-square statistics=694.073 with DF=454 chi-square/DF=1.529 indicating that the model should be accepted. The other readings were: GFI=.946, AGFI=.934, CFI=.978, PNFI=.809, SRMR=.0415, RMSEA=.026 (low=.022, high=.030) and PCLOSE=1.0. All indices were acceptable and also were improved.

Since the model fit indices were acceptable for the whole data sample, then CFA was carried out for the two samples separately to check the measurement model fits (Byrne, 2010). Their readings were (Figure IV.3 and Figure IV.6):

Athens sample CFA indices: Chi-square=673.612 with DF=454 and chi-square/DF=1.484, GFI=.912, AGFI=.891, CFI=.967, PNFI=.779, SRMR=.0372, RMSEA=.034 (low=.028, high=.039) and PCLOSE=1.0.

Heraklion sample CFA indices: Chi-square=563.443, DF=455 and chi-square/DF=1.238, GFI=.910, AGFI=.889, CFI=.977, PNFI=.768, SRMR=.040, RMSEA=.027 (low=.019, high=.034) and PCLOSE=1.0.

The model fit estimates were acceptable for the separate samples too.

5.3.7.3 Convergent and Discriminant Validity and Reliability

After the required modification in the combined sample, all item loadings in the SRWs output were above the threshold of 0.5 (Table III.13.a). SMCs were all above 0.5 except for a few, which were divided into two groups (Table III.13.b). The first included TOG3 and TOC3 which could not be deleted otherwise an unidentification problem might be

[32]According to Byrne (2010), items with high covariance plus high regression weight in the MIs should be candidates for deletion. Also items that proved to be problematic for most of the other criteria, should be candidates for deletion.

aroused. The second group consisted of TOI2, TOI1, TOI3, FC4, FC3, TOG4, and EE3 which did not demonstrate any issue on the rest of the deletion criteria.

To test convergent validity further as well as discriminant validity, the AVEs and the square root of the AVEs were calculated and are shown on the diagonal in the matrix (Table III.14). They were compared to all inter-factor correlations. Item FC had an AVE value (.487), lower than 0.5, which indicated a convergent validity problem. The diagonal values of the factors TOG and FC were lower than all their inter-construct correlations. The square root of AVE for TOG (.700) was lower than the correlation value of TOI (.715). The same problem aroused with FC variable. These measures indicated discriminant validity problems.

Reliability coefficients were assessed via SPSS for all the items comprising a factor, and the results are shown in Table III.15. In all cases factors' reliabilities were above the minimum threshold of 0.7, indicating that reliability was present in the factors.

The overall results indicated convergent and discriminant validity problems. Since the combined data sample showed problems with validity, and in the absence of more refinement, the two samples were examined separately. This decision was also supported by the measurement invariance test conducted on AMOS, between the Athens and Heraklion samples. The significant p-value (0.00) and ΔCFI (0.18) indicated that the two samples were different (Table III.16). At this point and before assessing the two samples separately the two constructs, PE5 and INT2 that loaded on the factor HBC were renamed HBC4 and HBC5 respectively, and by these names are referred in the rest of the analyses.

5.4 The Athens Sample Analysis

5.4.1 The Preliminary Tests

The two-step method approach, starting with the assessment of the measurement model reached above and afterwards, the structural model was applied to the Athens sample. Before any analysis was undertaken, the preliminary tests were carried out.

5.4.1.1 Assessment of Normality - Outliers

The normality assessment, using AMOS showed that there was no value above 7.0, and the multivariate index was 4.375, below the cut-off of 5.0 (Table III.17). Hence the

sample was normal. In the produced by AMOS table (Mahalanobis distance D^2), 27 cases identified as possible outliers (Table III.18), which after a closer inspection, they proved to be valid data points and, therefore, were retained in the sample.

5.4.1.2. Homoscedasticity Assessment

The Levene's test was conducted on the Athens sample, and the results were insignificant for all of the factors (Table III.19), demonstrating that the data was homogeneous.

5.4.1.3 Multicollinearity and Common Method Bias

Bivariate collinearity did not exist because there was no correlation above 0.8 between any two items (Table III.20); all the readings of the VIFs were below 5.0, and the tolerance measures were above 0.1 (Table III.21). Thus, multicollinearity was not an issue.

Next, the results of Harman's single-factor test revealed that one factor measured only 25.55% of the variance (Table III.22). That is, no single factor accounted for all of the variance. Hence CMB was not an issue.

5.4.2 Exploratory Factor Analysis

Factor analysis using MLE with Promax rotation was conducted on of all of the 33 items using SPSS. The KMO measure of sampling adequacy equalled .904 (Table III.23), which was very good. The result of Bartlett's test of Sphericity was also highly significant (p=0.00). Therefore, the sampled data was adequate for factor analysis. Then the inspection of the eigenvalues above 1.0 showed that retaining nine factors were sufficient (Table III.24). These nine factors accounted for 60.179 of the total variance explained. Further inspection of the EFA results was carried out through the Pattern Matrix (Table III.25). Findings were in line with the expectations.

5.4.3 Confirmatory Factor Analysis

5.4.3.1 Refinement of the Model

Next, the measurement model of the Athens sample was assessed, by applying the refinement criteria, to figure out the best items–variables representation. The reliability check presented in Table III.26 showed that all values were above 0.7, but if FC3 was

deleted, reliability would improve. Then the validity check was carried out to the measurement model reached above, to examine convergent and discriminant validity. In the SRWs output (Table III.27.a), all items showed loadings above 0.6, except FC3. In the SMCs output, some items had readings below 0.5 and FC3 had the lowest value (Table III.27.b). On the Pattern Matrix (Table III.25), FC3 had a low reading too. Some FC3 readings in the SRCs did not fall in the ±2.58 range (Table III.28). As FC3 proved to be problematic in most of the criteria, it was excluded.

The refined model after the FC3 deletion resulted in the items-variables representation shown in Figure IV.4. The model fit statistics were: Chi-square=617.075 with DF=424 and a chi-square/DF=1.455<2, indicating a good fit. The other fit indices were: GFI=.917, AGFI=.897, CFI=.970, PNFI=.780, SRMR=.0274, RMSEA=.033 (high=.27, low=.38) and PCLOSE=1.0. The overall model fit indices indicated an acceptable fit.

5.4.3.2 Assessment of Convergent and Discriminant Validity

For assessing validities, the readings of the SRWs and SMCs were estimated again. The SRWs were all above 0.6 (Table III.29.a). Some items in the SMCs output though were below 0.5 (Table III.29.b) but did not seem to cause problems to model fit or internal consistency. Reliability had already been established (Table III.26). Convergent validity was present, as all the AVE results were above 0.5 and CmRs were higher than 0.7 (Table III.30). Discriminant validity was supported too; all the AVEs were above 0.5, and all factors' inter-scale correlations were lower than the factors' square root of AVE (Table III.30).

5.4.4 The Structural Model for the Athenian Sample

The structural models usually present more than one solution; thus the process of examining the nested models, which involved testing a sequence of structural models beginning with a baseline or a null model (Ritchie and Sherlock, 2009). The baseline model is then modified and re-evaluated with subsequent structural models[33] using the sequential chi-square difference test. It was calculated by subtracting the chi-square values between sequentially nested models. This process enabled the selection of the

[33] A previous model, to facilitate accurate interpretation of the chi-square comparison.

model that best represented the relations of the primary variables and the dependent variable INT, according to the conceptual framework and the theoretical background.

After five assessments of structural models, the chosen structural model for the Athens sample is depicted in Figure IV.5, and its fit indices were: Chi-square=658.456, DF=433, chi-square/DF=1.521, which were not significant at the .05 level (p=.00). The findings suggested that the model fitted the data satisfactorily in the population from which the sample was drawn. The other indices provided corroborating evidence: GFI=.907, AGFI=.886, CFI=.962, PNFI=.784, SRMR=.0254, RMSEA=.036 (low=.031, high=.042) and PCLOSE=1.0. The fit indices of the structural model were similar to the ones of the measurement model, indicating that the overall model had a good fit (Hair et al., 2010).

The values associated with each path are the SRWs that is the evaluation of the relative contributions of each predictor variable to each outcome variable. AMOS also prints the R^2 values (SMCs) for each dependent variable above it. Tables III.31.a and b., display the SRWs and the SMCs. Table III.32 displays beside unstandardised estimates, standard errors, CR and the p-value, which is the probability value associated with the null hypothesis (that the test is significantly different from zero).

The standardised coefficients revealed the significance of the relationships between INT and HBC and the other factors. The measurement portion of the model was also quite good. The R^2 value of INT was 0.70, which is considered an excellent value to obtain in behavioural sciences research, while for HBC was 0.22. The R^2 values indicated that the model was accounting for a significant proportion of the variance in the measured items. Noteworthy features of the model included the negative relationships between HBC and the other factors, as illustrated by the statistically significant unstandardised regression coefficients.

Figure 5.10 represents the final structural model with the SRWs for each relationship, where the significant paths are shown in bold lines and the insignificant ones in thinner lines. The items' values, errors, and residual means are not shown in this Figure, for the sake of clarity, but they are depicted in Figure IV.5.

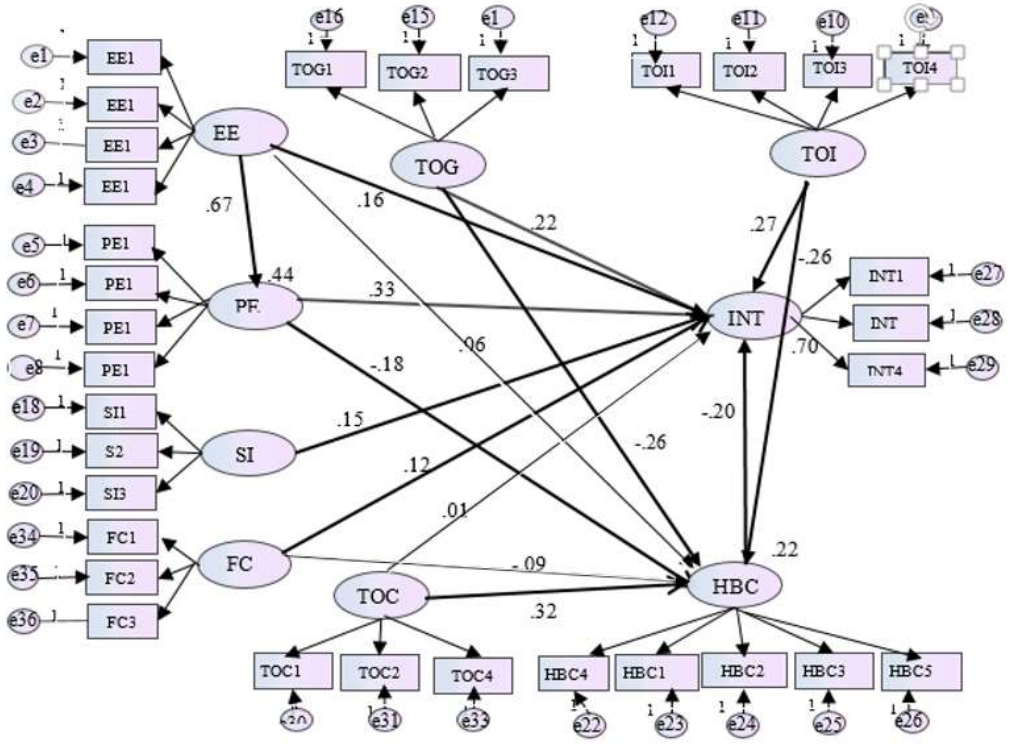

Figure 5.1: The structural model with standardised regression weights (The Athens sample).

5.4.5 Results and Hypotheses Testing for the Athens Sample

The factor loadings (regression weights) estimates indicated that most of the hypothesised relations among the primary factors and the dependent variables were significant. Figure 5.1 and Table 5.1 illustrate the outcomes of the structural model estimation. As can be seen, 12 out of the 15 hypotheses were significant ($p<0.05$) and in the hypothesised direction and significance. The structural model accounted 70% of the variance (SMC=0.70) in the dependent construct (INT), resulting in a structural model that can strongly predict 'intention' to adopt.

Table 5.1: Paths, Hypothesis Testing, and Standardised Estimates (Athens Sample)						
Path	**Hypothesis**	**Stand/sed Estimate**	**CR**	**P**	**Hypothesis Supported**	**Conclusion**
INT←PE	H1	.331	5.194	***	Yes	PE has a significant effect on INT
INT←EE	H2	.157	2.184	0.029	Yes	EE has a significant effect on INT
PE←EE	H3	.666	9.944	***	Yes	EE has a significant effect on PE
INT←SI	H4	.151	2.084	0.021	Yes	SI has a significant effect on INT
INT←FC	H5	.118	2.354	0.019	Yes	FC has a significant effect on INT
INT←HBC	H6	-.196	-4.322	***	Yes	HBC has a significant negative effect on INT
HBC←PE	H7	-.182	-2.195	0.028	Yes	PE has a significant negative effect on HBC
HBC←EE	H8	Ns	0.613	0.54	No	EE has a non-significant effect on HBC
HBC←FC	H9	Ns	-1.253	0.21	No	FC has a non-significant effect on HBC
INT←TOG	H10	.222	2.836	0.042	Yes	TOG has a significant effect on INT
HBC←TOG	H11	-.258	-3.02	0.003	Yes	TOG has a significant negative effect on HBC
INT←TOI	H12	.273	5.036	***	Yes	TOI has a significant effect on INT
HBC←TOI	H13	-.262	-3.458	***	Yes	TOI has a significant negative effect on HBC
INT←TOC	H14	.018, Ns	0.127	0.82	No	TOC has a non-significant effect on INT
HBC←TOC	H15	.315	3.783	***	Yes	TOC has a significant effect on HBC

Note: ***: p-value<0.01, Ns: Not significant. PE: 'performance expectancy', EE: Effort Expectancy, SI: Social Influence, FC: Facilitating Conditions, TOI: Trust in the Internet, TOG: Trust in the Government, TOC: Trust of the CSCs, INT: Behavioural Intention, HBC: Habit of CSCs.

The output shows that for the dependent variable INT, PE had the most significant direct impact (.331), followed by TOI (.273), TOG (.222), then EE (.157) and SI (.151), while last came FC (.118). HBC was negatively related to INT (-.196). The mediating role of PE between EE and INT (partial mediation) was very strong (.666) (Table III.33). This means that PE incorporated some variance of EE. The other dependent variable HBC was positively affected by TOC (.315), and negatively by TOI (-.262), followed by TOG (-.258), and last PE (-.182).

Figure 5.2 represents the covariance structure with hypotheses for the Athens model. The discussion of the results for the Athenian sample is presented in section 5.8, along with the discussion of the findings of the Heraklion city sample.

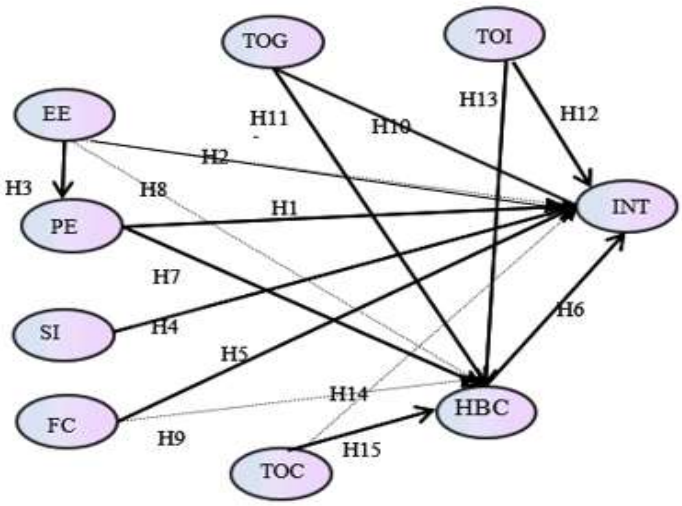

Figure 5.2: Covariance Structure with Hypotheses for the Athens Sample. Note: Insignificant paths are shown in thinner lines.

5.5 The Heraklion Sample Analysis

The two-step method approach was applied to the Heraklion city sample, using the same measurement model reached above for the combined sample.

5.5.1. Preliminary Tests (Normality, Outliers, Homoscedasticity, and Multicollinearity)

First, the preliminary tests were carried out. Assessment of normality was conducted on the Heraklion sample using AMOS, and the results are presented in Table III.34. The readings for kurtosis were less than 7.0, and the multivariate kurtosis index was 4.634 (below 5.0). Thus, the sample was multivariate normal.

The produced by AMOS table for the Mahalanobis distance D^2 values (multivariate outliers) showed that there were 37 possible outliers[34] (Table III.33). A closer inspection of these cases in the sample revealed that they were eligible responses and there was no justification for their deletion.

Levene's test was carried out on the Heraklion sample, and the results were insignificant for all of the constructs, and thus the homoscedasticity assumption was met (Table III.36).

[34] These that exhibited a D^2/DF value above 4.0.

Bivariate high collinearity did not exist. The correlation matrix revealed that there were no correlations above 0.85 between any two items (Table III.37). Next, the readings of the VIFs were below the threshold of 5.0, and the tolerance measures above 0.1 (multivariate correlations) (Table III.38). Thus, multicollinearity was not an issue in the sample.

Afterwards, the assessment of CMB was conducted via Harman's single-factor test to examine whether one factor accounted for all of the variance. The results indicated that the largest factor accounted for only 26.61% of the variance (Table III.39). As no single factor accounted for the total variance, CMB was not an issue.

5.5.2 Exploratory Factor Analysis

Factor analysis using MLE estimation with Promax rotation was conducted on all the 33 items. The results of KMO measure of sampling adequacy was .901 and Bartlett's test of Sphericity was also highly significant (p-val=0.0) (Table III.40), indicating that the sampled data was adequate to use for factor analysis. The inspection of the eigenvalues (Kaiser Criterion - eigenvalues higher than 1.0), revealed that retaining eight factors was sufficient (Table III.41). Nevertheless, based on previous knowledge on the number of constructs and the item loading, a less strict condition was followed, as suggested by Field (2009). The factors that had an eigenvalue greater than 0.9 were retained. These nine factors accounted 60.791% of the total variance explained. Further, inspection of the EFA results was carried out through Pattern Matrix (Table III.42).

5.5.3 Confirmatory Factor Analysis

5.5.3.1 Refinement of the Model

The initial measurement model is depicted in Figure IV.6, and its estimates were acceptable, as mentioned in section 5.3.7.2. Also, all items in the SRW output were above 0.6 (Table III.43.a). However, in the SMC output, some items were below 0.5 (Table III.43.b). The reliability check (Table III.44) showed that all constructs had reliability readings above 0.7, but reliability would improve for the FC construct if the FC1 item was deleted. A few FC1 readings, in the SRCs output, were not in the range of ±2.58 (Table III.45). The FC1 item also proved to be problematic on most of the other criteria, and it was decided to be excluded from the model.

After this refinement, the resulted model is depicted in Figure IV.7. The model fit indices indicated a very good fit: Chi-square=486.162, DF=424, chi-square/DF=1.147. The other estimates were: GFI=.919, AGFI=.900, CFI=.986, PNFI=.770, SRMR=.0216, RMSEA=.021 (low=.009, high=.029) and PCLOSE=1.00.

5.5.3.2 Assessment of Validity

Tables III.46.a and b, show that all SRWs were above 0.6, SMCs were above 0.5, except a few, which did not seem to harm the model validity. Then, convergent and discriminant validities were assessed for the measurement model. All the AVE values were above 0.5 (Table III.47). All the square roots of AVEs were higher than the inter-construct correlations, and reliability had already been demonstrated (Table III.44).

Having established measurement model fit and validity, the assessment of the structural model followed.

5.5.4 The Structural Model

The structural model presented more than one solution again. Hence the process of testing a sequence of structural models beginning with a baseline model was conducted. The baseline model was then modified and re-evaluated with the subsequent structural models using their sequential chi-square difference test. Having assessed four models, the model that best represented the factorial relations according to the conceptual framework and theoretical background was chosen. This structural model is depicted in Figure IV.8.

The chosen model fit indices readings were: Chi-square=612.666 with DF=435 and a chi-square/DF=1.408, GFI=.900, AGFI=.879, PNFI=.770, CFI=.961, SRMR=.0356, RMSEA=.035 (high=.028, low=.041) and PCLOSE=1.000, which was insignificant and with 90% confidence, the RMSEA value falls within these two interval values. All readings indicated a good fit.

Tables III.48.a and b, display the SRWs and the SMCs, while Table III.49 displays beside unstandardised estimates, standard errors, CR and the p-value[35]. Standardised coefficients present the relationships between INT, HBC, and the other factors.

[35] The p-value represents the probability value associated with the null hypothesis that the test is significantly different from zero.

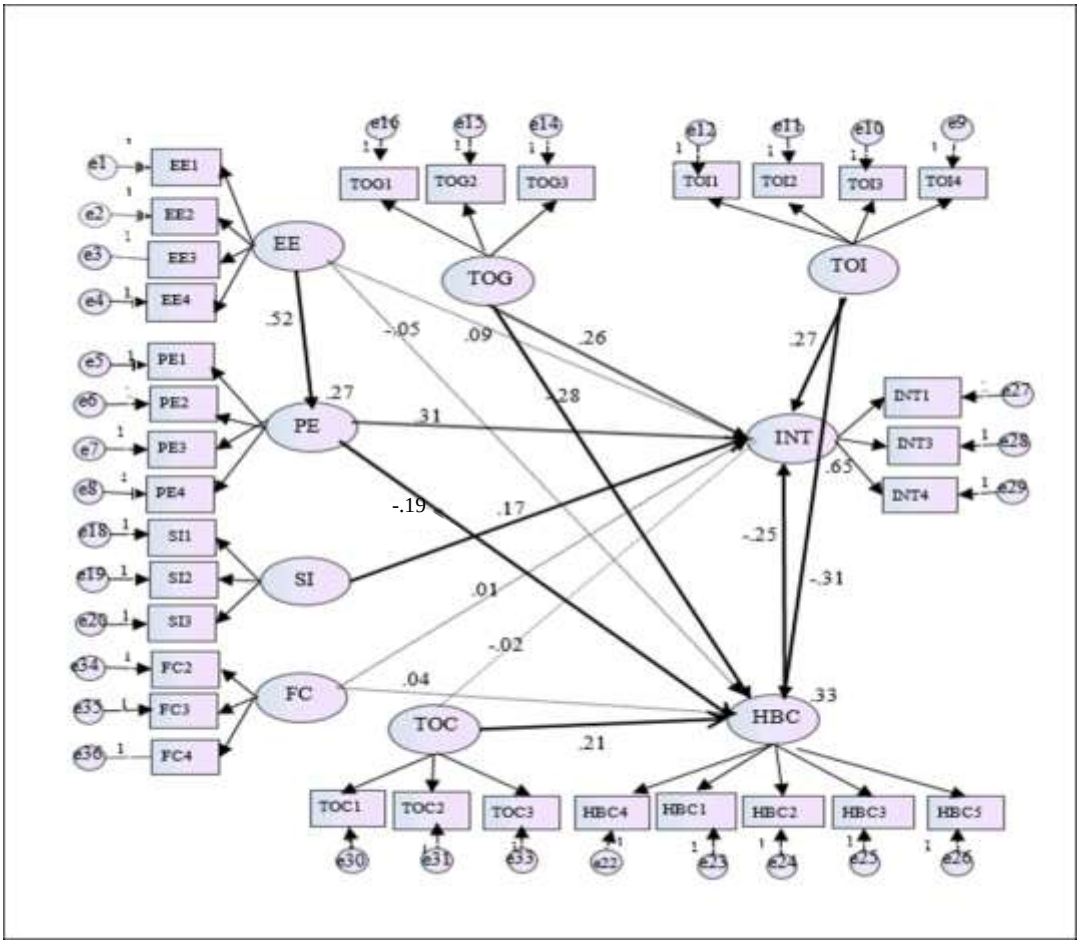

Figure 5.3: The Heraklion Final Model

5.5.5 Results and Hypotheses Testing for the Heraklion Sample

The measurement portion of the model was quite good. The R^2 value of INT was 0.65, of HBC is 0.33, and of PE is 0.27, indicating that the model was accounting for a significant proportion of the variance in the measured items. The final model is depicted in Figure 5.3, where the significant paths are shown in bold lines and the insignificant ones in thinner lines. The results of hypotheses testing are summarised in Table 5.2.

The output table (Table 5.2) shows that for the dependent variable INT, PE had the most significant direct impact (.313), followed by TOI (.266) and TOG (.263) with almost the same effect, and last SI (.174). HBC was negatively related to INT (-.250). EE had no direct impact on INT. Nevertheless, the mediating effect of PE between EE and INT (full mediation) was significant and very strong (.524) (Table III.50). This means that PE incorporated some variance of EE. FC had no impact on INT nor HBC. Thus it is not included in the model.

Table 5.2: Paths, Hypothesis Testing and Standardised Estimates for the Heraklion Sample						
Path	**Esti-mate**	**C.R.**	**P**	**Hypo-thesis**	**Su-ported**	**Conclusion**
INT←PE	.313	3.183	.001	H1	Yes	PE has a significant effect on INT
INT←EE	Ns	1.025	.306	H2	No	EE has a non-significant effect on INT
PE←EE	.524	7.600	***	H3	Yes	EE has a significant effect on PE
INT←SI	.174	2.431	.004	H4	Yes	SI has a significant effect on INT
INT←FC	Ns	.191	.849	H5	No	FC has a non-significant effect on INT
INT←HBC	-.250	-3.845	***	H6	Yes	HBC has a significant negative effect on INT
HBC←PE	-.193	-3.298	***	H7	Yes	PE has a significant negative effect on HBC
HBC←EE	Ns	.279	.581	H8	No	EE has a non-significant effect on HBC
HBC←FC	Ns	.279	.781	H9	No	FC has a non-significant effect on HBC
INT←TOG	.263	4.661	***	H10	Yes	TOG has a significant effect on INT
HBC←TOG	-.275	-2.345	***	H11	Yes	TOG has a significant negative effect on HBC
INT←TOI	.266	2.113	***	H12	Yes	TOI has a significant effect on INT
HBC←TOI	-.312	-5.088	***	H13	Yes	TOI has a significant negative effect on HBC
INT←TOC	-.02, Ns	.223	.824	H14	No	TOC has a non-significant effect on INT
HBC←TOC	.214	3.064	.002	H15	Yes	TOC has a significant effect on HBC

Note: ***: p-value<0.01, Ns: Not significant. PE: 'performance expectancy', EE: Effort Expectancy, SI: Social Influence, FC: Facilitating Conditions, TOI: Trust in the Internet, TOG: Trust in the Government, TOC: Trust of the CSCs, INT: Behavioural Intention, HBC: Habit of CSCs.

The other dependent variable HBC was negatively affected by TOI (-.312), followed by TOG (-.275), and PE (-.193) and positively by TOC (.214). Overall ten out of the fifteen hypothesised relations were confirmed. SMC=0.65, which means that the structural model contributed 65% of the variance in the dependent construct (INT), indicating that the overall structural model can strongly predict 'intention' to accept. The significant – insignificant hypotheses are depicted in the covariance structure model below (Figure 5.4).

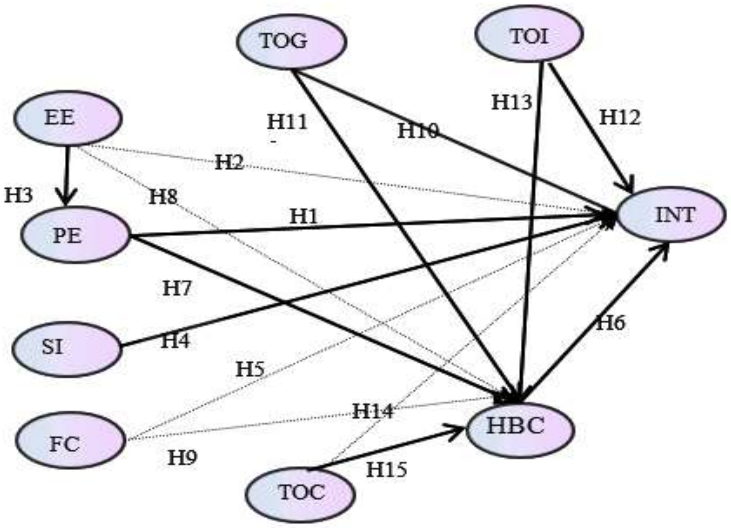

Figure 5.4: Covariance Structure with Hypotheses for the Heraklion Sample

Next, in section 5.8 the results for both samples are discussed.

5.6 The Combined Model

The two models are configurally similar but not necessarily metrically similar. Although in the beginning, the assessment of the proposed research model applied to the combined sample pointed to a need for a separate sample analysis, the resulting structural models of the two different analyses showed many similarities. The variables TOI, PE, EE, INT, HBC, and SI were represented with the same indicators in both models. Nevertheless, in the Heraklion final model, the construct FC was not present.

Then, it was possible to draw a model that best represented both samples (by keeping the common paths). The model depicted in Figure 5.5 is the closest one. This model represents the two municipalities' samples because (a) it is nested within both samples models (a logical subset), (b) all its paths are significant. Since the model is nested within both models, discriminant and convergent validity have been established, and also configural, and metric invariance are present between the Athens and Heraklion models.

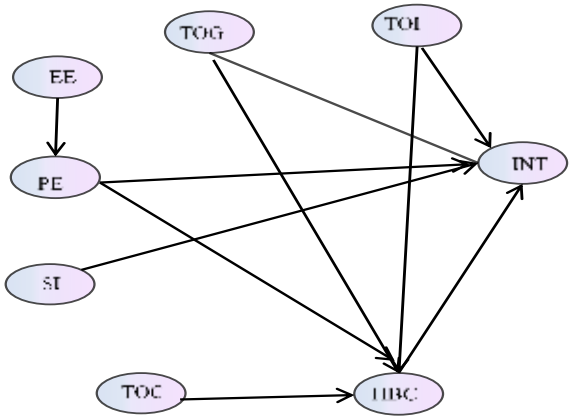

Figure 5.5: The Covariance Structure of the Combined Model.

5.7 Multi-group Moderation

Next, the investigation of the moderating impacts of the five moderators on the research model for each city sample is following, by applying multi-group analysis. For running the multi-group analysis, the sample for these variables except gender was re-coded, and afterwards, the split approach was used (Hair et al., 2010).

5.7.1 The Athens Sample

The analysis starts with the Athenian sample followed by the Heraklion city sample. Following the guidelines described in Chapter four, the group analysis test was run for the two groups in the sample. In this section, the multiple fit indices (CFI, TLI, SRMR, and RMSEA) suggested by Byrne (2010), for assessing model goodness of fit, were used.

5.7.1.1 Gender Groups

The Athens sample was distributed to 206 males and 216 females. For conducting multigroup moderation, measurement invariance has to be examined first. The measurement sample's fit statistics were: Chi-square=1046.537 with DF=848 and chi-square/DF=1.234, SRMR=.0383, CFI=.970, TLI=.964 and RMSEA=.024 with 90% confidence interval (low=.018, high=.028) and PCLOSE=1.00 (Figure IV.9). All were indicating a good fit. Thus configural invariance was present.

Then after constraining all the regression paths to be equal to the model, I calculated the Δchi-square, ΔDF, the p-value and ΔCFI, between the constrained and unconstrained models. The p-value=0.261 (insignificant) and ΔCFI=0.008 indicated

that the models were invariant (Table III.51). Thus, the measurement model met criteria for metric invariance across gender.

The second level of invariance, the structural weights, was assessed by calculating the p-value and ΔCFI in the structural model with all the significant paths, between the unconstrained and the same constrained model. The insignificant p-value (.620) and ΔCFI (.006) indicated that the two groups were similar across gender (Table III.52). Hence there was no difference between males or females.

5.7.1.2 Age Groups

The Athens sample was distributed into five age groups, and an attempt was made to divide the sample into these five levels. However, when tested separately, three groups (below 21, 31-40 and above 50 years old) produced solutions that were not admissible, due to the small sample sizes. Thus, the sample responses were categorised into two groups: the low for respondents with age lower or equal to 40 years and the high for those with age higher than 41 years old. This categorisation was taken from van Deursen and Pieterson (2009), where people up to 40 years old were considered to comprise the low age group and people older than 40 the high age group. These two groups were compared for invariance. There were 282 responses in the low age group and 140 in the senior age group.

The same procedure described in section 5.7.1.1 was followed. First, the configural invariance was tested. The measurement sample's fit statistics were: Chi-square=1117.704 with DF=848, chi-square/DF=1.318, CFI=.943, TLI=.933, SRMR=.0383 and RMSEA=.032 with 90% confidence interval (low=.027, high=.037) and PCLOSE=1.00. All were indicating a good fit, and thus configural invariance was present (Figure IV.10).

Then, after constraining all the regression paths to be equal to the model, I calculated the p-value and ΔCFI between the constrained and unconstrained models. The estimated p-value=.419 (insignificant) and ΔCFI=.005 indicated that the model was invariant (Table III.53). Thus, metric invariance was present.

Then the structural invariance was tested, by calculating p-value and ΔCFI between the unconstrained and constrained structural models with all the significant paths. The p-

value=0.0 (significant) and ΔCF=.013 indicated that the two groups were variant (Table III.54). A process of constraining one path equal at a time between the two groups, and testing for significant changes in chi-square was applied, to allocate the non-equivalent paths (Byrne, 2010). After a set of reruns, the non-equivalent paths were allocated. The assessment of paths across age groups is presented in Table III.55, along with estimates, p-values, and CR. Table III.56 shows the SMCs for the major dependent variables across groups.

5.7.1.3 Educational Groups

The sample descriptive frequencies for the education variable revealed that could be divided into four levels (e.g. basic education, below bachelor degree, bachelor degree, and above bachelor degree level). Two groups (the first and the fourth) gave a not admissible solution due to the small sample size. Hence, the sample was categorised into two groups: below bachelor degree level, and bachelor degree level and above and these two groups were compared for invariance. There were 120 responses in the low educational group and 302 in the high educational group.

At the measurement model, the sample fit statistics were: Chi-square=1081.857 with DF=848 and chi-square/DF=1.276, CFI=.963, TLI=.957, SRMR=.0391 and RMSEA=.026 with 90% confidence interval (low=.021, high=.030) and PCLOSE=1.00 (Figure IV.11); all indicating a good fit and thus configural invariance was present. Then the calculated insignificant p-value=.997 and ΔCFI=.005 between the constrained and unconstrained models indicated that the models were invariant (Table III.57) and hence metric invariance was present.

At the structural level, the two groups proved to be variant, as indicated by the significant p-value=0.0 and ΔCFI=.012, between the unconstrained model with all the significant paths and the constrained one (Table III.58). The allocation of variant - invariant paths was carried out by the same procedure described above. Table III.59 shows the outcomes along with estimates, p-values, and CR, while Table III.60 shows SMCs for INT, HBC, and PE.

5.7.1.4 Internet Experience Groups

The internet experience was calculated as a composite index including the web usage for information and transactions. Each variable was measured on a 5-point Likert scale, ranging as follow: 1: rare usage, 2: a few times a year, 3: a few times a month, 4: a few times a week and 5: daily usage. Internet experience was calculated as the sum of these two. Hence it got the values of 2 to 10, and it was categorised into two groups. The low experience (values 2 to 6) and the high experience group (7 to 10). The Athens sample was distributed to 154 respondents with low internet experience and 268 with high experience.

The measurement sample's fit statistics, depicted in Figure IV.12, were: Chi-square=1095.581 with DF=848, chi-square/DF=1.292, CFI=.961, TLI=.954, SRMR=.0333 and RMSEA=.026 with 90% confidence (low=.022, high=.031) and PCLOSE =1.00. All were indicating a good fit, and hence configural invariance was present. The calculation of p-value (.526) and ΔCFI (.006) between the constrained and unconstrained models (Table III.61) proved that the model met criteria for metric invariance across experience groups.

The structural models (constrained and unconstrained) with the significant paths, proved to be different between the two groups (p-value=0.046; ΔCFI=.012) (Table III.62). Then the non-equivalent paths were allocated, and the outcome is presented in Table III.63. The SMCs for the key dependent variables are shown in Table III.64.

5.7.1.5 Uncertainty Avoidance Groups

The responses with UAI values less than 50 comprised the low UA group and the rest of the high UA group. The Athens sample is distributed to 175 respondents with low UA and 247 with high UA.

First, the measurement sample's fit statistics were examined: Chi-square=1162.140 with DF=848 and chi-square/DF=1.370, CFI=.953, TLI=.946, SRMR=.0454 and RMSEA=.030 with 90% confidence interval (low=.025, high=.034) and PCLOSE=1.00 (Figure IV.13). All were indicating a good fit. The p-value=.587 (insignificant) and ΔCFI=.007 between unconstrained and constrained models proved

that the model was invariant across groups (Table III.65); hence, metric invariance had been achieved.

The structural model proved to be not similar between the two groups. The p-value=0.004 and ΔCFI=.013 between the constrained and unconstrained models with all significant paths proved the variance (Table III.66). The equivalent, nonequivalent paths are shown in Table III.67 along with the estimates, CR, and p-values estimated. The R^2s of the dependent variables are presented in Table III.68.

5.7.2 The Heraklion Sample

5.7.2.1 Gender Groups

The same procedures as with the Athens sample were followed for the Heraklion sample. The sample was divided into 204 males and 217 females. First, the metric invariance at the measurement model was checked. The sample fit statistics, depicted in Figure IV.14, were: Chi-square=591.843 with DF=502 and chi-square/DF=1.179, CFI=.974, TLI=.969, SRMR=.0393, RMSEA=.023 with 90% confidence interval (low=.012, high=.030) and PCLOSE=1.00. All were indicating a good fit, and thus achieving configural invariance. Then the p-value=0.176 and ΔCFI=.002 between the constrained and unconstrained models proved that the models were invariant (Table III.69). Thus, metric invariance was present across gender groups.

Then the invariance at the structural level was assessed. The p-value=0.715 (insignificant) and ΔCFI=.007 between the constrained and unconstrained models indicated that the model was invariant between the gender groups (Table III.70). Hence gender did not moderate any relationships in the model. The results were in line with the Athens sample, where there was no difference between males and females.

5.7.2.2 Age Groups

The sample descriptive frequencies for the age variable was categorised into five age groups. However, due to the small sample sizes of the groups, and to be consistent with the Athenian age group analysis, the responses were categorised into two groups. The low group, for respondents lower or equal to 40 years of age and the high for those with age higher than 40 years. These two groups were compared for invariance, as justified

in section 5.7.1.2. There were 291 respondents in the low age group and 130 in the high age group.

The measurement model sample fit statistics, as shown in Figure IV.15, were: Chi-square=553.360 with DF=502 and chi-square/DF=1.102, CFI=.985, TLI=.982, SRMR=.0313 and RMSEA=.018 with 90% confidence interval (low=.012, high=.026) and PCLOSE =1.00. All were indicating a good fit, and configural invariance had been achieved. Then the p-value (0.587) and ΔCFI (.002) between the constrained and unconstrained models (Table III.71) indicated that metric invariance was present in the model across age groups.

At the structural level, the model proved to be variant between the two groups because of the significant p-value (.001) and ΔCFI=.016 (Table III.72). Then the non-invariance for all the significant paths was checked, and the results are presented in Table III.73. Table III.74 shows SMCs for INT, HBC, and PE.

5.7.2.3 Educational Groups

The descriptive frequencies of the sample for the education seemed that it could be divided it into four groups, but samples' sizes were too small for analysis. Then the sample responses were categorised into two groups to be consistent with the Athenian educational group analysis. The below bachelor degree level and the bachelor degree level and above and these two groups were compared for invariance. There were 152 in the low educational group and 269 in the high educational group.

Running the AMOS for the measurement model with the sample split across these two categories (Figure IV.16), its fit statistics were: Chi-square=582.909 with DF=502, chi-square/DF=1.161, CFI=.976, TLI=.917, SRMR=.0387, RMSEA=.022 with 90% confidence interval (low=.012, high=.029) and PCLOSE=1.00. All indicated a good fit, and configural invariance was present. Then the calculated p-value (0.299), and ΔCFI (.002) between the model and the constrained one proved that the model was invariant between the groups (Table III.75). Thus, the measurement model met criteria for metric invariance across educational groups.

The second level of invariance proved to be variant. The estimates for p-value (0.00) and ΔCFI=.013 between the unconstrained model with the significant paths and the

constrained one, indicated that the model was variant across educational groups (Table III.76). The variant, non-variant paths were allocated, and the results are shown in Table III.77, while Table III.78 shows SMCs of the dependent variables for educational groups.

5.7.2.4 Experience Groups

Similarly, with the Athens sample, the experience was calculated as a composite index including the internet usage for information and transactions. Each variable was measured on a 5-point Likert scale, and the Internet experience was calculated as the sum of these two. Hence it got the values between 2 and 10, and it was categorised into two groups: the low experience (values 2 to 6) and the high (values 7 to 10). There were 171 respondents in the low experience group and 250 in the high experience group.

The measurement model fit statistics, shown in Figure IV.17, were: Chi-square=560.644 with DF=502 and chi-square/DF=1.117, CFI=.989, TLI=.987, SRMR=.0391 and RMSEA=.015 with 90% confidence interval (low=.012, high=.021) and PCLOSE=1.00. All were indicating a good fit, and configural invariance was present. Then the p-value (0.377), and ΔCFI (.006) between the unconstrained and constrained models proved that the model was equal across groups (Table III.79). Hence, metric invariance was present.

At the structural weights level, the model was variant between the two groups, as indicated by the p-value (0.004), and ΔCFI (.019) (Table III.80). Again the process of allocating the non-equivalent paths was carried out, and the variant-invariant paths located is presented in Table III.81. Table III.82 shows the SMCs for the dependent variables.

5.7.2.5 Uncertainty Avoidance Groups

The responses with UAI values less than 50 comprised the low UA group and the rest of the high UA group. There were 182 respondents with low UA and 239 with high UA, in the Heraklion sample.

The sample fit statistics at the measurement model were: Chi-square=561.932 with DF=502 and chi-square/DF=1.119, CFI=.983, TLI=.979, SRMR=.0251 and RMSEA=.019, with 90% confidence interval (low=.012, high=.027) and PCLOSE

=1.00 (Figure IV.18). All were indicating that fit was good and configural invariance was present. Then metric invariance was present across UA groups, as the calculated p-value (0.108) and ΔCFI (.008) between the constrained and unconstrained models proved that the models were invariant (Table III.83). At the structural level, the model was variant between the two groups because of the significant p-value (0.077) and ΔCFI (.026) (Table III.84). Then the equal, non-equal paths were allocated and are reported in Table III.85, while Table III.86 shows the R^2s of the dependent variables.

The results of the SMCs (R^2s) of the dependent variables for each sample are summarised in Table III.87. The summary of the variant paths located for each moderator and hypotheses tested for each sample are shown in Table III.88.

The discussion of the most significant findings follows next.

5.8 Discussion of the Results of Both models

5.8.1 Hypothesis Testing Results

In this section, hypotheses testing results for both models are discussed according to their significance on the dependent variable INT first and, next on the HBC. Then the discussion of the impact of the moderators on the relationships in the models follows. Also, the results will help to answer the research questions raised (Section 2.4, p. 12).

My research supports the findings of previews research in eGovernment. Also, both models demonstrated similar results on model specification and goodness of fit. All the primary hypothesised relationships on INT were supported, except the EE and FC on INT for the Heraklion sample, but they can be explained by the literature.

5.8.1.1 ‘Performance Expectancy’ – ‘Behavioural Intention’ Impact

The PE variable exhibited the strongest effect on INT, for both samples, with standardised direct effects above 0.30 (Tables 5.1, 5.2). Hence hypothesis H1 has been supported. It is worth to note that PE incorporated variance from EE. The PE variable comprised of four indicators measuring the perceived performance gained by using the e-services. These indicators covered characteristics of e-services associated with usefulness, speed, and time effectiveness of accomplishing the tasks required. As e-services offer a quicker service method and practical benefits, then PE of a user rises, and also the intention to use e-services.

In their original model, Venkatesh et al. (2003), found PE to be the strongest predictor of INT. In the consumer context, Venkatesh et al. (2012), found PE to be the most critical driver of INT when interaction terms were included. Furthermore, PE has been revealed as the most influential determinant of INT in other models too, e.g. TAM, TPB, in the context of the new technology adoption and the eGovernment as well.

5.8.1.2 The 'Trust' Factors - 'Behavioural Intention' Impact

The trust factors, TOG and TOI, comprised the second and third strongest determinants in both models. They were revealed as the major predictors in eGovernment take up, may be more important than PE, due to the EE's accumulated variance on PE. The effect of TOI on INT revealed as the second strongest, in both samples, with standardised direct effects 0.27 (moderate effects). Then hypothesis H12 has been supported. The results are in line with literature concerning the citizen trust in the Internet. Specifically, for conducting financial transactions, TOI remains a significant enabler to electronic Government applications and in particular makes users more willing to get involved in them (Carter and Bélanger, 2005; Carter and Weerakkody, 2008; Fakhoury and Baker, 2016). On the contrary, in the absence of trust in the Internet, many citizens will be less likely to consider utilising eGovernment services or changing their habits of going to CSCs.

TOG, referring to trust in the municipalities, showed the stronger impact on INT in the Heraklion sample (0.26), while in the Athenian sample was (0.22). It seems that the Heraklion city residents attached a little higher significance in the trust of their local authority than the Athenians did. Then H10 has been supported. In the literature, trust in the provider has been acknowledged to affect the willingness to use eGovernment services too. The stronger the citizen's trust in the e-service provider, the greater the impact of TOG on the INT (Bélanger and Carter, 2008; Carter and Weerakkody, 2008; Fakhoury and Baker, 2016).

5.8.1.3 'Habit of CSCs' – 'Behavioural Intention' Impact

In this research, the established HBC has been examined. HBC was found to be negatively related to INT, with standardised direct effects for the Athenian and Heraklion city samples to be -0.20 and -0.25, respectively. Then, H6 has been supported. As people have established a habitual pattern of going to CSCs to get

serviced, their INT to use e-services decreases. Venkatesh et al. (2012), found the Habit-INT effect to be more significant than any other variable, including PE, when interaction terms were excluded. The difference in Venkatesh et al. (2012), findings with my results are due to the type of 'habit' being examined.

5.8.1.4 'Social Influence'– 'Behavioural Intention' Impact

Both samples showed a weak relationship between SI and INT (standardised direct effects 0.15 and 0.17). Then, H4 has been supported. In the original UTAUT model, SI influence has been tested in the context of eGovernment, and its effect on INT has acquired acceptance (Shih and Venkatesh, 2002; Sun and Zhang, 2006; Burton-Jones and Hubona, 2005; Irani et al., 2009). In my research, Athenians and Heraklion city residents do not seem to rely much on important others (e.g. family and friends) to be convinced to use municipal e-services. The assumption that individuals tend to consult their social network to reduce any anxiety which arises due to the uncertain environment of the new technology has little applicability in my research. The respondents were characterised by high UA, and the TOI and TOG factors showed significant impact on INT. Hence, the perceptions of these factors lessened the effect SI had on INT (Burton-Jones and Hubona, 2005; Sun and Zhang, 2006). Most probably, they were firmly concerned about personal information and risks associated with e-services that a few people were likely to seek advice from important others. Hence, they most likely relied more on their perceptions of trust to form their intentions to use technology, than on significant others.

5.8.1.5 'Facilitating Conditions' – 'Behavioural Intention' Impact

The hypothesised direct path between FC-INT to use e-services was supported for the Athens sample only. Its impact was feeble though. Hence, hypothesis H5 has not been supported. Heraklion city residents were not influenced by the availability of the resources and support to form their 'intention' to use e-services, while the Athenians did not seem to be influenced that much.

As reported in the UTAUT, FC emphasises the role of resources and support have on actual 'usage' directly, without the mediation of INT. Taylor and Todd (1995b) and Venkatesh et al. (2012), agreed on the direct and indirect effect (through INT) of FC on 'use behaviour'. In other eGovernment studies, FC construct did not influence INT

(Moraes and Meirelles, 2016; Vinodh and Mathew, 2013; Krishnaraju et al., 2013). Additionally, in literature, FC has not been found as the perfect evidence of the predictability either on 'behavioural intention' or 'use behaviour' despite that it has been a well-utilised variable (Rana et al., 2011). In my case, an unexplored direct relation between FC and 'use behaviour' most probably existed.

5.8.1.6 'Effort Expectancy' - 'Behavioural Intention' Impact

The impact of EE on INT was found to be weak for the Athenian sample (0.16), while in the Heraklion sample was insignificant. Hence, H2 was not supported. EE variable comprised of four items measuring the degree of ease or effort required in using the website for getting information and services, such as skillfulness, ability to learn and use the system and its interactions. There are other studies based on the UTAUT2 model and in eGovernment settings where this relationship has been found insignificant too (Krishnaraju et al., 2013; Vinodh and Mathew, 2013). Usually, EE influence on INT is stronger when the website interface or the technology used is more complicated, and individuals are less experienced (Venkatesh et al., 2003; Taylor and Todd, 1995a). In my study, the respondents were Internet literate, or they had experience with the particular website, or/and the system was easy to navigate, and therefore they did not find it complex. Nevertheless, EE had an indirect effect on INT through PE.

5.8.1.7 'Effort Expectancy' - 'Performance Expectancy' Link

EE showed a very strong impact on PE for both samples, and specifically for the Athens sample. The standardised direct effects for the Athens and Heraklion samples were 0.67 and 0.52 respectively. Hence, H3 has been supported. According to UTAUT model, EE resembles other constructs in the comprising the UTAUT models, e.g. TAM's or TPB's PEOU. The link PEOU-PU has been shown to be a significant relationship in many studies (Davis et al., 1989; Davis, 1989; Taylor and Todd, 1995b; Voutinioti, 2014). Thus, this link is grounded in the literature. There are also other studies using the UTAUT or UTAUT2 models, where this relationship was significant too (Slade et al., 2015; Zhou et al., 2010; Gao and Deng, 2012).

5.8.1.8 The 'Trust in the CSCs' – 'Behavioural Intention' Impact

For both samples, TOC had no direct impact on INT to use e-services. It revealed a feeble indirect effect through HBC though. TOC positively affected HBC, which in

turn affected INT negatively. Hence, H14 was not supported. My findings initially seemed to contradict with other researchers' argument that TOC positively influences the eGovernment service usage. The argument is that citizens interact and transact with government on-line via a trusted third party, which in turn increases eGovernment usage (Al-Sobhi, 2011). However, it does not imply that enhances individuals' 'intention' to use e-services, as in our case. The explanation of the low significance most probably lies in the way CSCs operate. In Greece, CSCs' mostly inform citizens about government issues and conduct the government services on their behalf. In my previews study (Voutinioti, 2013b), TOC was positively associated with INT. Nevertheless, the construct HBC was not included in the model, and also the items comprising TOC were differently defined.

Based on the above findings, **research questions one, two, three, four and five** have been answered.

5.8.1.9 Factors Related to 'Habit of CSCs'

The results also revealed the most significant determinants of people going to CSCs. In the Athens sample, the other dependent variable HBC was influenced by the positive TOC (0.32), followed by TOG and TOI (-0.26) the most negative influential factors, and last by PE (-0.18). In the Heraklion sample, HBC was more influenced by TOI (-0.31), the most substantial negative factor, then by TOG (-0.28), followed by the positive TOC (0.21) and last by PE (-0.18). Hence, the significant contributors to individual's habit of going to CSCs have been revealed too. They were lack of TOI, TOG and PE, and also TOC. Then hypotheses H7, H11, H13, and H15 were supported.

The relations EE-HBC and FC-HBC were insignificant in both samples. Hence hypotheses H8 and H9 were not supported. That is, lack of the necessary resources to use the websites or lack of ease of use did not drive individuals to form a habit of getting serviced in the CSCs.

5.9 Results Related to the Impact of Moderators on the Proposed Hypotheses

The results of the impact of the moderators are organised around the effects of each moderator on the relations in the models (Table III.88).

5.9.1 'Performance Expectancy' Impact on 'Behavioural Intention'

The path PE→INT was moderated by the hypothesised effects of:

- Age, which was supported for both samples, with younger individuals to show stronger values, which is in line with Venkatesh et al. (2003), and Venkatesh et al. (2012).
- Education, which was supported by both samples and the effects are higher for the high educational groups. Educated people perceived that they gained more performance by using e-services. My findings support prior studies that educated individuals, are more comfortable in using non-store channels.
- Experience, which was supported by the Heraklion city sample only, with a stronger effect for the highly experienced group.
- UA, which was supported for both samples, with low UA groups to show higher values. On the contrary, high UA individuals perceived more risk and danger than performance gained in using e-services. Thus they were not willing to use them.

Hence H1m was partially supported.

5.9.2 'Effort Expectancy' Impact on 'Behavioural Intention'

The multigroup moderation for the path EE→INT was assessed for the Athens sample only because, in the Heraklion sample, this relation was insignificant. The results showed that the hypothesised effect of UA was supported, with the low group to show higher estimates. That is, H2m was supported for the Athenian sample and the UA only. Hence H2m was not supported.

5.9.3 'Effort Expectancy' Impact on 'Performance Expectancy'

The path EE→PE was moderated by the hypothesised effects of:

- Age and experience which were supported by both samples. The higher regression weights for older and less experienced individuals confirmed previous findings that these might transfer their perceptions of EE to PE.

Then, H3m was partially supported.

5.9.4 'Social Influence' Impact on 'Behavioural Intention'

The path SI→INT proved invariant for both samples. It can be explained by the argument that increased education and experience empower users, which in addition to high UA do not make individuals seek advice from significant others (Burton-Jones and Hubona, 2005; Sun and Zhang, 2006); and it is consistent across all groups. Hence, hypothesis H4m was not supported.

5.9.5 'Facilitating Conditions' Impact on 'Behavioural Intention'

The path FC→INT was significant for the Athens sample only and was moderated by UA, with the high group to show a higher estimate. Individuals with high UA rely more on facilitating conditions than those with low UA. Based on the findings, hypothesis H5m was partially supported.

5.9.6 'Habit of CSCs' Impact on 'Behavioural Intention'

The hypothesised negative effect on the path HBC→INT was moderated by:

- Age, education, and UA, which were supported for both samples, with the older individuals or less educated, or high UA groups to show higher adverse effects.
- Experience, which was supported by the Athens sample only. The negative effect was stronger for the low experienced group.

The results showed that individuals who are older, less educated, less experienced and perceive high risk are harder to change their habit of going to CSCs and to use the online services. Hence, hypothesis H6m was partially supported.

5.9.7 'Trust in the Government' Impact on 'Behavioural Intention'

The hypothesised effects of the moderators on the path TOG→INT was moderated by:

- Age and education, which both proved variant for the Athens sample only, with older or low educated individuals to show higher values.
- Experience and UA, which proved variant for both samples and rated higher by the low skilled, or high UA groups.

Then, hypothesis H10m was partially supported.

5.9.8 'Trust in the Internet' Impact on 'Behavioural Intention'

The path TOI→INT was moderated by:

- Education and experience, which were variant for the Heraklion sample only, with higher regression estimates for lower educated and less experienced individuals.
- UA, which was variant for both samples, with high UA groups to show higher estimates.

Hence, hypothesis H12m was partially supported.

Based on the above findings, the research question six has been answered. In the next section, the effect of the moderators to the dependent variables are reported.

5.10 Results of the Moderators to the Dependent Variables

5.10.1 Gender Impact

The invariance testing on the measurement weight level and the structural weight level indicated that gender was not a moderator to the models. This result was consistent across the two regions' samples. Both Venkatesh et al. (2003) and Venkatesh et al. (2012) found adoption to be moderated by gender. Nevertheless, in other research findings, the non-moderating effects of gender were confirmed; under non-mandatory conditions in addition to high experience, gender differences vanished (Morris and Venkatesh, 2000; Venkatesh et al., 2003; Morris et al., 2005; AlAwadhi and Morris, 2009). In my research, the respondents were more experienced with new technology than the average population and acted voluntarily, and this is most probably the explanation.

The invariance analysis for all the other moderators (age, education, experience and UA) showed that both samples' models had significant differences on INT and HBC. These results are presented in Table III.87 and are discussed next.

5.10.2 Age Impact

For both samples, the explained variances (R^2s) of INT were higher for the low age group than the high. Specifically, in the Heraklion city sample, the R^2 of INT raised to almost 0.80, meaning that INT's explained variance by the overall model was 80%. Previews studies in the area of ICT adoption have concluded that age differences significantly affected users' behaviour toward technology, with low age individuals to be faster adopters (Morris and Venkatesh, 2000; Gilbert et al., 2004; Al-Ghaith et al.,

2010). On the contrary, older adults were less willing to adopt eGovernment services. In my study, this group usually get serviced in the CSCs. The higher R^2s of HBC (.25%) for the high age groups confirmed the argument.

5.10.3 Education and Internet Experience Impact

For both samples, the R^2s of INT were higher for the high educational and the highly experienced groups than the low ones. Adoption of Internet and e-services are significantly associated with higher educational levels, computer and internet experience (AlShihi, 2006; AlAwadhi and Morris, 2008; Sun and Zhang, 2006). As people advance their education and qualification levels in using new technology, their adoption of e-services increases.

Correspondingly, people with low education and low internet literacy require extra support with technology usage. Consequently, these citizens would prefer to communicate with their government through the CSCs. This argument was confirmed by the higher R^2s of HBC for the low educated and low experienced groups than the higher ones, in both samples. Specifically, the R^2s of HBC, for low education and experience raised for the Athens and the Heraklion city samples to 0.35 and 0.37 respectively, meaning that the overall models contributed 35% and 37% in explaining the HBC's variance.

5.10.4 Uncertainty Avoidance Impact

For both samples, the explained variances of INT were significantly higher for the low group than the high. In the Athenian sample, the reading from 70% in the case of no moderation, increased to 79% for the low UA and lowered to 68% for the high UA group. In the Heraklion city sample, the same estimates from 65% (no moderation), increased to 72% and decreased to 62% respectively. It is noticeable that the explained variance of INT, in the case of low UA in the Athenian sample, became almost 80%.

On the other hand, the R^2s of HBC were higher for the high UA groups than the low ones. In the Athenian sample for the low UA group the estimate was 0.20%, and for the high 25%, while in the Heraklion city sample the individual readings were 32% and 40% respectively. Hence individuals with low UA seemed to adopt e-services faster, while the high UA individuals were getting serviced in the CSCs (specifically the

Heraklion city residents). The results confirmed previews findings that UA is negatively related to eGovernment adoption.

This Research Project indicates support for the findings for the effect of the moderators in improving the predictability of the model. The results suggested that the impacts on the dependent variables differ with age, education, experience, and UA. Specifically, the UA moderated almost all the relationships to INT, in both models. The high UA group exhibited lower readings for INT, whereas it showed higher for the HBC. In other words, in low UA groups, the explanatory power of the independent variables to INT increased considerably, with the highest reading in the Athenian sample (almost 80%). A similar effect on INT exhibited the low age group in the Heraklion city sample, where INT's variance was explained to nearly 80%, too. The opposite implied for the HBC dependent variable in the Heraklion city sample, whose variance for less educated, less experienced and high UA groups were explained by almost 40%. In the Athenian sample also the low educational group caused an increase in HBCs explained variance to 30%.

In this research, the extension of the UTAUT2 model with the 'trust' constructs has been proven successful in explaining INT. Indeed, the perceived TOI and TOG had a powerful influence on INT, may be stronger than PE. Also, the inclusion of the HBC factor has been corroborated its importance in intention to use eGovernment services and also revealed the most critical factors that make people get serviced in CSCs, namely, TOG, TOI, and TOC.

5.11 Summary and Conclusions

In Chapter five the results of the various analyses conducted for this Research Project were presented. The methodology that was followed is presented in Chapter three and the analyses followed in Chapter four. Initially, the demographic information on the sampled data was given. The results indicated that the participants were younger, more educated and ICT experienced and also exhibited a little less UA, than the average Greek population.

The Chapter's primary sections consisted of the EFA, CFA analyses, and assessment of the structural models, for constructing a valid and reliable model to measure intention to use eGovernment services, in Greece. An attempt was made to analyse the pooled

data, but due to validity issues, the two samples were examined separately. For the analyses, the parametric data analyses were conducted and reported, necessary for running SEM. Next, the EFA, CFA, and assessment of the structural model were carried out. In all these analyses the procedures presented in Chapter four were followed. The two models' results showed similar items-variables representation and revealed the significance and direction of the factors influencing the 'behavioural intention' to use e-services: PE along with the TOI, TOG and last HBC (negatively related). Afterwards, the impacts of the moderators on the models were examined for each sample, and both samples showed partial support for the hypotheses. Nevertheless, the moderators affected the INT to use e-Government services, also the HBC and increased the predictability of the model. Finally, the discussion of the most significant results, along with the general outcomes from the analyses were reported.

In Chapter six, the final empirical results and their evaluation, in addressing the aims and objectives of the Research Project are reported, along with recommendations for policymakers, web designers and the government agencies are given, based on the findings of this Research Project.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This Chapter is devoted to offering recommendations to decision makers and web developers for increasing the eGovernment adoption in Greece. First, the evaluation of the empirical results are discussed, and afterwards the recommendations, the limitations of this research are presented, and directions for future research are given.

6.2 Results and Evaluation of Empirical Findings

6.2.1 Designing the eGovernment Adoption Model

The main aim of my research was to investigate the user's intention drivers or barriers in the eGovernment services adoption. The ultimate goal was to contribute to the understanding of the most important determinants that affect citizens' behaviour towards the intention to use the eGovernment services, taking into account the role of the CSCs in Greece that had not been explored.

The first objective needed to be carried out to realise the aim (i.e. to develop an information base at the local level on eGovernment adoption) was fulfilled in the exploratory research phase. That is, by reviewing the literature on eGovernment adoption and by conducting exploratory studies (Voutinioti, 2013b; 2014a; 2014b; 2015).

The second objective (to hypothesise an eGovernment theoretical model and develop research hypotheses), was fulfilled in the exploratory research phase too. The literature review and the exploratory studies helped to identify the nine research constructs with their related statements (35 statements), and constructs interrelationships by applying the investigation process, presented in Chapter four. The initially hypothesised measurement model (Figure 4.1) was created, and the hypotheses that had to be supported by the data were formed. The research constructs were in conceptual terms, and they had to be measured by a set of survey items (statements), each of which measured some aspects of the construct. All the survey items were drawn from the literature, where they were found reliable and valid to measure the constructs they intended to.

The third objective, i.e. to design an appropriate research framework to study the Greek citizens' behavioural intention to use e-services, making an informed decision about

the appropriate research methods and analytical tools was carried out, by adopting a quantitative research framework, and the survey method. Data from two cities' citizens, was collected to empirically assess the hypothetical model. The two data samples were examined separately, and by using EFA, CFA and SEM, the strengths of the models were assessed, and the final theoretical model (the combined model that represented both models) was developed. Afterwards, the samples were segmented into groups by demographical and UA variable levels. This categorisation of the data samples allowed the understanding of the demographic and UA variables effects on behavioural intention to adopt e-services. By using this methodological framework, the third objective has been achieved.

6.2.2 eGovernment Adoption Model

The fourth objective (i.e. to empirically assess the research model and hypotheses) was carried out in the second phase of the research framework (Model testing) in two stages, i.e. the confirmatory and the structural. The administered online questionnaires with closed Likert-type questions were answered by two cities' citizens. The data collection techniques used are described in section 3.6. The data screening and preliminary tests showed that the samples were usable and reliable for statistical analyses (subsection 5.4.1 and 5.5.1). The data analysis methods are specified in section 3.9 and the data estimation methods in section 4.6, 4.7 and 4.8.

The theoretical hypotheses that guided factor analyses are presented in Chapter four, and the research methodologies and the collected data in Chapters three and four. Once the models were identified, the statistical methods used (i.e. EFA, CFA, SEM and invariance tests between different groups of citizens) allowed modifications of the models and retesting for the goodness of fit, with the final goal to construct research instruments for measuring the determinants of eGovernment adoption, in Greece. The results of the EFAs, the CFAs and the assessment of the structural models, asserted them as valid and reliable (Table 5.1, Table 5.2, Figure 5.4 and Figure 5.5). Then the final theoretical model (the combined model) that represented both models taking the common paths was developed. The empirical results confirmed the ten of the fifteen hypotheses proposed about the relations between the behavioural intention and the related constructs (Table 6.1, Figure 6.1).

Table 6.1: Paths, Hypothesis Testing for the Final Model			
Path	**Hypo-thesis**	**Supported**	**Conclusion**
INT←PE	H1	Yes	PE has a significant effect on INT
PE←EE	H3	Yes	EE has a significant effect on PE
INT←SI	H4	Yes	SI has a significant effect on INT
INT←HBC	H6	Yes	HBC has a significant negative effect on INT
HBC←PE	H7	Yes	PE has a significant negative effect on HBC
INT←TOG	H10	Yes	TOG has a significant effect on INT
HBC←TOG	H11	Yes	TOG has a significant negative effect on HBC
INT←TOI	H12	Yes	TOI has a significant effect on INT
HBC←TOI	H13	Yes	TOI has a significant negative effect on HBC
HBC←TOC	H15	Yes	TOC has a significant effect on HBC

Note: PE: 'Performance Expectancy', EE: Effort Expectancy, SI: Social Influence, TOI: Trust in the Internet, TOG: Trust in the Government, TOC: Trust in the CSCs, INT: Behavioural Intention, HBC: Habit of CSCs.

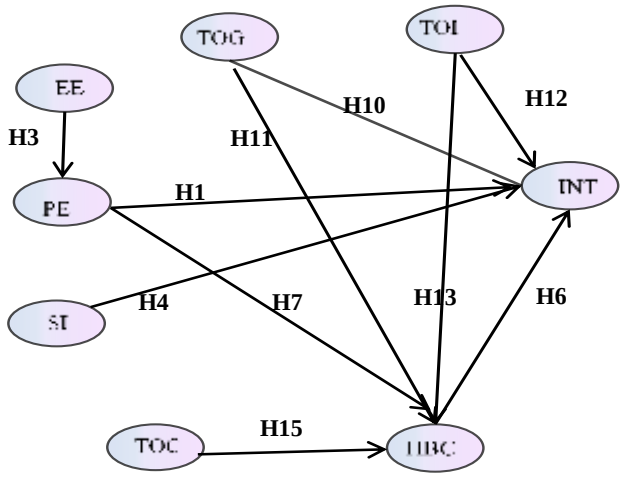

Figure 6.1: The Covariance Structure of the Combined Model.

The primary hypothesised relationships on INT were supported, except the EE-INT and FC-INT, but they can be explained by the literature.

6.2.3 Implications

In my research, the PE showed the strongest direct effect on INT. As mentioned above, the relation EE-INT was not supported, but EE had a very strong indirect effect on INT

through PE. This implies that both PE and EE are crucial determinants of eGovernment acceptance. Given that e-services provide benefits, i.e. convenient access, prompt service, efficiency and effectiveness in conjunction to traditional services, then the perceived performance of a user rises and therefore, the intention to use eGovernment increases. Hence, it is vital for the government agencies to provide usable, useful, up-to-date accurate and reliable information and services via their websites to increase perceived performance.

My research provides further support for the role of trust in the adoption of e-services. The trust factors (TOG and TOI) affected INT to use e-services directly. Each of these two factors has been revealed as major determinants in eGovernment take up.

A weak relationship between SI and INT has been found. The respondents were characterised by high UA, and the TOI and TOG factors showed significant impact on INT. Hence their perceptions of these factors lessened the effect SI had on INT.

HBC showed a negative relation toward the INT. This habitual pattern of people going to CSCs to get serviced has an adverse effect on intention to use e-services. As the main drivers of the citizens' habit to get serviced in the CSCs were TOC and the lack of TOI, TOG, and PE. While TOC had no direct impact on INT to use e-services, it revealed a weak indirect effect through HBC. TOC positively affected HBC, which in turn affected INT negatively. The explanation of the low significance most probably lies in the way CSCs operate. In Greece, CSCs' mostly inform citizens about government issues and interact and transact with the government agencies on their behalf.

6.2.4 The Effects of Demographic and UA Variables

This Research Project indicates support for the findings for the effect of the moderators in improving the predictability of the model. The results suggested that the impacts on the dependent variables differed with age, education, experience, and UA, but not gender. Specifically, a few demographics strengthened or decreased the power of the independent variables on the INT and HBC. That is, some demographics and UA affected the dependent variables indirectly via the relations in the model. The UA variable in particular, was revealed the most powerful moderator as it affected almost all the relationships to INT, in both models. Based on the findings presented in Chapter five, the hypotheses H1m, H3m, H6m, H7m, and H8m were partially supported. The

other hypothesised relationships H2m, H4m and H5m were not supported, because none of the moderators influenced these relationships.

Table 6.2: Summary of Results of the Multigroup Moderation. Major Dependent Variables(Athens, Heraklion Samples)

Dependent Variable	**Moderator**	**Results**	**Athens**	**Heraklion**
INT	Age	Stronger for the low group	Yes	Yes
	Education	Stronger for the high group	Yes	Yes
	Experience	Stronger for the high group	Yes	Yes
	UA	Stronger for the low group	Yes	Yes
HBC	Age	Stronger for the high group	Yes	Yes
	Education	Stronger for the low group	Yes	Yes
	Experience	Stronger for the low group	Yes	Yes
	UA	Stronger for the high group	Yes	Yes

Similarly, the overall effect of the moderators on the INT differed with age, educational level, experience, and UA (Table 6.2). The significance of the moderating effects in the models suggested that different groups of residents attach different weights to various factors that influence their intentions to use technology. Younger persons, more educated, savvy in using technology, or those with low UA seemed to be the early adopters. On the contrary, older adults, people with low education, low internet literate, or high in UA were less willing to adopt eGovernment services and preferred to communicate with their government via the CSCs. Thus, when the goal is to facilitate 'shifts' in citizens' habitual intention, as in this case, more resources may need to be targeted to these groups.

The variable estimators produced by the statistical analyses made possible the formulation of recommendations to policymakers and web designers to plan their eGovernment services better, design and implement strategies and policies to increase the eGovernment services take-up, which is the fifth objective of this Research Project. They are presented below in section 6.4. By meeting this research objective, a contribution to the understanding of eGovernment adoption determinants in Greece has been made. The tool along with guidelines for use will be freely available to

municipalities and other governmental agencies in Greece, to identify the specific factors that facilitate or impede their e-services take up, and thus increasing e-services adoption, which is the sixth research objective.

All six objectives have come to be realised, and therefore the ultimate aim of this Research Project, i.e. to contribute to the understanding of eGovernment adoption determinants in Greece has been accomplished.

6.2.5 Evaluation of Empirical Findings

My research advances knowledge on the topic of eGovernment. The developed model serves as one of the initial attempts to understand the salient determinants of eGovernment adoption in Greece and the first to examine the role of CSCs in it. To date, a few studies have explored the main factors that affect eGovernment adoption in Greece (Delitheou and Maraki, 2010; Vrana et al. 2010; Karavasilis et al., 2010; Voutinioti, 2013b; 2014a). My study tested a parsimonious model of eGovernment adoption, which incorporates the 'trust' and the 'habit of CSCs' factors. Hence, by extending the UTAUT2 model to study the INT to adopt e-services, the recommendations for future research by Venkatesh et al. (2012), i.e. to extend the model and apply it in different contexts and countries, has been fulfilled.

By extending the UTAUT2 model and testing it for the impact of the trust dimensions on the INT and HBC variables, it provided theoretical and practical support of the very significant role of the trust factors in the INT to use e-services and in the eGovernment adoption in Greece. Also, the fact that HBC and TOC factors that have not been previously proposed presented an opportunity for theoretical and practical implications. The relationships concerning HBC that were found are of particular interest, although they were mainly based on the data, as literature for intermediaries is now emerging (Al-Shobhi, 2011). My study has helped to reveal the primary drivers of citizens going to CSCs and provide fruitful recommendations to policymakers.

The model performed revealed better in predictability than the original UTAUT2 in explaining users' INT to adopt eGovernment services. In fact, Venkatesh et al. (2012) proposed the UTAUT2 to explain the consumer technology acceptance in the context of the mobile Internet, and it produced improvement in the explained variance on INT from 40% to 44%, compared to the original model (UTAUT). However, my extended

UTAUT2 model explained considerably higher variances of users' intentions in the two samples (Athenian: 70% and Heraklion city: 65%). Moreover, my research reported some findings for the effect of the moderators. The age, education, experience and UA showed moderating effects and confirmed Venkatesh et al. (2003) argument that extending various models with moderators enhances the predictive power of the models beyond their original specifications. When the moderators were included, the UTAUT2 variables explained 74% of the variance on INT (Venkatesh et al., 2012). In my model the explained variance of INT for the low UA group raised: for the Athens model to almost and the Heraklion model to 72%; moreover, the predictive power of the Heraklion model increased to 79% for the low age group. The higher explanatory power of my model compared to the UTAUT2, may be due to the inclusion of the trust factors, the particular technology examined, the national culture or type of users (i.e. more educated and experienced).

6.3 Policy Recommendations

A primary goal of my research is how its findings could assist Greece and other countries facing the problem of low citizen adoption to better plan their strategies to encourage G2C e-services' take up. By gaining a better understanding of the predictors of the eGovernment adoption, it is possible to provide practical recommendations to government organisations, to marketers and to website developers that seek to battle the low-level adoption problem. Also, suggestions for the Greek eGovernment strategy makers, about the CSCs, are derived as well.

6.3.1 'Performance' and 'Effort Expectancy' Enhancement

To increase the performance of e-services governments should offer transactional services[36], featuring end-to-end transactions and citizen self-service capabilities. In this case, users finalise their services electronically, and the perceived relative advantage of e-services is increased (Carter and Weerakkody, 2008). This is the reason that researchers posit that the actual value of eGovernment can only be actualised when it reaches the transactional stage (Al-Sebie and Irani, 2005). For conducting transactions with the government thought, e-identification and e-signature are vital. In Greece,

[36] At least at the 4th stage.

lately, e-identification has been issued to selected employees (head of divisions) of different government departments, but there is no training or promotion of its usage.

Furthermore in order eGovernment services to be useful, it is essential to ensure first that these services are easy to learn and use. Different factors are examined to assess the ease of use of a webpage. Nielsen and Loranger (2006) give a list of the features that make a website usable. First, is the navigability[37]. An easy navigation structure, designed by an intuitive way, enables users to find information quickly, as opposed to unclear navigation, where users may choose to leave the website on their first visit. Drop-down menus and hyperlinks that are part of the navigation system are usually used on the homepage to link to other pages, and if they are linked to related online services, there is an opportunity that these e-services will be used. However, if the website has too many hyperlinks, it becomes confusing, and the user might leave the homepage. Hence, they should be used with caution and placed preferably at the beginning of the page or the bottom.

Nevertheless, an intuitive interface is not enough. Search facilities should be available on the website, to enable the user to look up the desired term within that site (Nielsen and Loranger, 2006). Users usually have different methods of finding information: experienced tend to use the search facilities while beginners prefer links, icons or drop-down menus (Al-Qeisi, 2009; Hanson, 2000). Hence, all choices should be available on the website. Additionally, on-line help and support facilities should be provided to assist citizens in finding the relevant information and in using e-services; documentation alongside the services, e.g. online tutorials to illustrate how citizens can use these e-services and FAQs (Carter and Bélanger, 2005; Li and Suomi, 2009). Furthermore, researchers insist that usability is critical, as a usable website enhances trust to the user, which in turn increases adoption (Bedi and Banati, 2006; McKnight et al., 2002; Roy et al., 2001).

Generally speaking, in eGovernment, there should be a transformation of government from government-centric towards becoming more user-centric and user-driven. A user-centric eGovernment model reflects a demand-side perspective which directs its focus on user interactions. It is supporting and enhancing service delivery to users.

[37] Navigability is the ability of a user to move around the site easily and efficiently (Al-Qeisi, 2009).

Moreover, this transformation of the public sector has become a transformation to a more open and user-friendly government which cares about user needs, demands, and satisfaction. Thus building user-focused and attractive eGovernment services. Also, the government must give as much priority to their websites as businesses do; they should make them usable and appealing because it is their 'window to the world' and nowadays websites are becoming the most visible parts of the government.

Finally, to ensure that the e-services are useful and easy to use, citizens should be asked to give feedback on different aspects of eGovernment websites, i.e. usability, accessibility, usefulness and other issues on government services; they have to provide their opinions, recommendations and even complaints about improvement, on a regular basis. This user feedback should be analysed, elicited by the managers and website developers and taken into account in the redesign of the websites. Then the enhanced e-services will lead to more successful implementation and acceptance of such innovations.

For the case of Greece, citizens perceive their interaction with municipal websites as complex (Delitheou and Maraki, 2010). Additionally as mentioned in Chapter two, the Greek user-centric eGovernment service delivery for 2016, is 58% while the EU average is 77%. The online help is not available on most of the government websites and the central government telephone helpline '1500' has ceased its operation. Hence, the government websites should provide help and support and also they should be available over the phone (i.e. helpline). Specifically, the telephone helpline '1500' should restart its operation and there should be the promotion of its existence, so people do not have to go to the agencies or CSCs for information and assistance.

6.3.2 Enhancing Trust in the Government and the Internet

It has been discussed before that TOG depends heavily on the image of the organisation providing the service, especially if eGovernment is in its initial stages. Therefore, it is crucial that citizens have positive past experiences with the supplying government agency. Influencing TOG is a long-term effort (Voutinioti, 2013b). In the long run, government institutions should enhance their reputation by establishing consistent government policies, looking after citizens' needs, fighting corruption and increasing the field of civil rights. Also, government officials must conduct themselves in a

trustworthy manner. Nevertheless, government agencies should demonstrate their will and capability to provide trustworthy e-services. In fact, if citizens feel that their personal and financial information is protected, they will overcome any concern to engage in the online servicing. Next, the Greek government has to improve the legal infrastructure (i.e. laws for privacy and knowledge acquisition).

In the short run, trust in the government can be enhanced if the government increases its effectiveness. That is, by improving the active communication with the stakeholders in regard but not limited to supplying services and by facilitating better exchange of information between government departments. It can be achieved by reducing bureaucratic procedures, restructuring business processes and streamlining these processes. This way public sector agencies would increase their service processing and delivery capabilities, requiring less time and staff and thus respond to these efficiently and economically. Also by more efficient monitoring and controlling of these services, productivity levels and the quality of services would improve, accessibility to information and services would increase thus broader inclusiveness and enhanced accountability of the government itself (Irani et al., 2006; Alanezi et al., 2010). Hence government becomes more efficient, effective, transparent and accountable and trust in the government enhances as well. All the above, along with the discussed in the previews paragraph would help in fighting corruption. According to Fakhoury and Baker **(**2016), corruption does not contribute to establishing trust, and it is linked to governmental services in the countries where there is a lack of automated processes or transparency in the government. More discussion on corruption is presented in section 6.3.6 because of its importance for Greece.

Trust in the government can also be enhanced by using media tools to increase the perception of trustworthiness in the organisation, by strategically communicating their security policies on the government website and by taking measures that would demonstrate that users can trust government bodies.

Concerning TOI, the results have shown that without it, mainly for financial transactions, many citizens would not consider changing their current habits in the traditional channels and utilising eGovernment services. There should be taken the necessary security measures for the Internet to become a more trustworthy and reliable technology. Governments should build mechanisms for security and privacy protection

and also, speeding up laws and regulations related to e-services and adhering to them. Also, public institutions should improve the safeguards of information by better encryption mechanisms and secure servers. The public should be aware of the utilisation of these mechanisms.

Greece has initiated several scattered strategies to establish a secure electronic environment without considerable success. Hence, public and private organisations should consider joining forces to develop a national cybersecurity strategy, secure government cyberspace and promote a national culture of cybersecurity. As a general rule, if the goal is to enhance e-services usage, the cumulative influence of expected benefits and trust should outweigh the perceived risk of the electronic environment (Dinev and Hart 2006). In my opinion, trust is vital for Greece. Hence it should be researched further (refer to section 6.5).

6.3.3 Increasing Awareness and Training

Given that the electronic channel offers a relative advantage, governments should consider policy measures and marketing strategies to 'shift' citizens behaviour to the electronic channel (Channel shift)[38] (Mundy et al., 2011). One such action is increasing awareness. After governments have made sure services are implemented effectively, and all the possible actions that decrease the risk have been taken, citizens must be aware of the electronic medium so they can appreciate its relative advantage. It is imperative that the local administration, as well as central government, inform citizens of the benefits of such services (Choudrie and Dwivedi, 2005; AlAwadhi and Morris, 2009; Sá et al., 2016; Karavasilis et al., 2010). Therefore, campaigns should be designed to communicate utilitarian messages. Effective communication strategies should be performed through product brochures, newspapers, CD-ROMs, radio, and TV; additionally live demonstrations, roadmaps, and best practices should be invoked as well (Alshare and Lane 2011; Pynoo et al. 2011). In the communications, the motives and anticipated benefits of eGovernment initiatives should be openly and honestly demonstrated, i.e. reducing the time and cost of providing and getting services, increasing efficiency, cutting red tape, and fighting corruption.

[38] 'Channel Shift' itself is not limited to a simple move from physical to virtual services. Rather it has been defined as "*the design and marketing of effective and efficient channels because they are the most appropriate channel for the type of contact, customer and organisation*" (Simon Pollock, as cited in Mundy et al., 2011).

Furthermore, government organisations should strategically communicate their information security policy on their websites and by taking measures that would demonstrate that users can trust government bodies. The promotion of the safety of the Internet-enabled services is important in reducing the users' risk perceptions (Slade et al., 2015). Examples could be the presentation of successful prior systems, communicating statements on how user data are managed and protected, and also showing that the provider is behaving in line with these declarations (Söllner et al., 2016). In parallel to the other marketing strategies, government agencies might enhance their services by using eGovernment 2.0 tools (e.g. social media, forums). For instance, discussions and debates can be used for sharing best practices, instituting champions for diffusing the eGovernment systems, and generating positive word-of-mouth (Sumak et al. 2010; Chiu et al. 2012). It would also be very beneficiary to initiate additional strategies and programs to get the local communities involved in the decision making processes of eGovernment implementation. Then the user participation, would lead to user empowerment and thus enhancing the relationship with government. Then the impact of social influence on behavioural intention will increase and so the e-users. Nevertheless, the marketing strategies should consider marketing segmentation strategies. The results suggest that the impact on 'behavioural intention' differs with age, gender, experience, and UA. Specifically, younger persons, more educated, savvy in using technology, or those with low UA seem to be the early adopters. Hence, the marketing strategies should target these groups first.

Last but not least, in parallel with effective communication plans, it is vital to train government staff and citizens on the new systems and inform them of the value and benefits of utilising eGovernment services. By training staff and user support staff working on non-digital alternatives, staff awareness and understanding of benefits will boost and confidence in them will build. Then the educated staff will be effective marketers to citizens. The suitably informed citizens will feel less anxiety, and be higher motivated to access and use eGovernment services.

In Greece, the awareness and training of eGovernment services is very low (Delitheou and Maraki, 2010, Voutinioti, 2014b). As discussed before, the campaigns should promote the usefulness of the electronic channel and not the CSCs, like the one that was running a few years ago in Greece: 'CSCs and it is done'. On the government

portals (municipals included) and specifically on CSCs and 'Hermes', there should be promotional material (i.e. videos) about the availability of e-services and the benefits gained.

6.3.4 The Roles of CSCs in eGovernment

As discussed in Chapter five, HBC showed negative relation toward the 'intention to use' and as main drivers of the citizens' habit to get serviced in the CSCs revealed the lack of TOI, TOG, and PE. Moreover, the results suggested that the impact of HBC on INT differs with age, education, experience, and UA. Older persons, less educated or in the early stages of using new technology, or those with high UA tend to be driven by the habit to get serviced in the CSCs. These are proved to have greater difficulty in changing their habits from CSCs to the electronic medium. Thus, when the goal is to make changes in citizens' habitual intention to use the e-services, as in our case, more resources may need to be targeted to those groups. This suggests that on-going facilitations designed for the less advantaged groups should be provided, such as customer help through call centres, instant messaging services; and the CSCs can take care of them too.

The above-discussed marketing segmentation strategy efforts should focus to lessen the adverse effect of HBC on INT, and if possible change this link from negative to a positive one. A development process should start by enhancing trust in the government, trust in the Internet and perceived performance, thus reducing perceived risk, which in turn would lead to higher intention to use e-services and less need of CSCs' servicing. In this marketing segmentation strategy, CSCs should play a vital role.

6.3.5 Revising the Role of CSCs in eGovernment Adoption

Al-Sobhi (2011), posits that trust in the physical third-party channels could enhance citizens' trust in the government, which in turn could enhance citizens' intention to use eGovernment services. They also argue that governments and intermediaries should work together to influence citizens' intention to adopt eGovernment services, which will lead to the gradual shift of citizens behaviour to 'self-using' the new technology.

In my research, the already established citizens' TOC, showed a small effect (indirect) on Greek citizens' 'intention' to use eGovernment. I strongly believe that this is due to

the way CSCs operate and there is a need for change. CSCs have to be dynamic and re-establish their roles in the new electronic environment (re-intermediation). As CSCs' employees are well ICT trained and already users of government portals, they can provide the necessary training in the self-usage of eGovernment services and thus could play a crucial role in the 'channel shifting' process. For example, by using 'market segmentation' strategy (i.e. targeting the younger, innovative), they should inform clients waiting in line to get serviced, about the availability of e-services and assist them in their usage on the spot, by providing computers, laptops, PDAs and also citizens' own smartphones. Then an effective promotion and usage of e-services will be achieved. Specifically, CSCs should promote 'Hermes' and help citizens in the initiation of the authentication procedure (they have the legal authorisation) and in the establishment of their electronic 'locker'. Then the most used certificates and permits will be stored there, available at hand when needed. In the medium-term CSCs' staff could also help in enhancing ICT education, by working together with the Municipal Lifelong Learning Centres and organising seminars on new technology and eGovernment.

By assisting to self-using the new technology and training people, more e-service users will emerge. This model can be technology-driven and is scalable as adoption rate increases (Al-Shobhi et al., 2009). Then the 'channel shifting' can gradually be accomplished and CSCs will be operating to provide services and help mostly for the less advantaged groups (i.e. elderly, less ICT savvy).

It is important to mention that the above discussed new roles of CSCs, at least at the beginning, require more staff to man these offices. This could be faced with involving tertiary students doing their internships, as well as volunteers (e.g. Ireland's CSCs). Another excellent option to battle the workload and staff inadequacy in the CSCs could be the enhancement of the already established PPPs (i.e. Post Office, certified accountants) (Voutinioti, 2014b), in the big cities. These government authorised partners, e.g. entrepreneurs, new technology companies, or voluntary sector can work in parallel with the municipal CSCs, maybe for a small fee. PPPs and the use of private sector channels which can offer additional services as well will help in achieving greater access to public services. Then, the government will be able to include more citizens in e-service delivery, private partners to achieve sustainability and the creation of a

competitive intermediary market will be attained. The above will encourage intermediaries to improve their services continually, and a competitive market for public CSCs will be established too. As discussed in Chapter two, PPPs is a common practice all over the world and in other European countries too. On average, in the EU28, almost half of the population choose the online channel for public services. From them, the 27% let another person, e.g. consultants, tax advisors (professional intermediaries) and acquaintances to access the e-services on their behalf (European Commission, Digital Agenda Scoreboard, 2016).

It is worth to mention that in the multichannel service delivery, mobile-based technologies hold tremendous promise in both developed and less developed countries and also in rural areas, where ADSL Internet connections are not fully established or not working correctly (UNDESA, 2012). They play a significant role in the eGovernment service delivery, and help increase e-services take up, as they can be used by the people everywhere and at all times. As e-services are gradually available as m-services, public agencies should continually extend their availability. They should target 'high impact services'[39] first, promote and encourage their usage, especially to the younger, as they are more likely to use them. Determining services which have the most potential for impact in terms of financial and added value for citizens will lead to a growth in confidence in local online services. This is particularly true when the service is reformed to add greater value to the customer than previously delivered through other channels. Lately local agencies, e.g. Thessaloniki, Glyfada, Thermi, Evosmos, Xanthi, Argyroupoli - Elliniko, Leibadia, offer m-services with great success.

Other emerging technologies, i.e. geographical localisation tools, semantic web, the web of things, cloud computing could make users become more interested and involved in the consumption of e-services. Hence they should be provided as well.

Concluding this subsection, the findings of my research suggested that multichannel service delivery is needed and in this strategy, CSCs have to play a different role than their current (re-intermediation). These trusted entities should inform citizens about the

[39] 'High impact services', e.g reporting services enable citizens to provide information about different elements of their operation which are either not working (e.g. street lighting), have been damaged (e.g. potholes in roads) or are in need of improvement (e.g. a requirement for dropped paving) or waste and environmental management.

practical implications and benefits, and help in establishing trust in the electronic medium. Greek eGovernment policymakers and government organisations have to put more effort in achieving eGovernment take up, because of different reasons. First of all is the already established distrust in the government (local government included) and on the Internet. Secondly, the dominant culture (risk averse), which negatively affects the trust factors, does not facilitate eGovernment take up either.

6.3.6 Other Policy Recommendations

In this section, other suggestions are presented that do not come out directly from my research's results. They mostly refer to eGovernment implementation but are closely related to the eGovernment adoption in Greece. Most of these recommendations are mentioned above, but there should be given particular attention to them.

As I have discussed before (Chapter two), for eGovernment to create high-level public value there is a need for eGovernment to offer at least transaction capabilities (4th stage). The fourth stage provides progressively higher sophisticated eGovernment capabilities with which the different stakeholders can interact with eGovernment self-service offerings. However, the higher stages are associated with more complex requirements, e.g. Increases in ICT infrastructure, a higher level of interoperability and integration across agencies, and of course a high degree of organisational changes; and provision e-identification and e-signature as well (Chatfield and AlHujran, 2007; Irani et al., 2007).

There should be increases and improvements in ICT infrastructure in Greece. A high-level IT infrastructure positively affects government organisations as far as technologies and business processes are concerned. The limit of ICT infrastructure is considered a challenge that prevents successful eGovernment implementation (Al-Khouri and Bal, 2007, Irani et al., 2007; Choudrie et al., 2005). Delays in eGovernment implementation are also caused by and lack of standardisation of eGovernment systems.

Since eGovernment projects are typically on a national scale, the government should try to meet all the needs and goals of various departments to improve integration and cooperation within the eGovernment environment (Irani et al., 2007). Despite that it is a significant challenge to combat, establishing an integrated eGovernment infrastructure, helps in achieving virtual integration horizontally across agencies within

the national government and vertically across different levels of government (e.g., international, national, state and local).

A critical issue closely related to integration is the need to achieve interoperability across public-sector agencies. Like any other national initiatives, eGovernment at national government level requires cross-agency collaboration to build interoperability across agencies. Effective inter-agency interoperability brings together independent government agencies to remove the silo effects and deliver e-services to citizens, businesses and governments. However, effective inter-agency collaboration requires institutional changes, diminishing bureaucracy and business process re-engineering[40] in their new working relationships. Without such a central coordination mechanism, prior research on cross-agency partnership has shown great difficulty and failures.

Furthermore, the e-identification and e-signature are very important for delivering e-services at higher stage levels. By using e-identification, a person (a natural or legal) can uniquely identify himself with no doubt and can exercise his right to access and complete any service on-line anywhere in the country or abroad. In the case of Greece, a strong emphasis is required on the issues of e-identification and the way it should be implemented according to the EE regulations. In Greece there exist different ids for each person. Each one, issued by various government agencies, e.g. the Civil Registry, the Taxisnet, the Social Security Registry and, the ID card, has its identification number and standards. It is the responsibility of the government to come up with one e-identification for each person. Hence the definition of the Greek identification scheme has to be decided first. Since 2014, there is the EU Regulation 910 on eID and eIDAS. All these identifications have to be incorporated quickly (probably a unique number coming out of the combination of the existing ones) in the Greek Identification System that will operate by the eIDAS standard. By appropriate re-codification and adaptation of the national legislation, then each person physical or legal will be identified as a unique entity for horizontal use in the public administration. After the e-identification has been established, which is the main business issue, next the adaptation of the existing electronic services (e.g. Taxisnet, 'Hermes', civil registries, social security

[40] Bureaucracy and business process reengineering are crucial issues for Greece, but their discussion is out of the scope of this research.

registry) has to be implemented and adapted to the eIDAS, to be able to interoperate with it.

The most decisive factor is Operational Interoperability (Institutional/Framework, Organizational/Process, Semantic/Data), which should precede the technical issues (Technical Interoperability/Systems). Then the establishment of the central national interoperability system operating on the eIDAS standard. End to end interoperability in public administration is needed, and therefore citizens and businesses can enjoy high added value services. Greece shows not to be lagging behind the other EU member countries in the establishment of this system (https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Country+Overview+-+eID).

Next is the limited digital signature issuance (used mainly in public procurement) poses another issue. A few steps have been taken to replace physical signatures with electronic ones in other sectors of the economic activity. Greece has successfully claimed funding (about €1.5m from the CEF program) for these actions (https://ec.europa.eu/inea/sites/inea/files/country_fiche_el_201710.pdf). That is, there is the institutional framework, and the funding, there is only a need for action from the government.

Last but not least, battling corruption is a crucial issue for Greece. As mentioned in Chapter two, it ranks fourth on the list of most corrupt developed nations (Business Insider, 2016). The Greek transparent eGovernment index is only 22%, and 88% of the Greeks do not trust the government. On the other hand eGovernment, and specifically, the transactional stage constitutes a crucial way to combat corruption (Fakhoury and Baker, 2016). eGovernment enables the governments to increase the level of efficiency and effectiveness through streamlining the processes, reducing the red tape, and diminishing improper negotiations; it also helps to improve the quality of government business processes regarding time, accuracy, and information distribution. Furthermore, governments can disseminate information broader and faster. As a result, more people get more information from government, and by disclosing their decision-making processes, citizens can collect information from the government to monitor their performance. Hence governments become more transparent to the public, accountability and trustworthiness of government and eGovernment increase and trust

builds in government and eGovernment among the stakeholders. Knowledge equity, transparency, accountability constitute the main dimensions in fighting corruption, and there is no doubt that Greece using eGovernment, has a good potential in this direction. In Greece, since 2011 there exists the transparency platform 'Diaygeia' (https://diavgeia.gov.gr) for the government and broader government agencies, to upload all their transactions, contracts and payments. It is accessible by all, and it has helped a lot in enhancing accountability and decreasing corruption, but there are still more to be done in this direction.

Hence the Greek government has to prioritise its eGovernment strategy, join forces with local government, CSCs and the private sector, establish effective policies and implement them effectively. Then the eGovernment technology will help improve the quality of life for the citizens, enhance government efficiency and effectiveness, decrease corruption and economic growth will increase as well.

6.4 Limitations of the Study

The most apparent limitation of this study is that it was only conducted at the local government level. This provided some benefits in methodological control, particularly in matching the sample population, as suggested by Chin (1998). However, it limits the generalizability of the results. Also, the research relied on two cases to identify factors that affect eGovernment adoption in Greece. It would be better to use multiple cases to validate better the results of the factors influencing eGovernment adoption, as suggested by Al-Shehry (2008).

Also, given the constraints of the research regarding time and finance, a convenience sample was used. Although using convenience sampling is acceptable in literature, in the IS area, the usage of random sampling techniques is considered better as they are associated with more generalisability. Thus, as suggested by Aroean and Michaelidou (2014), future research should test the model validated in my research, with random samples of e-service users.

Another limitation is that this research deals with intentions, not actual eGovernment behaviour. Although most of the researchers to assume that the degree to which people express their intentions to adopt eGovernment services, is an immediate predictor of

the actual eGovernment adoption behaviour (Ajzen, 1985; Al-Shafi and Weerakkody, 2010), it would be beneficiary to assess the actual user behaviour in the future.

Moreover, although the post hoc re-estimating of the model for better fit was based on strong theoretical grounds, a cross-validation study with a new sample data would provide a better generalisation of the results, as suggested by Browne and Cudek (1992). The method of model generation used in this study should, therefore, be used with caution, although the modifications made to the original model were substantively meaningful and justifiable (Chin, 1998).

6.5 Areas of Future Research

Despite the limitations, this research provides valuable insights into the study of citizen adoption of eGovernment, and the above-acknowledged limitations have led to suggestions for further studies. A longitudinal study would examine whether or not the citizens' intention toward using eGovernment services had changed over time. This kind of research would also test the validity of the model and see how its predictive power holds over time.

While this research provided a significantly high predictive capability for the dependent variables, I suggest that other significant antecedents warrant future investigation. For example, within the specific context of eGovernment services, given the significance of the trust factors, additional research into the antecedents of trust would provide benefits to researchers and managers alike. The literature suggests that other factors, such as 'disposition to trust' (Carter and Belanger 2005; McKnight et al. 2002) have an impact on trust. Papadopoulou et al. (2010), identified different types of trust (e.g. trust in stored data, trust in service, trust in information, trust in the system, and trust in the transaction). They suggested that trust in eGovernment should be addressed as a multidimensional construct, which involves different types of trust. Future work then is needed to investigate the relationships between the proposed trust types and empirically test their validity. Also, privacy and security concerns that have been found to impede intention to use eGovernment services (Abu-Shanab, 2014), might be examined as well.

Around the world, there are significant cultural value differences related to technology. Hence, examining other cultural variables, i.e. Power Distance, or Individualism, provide an avenue for future research too.

CHAPTER 7: REFLECTIONS ON IMPACT AND PROFESSIONAL LEARNING

7.1 The Positive Impacts of the Research

7.1.1 Contribution to Innovation

Findings from my Research Project contribute to the existing body of knowledge on eGovernment adoption, in the context of the users' perception. They also contribute to eGovernment adoption theory by understanding the factors that facilitate or impede eGovernment adoption. The developed model extended and enriched previous theories by offering specification, justification, and empirical validation of the important factors affecting eGovernment take up at the local government level, in Greece that has not been sufficiently explored. Also the model by taking into account the role of the third parties, the CSCs that operate in the Greek eGovernment context, makes significant contributions to eGovernment adoption research. In eGovernment, many studies have investigated a variety of factors. However, so far, very few studies worldwide have explored the roles of third parties in this realm, but none in Greece. In e-services, third parties were found to be trusted entities between government providers and service requesters. Moreover, the IS models for citizen adoption have been used successfully in eGovernment, but do not take into account country's and society's specific factors. By enriching the UTAUT2 model to consider the trust factors, and the habit of going to CSCs and creating a research framework for testing and modifying it for certain sector (i.e. local government) and cultural setting (i.e. Greek), the model can be used in any sector. This is the benefit gained by having a country informed adoption model, and this is the contribution to the innovation of this research.

From the academic perspective, my research provides a base for future research to build on, by extending the application of my proposed model to other contexts. Contributions to IS research methodology are provided as well, due to the different methods that have been employed in my research framework.

7.1.2 eGovernment Adoption Instrument's Impact

The identified factors and the relations among them enabled my research to provide practical implications. It offers recommendations for policymakers, practitioners, and web designers. Policymakers following the recommendations will be helped to design

and implement their strategic planning to how individuals will increase their interactions and transactions with government online. In addition, the government agencies by using the questionnaire would benefit from having actual users' perceptions, as it provides insight into different areas of improvement. Hence significant contributions to practice have been accomplished. It is anticipated that it will stimulate discussion among the eGovernment research community in Greece and also, in other countries with similar characteristics in eGovernment take up.

7.1.3 eGovernment Adoption Instrument's Implementability

The issue of implementation of my research product by the local government has to do with their strong motive to evaluate their websites and their reputation. As government organisations increasingly adopt elements of successful organisations, evaluation gives them a mean to comply with the requirements of legitimacy. Therefore, the applicability of the research outcome is of high priority to the policymakers and the practitioners. As it has been proposed in Chapter six, government organisations should get actual users feedback on a regular basis, on different aspects of eGovernment systems' implementation. With the use of my research's instrument, users' feedback information can be elicited and analysed for improvement and actions can be scientifically planned and taken.

This academic research project is unique in the sense that an eGovernment adoption instrument includes the CSCs that play a critical role in Greek eGovernment strategy. The research instrument and documentation for implementation in the Greek language (Appendix V.14) will be freely available to the Greek local government, and to other interested governmental agencies for implementation to evaluate their eGovernment acceptance. The evaluation will give them areas for improvement, i.e. website usability, usefulness, trust in the agency.

7.1.4 Research Dissemination

As far as the dissemination of my Research Project's product to the ultimate stakeholders, the two municipalities (i.e. of Athens, Heraklion) that have sponsored this research are already aware of the project's results as well as the municipality of Thessaloniki. These three towns have established an eGovernment liaison for exchanging knowledge and practices. As mentioned before, these three municipalities demonstrate the highest traffic on their websites, among all the Greek municipalities.

Moreover, the Central Union of Municipalities of Greece (Κ.Ε.Δ.Ε.), and the Union of Regional Authorities (ΕΝ.ΠΕ.) have agreed to sponsor the project by placing a link to their websites, so their members (Municipalities and Regions) will be able to download the questionnaire with the guidelines for implementation.

Also, the results of this research will be presented at international conferences. The Hellenic conference in New Technology Economy and Business (PASYTOD); even at the eGovernment Conference (IFIP EGOV-EPART), the Mediterranean Conference on Information Systems (MCIS), and, the European Conference on Information Systems (ECIS), and will be published in scientific journals.

7.2 Reflections on Professional Learning and Development

The central aspect of DProf programs is that they bring theory and practice together, enhance the link between professional and academic knowledge, and advance knowledge useful in the workplace. They consist of applied research to the senior professional practitioner's own field of practice. The Middlesex University DProf program of studies that I have attended helped me in creating knowledge that advanced my professional training. It gave me the opportunity to apply my professional experience and academic expertise to analyse the problem of the low eGovernment adoption in Greece, though a broader perspective. My prior learning acquired during educational and professional life and the skills that were cultivated and accumulated were all closely related to this issue. In particular, reflecting on previous learning and experience from postgraduate studies in computer science plus professional and academic work as IS specialist in local government, I realised that I could research the field of IS, about the determinants of user adoption of eGovernment services, at the local government, in Greece.

Specifically, my advanced professional learning that started in the year 1988 was related to the application of Information & Communication Technology in the local government. I started as a system administrator and a computer programmer in the context of a municipal project for the Urban Planning Department and later on I was appointed Director of the Information Technology Department of the Municipality of Kalamata. Currently, I serve as an assistant professor specialised in IS applications designed for local government, in the TEIPel, located in Southern Greece. The advanced experiential professional learning I acquired, by employing and

implementing DBMS, GIS, MIS, and CRM in local government was intergraded into two peer-reviewed books (in Greek) for the benefit of the students of the ex-Local Government Administration Department and currently Local Government major, of the TEIPel. The writing of the two books helped me keep up with the technological advancements and the changes in IS. In all the IS and eGovernment projects that I have been professionally involved with, usability and acceptance by the stakeholders was my primary concern.

As a practitioner on eGovernance, I have been witnessing numerous occasions of e-service ineffectiveness in Greece. To understand the problem, I studied the literature on eGovernment adoption and also on the intermediaries and CSCs. I realised then that my approach needed to be multidisciplinary and that recently the eGovernment issue has been the subject of theoretical and practical debate. After narrowing down to the issue of the local government sector, I processed the extended material in detail for eGovernment evolution to the point that I reached a critical stance on the roles of CSCs in eGovernment. Additionally, it became apparent to me from searching the literature that the eGovernment acceptance issues in Greece have not been researched adequately.

While attending this DProf programme, I was aware of the previous work done by the creators of the UTAUT2 model for mobile applications, and it influenced my research design. In parallel, in meetings with actual eGovernment users during the undertaken exploratory studies, I sensed that users felt highly uncertain and risky to use e-services due to the uncertain electronic environment, the lack of trust in government agencies, and their culture (highly-risk averse). Hence it was inevitable to incorporate the trust factors into the analysis. As I researched further the lack of trust and its consequences and the role of third parties as intermediaries in eGovernment, I realised the critical aspect of people's habit to get serviced in CSCs. This habit has adverse results in eGovernment services usage. Those were the main influences that shaped the rationale for the research approach and the design of the model.

Designing the research, I developed a critical awareness of the research methodology. I critically evaluated scientific paradigms, epistemologies, and methodologies in social research and developed advanced critiques of them to choose the most appropriate for my research. I gained better insights about IS research methodology, quantitative methods, and survey techniques. The quantitative methods allowed statistical models

to fit the data and tested to determine if they demonstrated adequate fit. Survey research plays a critical role in data collection. Hence it was necessary to ensure that the developed instrument was a valid proxy for the phenomenon under investigation. The validation of a tool is usually a complicated process, requiring skills in relevant research theory, practice and statistical methods. I also advanced my perception of the issues of eGovernment and most importantly on the limitations of research in this area.

During the last years of my DProf, I participated in five International Conferences with peer reviewers, presenting my research on eGovernment acceptance and CSCs and I have been credited to two publications in international journals (Voutinioti, 2013; 2014). Also, I have been a co-author of a book contributing to a Chapter on eGovernment acceptance (in Greek). All this work has been served as an exploratory study towards my Research Project.

As a researcher, I learned how to apply and justify aims and objectives, evaluate theories and research methodologies, analyse and synthesise theory, data, and research tools. I became skilful in research and reflected rigorously on practice; this provided me with understanding, knowledge, and confidence to manage my own learning and undertake my research and create new perceptions and knowledge in IS problems.

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http://www.synathina.gr A platform that aggrgates all the voluntary agencies in Athens city.

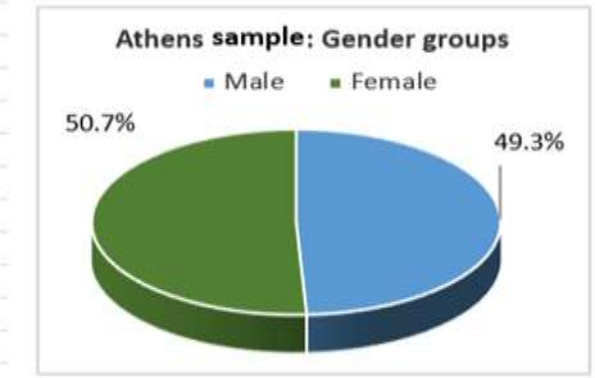
APPENDIX I: DESCRIPTIVE STATISTICS FOR DEMOGRAPHICS AND DATA PLOTS

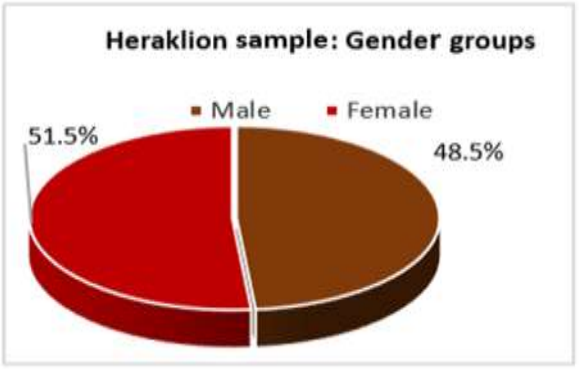
Table I.1: Demographics for the Athens and Heraklion city samples.

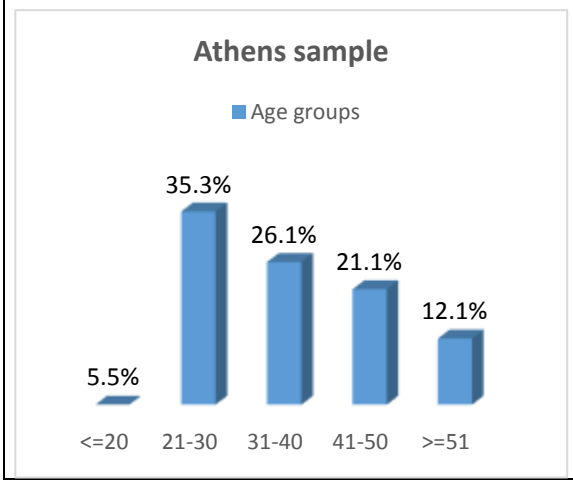
Item		**Athens sample**				**Heraklion sample**				
Gender	Male	Female				Male	Female			
Frequency	206	216				204	217			
Percent	49.23%	50.87%				48.51%	51.49%			
Age	<=20	21-30	31-40	41-50	>=51	<=20	21-30	31-40	41-50	>=51
Frequency	23	149	110	89	51	35	157	99	82	48
Percent	5.5%	35.3%	26.1%	21.1%	12.1%	5.1%	38.1%	25.3%	23.5%	8.9%
Education	Below secondary education	Secondary education	Undergraduate degree	Post graduate degree		Below secondary education	Secondary education	Undergraduate degree	Post graduate degree	
Frequency	3	117	217	85		9	143	212	57	
Percent	0.07%	27.73%	51.42%	20.14%		2.1%	34.0%	50.4%	13.5%	
Internet usage	Rarerly	A few times a year	A few times a month	Several times a week	Every day	Rarerly	A few times a year	A few times a month	Several times a week	Every day
Frequency	1	14	47	94	266	1	25	34	108	253
Percent	0.24%	3.32%	11.14%	22.27%	63.03%	0.24%	5.94%	8.08%	25.65%	60.10%
Information usage										
Frequency	2	9	38	124	249	2	24	60	157	178
Percent	0.47%	2.13%	9.00%	29.38%	59.00%	0.48%	5.70%	14.25%	37.29%	42.28%
Transactions usage										
Frequency	43	104	133	82	60	54	180	106	47	34
Percent	10.2%	24.6%	31.5%	19.4%	14.2%	12.8%	42.8%	25.2%	11.2%	8.1%
Municipal website usage (information)										
Frequency	38	128	184	58	14	3	59	183	136	40
Percent	9.00%	30.33%	43.60%	13.74%	3.32%	0.71%	14.01%	43.47%	32.30%	9.50%
Egov Usage (information)										
Frequency	18	77	132	120	75	11	40	108	167	95
Percent	4.27%	18.25%	31.28%	28.44%	17.77%	2.61%	9.50%	25.65%	39.67%	22.57%
Municipal website usage (transactions)	Never	Rarerly	A few times a year	A few times a month	Several times a week	Never	Rarerly	A few times a year	A few times a month	Several times a week
Frequency	350	66	2	4	0	367	54	0	0	0
Percent	82.94%	15.64%	0.47%	0.95%	0.00%	87.17%	12.83%	0.00%	0.00%	0.00%

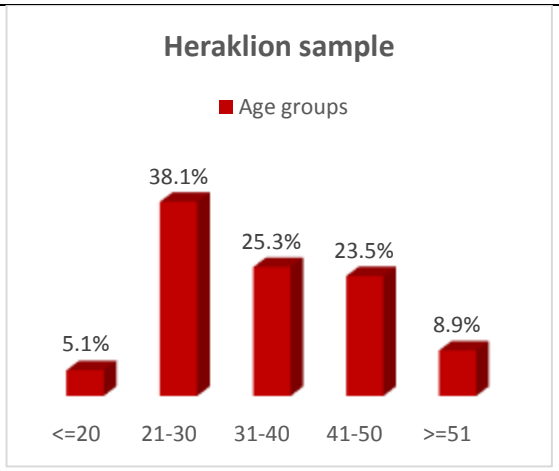
Egov websites (transactions)										
Frequency	89	93	126	69	45	80	75	160	84	22
Percent	21.09%	22.04%	29.86%	16.35%	10.66%	19.00%	17.81%	38.00%	19.95%	5.23%
Gov. portal 'Hermis'	Know		Use			Know		Use		
	Yes	No	Yes	No		Yes	No	Yes	No	
Frequency	237	185	63	359		160	261	40	381	
Percent	56.16%	43.84%	14.93%	85.07%		38.00%	62.00%	9.50%	90.50%	

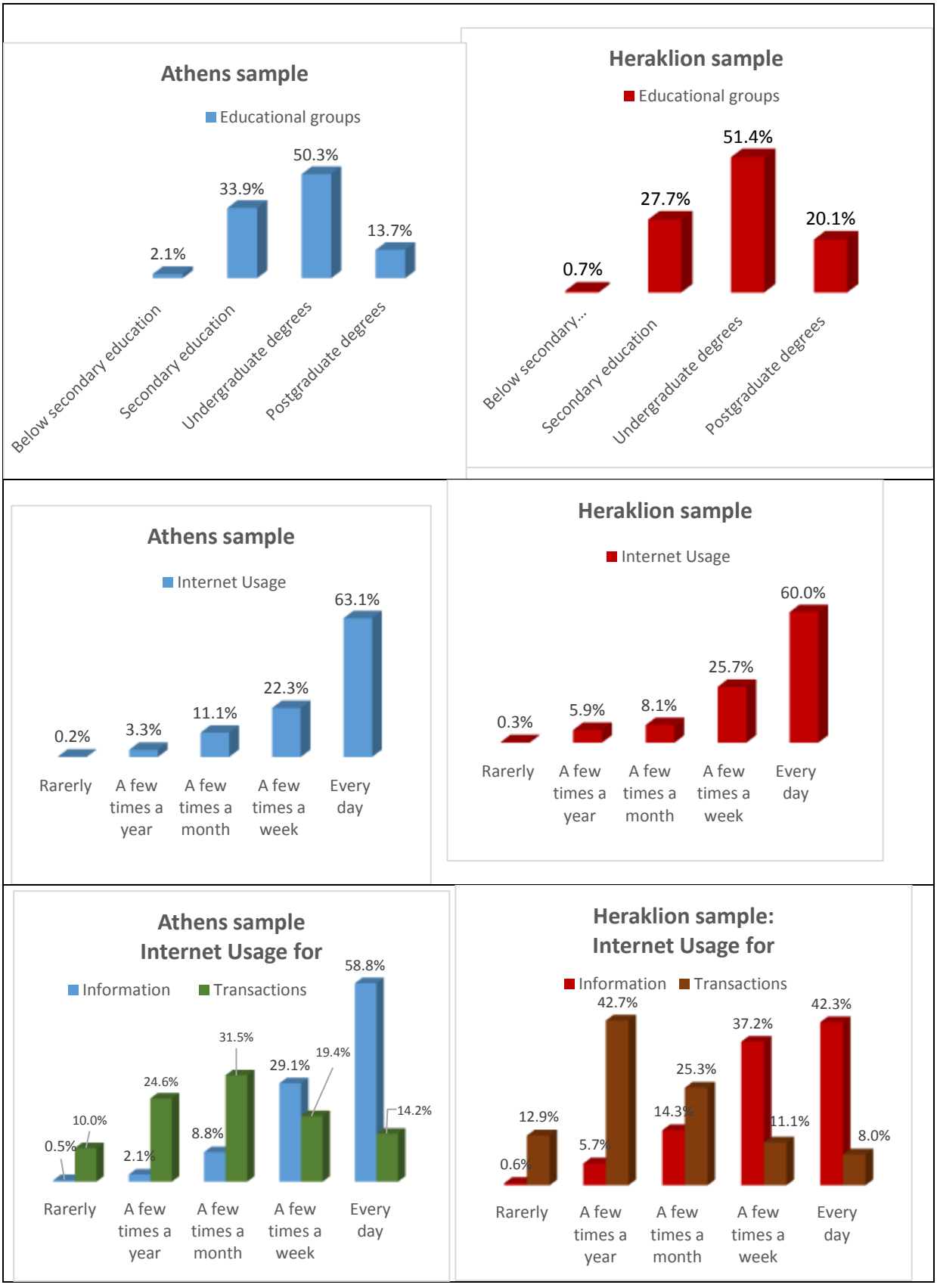
Table I.2: Dataplots of Demographic Variables for Athenian and Heraklion city samples










Athens sample
Educational groups
2.1%
33.9%
50.3%
13.7%
Below secondary education
Secondary education
Undergraduate degrees
Postgraduate degrees
Heraklion sample
Educational groups
0.7%
27.7%
51.4%
20.1%
Below secondary...
Secondary education
Undergraduate degrees
Postgraduate degrees
Athens sample
Internet Usage
0.2%
3.3%
11.1%
22.3%
63.1%
Rarerly
A few times a year
A few times a month
A few times a week
Every day
Heraklion sample
Internet Usage
0.3%
5.9%
8.1%
25.7%
60.0%
Rarerly
A few times a year
A few times a month
A few times a week
Every day
Athens sample
Internet Usage for
Information
Transactions
0.5%
10.0%
2.1%
24.6%
8.8%
31.5%
29.1%
19.4%
58.8%
14.2%
Rarerly
A few times a year
A few times a month
A few times a week
Every day
Heraklion sample:
Internet Usage for
Information
Transactions
0.6%
12.9%
5.7%
42.7%
14.3%
25.3%
37.2%
11.1%
42.3%
8.0%
Rarerly
A few times a year
A few times a month
A few times a week
Every day

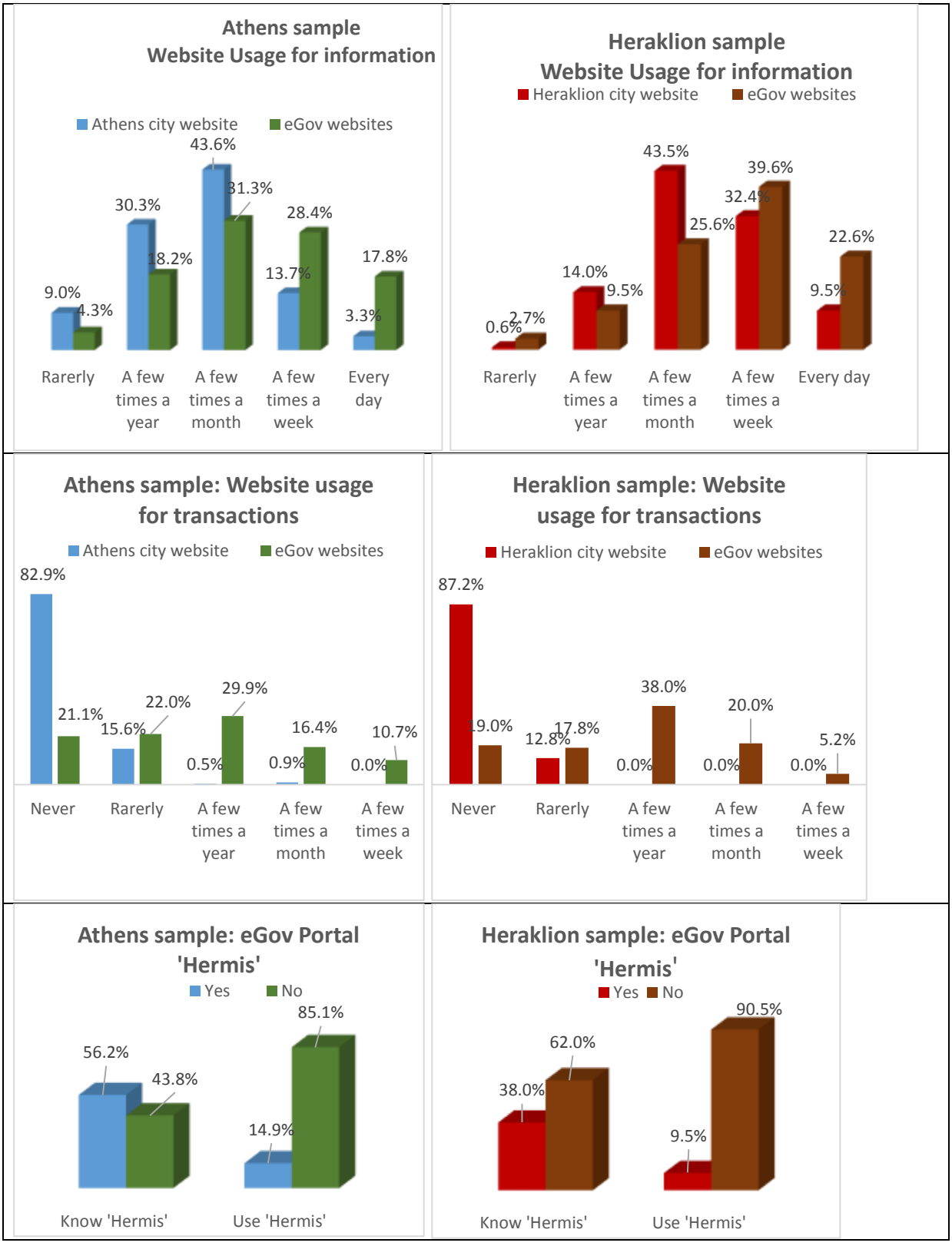

Athens sample
Website Usage for information
Athens city website
eGov websites
9.0%
4.3%
30.3%
18.2%
43.6%
31.3%
13.7%
28.4%
3.3%
17.8%
Rarerly
A few times a year
A few times a month
A few times a week
Every day
Heraklion sample
Website Usage for information
Heraklion city website
eGov websites
0.6%
2.7%
14.0%
9.5%
43.5%
25.6%
32.4%
39.6%
9.5%
22.6%
Rarerly
A few times a year
A few times a month
A few times a week
Every day
Athens sample: Website usage for transactions
Athens city website
eGov websites
82.9%
21.1%
15.6%
22.0%
0.5%
29.9%
0.9%
16.4%
0.0%
10.7%
Never
Rarerly
A few times a year
A few times a month
A few times a week
Heraklion sample: Website usage for transactions
Heraklion city website
eGov websites
87.2%
19.0%
12.8%
17.8%
0.0%
38.0%
0.0%
20.0%
0.0%
5.2%
Never
Rarerly
A few times a year
A few times a month
A few times a week
Athens sample: eGov Portal 'Hermis'
Yes
No
56.2%
43.8%
14.9%
85.1%
Know 'Hermis'
Use 'Hermis'
Heraklion sample: eGov Portal 'Hermis'
Yes
No
38.0%
62.0%
9.5%
90.5%
Know 'Hermis'
Use 'Hermis'

Table I.3: Comparison of demographic Indicators between the Athens and the Heraklion samples and Greece.

Demographics		**Athens sample**		**Heraklion sample**		**Greece**
Gender, men			50.7%		51.5%	49.3%
	0-17	0%	40.8%	0%	43.2%	32.11%
Age Groups	18-20	5.5%		5.1%		
	21-30	35.3%		38.1%		
	31-40	26.1%	59.3%	25.3%	57.7%	42%
	41-50	21.1%		23.5%		
	50-60	12.1%		8.9%		
Educational Groups	Below secondary school		2.1%		0.7%	29.2%
	Secondary school certificates		33.9%		27.7%	25.76%
	Undergraduate level		50.3%		51.4%	21.37%
	Postgraduate degrees		13.7%		20.1%	
Individuals using PCs and the Internet			100%		100%	66.6%
Uncertainty Avoidance Index			93.33		85.07	100

Source: ELSTAT Population and Labour Market Statistics Division. European Commission under the ISA programme, Joinup.eu. eGovernment in Greece, February 2016, Edition 18.0. https://joinup.ec.europa.eu/

APPENDIX II: DESCRIPTIVE STATISTICS

Table II.1: Descriptive statistics for the Athens and Heraklion samples

		Athens sample				**Heraklion sample**			
Item	Scale	N		Mean	Std. Deviation	N		Mean	Std. Deviation
		Valid	Missing			Valid	Missing		
Age	1-5	422	0	2.99	1.126	421	0	2.71	1.089
Education	1-5	422	0	2.91	.707	421	0	2.76	.708
Internet use	1-5	422	0	4.15	1.033	421	0	3.85	1.103
Information usage	1-5	422	0	4.50	.773	421	0	4.15	.909
Transactions usage	1-5	422	0	3.18	1.26	421	0	2.71	1.058
TOI1	1-7	422	0	4.50	1.10	421	0	4.60	1.21
TOI2	1-7	422	0	4.19	.91	421	0	4.12	1.27
TOI3	1-7	422	0	4.22	1.01	421	0	4.26	1.06
TOI4	1-7	422	0	4.93	1.18	421	0	4.72	1.11
TOG1	1-7	422	0	5.13	1.24	421	0	5.08	1.24
TOG2	1-7	422	0	4.46	1.26	421	0	4.70	1.18
TOG3	1-7	422	0	4.90	1.01	421	0	4.78	1.13
TOG4	1-7	422	0	4.93	1.18	421	0	4.88	1.10
EE1	1-7	422	0	5.39	1.24	421	0	5.28	.91
EE2	1-7	422	0	5.12	1.26	421	0	5.42	1.01
EE3	1-7	422	0	5.45	1.23	421	0	5.23	1.18
EE4	1-7	422	0	5.20	1.10	421	0	5.52	1.24
PE1	1-7	422	0	5.34	1.17	421	0	5.17	1.26
PE2	1-7	422	0	5.50	1.31	421	0	5.51	1.40
PE3	1-7	422	0	4.99	1.25	421	0	5.33	1.01
PE4	1-7	422	0	4.81	1.45	421	0	5.16	1.24
TOC1	1-7	422	0	4.36	1.24	421	0	4.46	1.06
TOC2	1-7	422	0	4.28	1.26	421	0	4.43	1.30
TOC3	1-7	422	0	4.59	1.40	421	0	4.44	1.10
TOC4	1-7	422	0	4.41	1.34	421	0	4.01	1.33
SI1	1-7	422	0	3.94	1.45	421	0	4.56	1.17
SI2	1-7	422	0	3.46	1.46	421	0	4.03	1.31
SI3	1-7	422	0	3.73	1.37	421	0	4.44	1.64
FC1	1-7	422	0	5.28	1.02	421	0	4.98	1.57
FC2	1-7	422	0	5.70	1.17	421	0	5.44	1.36
FC3	1-7	422	0	5.02	1.24	421	0	5.11	1.44
FC4	1-7	422	0	5.08	1.34	421	0	4.88	1.23
HBC1	1-7	422	0	4.61	1.23	421	0	4.23	1.16
HBC2	1-7	422	0	4.31	1.76	421	0	4.33	1.27
HBC3	1-7	422	0	4.38	1.37	421	0	4.61	1.39

Item	Scale	N		Mean	Std. Deviation	N		Mean	Std. Deviation	Item	Scale
		Valid	Missing			Valid	Missing				
PE5	1-7	422	0	4.44	1.63	421	0	4.43	1.83		
INT2	1-7	422	0	4.20	1.83	421	0	4.37	1.27		
INT1	1-7	422	0	5.32	1.23	421	0	5.39	1.76		
INT3	1-7	422	0	4.93	1.44	421	0	4.78	1.12		
INT4	1-7	422	0	5.60	1.24	421	0	5.46	1.23		
Municipal website usage	1-5	422	0	2.72	1.04	421	0	3.36	.952		
Other egov websites usage	1-5	422	0	3.38	1.23	421	0	3.70	1.07		
Know ‘Hermis’	1-2	422	0	1.73	.540	421	0	1.75	.500		
Use ‘Hermis’	1-2	422	0	1.14	.340	421	0	1.45	.440		
UA1	1-5	422	0	3.09	1.44	421	0	3.31	1.03		
UA2	1-5	422	0	3.71	1.24	421	0	3.25	1.05		
UA3	1-5	422	0	2.84	1.44	421	0	2.87	1.17		
UA4	1-5	422	0	2.31	1.24	421	0	2.59	1.27		
UAI	1-5	422	0	93.33	70.174	421	0	85.071	50.882		

Table II.2: Descriptive statistics for the Athens - Heraklion combined sample					
Item	N Valid	N Missing	Mean	Std. Deviation	Variance
TOI1	843	0	4.55	.780	1.21
TOI2	843	0	4.15	.875	1.27
TOI3	843	0	4.24	.804	1.06
TOI4	843	0	4.83	.851	1.11
TOG1	843	0	5.11	.826	1.24
TOG2	843	0	4.56	.847	1.18
TOG3	843	0	4.84	.805	1.13
TOG4	843	0	3.81	.779	1.10
EE1	843	0	5.33	.830	.91
EE2	843	0	5.25	.878	1.01
EE3	8 4	0	5.36	.865	1.18
EE4	843	0	5.33	.812	1.24
PE1	843	0	5.26	.762	1.26
PE2	843	0	5.50	.735	1.40
PE3	843	0	5.14	.773	1.01
PE4	843	0	4.97	.796	1.24
TOC1	843	0	4.41	.740	1.06
TOC2	843	0	4.34	.790	1.30
TOC3	843	0	4.52	.685	1.10
TOC4	843	0	3.52	.459	1.17
SI1	843	0	4.21	.817	1.31
SI2	843	0	3.71	.923	1.64
SI3	843	0	4.05	.941	1.57
FC1	843	0	5.21	.722	1.36
FC2	843	0	5.49	.767	1.44
FC3	843	0	5.12	.707	1.23
FC4	843	0	5.12	.749	1.16
HBC1	843	0	4.48	.722	1.27
HBC2	843	0	4.33	.786	1.39
HBC3	843	0	4.48	.728	1.83
PE5	843	0	4.44	.817	1.27
INT2	843	0	4.28	.793	1.76
INT1	843	0	5.28	.806	1.12
INT3	843	0	4.93	.792	1.23
INT4	843	0	5.47	.760	1.32

APPENDIX III: TABLES

Table III.1: Assessment of Normality statistics (Athens-Heraklion combined sample)						
Variable	min	max	skew	c.r.	kurtosis	c.r.
FC3	1.000	7.000	-.065	-.734	-.007	-.037
SI1	1.000	7.000	-.294	-3.300	.119	.671
TOC1	1.000	7.000	.034	.382	-.095	-.535
TOC2	1.000	7.000	.119	1.334	-.030	-.171
TOC3	1.000	7.000	.186	2.087	.372	2.089
TOC4	1.000	7.000	.157	2.035	.443	1.935
FC1	1.000	7.000	-.022	-.251	-.283	-1.589
FC2	2.000	7.000	-.305	-2.433	-.557	-3.128
FC4	1.000	7.000	-.052	-.585	-.060	-.335
PE4	1.000	7.000	-.057	-.642	-.290	-1.631
PE1	2.000	7.000	-.106	-1.196	-.429	-2.410
INT4	1.000	7.000	-.672	-7.548	.632	3.551
INT3	1.000	7.000	-.170	-1.915	-.145	-.813
INT1	1.000	7.000	-.512	-5.753	.116	.651
HBC3	1.000	7.000	-.163	-1.833	-.009	-.051
HBC5	1.000	7.000	.013	.143	.056	.314
PE5	1.000	7.000	-.070	-.783	-.106	-.595
HBC1	1.000	7.000	.213	2.395	.060	.335
HBC2	1.000	7.000	-.152	-1.706	-.282	-1.585
SI2	1.000	7.000	.113	1.275	-.204	-1.147
SI3	1.000	7.000	-.143	-1.605	-.339	-1.907
TOG4	1.000	7.000	-.287	-1.856	.281	.897
TOG3	1.000	7.000	-.305	-3.427	-.015	-.084
TOG2	1.000	7.000	-.035	-.389	.139	.784
TOG1	1.000	7.000	-.495	-5.569	.351	1.974
TOI4	1.000	7.000	-.255	-2.866	.046	.261
TOI3	1.000	7.000	.009	.096	-.243	-1.364
TOI2	1.000	7.000	.092	1.031	-.465	-2.614
TOI1	1.000	7.000	-.006	-.066	-.114	-.639
PE3	1.000	7.000	-.117	-1.315	-.291	-1.637
PE2	1.000	7.000	-.249	-2.799	-.194	-1.093
EE1	1.000	7.000	-.347	-3.898	-.187	-1.051
EE2	1.000	7.000	-.411	-4.620	-.089	-.498
EE3	1.000	7.000	-.403	-4.533	-.170	-.955
EE4	1.000	7.000	-.316	-3.550	-.290	-1.629
Multivariate					12.545	4.789

Table III.2: Assessment of multivariate outliers (Athens-Heraklion combined sample). *Observations farthest from the centroid*

Observation number	Mahalanobis d-squared	p1	p2
175	47.768	0.036	0.000
349	47.063	0.042	0.000
629	47.891	0.045	0.000
93	46.711	0.045	0.001
457	47.783	0.046	0
129	46.271	0.049	0.03
581	46.217	0.05	0.51
814	45.967	0.052	0.512
614	46.925	0.053	0.002
142	45.748	0.055	0.017
345	46.713	0.057	0.004
612	45.459	0.058	0.53
521	45.442	0.058	0.451
537	42.699	0.058	0.198
391	45.263	0.06	0.009
135	46.327	0.062	0.004
499	45.039	0.063	0.528
719	46.178	0.064	0.005
583	46.009	0.066	0.007
14	45.999	0.066	0.003
434	44.731	0.067	0.571
593	44.652	0.068	0.523
741	45.643	0.070	0.003
168	44.348	0.072	0.047
637	45.349	0.074	0.008
252	44.189	0.074	0.048
697	44.05	0.076	0.545
432	45.185	0.077	0.008
546	45.130	0.078	0.007
617	43.928	0.078	0.523
186	45.047	0.079	0.007
441	44.885	0.081	0.01
251	43.746	0.081	0.035
628	43.488	0.085	0.499
658	43.396	0.086	0.469
217	44.471	0.088	0.022
486	43.267	0.088	0.389
205	43.267	0.088	0.03
638	44.085	0.094	0.041
3	43.921	0.097	0.057

Observation number	Mahalanobis d-squared	p1	p2
729	43.913	0.097	0.036
422	42.713	0.097	0.046
674	43.861	0.098	0.034
301	42.683	0.098	0.097
503	43.729	0.1	0.043
101	42.564	0.1	0.096
235	42.393	0.104	0.108
560	43.468	0.105	0.066
353	43.411	0.106	0.064
732	43.341	0.108	0.065
524	43.313	0.109	0.058
446	43.068	0.113	0.104
593	43.008	0.114	0.103
550	42.657	0.118	0.366
548	41.755	0.119	0.176
754	40.297	0.129	0.415
575	41.627	0.141	0.546
668	39.882	0.147	0.418
494	41.229	0.151	0.561
416	40.036	0.156	0.54
430	39.849	0.16	0.577
657	39.584	0.168	0.424
398	38.972	0.185	0.527
624	38.586	0.196	0.575
359	38.460	0.2	0.59
517	38.326	0.221	0.578
524	38.141	0.23	0.537
598	**35.342**	**0.169**	**0.517**
…..	…..	….	….

DF=9 D2/DF=35.342/9=3.926

Table III.3: Levene' s Test of Homoscedasticity (Athens-Heraklion combined sample)					
		Levene Statistic	df1	df2	Sig
INT	Based on Mean	0.04	1.00	569.00	0.86
	Based on Median	0.00	1.00	569.00	0.96
EE	Based on Mean	0.13	1.00	569.00	0.86
	Based on Median	0.14	1.00	569.00	0.84
PE	Based on Mean	1.56	1.00	569.00	0.61
	Based on Median	1.66	1.00	569.00	0.58
SI	Based on Mean	0.57	1.00	569.00	0.59
	Based on Median	0.45	1.00	569.00	0.60
TOC	Based on Mean	1.53	1.00	569.00	0.62
	Based on Median	1.57	1.00	569.00	0.61
FC	Based on Mean	0.40	1.00	569.00	0.60
	Based on Median	0.25	1.00	569.00	0.62
HBC	Based on Mean	0.28	1.00	569.00	0.60
	Based on Median	0.37	1.00	569.00	0.58
TOG	Based on Mean	1.25	1.00	569.00	0.62
	Based on Median	1.13	1.00	569.00	0.72
TOI	Based on Mean	0.01	1.00	569.00	0.91
	Based on Median	0.00	1.00	569.00	0.99

Table III.4: Correlations among items (Athens - Heraklion combined sample)

Reproduced Correlations	TOC1	TOC2	TOC3	TOC4	TOI1	TOI2	TOI3	TOI4	TOG1	TOG2	TOG3	TOG4	EE1	EE2	EE3	EE4	PE1	PE2	PE3	PE4	SI1	SI2	SI3	FC1	FC2	FC3	FC4	HBC1	HBC2	HBC3	PE5	INT2	INT1	INT3	INT4
TOC1	.603[a]																																		
TOC2	.629	.674[a]																																	
TOC3	.560	.611	.610[a]																																
TOC4	.430	.465	.468	.382[a]																															
TOI1	.147	.131	.219	.203	.471[a]																														
TOI2	.168	.149	.233	.214	.497	.537[a]																													
TOI3	.178	.159	.254	.242	.520	.557	.611[a]																												
TOI4	.225	.209	.298	.270	.505	.542	.576	.573[a]																											
TOG1	.402	.382	.292	.268	.218	.245	.280	.284	.633[a]																										
TOG2	.327	.314	.239	.233	.200	.215	.253	.249	.585	.560[a]																									
TOG3	.271	.248	.177	.176	.196	.213	.246	.235	.540	.512	.481[a]																								
TOG4	.400	.400	.363	.330	.297	.317	.359	.363	.554	.523	.464	.548[a]																							
EE1	.181	.186	.217	.241	.282	.277	.317	.301	.213	.230	.167	.327	.595[a]																						
EE2	.152	.151	.193	.220	.327	.319	.349	.329	.191	.212	.157	.314	.617	.660[a]																					
EE3	.166	.169	.195	.216	.257	.251	.282	.270	.185	.202	.143	.294	.572	.599	.555[a]																				
EE4	.118	.114	.160	.201	.307	.299	.334	.311	.158	.181	.129	.281	.602	.641	.582	.631[a]																			
PE1	.176	.138	.178	.204	.294	.282	.311	.346	.217	.201	.175	.273	.350	.366	.329	.371	.532[a]																		
PE2	.161	.127	.163	.189	.244	.221	.260	.284	.178	.168	.144	.234	.336	.350	.317	.359	.508	.502[a]																	
PE3	.117	.073	.109	.164	.232	.197	.249	.265	.190	.188	.170	.231	.314	.326	.290	.348	.554	.559	.658[a]																
PE4	.141	.092	.126	.181	.292	.269	.311	.328	.230	.222	.200	.277	.382	.403	.358	.418	.574	.564	.643	.653[a]															
SI1	.192	.208	.235	.263	.169	.197	.264	.273	.262	.257	.186	.319	.285	.226	.241	.244	.238	.196	.206	.225	.561[a]														
SI2	.173	.190	.217	.250	.143	.172	.233	.252	.246	.244	.170	.301	.264	.199	.220	.219	.231	.184	.193	.210	.582	.613[a]													
SI3	.177	.197	.211	.221	.091	.114	.154	.187	.210	.206	.138	.256	.212	.153	.179	.162	.180	.138	.129	.145	.478	.509	.439[a]												
FC1	.148	.152	.195	.157	.232	.227	.234	.276	.183	.186	.145	.259	.312	.326	.305	.286	.276	.238	.181	.228	.134	.139	.157	.477[a]											
FC2	.123	.130	.185	.140	.217	.211	.220	.271	.158	.162	.124	.234	.259	.265	.251	.225	.263	.222	.160	.198	.136	.150	.174	.510	.565[a]										
FC3	.052	.050	.094	.087	.171	.169	.199	.223	.169	.178	.145	.218	.226	.220	.213	.195	.220	.188	.154	.181	.177	.190	.188	.407	.455	.398[a]									
FC4	.134	.136	.175	.146	.221	.223	.245	.275	.206	.207	.166	.272	.309	.312	.298	.275	.252	.215	.156	.203	.174	.181	.189	.473	.511	.427	.487[a]								
HBC1	.026	.014	-.042	-.067	-.245	-.226	-.189	-.222	-.154	-.200	-.175	-.205	-.131	-.174	-.117	-.153	-.169	-.117	-.147	-.171	-.094	-.107	-.089	-.159	-.154	-.112	-.112	.559[a]							
HBC2	-.012	-.018	-.065	-.090	-.246	-.233	-.186	-.231	-.152	-.188	-.159	-.206	-.168	-.210	-.156	-.193	-.214	-.157	-.180	-.214	-.115	-.130	-.111	-.165	-.152	-.102	-.113	.535	.531[a]						
HBC3	-.028	-.033	-.073	-.091	-.251	-.232	-.189	-.231	-.189	-.224	-.198	-.232	-.164	-.211	-.153	-.187	-.220	-.168	-.195	-.226	-.078	-.087	-.077	-.188	-.176	-.121	-.135	.540	.528	.538[a]					
PE5	-.010	-.019	-.074	-.098	-.262	-.243	-.205	-.247	-.180	-.221	-.192	-.233	-.151	-.191	-.135	-.172	-.218	-.162	-.196	-.221	-.125	-.140	-.117	-.173	-.166	-.120	-.122	.575	.558	.562	.598[a]				
INT2	-.056	-.058	-.104	-.114	-.287	-.275	-.224	-.281	-.208	-.234	-.208	-.253	-.156	-.202	-.145	-.177	-.254	-.188	-.209	-.246	-.107	-.122	-.110	-.218	-.213	-.145	-.162	.569	.563	.569	.596	.615[a]			
INT1	.239	.186	.197	.209	.422	.460	.427	.488	.359	.311	.285	.389	.402	.441	.391	.419	.493	.403	.375	.478	.253	.257	.222	.375	.350	.271	.350	-.287	-.356	-.347	-.333	-.416	.795[a]		
INT3	.209	.174	.192	.202	.362	.384	.361	.415	.310	.282	.249	.352	.379	.411	.365	.391	.442	.368	.352	.433	.242	.246	.214	.344	.324	.252	.319	-.293	-.346	-.341	-.334	-.396	.666	.573[a]	
INT4	.238	.197	.213	.218	.394	.428	.397	.459	.332	.291	.259	.372	.388	.422	.376	.400	.460	.374	.344	.439	.262	.269	.235	.364	.342	.262	.338	-.292	-.356	-.345	-.337	-.411	.740	.627	.695[a]

Extraction Method: Maximum Likelihood.

Table III.4: Multicollinearity tests among constructs (Athens-Heraklion combined sample)

Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics	
	Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF
FC	.60	1.67	TOI	.49	2.02	SI	.88	1.14	PE	.46	2.17	TOG	.43	2.34	EE	.51	1.96	TOC	.47	2.11	TOC	.46	2.15
SI	.87	1.14	PE	.44	2.27	TOG	.42	2.36	EE	.39	2.58	TOI	.45	2.21	TOC	.46	2.15	FC	.68	1.47	FC	.59	1.68
TOG	.69	1.44	EE	.38	2.64	TOI	.47	2.14	TOC	.46	2.15	PE	.45	2.23	FC	.60	1.67	SI	.87	1.14	SI	.87	1.14
TOI	.45	2.21	TOC	.76	1.31	PE	.44	2.27	FC	.62	1.63	EE	.37	2.73	SI	.90	1.12	TOG	.44	2.29	TOG	.42	2.37
PE	.44	2.28	FC	.59	1.68	EE	.42	2.38	SI	.87	1.14	TOC	.46	2.15	TOG	.42	2.35	TOI	.48	2.09	TOI	.45	2.21
EE	.38	2.67	SI	.88	1.13	TOC	.47	2.14	TOG	.46	2.17	FC	.60	1.68	TOI	.48	2.01	PE	.61	1.64	PE	.44	2.28
HBC	.58	2.35	HBC	.76	2.06	HBC	.44	2.35	HBC	.52	2.23	HBC	.35	1.79	HBC	.57	2.19	HBC	.59	1.99	EE	.37	2.73
a. Dependent Variable: TOC			a. Dependent Variable: TOG			a. Dependent Variable: FC			a. Dependent Variable: TOI			a. Dependent Variable: SI			a. Dependent Variable: PE			a. Dependent Variable: EE			a. Dependent Variable: HBC		

Table III.5: Results of Harman' s CMB Assessment test (Athens-Heraklion combined sample)

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulati-ve %
1	10.345	27.223	27.223	8.828	25.966	25.966
2	3.031	8.100	35.199			
3	2.573	7.409	41.708			
4	2.338	5.988	47.596			
5	2.139	5.176	52.172			
6	1.768	4.286	56.035			
7	1.383	3.939	59.674			
8	1.277	3.662	63.036			
9	1.187	3.325	66.160			

Extraction Method: Maximum Likelihood.

Table III.6: KMO and Bartlett's Test of Sphericity (Athens-Heraklion combined sample)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	5520.387
	df	595
	Sig.	0.000

Table III.7: Selected SPSS output -Total Variance Explained (Athens-Heraklion combined sample)

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	10.345	27.223	27.223	9.900	26.054	26.054
2	3.031	8.100	35.199	2.730	7.297	33.351
3	2.573	7.409	41.708	2.179	6.273	39.625
4	2.338	5.988	47.596	2.033	5.207	44.832
5	2.139	5.176	52.172	1.671	4.044	48.876
6	1.768	4.286	56.035	1.329	3.223	52.099
7	1.383	3.939	59.674	0.981	2.793	54.892
8	1.277	3.662	63.036	0.917	2.629	57.521
9	1.187	3.325	66.160	0.936	2.622	60.143
Extraction Method: Maximum Likelihood.						

Table III.8: Pattern Matrix (Athens-Heraklion combined sample)									
	Factor								
	HBC	EE	PE	TOG	TOI	FC	SI	TOC	INT
PE5	.783		.210						
HBC1	.783								
HBC3	.730								
INT2	.721								
HBC2	.717								
EE2		.803							
EE4		.777							
EE1		.757							
EE3		.750							
PE3			.874						
PE4			.749						
PE2			.695						
PE1			.632						
TOG1				.786					
TOG2				.764					
TOG3				.718					
TOG4				.611					
TOI3					.793				
TOI2					.733				
TOI4					.718				
TOI1					.683				
FC2						.855			
FC4						.657			
FC3						.634			
FC1						.605			
SI1							.802		
SI2							.770		
SI3							.665		
TOC2								.752	
TOC3								.711	
TOC1								.698	
TOC4	.222							645	
INT1									.848
INT4									.765
INT3									.718
Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization.									

Table III.9: AMOS selected output readings (Athens – Heraklion initial combined sample)

a. Standardised Regression Weights

			Estimate
EE4	<---	EE	.803
EE3	<---	EE	.699
EE2	<---	EE	.826
EE1	<---	EE	.730
PE2	<---	PE	.683
PE3	<---	PE	.750
TOI1	<---	TOI	.697
TOI2	<---	TOI	.682
TOI3	<---	TOI	.724
TOG2	<---	TOG	.734
SI3	<---	SI	.708
SI2	<---	SI	.807
HBC2	<---	HBC	.721
HBC1	<---	HBC	.728
PE5	<---	HBC	.770
HBC3	<---	HBC	.732
INT1	<---	INT	.867
INT3	<---	INT	.766
INT4	<---	INT	.788
TOG3	<---	TOG	.657
PE1	<---	PE	.730
PE4	<---	PE	.826
FC2	<---	FC	.803
FC1	<---	FC	.689
TOC3	<---	TOC	.742
TOC2	<---	TOC	.810
TOC1	<---	TOC	.775
SI1	<---	SI	.786
FC4	<---	FC	.718
TOG1	<---	TOG	.769
TOI4	<---	TOI	.784
TOC4	<---	TOC	.589
TOG4	<---	TOG	.754
INT2	<---	HBC	.785
FC3	<---	FC	.591

b. Squared Multiple Correlations

	Estimate
C3	.349
TOG4	.569
TOC4	.**346**
SI1	.617
TOC1	.600
TOC2	.656
TOC3	.550
FC1	.475
FC2	.644
FC4	.516
PE4	.682
PE1	.533
INT4	.621
INT3	.587
INT1	.751
HBC3	.536
HBC5	.616
PE5	.593
HBC1	.530
HBC2	.520
SI2	.651
SI3	.501
TOG3	.432
TOG2	.539
TOG1	.591
TOI4	.615
TOI3	.524
TOI2	.465
TOI1	.486
PE3	.563
PE2	.466
EE1	.533
EE2	.682
EE3	.488
EE4	.645

Table III.10: Standardised Residual Covariances (Athens –Heraklion combined sample)

	SI1	TOC1	TOC2	TOC3	FC1	FC2	FC4	PE4	PE1	INT4	INT3	INT1	HBC3	INT2	PE5	HBC1	HBC2	SI2	SI3	TOC4	TOG4	TOG3	TOG2	TOG1	FC3	TOI4	TOI3	TOI2	TOI1	PE3	PE2	EE1	EE2	EE3	EE4
SI1	0.00																																		
TOC1	-0.82	0.00																																	
TOC2	0.59	-0.21	0.00																																
TOC3	-1.17	0.12	0.25	0.00																															
FC1	-0.41	-0.88	-0.70	0.66	0.00																														
FC2	-0.36	-0.96	-0.54	1.66	0.29	0.00																													
FC4	2.74	1.03	0.82	0.68	-0.44	0.10	0.00																												
PE4	0.78	0.31	-0.03	-1.42	-0.36	-1.57	0.52	0.00																											
PE1	-0.71	0.90	0.73	1.02	2.54	2.23	-0.19	-0.35	0.00																										
INT4	-0.37	0.49	-0.34	1.14	-0.28	-0.38	0.46	-0.71	1.52	0.00																									
INT3	0.20	0.92	0.05	-0.23	-0.12	-0.02	1.46	0.96	1.87	-0.31	0.00																								
INT1	-0.10	-0.45	-0.29	-0.20	0.03	-0.32	0.00	0.33	1.48	0.22	-0.12	0.00																							
HBC3	0.25	1.19	0.65	-0.11	0.03	-1.19	0.38	-0.30	-0.78	-0.96	0.22	0.43	0.00																						
INT2	-0.33	-0.23	0.30	0.13	-1.57	-0.87	0.45	-0.82	-2.08	-1.17	-1.38	-0.97	-0.40	0.00																					
PE5	-0.34	-0.47	-0.35	-0.75	0.56	-0.20	1.20	-0.29	-0.36	0.67	-0.77	1.16	0.10	0.09	0.00																				
HBC1	-2.42	0.29	0.24	0.21	-0.02	0.97	0.72	1.07	0.57	1.68	-0.02	1.49	0.19	-0.25	0.38	0.00																			
HBC2	-0.84	0.15	-0.95	-0.47	-0.29	0.31	0.72	-0.19	-0.58	-0.63	-1.23	0.21	0.17	-0.01	-0.36	0.23	0.00																		
SI2	0.11	0.21	0.45	-1.49	-1.95	-0.74	1.62	0.14	-0.96	-0.37	0.56	-0.35	0.03	1.35	0.07	-0.84	-0.26	0.00																	
SI3	-0.03	0.18	0.86	0.12	-0.85	-0.42	2.18	0.24	-0.08	0.14	0.92	0.40	1.60	1.28	-0.09	-0.42	1.37	-0.13	0.00																
TOC4	1.73	-0.9	0.09	-0.98	-0.51	-1.13	-0.61	0.14	-0.26	-0.49	-0.73	-1.2	-0.12	-0.02	1.46	0.96	1.87	-0.31	-0.17	0.00															
TOG4	-0.25	2.28	0.61	1.18	1.46	0.85	2.58	1.19	2.09	1.48	1.00	1.24	-0.21	-1.21	0.02	-0.63	-0.49	0.02	0.42	-0.13	0.00														
TOG3	-2.06	-1.33	-1.35	-1.20	-0.95	-1.33	-0.28	-0.41	-0.68	-0.50	-0.49	-0.97	-1.75	-0.09	0.21	0.73	0.21	-0.43	-0.03	-0.53	0.93	0.00													
TOG2	0.17	0.14	-0.53	0.17	-0.53	-0.71	0.47	0.00	-0.72	-1.16	-0.54	-0.51	-0.41	-0.24	-0.84	-0.11	0.48	0.47	0.90	0.40	0.12	0.24	0.00												
TOG1	-1.36	0.31	-0.54	-0.34	-0.50	-1.24	0.11	-0.27	0.92	-0.31	0.15	0.05	0.69	-0.13	0.80	1.37	1.55	0.53	1.65	-0.60	0.93	0.22	0.99	0.00											
FC3	2.28	0.13	0.26	0.41	-1.49	-1.44	-0.97	-0.12	-0.02	1.46	0.96	1.87	-0.31	0.20	0.92	0.05	-0.23	-0.12	-0.02	1.46	0.96	1.87	1.15	0.96	0.00										
TOI4	-1.40	1.13	1.03	0.65	0.71	0.69	0.96	-0.05	2.48	0.83	-0.27	0.27	0.40	-0.69	0.31	1.20	-0.64	0.24	0.05	2.30	-0.63	-0.01	-0.54	0.67	2.23	0.00									
TOI3	0.99	1.85	0.44	-1.01	-0.95	-0.86	0.54	0.44	1.07	-1.06	-1.20	-0.57	0.96	0.47	1.01	0.97	1.92	0.32	1.21	1.69	-0.16	0.00	-0.69	0.09	-0.38	-0.38	0.00								
TOI2	-0.98	0.64	-1.53	-1.51	-0.53	-0.32	-0.42	-0.78	0.75	0.29	0.68	0.57	-0.02	-0.42	-0.54	-0.42	-0.50	-0.19	-0.50	**-2.75**	-0.32	0.38	-1.96	-0.40	-0.02	-0.51	1.08	0.00							
TOI1	0.23	-1.04	-1.52	-1.44	0.19	-0.30	0.19	0.52	0.19	-0.12	0.13	0.23	-1.42	-1.16	-0.80	-0.69	-1.12	0.35	-0.33	0.96	-0.50	0.45	-0.89	-1.57	-0.32	0.67	-0.14	-0.74	0.00						
PE3	0.27	0.36	-0.55	-1.22	-1.47	-1.59	-0.98	0.52	-0.30	-1.62	-0.93	-1.68	-0.23	0.19	0.50	0.92	0.26	-0.13	0.16	0.36	-0.77	1.20	-0.58	-0.75	-1.19	-0.79	-1.07	-2.05	-0.48	0.00					
PE2	0.06	0.76	-0.80	-0.01	0.94	1.24	0.07	-0.50	-0.11	-0.07	-0.05	-0.10	0.02	0.73	0.38	1.94	0.31	0.09	-0.36	1.05	0.17	0.72	-0.87	-1.36	-0.87	0.74	-0.32	-0.66	-0.11	0.73	0.00				
EE1	-0.77	1.69	0.49	1.25	0.18	0.13	0.36	-0.66	0.86	0.13	0.01	-0.69	-0.97	0.91	0.70	1.24	-0.31	-0.31	-0.02	**3.85**	-1.00	0.72	0.33	0.04	-0.20	-0.04	0.47	-0.84	0.33	-0.77	0.39	0.00			
EE2	0.68	0.19	-1.12	-1.53	1.35	-1.20	0.92	0.58	-0.25	0.05	0.62	0.25	-0.64	-0.76	-0.20	-0.44	-1.01	-0.38	-0.14	2.41	-1.39	1.62	-0.05	-1.28	0.97	0.09	0.66	0.53	0.37	-1.20	0.39	-0.84	0.00		
EE3	-0.06	0.90	-0.08	-0.77	0.19	-0.13	0.88	-0.26	1.38	-0.49	0.11	-0.16	-0.28	0.24	0.61	1.74	0.31	-0.43	-0.43	2.13	-1.38	2.18	-0.47	-0.26	0.31	-1.09	0.05	-0.87	-1.14	-1.69	-0.39	1.58	-0.32	0.00	
EE4	0.77	0.06	-0.49	-0.17	-0.61	-2.31	0.58	1.07	-0.08	0.08	1.08	-0.27	-0.07	0.38	-0.10	0.17	-0.98	0.47	0.45	1.71	**-3.33**	1.14	-1.22	-2.05	-0.74	-0.53	0.13	0.06	1.34	-0.13	0.84	-0.38	0.99	-0.97	0.00

Extraction Method: Maximum Likelihood.

Table III.11:Selected Modification Indices Regression weights			
Errors	**MI- covariance**	**Path**	**MI-regression weight**
e13 <--> e14	36.275	TOG3 ← TOG4	26.299
		TOG4 ← TOG3	32.477
e38<--> e35	26.275	TOC4 ← TOC1	27.225
		TOC1 ← TOC4	30.454

Table III.12: AMOS Graphics selected output readings (Athens–Heraklion combined sample, after TOG4 & TOC4 deletion)

a. Standardised Regression Weights

			Estimate
EE4	<---	EE	.812
EE3	<---	EE	.702
EE2	<---	EE	.768
EE1	<---	EE	.788
PE2	<---	PE	.735
PE3	<---	PE	.779
TOI1	<---	TOI	.664
TOI2	<---	TOI	.663
TOI3	<---	TOI	.662
TOG2	<---	TOG	.767
SI3	<---	SI	.722
SI2	<---	SI	.867
HBC2	<---	HBC	.748
HBC1	<---	HBC	.762
PE5	<---	HBC	.750
HBC3	<---	HBC	.735
INT1	<---	INT	.903
INT3	<---	INT	.748
INT4	<---	INT	.803
TOG3	<---	TOG	.618
PE1	<---	PE	.798
PE4	<---	PE	.785
FC2	<---	FC	.776
FC1	<---	FC	.754
TOC3	<---	TOC	.644
TOC2	<---	TOC	.805
TOC1	<---	TOC	.796
SI1	<---	SI	.771
FC3	<---	FC	.699
FC4	<---	FC	.692
TOG1	<---	TOG	.786
TOI4	<---	TOI	.793
INT2	<---	HBC	.782

b. Squared Multiple Correlations

	Estimate
INT2	.611
FC3	.489
SI1	.595
TOC1	.634
TOC2	.648
TOC3	.415
FC1	.568
FC2	.603
FC4	.478
PE4	.617
PE1	.636
INT4	.645
INT3	.559
INT1	.815
HBC3	.540
PE5	.562
HBC1	.580
HBC2	.560
SI2	.752
SI3	.521
TOG3	.382
TOG2	.589
TOG1	.617
TOI4	.628
TOI3	.438
TOI2	.439
TOI1	.442
PE3	.606
PE2	.540
EE1	.621
EE2	.591
EE3	.493
EE4	.659

Table III.13: Calculated AVE & CR (Athens - Heraklion combined sample)											
	CmR	AVE	HBC	EE	PE	SI	TOI	TOG	INT	FC	TOC
HBC	0.869	0.571	0.756								
EE	0.852	0.591	-0.322	0.769							
PE	0.857	0.600	-0.267	0.585	0.775						
SI	0.831	0.622	-0.222	0.313	0.345	0.789					
TOI	0.790	0.535	-0.428	0.566	0.627	0.310	0.731				
TOG	0.769	0.503	-0.341	0.421	0.333	0.339	**0.715**	**0.700**			
INT	0.860	0.673	-0.521	0.614	0.667	0.406	0.713	0.538	0.821		
FC	0.821	**0.487**	-0.209	**0.714**	0.382	0.222	0.507	0.294	0.442	**0.698**	
TOC	0.794	0.565	-0.068	0.264	0.221	0.163	0.355	0.541	0.276	0.148	0.752

Note: Values on the diagonal are the constructs' square root of the AVE.

Table III.14: Reliability table (Athens - Heraklion combined sample)				
CONSTRUCT	**RELIABILITY**	**NO OF ITEMS**	**IF ITEM DELETED**	**IMPROVED ALPHA**
TOI	.821	4		
TOG	.820	3		
EE	.859	4		
PE	.840	4		
SI	.769	3		
TOC	.807	3		
FC	.768	4		
HBC	.864	5		
INT	.847	3		

Table III.15: Measurement invariance test (Athens – Heraklion combined sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Overall Model				
Unconstrained	1131.2	976		
Fully constrained	1425	1010		
Number of groups		2		
Difference	293.8	34	0.000	NO
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.968	**.950**		**.018**	NO

A: The Athens Sample

Table III.16: Assessment of Normality (Athens sample)						
Variable	**min**	**max**	**skew**	**c.r.**	**kurtosi**	**c.r.**
FC3	1.00	7.000	-.072	-.605	.064	.270
TOC1	2.00	7.000	-.128	-1.073	.025	.104
SI1	1.00	7.000	.099	.832	.033	.138
SI2	1.00	7.000	.057	.476	-.057	-.238
SI3	1.00	7.000	.150	1.262	.145	.606
FC1	1.00	7.000	-.132	-1.104	-.260	-1.089
FC2	2.00	7.000	-.523	-4.384	-.250	-1.048
FC4	2.00	7.000	-.093	-.782	-.064	-.270
PE4	1.00	7.000	.075	.628	-.240	-1.008
PE1	2.00	7.000	-.185	-1.551	-.522	-2.188
INT4	1.00	7.000	-.537	-4.506	.417	1.747
INT3	1.00	7.000	-.137	-1.152	-.024	-.101
INT1	1.00	7.000	-.394	-3.307	.040	.166
HBC3	1.00	7.000	-.105	-.880	.006	.024
HBC5	1.00	7.000	.092	.770	.142	.596
HBC4	1.00	7.000	-.121	-1.014	-.347	-1.455
HBC1	1.00	7.000	.077	.644	-.105	-.441
HBC2	1.00	7.000	-.151	-1.263	-.492	-2.061
TOC2	2.00	7.000	.162	1.359	-.359	-1.506
TOC3	2.00	7.000	.047	.396	-.337	-1.414
TOG3	1.00	7.000	-.418	-3.502	.378	1.586
TOG2	1.00	7.000	.001	.008	.029	.123
TOG1	1.00	7.000	-.575	-4.820	.391	1.641
TOI4	1.00	7.000	-.345	-2.890	.027	.115
TOI3	1.00	7.000	-.032	-.266	-.175	-.733
TOI2	1.00	7.000	.033	.274	-.462	-1.939
TOI1	1.00	7.000	-.062	-.522	-.202	-.848
PE3	2.00	7.000	.004	.031	-.352	-1.477
PE2	2.00	7.000	-.295	-2.471	-.161	-.674
EE1	1.00	7.000	-.476	-3.993	-.236	-.988
EE2	1.00	7.000	-.370	-3.104	-.336	-1.408
EE3	1.00	7.000	-.544	-4.563	-.005	-.021
EE4	2.00	7.000	-.269	-2.252	-.224	-.941
Multivariate					12.707	4.375

Table III.17: Observations farthest from the centroid (Athens sample)			
Observation number	Mahalanobis d-squared	p1	p2
95	46.586	.046	.565
159	46.217	.050	.510
392	45.967	.052	.512
190	45.459	.058	.530
100	45.442	.058	.451
163	45.039	.063	.528
98	44.731	.067	.571
257	44.652	.068	.523
361	44.050	.076	.545
281	43.928	.078	.523
292	43.488	.085	.499
322	43.396	.086	.469
150	43.267	.088	.389
201	42.699	.058	0.198
214	42.657	0.118	0.366
239	41.627	0.141	0.546
158	41.229	0.151	0.561
80	40.036	0.156	0.54
94	39.849	0.16	0.577
321	39.584	0.168	0.424
62	38.972	0.185	0.527
288	38.586	0.196	0.575
23	38.46	0.2	0.59
181	38.326	0.221	0.578
188	38.141	0.23	0.537
159	36.936	0.251	0.493
216	**35.606**	**0.302**	**0.596**

DF=9, D^2/DF=35.606/9=3.96

Table III.18: Results of Levene' s Test for Homoscedasticity					
		Levene Statistic	df1	df2	Sig
INT	Based on Mean	0.43	1.00	576.00	0.84
	Based on Median	0.37	1.00	576.00	0.95
EE	Based on Mean	0.06	1.00	576.00	0.83
	Based on Median	0.07	1.00	576.00	0.84
PE	Based on Mean	2.56	1.00	576.00	0.73
	Based on Median	1.66	1.00	576.00	0.67
SI	Based on Mean	0.47	1.00	576.00	0.79
	Based on Median	0.45	1.00	576.00	0.75
TOC	Based on Mean	1.53	1.00	576.00	0.73
	Based on Median	1.57	1.00	576.00	0.72
FC	Based on Mean	0.52	1.00	576.00	0.70
	Based on Median	0.49	1.00	576.00	0.63
HBC	Based on Mean	0.28	1.00	576.00	0.60
	Based on Median	0.36	1.00	576.00	0.66
TOG	Based on Mean	0.37	1.00	576.00	0.63
	Based on Median	0.33	1.00	576.00	0.68
TOI	Based on Mean	0.12	1.00	576.00	0.93
	Based on Median	0.13	1.00	576.00	0.98

Table III.19: Reproduced Correlations

		TOC1	TOC2	TOC3	TOI1	TOI2	TOI3	TOI4	TOG1	TOG2	TOG3	EE1	EE2	EE3	EE4	PE1	PE2	PE3	PE4	SI1	SI2	SI3	FC1	FC2	FC3	FC4	HBC1	HBC2	HBC3	HBC4	HBC5	INT1	INT3	INT4
Reproduced Correlations	TOC1	.613[a]																																
	TOC2	.630	.684[a]																															
	TOC3	.526	.571	.558[a]																														
	TOI1	.198	.171	.282	.493[a]																													
	TOI2	.172	.132	.259	.490	.510[a]																												
	TOI3	.193	.144	.289	.524	.546	.635[a]																											
	TOI4	.263	.218	.357	.539	.557	.621	.644[a]																										
	TOG1	.464	.430	.333	.234	.224	.301	.290	.684[a]																									
	TOG2	.407	.381	.297	.231	.222	.285	.273	.629	.604[a]																								
	TOG3	.289	.256	.202	.207	.204	.276	.245	.540	.505	.451[a]																							
	EE1	.229	.220	.252	.275	.225	.309	.298	.185	.211	.138	.657[a]																						
	EE2	.184	.168	.231	.347	.302	.363	.360	.152	.193	.123	.641	.660[a]																					
	EE3	.173	.160	.185	.213	.163	.240	.225	.137	.166	.101	.620	.601	.594[a]																				
	EE4	.170	.150	.224	.344	.295	.368	.367	.119	.147	.094	.636	.648	.597	.659[a]																			
	PE1	.228	.169	.236	.312	.278	.345	.372	.219	.175	.154	.386	.397	.359	.420	.550[a]																		
	PE2	.186	.143	.214	.297	.258	.323	.340	.143	.105	.097	.394	.402	.367	.433	.495	.469[a]																	
	PE3	.167	.103	.151	.262	.201	.289	.295	.205	.127	.151	.354	.346	.339	.404	.594	.551	.760[a]																
	PE4	.185	.109	.164	.300	.249	.329	.343	.229	.173	.171	.414	.418	.395	.461	.605	.552	.719	.714[a]															
	SI1	.246	.220	.288	.193	.209	.300	.334	.264	.262	.202	.259	.237	.225	.252	.273	.208	.189	.246	.521[a]														
	SI2	.253	.227	.307	.176	.199	.289	.341	.243	.244	.179	.237	.213	.205	.234	.274	.198	.172	.236	.592	.685[a]													
	SI3	.274	.270	.298	.100	.110	.168	.218	.220	.222	.145	.209	.177	.183	.176	.208	.146	.108	.159	.446	.515	.423[a]												
	FC1	.163	.160	.230	.214	.216	.258	.249	.158	.174	.120	.324	.337	.296	.279	.280	.242	.172	.215	.181	.169	.192	.474[a]											
	FC2	.133	.136	.235	.201	.218	.262	.249	.130	.144	.101	.263	.279	.237	.210	.274	.226	.145	.180	.190	.184	.213	.550	.675[a]										
	FC3	.143	.136	.197	.112	.137	.204	.188	.186	.180	.147	.161	.144	.140	.104	.193	.141	.102	.125	.246	.260	.246	.370	.465	.380[a]									
	FC4	.173	.156	.214	.183	.200	.256	.241	.201	.221	.156	.332	.332	.306	.273	.252	.206	.123	.184	.242	.241	.243	.454	.521	.381	.468[a]								
	HBC1	.015	-.001	-.067	-.249	-.217	-.181	-.203	-.161	-.219	-.181	-.056	-.150	-.042	-.102	-.131	-.074	-.087	-.128	-.123	-.125	-.088	-.160	-.180	-.083	-.113	.644[a]						
	HBC2	-.015	-.019	-.075	-.241	-.195	-.153	-.196	-.111	-.161	-.119	-.127	-.214	-.117	-.187	-.212	-.159	-.194	-.235	-.130	-.138	-.096	-.126	-.116	-.025	-.076	.573	.561[a]						
	HBC3	-.014	-.020	-.062	-.259	-.212	-.186	-.201	-.198	-.237	-.206	-.103	-.187	-.088	-.152	-.187	-.136	-.193	-.219	-.087	-.073	-.044	-.129	-.122	-.036	-.075	.598	.553	.587[a]					
	HBC4	-.016	-.025	-.083	-.267	-.223	-.196	-.221	-.182	-.229	-.191	-.110	-.197	-.094	-.162	-.192	-.136	-.177	-.212	-.136	-.135	-.091	-.145	-.145	-.057	-.095	.623	.577	.598	.618[a]				
	HBC5	-.041	-.042	-.103	-.278	-.241	-.203	-.241	-.186	-.228	-.185	-.090	-.184	-.074	-.144	-.221	-.153	-.191	-.230	-.141	-.144	-.106	-.177	-.190	-.086	-.124	.624	.582	.594	.617	.630[a]			
	INT1	.269	.165	.233	.451	.459	.445	.511	.285	.295	.208	.376	.466	.338	.429	.497	.410	.382	.493	.274	.280	.216	.331	.302	.170	.333	-.278	-.342	-.292	-.310	-.370	.868[a]		
	INT3	.282	.215	.257	.375	.363	.355	.420	.283	.293	.204	.352	.417	.317	.387	.441	.363	.352	.441	.274	.284	.233	.293	.265	.157	.288	-.298	-.352	-.310	-.329	-.374	.708	.607[a]	
	INT4	.260	.175	.240	.425	.422	.420	.479	.289	.299	.217	.371	.448	.334	.419	.473	.393	.381	.477	.287	.294	.226	.306	.278	.164	.305	-.302	-.356	-.316	-.334	-.381	.770	.645	.697[a]

Extraction Method: Maximum Likelihood.

Table III.20: Multicollinearity tests among constructs (Athens sample)

Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics	
	Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF
FC	.60	1.67	TOI	.50	2.02	SI	.88	1.14	PE	.46	2.17	TOG	.43	2.34	EE	.51	1.96	TOC	.47	2.11	TOC	.46	2.15
SI	.88	1.14	PE	.44	2.27	TOG	.42	2.36	EE	.38	2.58	TOI	.45	2.21	TOC	.47	2.15	FC	.68	1.47	FC	.59	1.68
TOG	.70	1.44	EE	.38	2.64	TOI	.47	2.14	TOC	.46	2.15	PE	.45	2.23	FC	.60	1.68	SI	.87	1.14	SI	.87	1.14
TOI	.45	2.21	TOC	.76	1.30	PE	.44	2.27	FC	.62	1.63	EE	.37	2.73	SI	.89	1.20	TOG	.44	2.29	TOG	.42	2.37
PE	.44	2.28	FC	.60	1.68	EE	.42	2.38	SI	.88	1.14	TOC	.47	2.15	TOG	.43	2.36	TOI	.48	2.09	TOI	.45	2.21
EE	.38	2.67	SI	.89	1.13	TOC	.47	2.14	TOG	.46	2.17	FC	.60	1.68	TOI	.48	2.10	PE	.61	1.64	PE	.44	2.29
HBC	.57	1.23	HBC	.77	2.39	HBC	.52	2.23	HBC	.52	1.89	HBC	.55	2.11	HBC	.35	1.97	HBC	.52	1.77	EE	.36	2.73
a. Dependent Variable: TOC			a. Dependent Variable: TOG			a. Dependent Variable: FC			a. Dependent Variable: TOI			a. Dependent Variable: SI			a. Dependent Variable: PE			a. Dependent Variable: EE			a. Dependent Variable: HBC		

Table III.21: Harman's single factor test (Athens sample)

Factor	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.940	26.865	26.865	9.709	25.551	25.551
2	3.204	8.860	35.525			
3	2.805	7.781	43.106			
4	2.324	6.581	49.387			
5	1.819	5.115	54.302			
6	1.511	4.384	58.387			
7	1.267	3.623	61.810			
8	1.230	3.325	65.135			
9	1.096	2.581	67.716			
Extraction Method: Maximum Likelihood.						

Table III.22: KMO and Bartlett's Test (Athens sample)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	7571.457
	df	595
	Sig.	.000

Table III.23: Total Variance Explained (Athens sample)						
Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**Total**	**% of Variance**	**Total**	**% of Variance**	**Cumulative %**
1	9.940	26.865	26.865	9.513	25.711	25.601
2	3.204	8.860	35.525	2.887	7.982	33.583
3	2.805	7.781	43.106	2.375	6.589	40.172
4	2.324	6.581	49.387	2.021	5.723	45.894
5	1.819	5.115	54.302	1.421	3.996	49.890
6	1.511	4.384	58.387	1.136	3.297	53.187
7	1.267	3.623	61.810	.898	2.570	55.757
8	1.230	3.325	65.135	.883	2.387	58.144
9	1.096	2.581	67.716	.864	2.036	60.179
Extraction Method: Maximum Likelihood.						

Table III.24: Pattern Matrix (Athens sample)									
	Factor								
	HBC	EE	TOI	PE	TOG	FC	TOC	SI	INT
HBC1	.818								
HBC4	.782								
HBC5	.756								
HBC3	.753								
HBC2	.726								
EE1		.809				.243			
EE3		.792							
EE2		.781							
EE4		.768							
TOI3			.782						
TOI4			.755						
TOI2			.724						
TOI1			.660						
PE3				.960					
PE4				.772					
PE1				.585					
PE2				.639					
TOG1					.825				
TOG2					.805				
TOG3					.681				
FC2			.235			.863			
FC1						.684			
FC4						.678			
FC3						**.585**			
TOC2							.790		
TOC1							.780		
TOC3							.649		
SI2								.797	
SI1								.722	
SI3								.632	
INT1									.763
INT4									.752
INT3									.692
Extraction Method: Maximum Likelihood. Promax rotation with Kaiser Normalization									

Table III.25:Reliability readings (Athens sample)				
CONSTRUCT	**RELIABILITY**	**NO OF ITEMS**	**IF ITEM DELETED**	**IMPROVED ALPHA**
TOI	.827	4		
TOG	.794	3		
EE	.868	4		
PE	.851	4		
SI	.765	3		
TOC	.796	3		
FC	.761	4	FC3	.773
HBC	.878	5		
INT	.879	3		

Table III.26: AMOS selected output readings (Athens initial sample)

a. Standardised Regression Weights

			Estimate
EE4	<---	EE	.830
EE3	<---	EE	.689
EE2	<---	EE	.832
EE1	<---	EE	.745
PE2	<---	PE	.675
PE3	<---	PE	.807
TOI1	<---	TOI	.705
TOI2	<---	TOI	.662
TOI3	<---	TOI	.738
TOG2	<---	TOG	.778
SI3	<---	SI	.700
SI2	<---	SI	.783
HBC2	<---	HBC	.756
HBC1	<---	HBC	.807
HBC4	<---	HBC	.776
HBC3	<---	HBC	.754
HBC5	<---	HBC	.787
INT1	<---	INT	.897
INT3	<---	INT	.780
INT4	<---	INT	.856
TOG3	<---	TOG	.648
PE1	<---	PE	.739
PE4	<---	PE	.851
FC2	<---	FC	.731
FC1	<---	FC	.721
TOC3	<---	TOC	.698
TOC2	<---	TOC	.793
TOC1	<---	TOC	.791
SI1	<---	SI	.783
FC3	<---	FC	**.494**
TOG1	<---	TOG	.820
TOI4	<---	TOI	.818
FC4	<---	FC	.705

b. Squared Multiple Correlations

	Estimate
FC4	.497
SI1	.614
TOC1	.626
TOC2	.628
TOC3	.487
FC1	.519
FC2	.534
FC3	**.244**
PE4	.724
PE1	.546
INT4	.733
INT3	.608
INT1	.805
HBC3	.569
HBC5	.620
HBC4	.603
HBC1	.652
HBC2	.572
SI2	.613
SI3	.490
TOG3	.420
TOG2	.605
TOG1	.672
TOI4	.670
TOI3	.545
TOI2	.439
TOI1	.497
PE3	.652
PE2	.456
EE1	.555
EE2	.691
EE3	.475
EE4	.688

Table III.27:Standardised Residual Covariances (Athens sample)

	FC3	SI1	TOC1	TOC2	TOC3	FC1	FC2	FC4	PE4	PE1	INT4	INT3	INT1	HBC3	HBC5	HBC4	HBC1	HBC2	SI2	SI3	TOG3	TOG2	TOG1	TOI4	TOI3	TOI2	TOI1	PE3	PE2	EE1	EE2	EE3	EE4
FC3	0																															
SI1	1.78	0																														
TOC1	1.36	-0.77	0																													
TOC2	0.63	0.55	-0.2	0																												
TOC3	1.14	-1.17	0.18	0.19	0																											
FC1	-1.63	-0.54	-0.21	-0.8	1.32	0																										
FC2	0.79	-0.37	-1.02	-0.41	0.32	0.25	0																									
FC4	1.03	1.05	0.1	0.02	0.61	-0.33	-0.27	0																								
PE4	-0.97	0.89	0.37	-0.02	-1.39	0.13	-1.3	-0.35	0																							
PE1	0.05	-0.77	0.8	0.56	0.9	2.83	1.93	0.16	-0.15	0																						
INT4	-0.52	-0.12	0.12	-0.16	0.74	1.27	0.09	0.7	-0.14	1.17	0																					
INT3	-1.96	-0.47	0.8	0.76	0.4	1.27	-0.62	0.09	0.7	0.86	-0.17	0																				
INT1	-1.2	-0.39	-0.58	-0.32	-0.49	1.73	-0.92	-0.2	0.57	0.7	0.12	-0.04	0																			
HBC3	**2.74**	0.24	1.18	0.67	-0.1	-0.93	-0.9	-0.22	-0.27	-0.6	-0.21	0.17	0.77	0																		
HBC5	1.41	-0.35	-0.25	0.31	0.13	-2.65	-1.35	0.21	-0.81	-1.9	-1.21	-1.79	-0.34	0	0																	
HBC4	1.82	-0.4	-0.53	-0.38	-0.79	0.26	0.24	1.57	-0.36	-0.26	0.6	-0.57	0.69	-0.04	-0.02	0																
HBC1	1.53	-2.48	0.23	0.21	0.18	-0.3	0.72	1.5	1.0	0.66	1.4	0.47	0.88	0.07	-0.34	0.48	0															
HBC2	1.73	-0.9	0.09	-0.98	-0.51	-1.13	-0.61	0.14	-0.26	-.49	-.73	-1.2	0.35	0.05	-0.09	-0.26	0.34	0														
SI2	2.28	0.13	0.26	0.41	-1.49	-1.44	-0.97	0.31	0.25	-1.01	-0.51	0.34	-0.15	0.02	1.33	0.01	-0.91	-0.33	0													
SI3	**2.82**	-0.05	0.21	0.8	0.11	-0.62	-0.7	-0.05	0.33	-0.14	0.13	0.8	0.94	1.59	1.27	-0.14	-0.46	1.32	-0.14	0												
TOG3	0.26	-2.06	-0.89	-0.94	-0.84	0.24	-0.75	0.19	0.03	-0.43	0.12	-0.08	-0.54	-1.86	-0.23	0.01	0.54	0.01	-0.42	-0.04	0											
TOG2	0.61	0.34	0.85	0.15	0.75	-0.4	0.07	1.18	0.68	-0.26	-0.86	-0.12	0.55	-0.73	-0.59	-1.25	-0.51	0.08	0.65	1.05	0.01	0										
TOG1	0.25	-1.44	0.72	-0.18	-0.02	1.03	-1.25	0.03	0.13	1.12	-0.17	0.52	0.15	0.65	-0.19	0.66	1.23	1.41	0.45	1.56	0.15	-0.12	0									
TOI4	-1.3	-1.49	0.98	0.81	0.5	0.95	0.33	0.18	-0.32	1.99	0.17	-0.13	-0.08	0.7	-0.39	0.51	1.38	-0.46	0.15	-0.04	-0.27	0.11	0.29	0								
TOI3	0.24	1.13	2.01	0.55	-0.9	0.61	-0.22	-0.06	0.62	1.01	-0.34	-0.77	0.24	0.9	0.39	0.85	0.81	1.76	0.47	1.33	0.53	0.3	0.76	-0.16	0							
TOI2	-0.79	-0.79	0.88	-1.33	-1.33	0.76	-0.06	-0.19	-0.5	0.8	0.44	0.96	1.06	-0.16	-0.6	-0.8	-0.67	-0.75	0.01	-0.34	0.43	-0.93	0.34	-0.09	0	0						
TOI1	**-3.38**	0.18	-1.13	-1.68	-1.54	1.16	-0.44	-1.18	0.33	-0.19	-0.77	-0.35	-0.36	-1.19	-0.93	-0.67	-0.57	1.0	0.30	-0.39	-0.13	-0.27	-1.27	0.27	0.16	-0.27	0					
PE3	-0.46	0.39	0.44	-0.53	-1.17	-0.86	-1.29	-2.02	0.0	-0.05	-0.98	-0.87	-0.98	-0.22	0.18	0.41	0.83	0.17	0.0	0.26	-0.34	0.09	-0.35	-1.0	-0.87	-1.76	-0.63	0				
PE2	0.45	0.02	0.67	-0.95	-0.11	1.48	0.43	-0.35	-0.27	-0.28	-0.64	-0.5	-0.68	0.19	0.88	0.46	2.02	0.39	0.05	-0.4	0.42	-0.42	-1.16	0.29	-0.37	-0.6	-0.46	1.01	0			
EE1	-0.63	-0.6	2.18	0.94	1.65	2.51	-0.18	1.23	-0.12	1.09	0.46	-0.05	0.06	-1.06	0.8	0.53	1.07	-0.48	-0.13	0.13	0.07	1.69	1.19	0.12	1.05	-0.17	0.53	-0.22	0.64	0		
EE2	-1.06	0.47	0.24	-1.14	-1.51	2.38	-1.28	0.49	0.37	-0.73	-0.43	-0.64	0.24	-0.37	-0.48	0.0	-0.25	-0.83	-0.59	-0.33	-0.63	0.99	-0.49	-0.43	0.62	0.62	-0.04	-1.35	-0.05	-0.36	0	
EE3	-0.71	0.15	1.42	0.4	-0.36	1.95	-0.66	0.83	0.34	1.68	0.25	0.28	0.7	-0.4	0.1	0.41	1.55	0.12	-0.22	-0.26	-0.31	0.88	0.89	-0.88	0.66	-0.18	-0.9	-1.1	-0.08	0.0	0.25	0
EE4	-0.43	0.55	0.08	-0.54	-0.17	1.43	-2.15	-0.64	0.83	-0.58	-0.04	-0.03	-0.19	0.21	0.67	0.12	0.37	-0.79	0.24	0.24	-0.6	-0.24	-1.31	-1.07	0.06	0.12	0.9	-0.32	0.37	0.04	0.25	-0.47

Table III.28: AMOS selected output readings (Athens sample after FC3 deletion)

a.Standardised Regression Weights

			Estimate
EE4	<---	EE	.829
EE3	<---	EE	.690
EE2	<---	EE	.832
EE1	<---	EE	.745
PE2	<---	PE	.675
PE3	<---	PE	.807
TOI1	<---	TOI	.705
TOI2	<---	TOI	.662
TOI3	<---	TOI	.738
TOG2	<---	TOG	.778
SI3	<---	SI	.699
SI2	<---	SI	.784
HBC2	<---	HBC	.756
HBC1	<---	HBC	.807
HBC4	<---	HBC	.776
HBC3	<---	HBC	.754
HBC5	<---	HBC	.787
INT1	<---	INT	.898
INT3	<---	INT	.780
INT4	<---	INT	.856
TOG3	<---	TOG	.648
PE1	<---	PE	.739
PE4	<---	PE	.851
FC2	<---	FC	.733
FC1	<---	FC	.745
TOC3	<---	TOC	.697
TOC2	<---	TOC	.793
TOC1	<---	TOC	.792
SI1	<---	SI	.782
TOG1	<---	TOG	.820
TOI4	<---	TOI	.818
FC4	<---	FC	.679

b.Squared Multiple Correlations

	Estimate
FC4	.460
SI1	.612
TOC1	.627
TOC2	.628
TOC3	.486
FC1	.555
FC2	.537
PE4	.724
PE1	.546
INT4	.733
INT3	.608
INT1	.806
HBC3	.569
HBC5	.620
HBC4	.603
HBC1	.652
HBC2	.572
SI2	.615
SI3	.489
TOG3	.420
TOG2	.605
TOG1	.672
TOI4	.670
TOI3	.545
TOI2	.439
TOI1	.497
PE3	.652
PE2	.456
EE1	.555
EE2	.692
EE3	.475
EE4	.687

Table III.29: Calculated AVE and CR (Athens sample after FC3 deletion)

	CmR	**AVE**	**HBC**	**EE**	**PE**	**SI**	**TOI**	**TOG**	**INT**	**FC**	**TOC**
HBC	0.883	0.603	0.776								
EE	0.858	0.603	-0.229	0.776							
PE	0.853	0.594	-0.285	0.638	0.771						
SI	0.800	0.572	-0.137	0.212	0.264	0.756					
TOI	0.822	0.537	-0.370	0.536	0.518	0.226	0.733				
TOG	0.795	0.566	-0.306	0.246	0.289	0.211	0.451	0.752			
INT	0.883	0.716	-0.487	0.598	0.642	0.266	0.691	0.413	0.846		
FC	0.763	0.518	-0.242	0.499	0.354	0.182	0.436	0.286	0.490	0.720	
TOC	0.805	0.581	-0.052	0.308	0.268	0.153	0.387	0.622	0.344	0.306	0.762

Table III.30: AMOS output readings (Athens structural model)

a. Standardised Regression Weights:

			Estimate
PE	<---	EE	0.666
HBC	<---	TOI	-0.262
HBC	<---	TOG	-0.258
HBC	<---	PE	-0.182
HBC	<---	TOC	0.315
HBC	<---	FC	-0.086
HBC	<---	EE	0.059
INT	<---	TOI	0.273
INT	<---	PE	0.331
INT	<---	HBC	-0.196
INT	<---	SI	0.151
INT	<---	EE	0.157
INT	<---	TOG	0.222
INT	<---	FC	0.118
INT	<---	TOC	0.014
EE4	<---	EE	0.822
EE3	<---	EE	0.657
EE2	<---	EE	0.821
EE1	<---	EE	0.72
PE2	<---	PE	0.664
PE3	<---	PE	0.722
TOI2	<---	TOI	0.671
TOI3	<---	TOI	0.72
TOG2	<---	TOG	0.771
EI6	<---	SI	0.71
EI5	<---	SI	0.78
HB2	<---	HBC	0.719
HB1	<---	HBC	0.769
HB3	<---	HBC	0.781
INT1	<---	INT	0.892
INT3	<---	INT	0.748
INT4	<---	INT	0.837
TOG3	<---	TOG	0.611
PE1	<---	PE	0.77
PE4	<---	PE	0.759
FC2	<---	FC	0.759
FC1	<---	FC	0.739
TOC3	<---	TOC	0.677
TOC2	<---	TOC	0.787
TOC1	<---	TOC	0.766
EI4	<---	SI	0.769
FC4	<---	FC	0.643
HBC4	<---	HBC	0.752
TOI4	<---	TOI	0.852
TOG1	<---	TOG	0.82
TOI1	<---	TOI	0.696
HBC5	<---	HBC	0.834

b. Squared Multiple Correlations

	Estimate
PE	0.444
HBC	0.218
INT	0.697
EI4	0.592
TOC1	0.587
TOC2	0.619
TOC3	0.459
FC1	0.546
FC2	0.575
FC4	0.413
PE4	0.577
PE1	0.593
INT4	0.7
INT3	0.559
INT1	0.795
HB3	0.61
HBC5	0.696
HBC4	0.566
HBC1	0.591
HBC2	0.517
EI5	0.608
EI6	0.505
TOG3	0.373
TOG2	0.524
TOG1	0.664
TOI4	0.614
TOI3	0.518
TOI2	0.451
TOI1	0.494
PE3	0.522
PE2	0.441
EE1	0.518
EE2	0.673
EE3	0.432
EE4	0.676

Table III.31: Selected Unstandardised Regression Weights for the Athens structural model						
			Estimate	S.E.	C.R.	P
PE	<--	EE	0.639	0.064	9.944	***
HBC	<--	TOI	-0.234	0.068	-3.458	***
HBC	<--	TOG	-0.235	0.078	-3.02	0.003
HBC	<--	EE	0.058	0.095	0.613	0.54
HBC	<--	PE	-0.186	0.085	-2.195	0.028
HBC	<--	FC	-0.095	0.076	-1.253	0.21
HBC	<--	TOC	0.353	0.093	3.783	***
INT	<--	TOG	0.191	0.065	0.636	0.525
INT	<--	TOI	0.244	0.058	5.036	***
INT	<--	EE	0.177	0.081	2.184	0.029
INT	<--	PE	0.389	0.075	5.194	***
INT	<--	FC	0.15	0.064	2.354	0.019
INT	<--	HBC	-0.225	0.052	-4.322	***
INT	<--	SI	0.15	0.038	0.384	0.701
INT	<--	TOC	0.018	0.078	0.227	0.82

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant

Table III.32: Results of Mediation assessment (Athens sample)			
Paths	**Direct Effect**	**Indirect Effect**	**Results**
EE-PE-INT	0.157	.232 *	Partial Mediaton
PE-HBC-INT	0.331 **	.036 **	Partial Mediaton
TOC-HBC-INT	0.014 Ns	-.062	Full Mediaton
TOI-HBC-INT	0.313	.056**	Partial Mediaton
TOG-HBC-INT	0.22 **	.056**	Partial Mediaton
FC-HBC-INT	.118**	.17 NS	Full Mediaton
EE-PE-HBC	0.059 Ns	-.121 **	Full Mediaton

B. The Heraklion Sample

Table III.33:Assessment of normality (Heraklion Sample)						
Variable	min	max	skew	c.r.	kurtosis	c.r.
FC1	1.000	7.000	.052	.387	-.260	-.974
SI1	1.000	7.000	-.212	-1.585	.015	.055
TOC1	2.000	7.000	-.034	-.253	-.469	-1.753
TOC2	1.000	7.000	.246	1.841	-.073	-.274
TOC3	1.000	7.000	.125	.936	.563	2.108
FC2	1.000	7.000	-.046	-.342	-.760	-2.845
FC3	1.000	7.000	-.084	-.630	-.115	-.429
FC4	1.000	7.000	-.006	-.042	-.017	-.065
PE4	1.000	7.000	-.177	-1.324	-.254	-.952
PE1	1.000	7.000	-.045	-.339	-.278	-1.041
INT4	1.000	7.000	-.732	-5.479	.573	2.143
INT3	1.000	7.000	-.171	-1.280	-.313	-1.172
INT1	1.000	7.000	-.636	-4.759	.169	.632
HBC3	1.000	7.000	-.110	-.822	-.393	-1.472
HBC5	1.000	7.000	-.047	-.355	-.265	-.991
HBC4	1.000	7.000	.087	.650	-.229	-.858
HBC1	1.000	7.000	.201	1.503	.210	.785
HBC2	1.000	7.000	-.119	-.893	-.169	-.631
SI2	1.000	7.000	.299	2.238	-.104	-.390
SI3	1.000	7.000	-.240	-1.797	-.163	-.611
TOG3	1.000	7.000	-.164	-1.228	-.526	-1.967
TOG2	1.000	7.000	.025	.188	.182	.680
TOG1	1.000	7.000	-.356	-2.666	.077	.289
TOI4	1.000	7.000	-.198	-1.480	.028	.103
TOI3	1.000	7.000	.116	.869	-.653	-2.442
TOI2	1.000	7.000	.169	1.268	-.540	-2.019
TOI1	1.000	7.000	.164	1.229	-.166	-.621
PE3	1.000	7.000	-.195	-1.459	-.155	-.579
PE2	1.000	7.000	-.170	-1.272	-.312	-1.168
EE1	1.000	7.000	-.123	-.920	-.295	-1.105
EE2	1.000	7.000	-.263	-1.969	-.102	-.383
EE3	1.000	7.000	-.244	-1.824	-.308	-1.154
EE4	1.000	7.000	-.390	-2.922	-.329	-1.230
Multivariate					22.730	4.634

Table III.34:Multivariate Outliers (Heraklion sample)			
Observation number	Mahalanobis d-squared	p1	p2
142	45.748	0.055	0.017
9	45.714	0.055	0.011
391	45.263	0.06	0.009
168	44.348	0.072	0.047
252	44.189	0.074	0.048
251	43.746	0.081	0.035
378	43.627	0.083	0.033
226	43.503	0.084	0.032
276	43.472	0.085	0.024
205	43.267	0.088	0.03
301	42.683	0.098	0.097
101	42.564	0.1	0.096
235	42.393	0.104	0.108
99	42.362	0.104	0.089
343	41.786	0.115	0.229
167	41.652	0.118	0.238
132	41.557	0.12	0.233
158	41.315	0.125	0.292
222	41.204	0.128	0.248
383	41.113	0.13	0.201
245	41.113	0.13	0.164
162	40.720	0.139	0.285
312	40.335	0.148	0.438
339	40.322	0.148	0.392
198	40.275	0.151	0.366
293	40.243	0.150	0.333
266	40.205	0.151	0.26
92	39.937	0.158	0.351
323	39.925	0.158	0.31
243	39.790	0.162	0.335
216	39.769	0.163	0.3
173	39.559	0.168	0.367
44	39.395	0.173	0.364
182	39.344	0.174	0.3
405	39.071	0.182	0.361
291	38.993	0.184	0.359
360	**38.760**	**0.191**	**0.357**
89	35.673	0.231	0.564

DF= 9; D^2/DF=38.760/9=4.30

Table III.35: Levene's Test Of Homoscedasticity (Heraklion Sample)					
		Levene Statistic	**df1**	**df2**	**Sig**
INT	Based on Mean	0.54	1.00	619.00	0.64
	Based on Median	0.48	1.00	619.00	0.67
EE	Based on Mean	0.33	1.00	619.00	0.88
	Based on Median	0.41	1.00	619.00	0.83
PE	Based on Mean	1.56	1.00	619.00	0.41
	Based on Median	1.63	1.00	619.00	0.48
SI	Based on Mean	0.74	1.00	619.00	0.58
	Based on Median	0.68	1.00	619.00	0.60
TOC	Based on Mean	1.55	1.00	619.00	0.42
	Based on Median	1.59	1.00	619.00	0.49
FC	Based on Mean	0.53	1.00	619.00	0.63
	Based on Median	0.45	1.00	619.00	0.62
HBC	Based on Mean	0.38	1.00	619.00	0.53
	Based on Median	0.35	1.00	619.00	0.57
TOG	Based on Mean	0.27	1.00	619.00	0.66
	Based on Median	0.17	1.00	619.00	0.71
TOI	Based on Mean	0.11	1.00	619.00	0.73
	Based on Median	0.09	1.00	619.00	0.69

Table III.36: Correlations among items(Heraklion Sample)

		TOC1	TOC2	TOC3	TOI1	TOI2	TOI3	TOI4	TOG1	TOG2	TOG3	EE1	EE2	EE3	EE4	PE1	PE2	PE3	PE4	EI1	EI2	EI3	FC1	FC2	FC3	FC4	HBC1	HBC2	HBC3	HBC4	HBC5	INT1	INT3	INT4
Reproduced Correlation	TOC1	.603[a]																															
	TOC2	.690	.819[a]																														
	TOC3	.525	.628	.494[a]																													
	TOI1	.104	.112	.130	.473[a]																												
	TOI2	.166	.181	.190	.510	.576[a]																											
	TOI3	.174	.198	.199	.514	.579	.597[a]																										
	TOI4	.170	.185	.182	.476	.522	.522	.502[a]	.																								
	TOG1	.315	.319	.234	.181	.277	.270	.258	.586[a]																								
	TOG2	.272	.263	.178	.152	.212	.197	.228	.510	.509[a]																							
	TOG3	.245	.218	.148	.159	.237	.220	.231	.550	.511	.554[a]																						
	EE1	.116	.132	.143	.302	.361	.341	.319	.284	.271	.235	.581[a]																					
	EE2	.164	.169	.185	.298	.362	.331	.308	.250	.229	.199	.597	.672[a]																				
	EE3	.134	.147	.164	.308	.387	.366	.321	.301	.253	.241	.585	.624	.617[a]	.																		
	EE4	.100	.105	.136	.259	.319	.288	.271	.225	.196	.170	.565	.630	.591	.609[a]																		
	PE1	.084	.072	.077	.268	.289	.271	.325	.203	.250	.215	.329	.327	.317	.309	.531[a]																	
	PE2	.141	.122	.094	.162	.164	.144	.232	.192	.286	.226	.271	.276	.243	.248	.550	.643[a]																
	PE3	.094	.082	.068	.191	.200	.185	.258	.209	.276	.229	.274	.259	.249	.246	.522	.577	.540[a]															
	PE4	.133	.122	.118	.274	.308	.291	.338	.241	.270	.244	.339	.353	.343	.332	.560	.582	.550	.604[a]														
	EI1	.138	.223	.157	.138	.171	.215	.174	.253	.241	.170	.320	.211	.278	.210	.190	.175	.207	.186	.583[a]													
	EI2	.081	.161	.109	.091	.119	.154	.137	.256	.242	.174	.294	.173	.245	.197	.173	.152	.200	.162	.567	.588[a]												
	EI3	.039	.121	.081	.100	.116	.149	.136	.180	.183	.113	.254	.129	.202	.150	.175	.152	.196	.157	.528	.542	.520[a]											
	FC1	.134	.129	.140	.274	.294	.269	.300	.189	.184	.148	.370	.426	.361	.424	.230	.179	.189	.238	.101	.127	.068	.521[a]										
	FC2	.063	.033	.043	.261	.242	.226	.291	.155	.197	.147	.252	.274	.204	.283	.207	.179	.194	.193	.083	.131	.068	.534	.674[a]									
	FC3	.080	.052	.056	.166	.155	.147	.182	.108	.133	.088	.232	.284	.208	.286	.147	.139	.137	.149	.062	.087	.020	.455	.542	.484[a]								
	FC4	.096	.073	.071	.201	.187	.171	.223	.133	.168	.123	.218	.253	.181	.252	.137	.123	.127	.128	.051	.085	.026	.460	.567	.471	.489[a]							
	HBC1	-.015	-.029	-.058	-.243	-.265	-.204	-.275	-.157	-.183	-.179	-.245	-.214	-.223	-.206	-.240	-.181	-.197	-.217	-.028	-.063	-.098	-.161	-.110	.020	-.071	.538[a]						
	HBC2	-.021	-.030	-.053	-.275	-.296	-.243	-.311	-.212	-.231	-.225	-.254	-.208	-.220	-.207	-.215	-.144	-.176	-.186	-.074	-.121	-.134	-.238	-.238	-.082	-.179	.501	.511[a]					
	HBC3	-.017	-.026	-.055	-.251	-.269	-.209	-.290	-.181	-.221	-.197	-.314	-.286	-.282	-.282	-.296	-.248	-.260	-.274	-.088	-.130	-.148	-.248	-.214	-.080	-.159	.515	.497	.524[a]				
	HBC4	-.004	-.024	-.049	-.263	-.286	-.235	-.303	-.188	-.210	-.201	-.248	-.189	-.217	-.190	-.269	-.204	-.233	-.245	-.106	-.147	-.178	-.162	-.135	.011	-.080	.527	.506	.512	.537[a]			
	HBC5	-.039	-.046	-.075	-.294	-.327	-.267	-.344	-.239	-.245	-.249	-.276	-.245	-.259	-.250	-.312	-.242	-.270	-.302	-.055	-.107	-.122	-.254	-.225	-.072	-.159	.539	.528	.535	.544	.588[a]		
	INT1	.191	.209	.201	.295	.392	.365	.373	.468	.370	.407	.388	.382	.425	.397	.388	.309	.352	.436	.221	.258	.206	.333	.243	.164	.176	-.320	-.340	-.354	-.353	-.444	.671[a]	
	INT3	.180	.218	.206	.270	.355	.338	.347	.393	.297	.324	.312	.290	.342	.314	.356	.276	.325	.399	.231	.272	.234	.275	.196	.113	.130	-.303	-.318	-.327	-.346	-.420	.618	.596[a]	.
	INT4	.108	.121	.130	.240	.317	.296	.309	.374	.284	.314	.315	.303	.343	.337	.334	.255	.306	.373	.195	.250	.199	.318	.262	.182	.188	-.260	-.292	-.301	-.300	-.386	.596	.560	.554[a]

Table III.37: Multicollinearity tests among constructs (Heraklion Sample)

Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics		Model	Collinearity Statistics	
	Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF
TOC	.704	1.420	SI	.734	1.363	FC	.702	1.425	TOG	.593	1.687	PE	.590	1.694	EE	.446	2.240	TOI	.527	1.899	TOI	.452	2.212
FC	732	1.366	TOG	.504	1.984	SI	.733	1.364	PE	.567	1.764	EE	.420	2.381	TOI	.473	2.116	TOC	.749	1.335	TOC	.702	1.425
SI	.744	1.344	PE	.560	1.787	TOG	.532	1.880	EE	.418	2.390	TOI	.463	2.161	TOC	.709	1.411	FC	.744	1.343	FC	.696	1.436
TOG	.514	1.946	EE	.447	2.237	PE	.565	1.770	TOI	.461	2.169	TOC	.744	1.345	FC	.696	1.436	SI	.730	1.370	SI	.730	1.370
PE	.585	1.709	TOI	.475	2.104	EE	.446	2.241	TOC	.705	1.418	FC	.699	1.431	SI	.739	1.352	TOG	.504	1.984	TOG	.502	1.992
EE	.487	2.053	TOC	.707	1.414	TOI	.454	2.205	FC	.700	1.428	SI	.862	1.161	TOG	.530	1.888	PE	.597	1.674	PE	.560	1.787
HBC	.520	1.924	HBC	.456	1.923	HBC	.542	2.001	HBC	.654	1.236	HBC	.732	1.354	HBC	.478	2.233	HBC	.586	1.613	EE	.418	2.391
a. Dependent Variable: TOI			a. Dependent Variable FC			a.: Dependent Variable TOC			a: Dependent Variable SI			a: Dependent Variable TOG			a. Dependent Variable: PE			a. Dependent Variable: EE			a. Dependent Variable: HBC		

Table III.38: Assessment of CMB - Harman's single-factor test (Heraklion Sample)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.057	26.947	27.447	8.781	26.610	26.610
2	3.304	8.960	36.407			
3	2.805	7.681	44.088			
4	2.524	6.681	50.769			
5	2.093	5.215	55.984			
6	1.413	4.184	60.168			
7	1.297	3.823	63.992			
8	1.130	3.595	67.587			
9	.979	2.230	69.817			
Extraction Method: Maximum Likelihood.						

Table III.39: KMO and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.901
Bartlett's Test of Sphericity	Approx. Chi-Square	5383.116
	df	595
	Sig.	.000

Table III.40: Total Variance Explained (Heraklion Sample)						
	Initial Eigenvalues			**Extraction Sums of Squared Loadings**		
Factor	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	9.057	26.947	27.447	8.668	25.789	26.054
2	3.304	8.960	36.407	2.977	8.072	34.126
3	2.805	7.681	44.088	2.375	6.504	40.630
4	2.524	6.681	50.769	2.195	5.810	46.440
5	2.093	5.215	55.984	1.635	4.074	50.514
6	1.413	4.184	60.168	1.063	3.146	53.660
7	1.297	3.823	63.992	0.920	2.712	56.372
8	1.130	3.595	67.587	0.823	2.618	58.990
9	.979	2.230	69.817	0.791	1.801	60.791
Extraction Method: Maximum Likelihood.						

Table III.41: Patern Matrix (Heraklion Sample)									
	Factor								
	HBC	PE	EE	TOI	SI	TOC	FC	TOG	INT
HBC1	-.763								
HBC4	-.722								
HBC3	-.706								
HBC2	-.703								
HBC5	-.666								
PE2		.870							
PE3		.725							
PE4		.691							
PE1		.649							
EE2			.853						
EE4			.765						
EE3			.749						
EE1			.666						
TOI3				.812					
TOI2				.725					
TOI1				.701					
TOI4				.629					
SI2					.871				
SI1					.696				
SI3					.625				
TOC3						.747			
TOC2						.743			
TOC1						.724			
FC2							.786		
FC4							.700		
FC3							.668		
FC1			.226				573		
TOG3								.765	
TOG1								.753	
TOG2				.275				.652	
INT4									.785
INT3									.676
INT1									.666

Table III.42: AMOS readings (Heraklion initial sample)

a. Standardised Regression Weights

			Estimate
EE4	<---	EE	.764
EE3	<---	EE	.776
EE2	<---	EE	.802
EE1	<---	EE	.755
PE2	<---	PE	.738
PE3	<---	PE	.714
TOI1	<---	TOI	.695
TOI2	<---	TOI	.714
TOI3	<---	TOI	.693
TOG2	<---	TOG	.665
TOC3	<---	SI	.690
TOC2	<---	SI	.901
HBC2	<---	HBC	.655
HBC1	<---	HBC	.662
HBC4	<---	HBC	.733
INT1	<---	INT	.845
INT3	<---	INT	.748
INT4	<---	INT	.716
TOG3	<---	TOG	.707
PE1	<---	PE	.748
PE4	<---	PE	.782
FC3	<---	FC	.673
FC2	<---	FC	.784
SI3	<---	SI	.704
SI2	<---	SI	.755
SI1	<---	SI	.757
FC4	<---	FC	.687
FC1	<---	FC	**.704**
TOI4	<---	TOI	.738
TOG1	<---	TOG	.792
HBC5	<---	HBC	.779
HBC3	<---	HBC	.723
TOC1	<---	TOC	.769

b. Squared Multiple Correlations

	Estimate
FC1	.495
SI1	.591
TOC1	.572
TOC2	.570
TOC3	.496
FC2	.615
FC3	**.452**
FC4	.473
PE4	.612
PE1	.560
INT4	.512
INT3	.559
INT1	.715
HBC3	.522
HBC5	.606
HBC4	.538
HBC1	**.438**
HBC2	.429
TOC2	.811
TOC3	.476
TOG3	.500
TOG2	.442
TOG1	.627
TOI4	.545
TOI3	.480
TOI2	.510
TOI1	.483
PE3	.509
PE2	.545
EE1	.570
EE2	.644
EE3	.602
EE4	.584

Table III.43:Reliability Table (Heraklion sample)

Construct	**Cronbach's Alpha**	**No Of Items**	**If Item Deleted**	**Improved Alpha**
TOI	.813	4		
TOG	.765	3		
EE	.856	4		
PE	.834	4		
SI	.779	3		
TOC	.751	3		
FC	.772	4	FC1	.806
HBC	.844	5		
INT	.813	3		

Table III.44: Standardised Residual Covariances (Heraklion sample)

	FC1	TOC1	SI1	SI2	SI3	FC2	FC3	FC4	PE4	PE1	INT4	INT3	INT1	HBC3	HBC5	HBC4	HBC	HBC	TOC2	TOC3	TOG3	TOG2	TOG1	TOI4	TOI3	TOI2	TOI1	PE3	PE2	EE1	EE2	EE3	EE4
SI1	0.00																																
TOC1	1.03	0.00																															
TOC2	0.20	0.38	0.00																														
TOC3	0.70	-0.77	-0.19	0.00																													
FC1	0.55	-2.20	0.06	0.18	0.00																												
FC2	-0.21	-0.33	-0.05	1.11	-0.88	0.00																											
FC4	-0.36	0.33	-0.16	-0.16	-0.98	0.17	0.00																										
PE4	-0.55	0.90	-0.54	-0.05	-0.47	0.38	0.50	0.00																									
PE1	0.76	0.78	-0.17	-0.35	-0.24	0.10	-1.03	-0.16	0.00																								
INT4	1.29	-0.30	-0.33	-0.16	0.64	0.61	-0.57	-0.84	0.31	0.00																							
INT3	1.67	-1.01	-0.61	0.68	0.27	0.82	0.08	-0.07	0.38	0.54	0.00																						
INT1	1.19	0.05	0.34	1.11	0.02	-0.36	-1.69	-1.63	1.13	-0.13	0.07	0.00																					
HBC3	2.03	0.26	-0.64	0.01	-0.42	-0.66	-0.61	-0.66	0.58	-0.10	0.09	-0.11	0.00																				
HBC5	-1.83	0.44	0.86	-0.31	1.50	-1.33	1.48	0.23	-0.33	-1.05	0.16	0.72	0.25	0.00																			
HBC4	-2.23	-0.46	0.44	0.90	-0.31	-0.81	2.20	-0.37	-0.83	-1.33	-1.17	-1.18	0.08	0.00	0.00																		
HBC1	0.79	0.12	0.00	-0.62	-1.45	0.55	2.41	0.80	-0.25	0.19	0.84	-0.06	0.05	0.47	-0.40	0.00																	
HBC2	-1.06	1.14	1.78	0.43	-0.04	1.03	2.33	1.47	0.98	-0.25	1.18	-0.02	-0.03	-0.08	-0.16	0.46	0.00																
SI2	-1.43	0.20	0.19	-0.84	0.20	-1.60	0.55	-1.09	1.25	0.42	-0.35	-0.59	0.50	-0.49	0.28	0.00	0.00	0.00															
SI3	0.73	-0.03	1.05	-0.12	-0.15	-0.93	-0.37	-0.07	0.08	-0.67	-0.94	0.67	-0.05	0.35	0.24	0.37	-0.32	0.02	0.00														
TOG4	**2.79**	-0.12	0.65	0.22	-1.02	-0.48	-0.21	-0.13	0.40	0.10	-0.18	1.04	0.25	-0.38	-1.51	-0.27	-0.23	-0.39	0.09	0.00													
TOG3	0.01	0.16	-0.79	-0.60	-1.14	-0.02	-0.96	-0.33	0.12	-0.22	-0.14	-0.20	-0.19	-0.06	-0.39	0.09	0.15	-0.83	-0.97	-1.14	0.00												
TOG2	0.67	0.63	0.41	0.75	0.57	1.03	-0.13	1.05	1.07	0.66	-1.34	-0.62	0.73	-0.68	-0.89	-0.43	0.27	-0.84	0.44	-1.28	0.30	0.00											
TOG1	1.17	1.82	0.58	0.68	-0.80	-0.29	-0.95	-0.89	-0.19	-0.50	-0.09	0.15	0.35	0.73	-0.10	0.69	1.23	-0.08	-0.10	0.02	0.16	-0.39	0.00										
TOI4	0.71	-0.10	-0.07	-0.05	0.12	0.79	-0.97	-0.24	0.94	1.40	-0.18	0.84	-0.11	0.24	-0.46	-0.34	0.10	-1.09	-0.03	1.24	-0.32	0.65	0.46	0.00									
TOI3	0.63	0.90	1.71	0.16	0.24	-0.19	-0.93	-1.06	0.96	0.25	0.06	0.25	0.64	0.73	0.27	0.93	1.00	-0.18	0.39	0.93	0.22	0.12	0.21	-0.28	0.00								
TOI2	1.41	0.16	0.33	-0.43	-0.03	-0.61	-0.91	0.01	0.58	0.94	0.23	0.52	0.65	0.72	0.01	-0.24	-0.88	-1.04	0.12	0.79	0.74	-0.21	0.48	-0.31	0.00	0.00							
TOI1	1.76	-1.10	0.01	-1.11	-0.54	0.23	-1.06	-0.75	0.24	-0.10	-0.98	-0.58	-1.15	0.01	-0.22	0.17	0.23	0.20	-1.02	-0.18	-0.87	-0.89	-0.78	0.33	0.35	-0.08	0.00						
PE3	0.28	0.49	0.99	0.74	-0.05	0.38	-0.03	-0.89	-1.04	0.08	-0.09	0.35	0.04	-0.30	-0.13	0.33	0.09	0.31	-0.71	0.13	0.06	1.02	-0.81	0.02	-0.99	-0.34	-0.76	0.00					
PE2	0.56	0.71	0.17	-0.62	-0.26	-0.48	0.22	-0.84	0.21	-0.72	-0.91	-0.95	-1.04	0.06	0.86	0.85	0.16	1.04	0.35	-0.06	0.42	1.42	-1.19	-0.34	-1.79	-1.57	-1.19	1.31	0.00				
EE1	1.80	-0.35	1.70	1.54	0.56	-1.06	0.00	-0.80	0.16	1.42	0.32	-0.33	0.16	-1.44	0.16	0.02	-0.82	-1.08	-0.15	0.34	0.06	1.15	0.61	0.18	0.64	0.35	0.54	0.06	-0.43	0.00			
EE2	**2.82**	0.84	-0.40	-0.95	-1.69	-0.50	-0.20	-0.32	0.85	0.09	-0.64	-1.12	-0.25	-0.93	0.42	0.92	0.55	0.59	0.15	0.98	-0.68	-0.01	-0.18	-0.17	0.26	0.48	-1.02	-0.78	-0.54	-0.33	0.00		
EE3	0.76	-0.06	1.38	0.42	-0.81	-1.63	-0.70	-1.39	0.36	0.23	0.47	-0.14	0.95	-0.76	-0.07	0.51	-0.03	-0.02	-0.25	1.57	-0.28	0.67	0.67	-0.37	1.13	1.23	-0.31	-0.56	-0.81	0.00	0.22	0.00	
EE4	**3.43**	-0.66	-0.41	-0.71	-0.40	-0.47	0.47	-0.44	0.71	0.04	0.10	0.18	0.03	-0.50	0.03	1.07	0.34	0.03	-0.65	-0.02	-0.54	-0.23	-0.86	-1.23	-0.72	0.36	-0.39	-0.67	-0.82	0.01	0.32	-0.29	0.00

Table III.45: AMOS Graphics selected Readings (Heraklion sample after FC1 deletion)

a. Standardised Regression Weights

			Estimate
EE4	<---	EE	.760
EE3	<---	EE	.781
EE2	<---	EE	.800
EE1	<---	EE	.758
PE2	<---	PE	.738
PE3	<---	PE	.714
TOI1	<---	TOI	.693
TOI2	<---	TOI	.714
TOI3	<---	TOI	.694
TOG2	<---	TOG	.666
SI3	<---	SI	.690
SI2	<---	SI	.901
HBC2	<---	HBC	.655
HBC1	<---	HBC	.662
HBC4	<---	HBC	.734
INT1	<---	INT	.846
INT3	<---	INT	.748
INT4	<---	INT	.715
TOG3	<---	TOG	.707
PE1	<---	PE	.748
PE4	<---	PE	.782
FC3	<---	FC	.682
FC2	<---	FC	.797
TOC3	<---	TOC	.704
TOC2	<---	TOC	.755
TOC1	<---	TOC	.756
FC4	<---	FC	.707
TOI4	<---	TOI	.739
TOG1	<---	TOG	.791
HBC5	<---	HBC	.778
HBC3	<---	HBC	.722
SI1	<---	SI	.769

***b.* Squared Multiple Correlations**

	Estimate
TOC1	.591
SI1	.572
SI2	.571
SI3	.496
FC2	.635
FC3	.465
FC4	.500
PE4	.612
PE1	.560
INT4	.512
INT3	.559
INT1	.715
HBC3	.522
HBC5	.606
HBC4	.538
HBC1	.438
HBC2	.429
TOC2	.811
TOC3	.477
TOG3	.500
TOG2	.444
TOG1	.626
TOI4	.546
TOI3	.482
TOI2	.509
TOI1	.481
PE3	.510
PE2	.545
EE1	.574
EE2	.641
EE3	.610
EE4	.578

Table III.46: Calculated AVE & CR (Heraklion sample)

	CmR	**AVE**	**TOI**	**EE**	**PE**	**HBC**	**TOC**	**TOG**	**INT**	**FC**	**SI**
TOI	0.802	0.504	0.710								
EE	0.857	0.599	0.579	0.774							
PE	0.851	0.589	0.451	0.489	0.767						
HBC	0.842	0.516	-.539	-.426	-0.415	0.718					
TOC	0.784	0.550	0.391	0.424	0.349	-0.315	0.742				
TOG	0.766	0.523	0.429	0.423	0.403	-0.390	0.464	0.723			
INT	0.814	0.595	0.594	0.584	0.585	-0.612	0.548	0.659	0.771		
FC	0.763	0.519	0.489	0.524	0.319	-0.342	0.314	0.306	0.423	0.720	
SI	0.783	0.546	0.265	0.385	0.308	-0.196	0.479	0.385	0.395	0.168	0.739

Table III.47: Selected AMOS (Heraklion structural model)

a. Standardised Regression Weights

			Estimate
PE	<---	EE	.524
HBC	<---	TOI	-.312
HBC	<---	TOG	-.275
HBC	<---	EE	-.052
HBC	<---	PE	-.183
HBC	<---	TOC	.214
HBC	<---	FC	.037
INT	<---	TOG	.263
INT	<---	PE	.313
INT	<---	HBC	-.250
INT	<---	SI	.174
INT	<---	TOI	.266
INT	<---	TOC	-.023
INT	<---	FC	.096
INT	<---	EE	.093
EE4	<---	EE	.736
EE3	<---	EE	.758
EE2	<---	EE	.777
EE1	<---	EE	.732
PE2	<---	PE	.737
PE3	<---	PE	.705
TOI2	<---	TOI	.712
TOI3	<---	TOI	.693
TOG2	<---	TOG	.691
SI3	<---	SI	.667
SI2	<---	SI	.818
HBC2	<---	HBC	.686
HBC1	<---	HBC	.692
HBC3	<---	HBC	.678
INT1	<---	INT	.825
INT3	<---	INT	.717
INT4	<---	INT	.679
TOG4	<---	TOG	.727
PE1	<---	PE	.740
PE4	<---	PE	.775
FC3	<---	FC	.682
FC2	<---	FC	.797
TOC3	<---	TOC	.688
TOC2	<---	TOC	.899
TOC1	<---	TOC	.763
SI1	<---	SI	.732
FC4	<---	FC	.707
TOI1	<---	TOI	.703
TOI4	<---	TOI	.731
TOG1	<---	TOG	.738
HBC4	<---	HBC	.713
HBC5	<---	HBC	.740

***b.* Squared Multiple Correlations**

	Estimate
PE	.274
HBC	.331
INT	.652
SI1	.535
TOC1	.582
TOC2	.809
TOC3	.473
FC2	.636
FC3	.465
FC4	.500
PE4	.601
PE1	.548
INT4	.462
INT3	.515
INT1	.680
HBC3	.460
HBC5	.548
HBC4	.509
HBC1	.479
HBC2	.471
SI2	.669
SI3	.445
TOG4	.528
TOG2	.478
TOG1	.544
TOI4	.535
TOI3	.480
TOI2	.507
TOI1	.495
PE3	.497
PE2	.543
EE1	.536
EE2	.604
EE3	.575
EE4	.542

Table III.48:Selected AMOS Unstandardised Regression Weights						
			Estimate	S.E.	C.R.	P
PE	<---	EE	.582	.077	7.600	***
HBC	<---	TOI	-.323	.063	-5.088	***
HBC	<---	TOG	-.155	.061	-2.345	***
HBC	<---	EE	.013	.053	.279	.581
HBC	<---	PE	-.173	.053	-3.298	***
HBC	<---	FC	.015	.053	.279	.781
HBC	<---	TOC	.143	.047	3.064	.002
INT	<---	TOG	.457	.098	4.661	***
INT	<---	EE	.119	.116	1.025	.306
INT	<---	PE	.262	.082	3.183	.001
INT	<---	HBC	-.408	.106	-3.845	***
INT	<---	SI	.180	.074	2.431	.004
INT	<---	TOI	.205	.097	2.113	***
INT	<---	TOC	.018	.082	.223	.824
INT	<---	FC	.014	.073	.191	.849

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant

Table III.49: Mediation Results (Heraklion sample)			
	Direct Effects	**Indirect Effects**	**Results**
EE-PE-INT	.10 Ns	.149 **	Full Mediation
PE-HBC-INT	.313 *	. 048 *	Partial Mediation
TOC-HBC-INT	-.023 Ns	-.053 **	Full Mediation
TOI-HBC-INT	.265 **	.104 *	Partial Mediation
TOG-HBC-INT	.263 *	.072*	Partial Mediation
EE-PE-HBC	-.045 Ns	-.1 *	Full Mediation

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant

Multigroup Moderation

A: Athens Sample

a) Gender groups

Table III.50: Assessment of metric invariance for gender groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	**1046.5**	**848**		
Fully constrained	**1053**	**853**		
Number of groups		**2**		
Difference	**6.5**	**5**	**0.261**	**YES**
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	
.975	**.967**	**.008**	Yes	

Table III.51: Assessment of structural invariance for gender groups (Athens sample)				
	Chi-square	**DF**	**p-val**	**Invariant?**
Unconstrained	1141.8	848		
Fully constrained	980	680		
Number of groups		2		
Difference	161.8	168	0.620	YES
Chi-square Thresholds				
90% Confidence	**1144.51**	**879**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**1145.64**	**879**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**1148.43**	**879**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	
.953	**.947**	**.006**	Yes	

b) Age groups

Table III.52: Assessment of metric invariance for age groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1117.704	848		
Fully constrained	1087.8	877		
Number of groups		2		
Difference	29.904	29	0.419	YES
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	
.943	**.938**	**.005**	Yes	

Table III.53: Assessment of structural invariance for age groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1203.2	881		
Fully constrained	1278	910		
Number of groups		2		
Difference	74.8	29	0.000	NO
Chi-square Thresholds				
90% Confidence	**1205.91**	**882**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**1207.04**	**882**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**1209.83**	**882**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	
848	**835**	**.013**	No	

Table III.54: Multigroup moderation for age groups (Athens sample)												
			Low age group			**High age group**			.821			
	Path		**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**p**	**Notes**
INT	←	PE	.48	5.78	***	.29	3.48	***	4.3	1	**	**Variant**
INT	←	EE	.22	2.68	.02	.11	1.63	.108	1.2	1		Invariant
PE	←	EE	.517	6.452	***	.841	5.926	***	4.8	1	**	**Variant**
INT	←	HBC	-.26	-3.01	.003	-.43	-5.26	***	4.2	1	**	**Variant**
INT	←	TOG	.25	4.967	***	.43	4.45	***	2.82	1	*	**Variant**
INT	←	TOI	.366	4.77	***	.37	4.715	***	2.62	1	*	Invariant
HBC	←	PE	.076	.011	.412	-.28	-2.55	***	4.9	1	**	**Variant, Ns for low age**
HBC	←	TOG	-.28	-2.77	.006	-.50	-3.55	***	4.7	1	**	**Variant**
HBC	←	TOI	-.35	-3.25	.001	-.29	-2.74	.006	0.6	1		Invariant
HBC	←	TOC	.29	2.37	.02	.40	2.8	.004	0.5	1		Invariant

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant, $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.55: SMCs estimates (Athens sample)		
Low Age		**High Age**
	Estimate	Estimate
PE	.50	.48
HBC	.184	.253
INT	**.722**	.641

c) Educational groups

Table III.56: Assessment of metric invariance for educational groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1081.8	848		
Fully constrained	1121.3	915		
Number of groups		2		
Difference	39.5	67	0.997	YES
CFI unconstrained	**CFI constrained**	**ΔCFI**		**Notes**
.963	**.958**	**.005**		Yes

Table III.57: Assessment of structural invariance for educational groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1203.5	880		
Fully constrained	1321.3	915		
Number of groups		2		
Difference	117.8	35	0.000	NO
Chi-square Thresholds				
90% Confidence	**1206.21**	**881**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**1207.34**	**881**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**1210.13**	**881**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.942	**.930**		**.012**	NO

Table III.58: Multigroup moderation for educational groups (Athens sample)												
			Low educ.			**High educ.**						
Path			**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**p**	**Notes**
INT	←	PE	.31	2.95	.03	.54	7.57	***	2.8	1	*	**Variant**
INT	←	EE	.24	2.52	.012	.12	1.24	.216	2.4	1		Invariant
PE	←	EE	.62	7.77	***	.571	7.94	***	1.1	1		Invariant
INT	←	HBC	-.25	-4.29	***	-.16	-1.67	.096	4.2	1	**	**Variant, Ns for high educ.**
INT	←	TOG	.35	2.73	.01	.02	.31	.76	3.1	1	*	**Variant, Ns for high educ.**
INT	←	TOI	.40	4.11	***	.30	6.76	***	2.3	1		Invariant
HBC	←	PE	-.20	-2.63	.01	-.10	.911	.37	2.9	1	*	**Variant, Ns for high educ.**
HBC	←	TOI	-.23	-3.01	.002	-.05	-2.59	.14	3.1	1	*	**Variant, Ns for high educ.**
HBC	←	TOG	-.24	-2.72	.01	-.22	-2.96	.00	0.5	1		Invariant
HBC	←	TOC	.46	2.22	.03	.31	.04	.34	1.3	1		Invariant

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant, $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.59: SMCs estimates (Athens sample)		
Low Educ.		**High Educ.**
	Estimate	Estimate
PE	0.447	0.413
HBC	0.303	0.183
INT	0.66	0.701

d) Experience groups

Table III.60 Assessment of metric invariance for experience groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1095.6	848		
Fully constrained	1143.3	897		
Number of groups		2		
Difference	47.7	49	0.526	YES
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.961	**.955**		**.006**	Yes

Table III.61: Assessment of structural invariance for experience groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1011.8	710		
Fully constrained	1083.3	763		
Number of groups		2		
Difference	71.5	53	0.046	NO
Chi-square Thresholds				
90% Confidence	**1014.51**	**711**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**1015.64**	**711**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**1018.43**	**711**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**		**ΔCFI**	
.953	**.941**		**.012**	NO

Table III.62: Multigroup moderation for experience groups (Athens sample)												
			Low experience			**High experience**						
Path			**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**p**	**Notes**
INT	←	PE	.358	5.46	.004	0.4	5.13	***	.3	1		Invariant
INT	←	EE	.152	1.64	.102	.22	2.67	.008	1.2	1		Invariant
PE	←	EE	.72	7.12	***	.43	6.18	***	7	1	**	**Variant**
INT	←	HBC	-.30	-4.23	***	-.10	-1.54	0.12	2.9	1	*	**Variant, Ns for high expr.**
INT	←	TOG	.32	1.71	**	.013	.33	.741	2.9	1	**	**Variant, Ns for high expr.**
INT	←	TOI	.347	5.06	***	.29	5.37	***	.5	1		Invariant
HBC	←	PE	-.21	-2.64	.008	-.095	-.829	.407	2.9	1	*	**Variant, Ns for high expr.**
HBC	←	TOG	-.233	-.18	.029	-.223	-1.89	.056	.265	1		Invariant
HBC	←	TOI	-.233	-.438	.015	-.227	-3.0	.003	2.2	1		Invariant
HBC	←	TOC	.40	2.97	.003	.272	2.19	.029	2.73	1	*	**Variant**

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant, expr. Experience, $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.63: SMCs estimates (Athens sample)		
Low Expr.		**High Expr.**
	Estimate	Estimate
PE	0.384	0.473
HBC	0.197	0.188
INT	0.648	0.733

e) Uncertainty Avoidance groups

Table III.64: Assessment of metric invariance for UA groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1162.1	848		
Fully constrained	1223	912		
Number of groups		2		
Difference	60.9	64	0.587	YES
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.953	**.946**		**.007**	Yes

Table III.65: Assessment of structural invariance for UA groups (Athens sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	1268	878		
Fully constrained	1328	912		
Number of groups		2		
Difference	60	34	0.004	NO
Chi-square Thresholds				
90% Confidence	**1270.71**	**879**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**1271.84**	**879**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**1274.63**	**879**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	
.947	**.934**	**.013**	NO	

Table III.66: Multigroup moderation for UA groups (Athens sample)										
	Low UA			**High UA**			**Invariance**			
Path	**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**P**	**Notes**
INT←PE	.50	7.61	***	.27	2.68	.04	16.2	1	***	**Variant**
INT←EE	.309	1.74	*	.14	1.52	.12	3.1	1	**	**Variant, Ns for high UA**
PE←EE	.65	8.34	***	.75	7.25	***	1.30	1		Invariant
INT←FC	-.07	-.55	.579	.22	2.77	.01	3.1	1	**	**Variant, Ns for low UA**
INT←HBC	-.05	-.82	.141	-.24	-4.09	***	9.2	1	***	**Variant, Ns for low UA**
INT←TOG	.09	1.17	.56	.26	2.08	.04	6.3	1	**	**Variant, Ns for low UA**
INT←TOI	.31	7.39	***	.76	5.44	***	21.3	1	***	**Variant**
HBC←PE	-.07	.189	.13	-.27	-3.53	***	5.4	1	**	**Variant, Ns for low UA**
HBC←TOI	-.23	-3.32	***	-.47	-4.03	.002	4.4	1	**	**Variant**
HBC←TOG	-.18	-2.48	.01	-.38	-4.13	***	3.3	1	*	**Variant**
HBC←TOC	.26	2.88	.00	.38	2.44	.02	1.30	1		Invariant

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant. $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.67: Squared Multiple Correlations (Athens sample)		
Low UA		**High UA**
	Estimate	Estimate
PE	0.51	0.375
HBC	0.199	0.249
INT	0.787	0.683

B: Heraklion Sample

a) Gender groups

Table III.68: Assessment of metric invariance for gender groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	591.843	502		
Fully constrained	641.123	543		
Number of groups		2		
Difference	49.28	41	0.176	YES
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.974	**.972**		**.002**	Yes

Table III.69: Assessment of structural invariance for gender groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	641.323	602		
Fully constrained	682.413	649		
Number of groups		2		
Difference	41.09	47	0.715	YES
Chi-square Thresholds				
90% Confidence	644.03	603		
Difference	2.71	1	0.100	
95% Confidence	645.16	603		
Difference	3.84	1	0.050	
99% Confidence	647.96	603		
Difference	6.63	1	0.010	
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.954	**.947**		**.007**	Yes

b) Age groups

Table III.70: Assessment of metric invariance for age groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	553.36	502		
Fully constrained	621.123	573		
Number of groups		2		
Difference	67.763	71	0.587	YES
CFI unconstrained	**CFI constrained**	**ΔCFI**	**Notes**	Notes
.985	**.983**	**.002**		Yes

Table III.71: Assessment of structural invariance for age groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	642.9	580		
Fully constrained	724.413	627		
Number of groups		2		
Difference	81.513	47	0.001	NO
Chi-square Thresholds				
90% Confidence	645.61	581		
Difference	2.71	1	0.100	
95% Confidence	646.74	581		
Difference	3.84	1	0.050	
99% Confidence	649.53	581		
Difference	6.63	1	0.010	
CFI unconstrained	**CFI constrained**		**ΔCFI**	Notes
.972	**.956**		**.016**	No

Table III.72: Multigroup moderation for age groups (Heraklion sample)												
			Low age group			**High age group**						
Path			**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**P**	**Notes**
INT	←	PE	.35	4.07	***	.17	1.97	0.04	2.81	1	*	**Variant**
PE	←	EE	.35	3.64	***	.53	5.19	***	2.93	1	*	**Variant**
INT	←	HBC	-.25	-2.9	***	-.42	-4.60	***	2.92	1	*	**Variant**
INT	←	TOG	.36	4.43	***	.49	5.47	***	1.3	1		Invariant
INT	←	TOI	.45	5.42	***	.55	6.46	***	1.6	1		Invariant
HBC	←	PE	-.23	-2.63	.008	-.31	-3.40	***	0.5	1		Invariant
HBC	←	TOI	-.36	-3.77	***	-.54	4.95	***	2.93	1	*	**Variant**
HBC	←	TOG	-.18	2.35	***	-.38	-3.77	***	2.91	1	*	**Variant**

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant. $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.73: Squared Multiple Correlations (Heraklion sample)		
Low age		**High age**
	Estimate	Estimate
PE	0.51	0.375
HBC	0.199	0.249
INT	0.787	0.683

c) Educational groups

Table III.74: Assessment of metric invariance for educational groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	582.909	502		
Fully constrained	631.323	546		
Number of groups		2		
Difference	48.414	44	0.299	YES
CFI unconstrained	**CFI constrained**	**ΔCFI**		Notes
.976	**.974**	**.002**		Yes

Table III.75: Assessment of structural invariance for educational groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	633.41	572		
Fully constrained	713.42	607		
Number of groups		2		
Difference	80.01	35	0.000	NO
Chi-square Thresholds				
90% Confidence	636.12	573		
Difference	2.71	1	**0.10**	
95% Confidence	637.25	573		
Difference	3.84	1	**0.05**	
99% Confidence	640.04	573		
Difference	6.63	1	**0.01**	
CFI Unconstrained	**CFI constrained**	**ΔCFI**		**Notes**
.929	**.942**	**.013**		No

Table III.76: Multigroup moderation for educational groups (Heraklion sample)										
	Below Bachelor's degree			**Bachelor's degree and above**			**Invariance**			
Path	**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δ df**	**p**	**Notes**
INT←PE	.14	1.186	.235	.426	4.45	***	2.83	1	***	**Variant, Ns for low educ.**
PE←EE	.67	4.88	***	.527	5.53	***	2.6	1		Invariant
INT←HBC	-.55	-2.06	.04	-.34	-2.91	.004	2.74	1	***	**Variant**
INT←TOG	.40	2.73	.006	.38	4.87	***	2.13	1		Invariant
INT←TOI	.38	3.75	***	.074	.531	.595	2.75	1	*	**Variant, Ns for high educ.**
HBC←PE	-.194	-2.80	.005	-.061	-.906	.365	2.83	1	***	**Variant, Ns for high educ.**
HBC←TOI	-.345	-4.55	***	-.291	-3.56	***	2.63	1		Invariant
HBC←TOG	-.233	-3.19	.001	-0.17	-1.90	.057	2.11	1		Invariant
HBC←TOC	.162	2.956	.003	.052	.773	.44	2.62	1	*	Invariant

Note: ***: p-value<0.1, **: p-value<0.05, *: p-value<0.01, Ns: Not significant, educ.: Education, $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.77: Squared Multiple Correlations (Heraklion sample)		
Low educ.		**High educ.**
	Estimate	Estimate
PE	0.293	0.212
HBC	0.351	0.333
INT	**0.503**	0.743

d) Experience groups

Table III.78: Assessment of metric invariance for experience groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	560.644	502		
Fully constrained	622.42	561		
Number of groups		2		
Difference	61.776	59	0.377	YES
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
. 989	**.983**		**.006**	Yes

Table III.79: Assessment of structural invariance for experience groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	898.3	712		
Fully constrained	1053	823		
Number of groups		2		
Difference	154.7	111	0.004	NO
Chi-square Thresholds				
90% Confidence	**901.01**	**713**		
Difference	**2.71**	**1**	**0.100**	
95% Confidence	**902.14**	**713**		
Difference	**3.84**	**1**	**0.050**	
99% Confidence	**904.93**	**713**		
Difference	**6.63**	**1**	**0.010**	
CFI unconstrained	**CFI constrained**	**ΔCFI**		Notes
.979	**.960**	**.019**		No

Table III.80: Multigroup moderation for experience groups (Heraklion sample)										
	Low Experience			**High Experience**			**Invariance**			
Path	**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**p**	**Notes**
INT←PE	.193	1.69	0.09	.396	4.185	***	1.1	1	**	**Variant**
PE←EE	.731	4.49	***	.448	5.278	***	2.73	1	***	**Variant**
INT←HBC	-.473	-2.19	.028	-.404	-3.49	***	1.2	1		Invariant
INT←TOG	.546	5.367	***	.106	1.61	.108	3.7	1	*	**Variant, Ns for high expr**.
INT←TOI	.368	2.68	.007	.205	2.11	.035	2.9	1	*	**Variant**
HBC←PE	-.222	-2.90	.004	-.084	-1.26	.209	2.8	1	*	**Variant, Ns for high expr**.
HBC←TOG	-.39	-3.55	***	-.183	-2.26	.024	5.5	1	**	**Variant**
HBC←TOI	-.445	-5.19	***	-.147	-1.89	.059	3.1	1	**	**Variant, Ns for high expr**.
HBC←TOC	.146	2.31	.021	.163	2.369	.018	2.72	1		Invariant

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant, expr.: Experience, $\Delta\chi^2$: Chi-square difference, Δdf: Degrees of freedom difference.

Table III.81: SMCs (Heraklion sample)		
	Estimate	
	Low expr.	**High expr.**
PE	0.291	0.254
HBC	0.327	0.372
INT	**0.500**	0.736

e) Uncertainty Avoidance groups

Table III.82: Assessment of metric invariance for UA groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	561.932	502		
Fully constrained	632.413	559		
Number of groups		2		
Difference	70.481	57	0.108	YES
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.983	**.975**		**.008**	Yes

Table III.83: Assessment of structural invariance for UA groups (Heraklion sample)				
	Chi-square	**df**	**p-val**	**Invariant?**
Unconstrained	647.12	532		
Fully constrained	715.42	585		
Number of groups		2		
Difference	68.3	53	0.077	NO
Chi-square Thresholds				
90% Confidence	649.83	533		
Difference	2.71	1	**0.100**	
95% Confidence	650.96	533		
Difference	3.84	1	**0.050**	
99% Confidence	653.75	533		
Difference	6.63	1	**0.010**	
CFI unconstrained	**CFI constrained**		**ΔCFI**	**Notes**
.946	**.920**		0.026	NO

Table III.84: Multigroup moderation for UA groups (Heraklion sample)												
			Low UA			**High UA**			**Invariant**			
Path			**Estimate**	**C.R.**	**P**	**Estimate**	**C.R.**	**P**	**$\Delta\chi^2$**	**Δdf**	**P**	**Notes**
INT	←	PE	.433	4.508	***	.132	1.26	.209	2.75	1	*	**Variant, Ns for high UA**
PE	←	EE	.567	5.8	***	.667	5.212	***	0.3	1		Invariant
INT	←	HBC	-.12	-0.793	.428	-.736	-4.46	***	2.75	1	*	**Variant, Ns for low UA**
INT	←	TOG	.14	3.08	.12	.381	3.989	***	2.76	1	*	**Variant, Ns for low UA**
INT	←	TOI	.163	1.6	.111	.439	3.487	***	2.81	1	*	**Variant, Ns for low UA**
HBC	←	PE	-.032	-.505	.613	-.264	-3.61	***	2.74	1	*	**Variant, Ns for low UA**
HBC	←	TOI	-.24	-3.33	***	-.42	-4.56	***	3.2	1	*	**Variant**
HBC	←	TOG	-.191	-2.36	.018	-.264	-3.04	.002	0.7	1		Invariant
HBC	←	TOC	.052	1.04	.298	.267	3.26	.001	2.5	1	*	Invariant

Note: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1, Ns: Not significant, UA: Uncertainty Avoidance, $\Delta\chi^2$: chi-square difference, Δdf: Degrees of freedom difference.

Table III.85: Squared Multiple Correlations (Heraklion sample)		
Low UA		**High UA**
	Estimate	Estimate
PE	0.296	0.288
HBC	0.395	0.323
INT	**0.722**	0.623

Table III.86: Summary of results of the multigroup moderation. SMCs estimates for major variables(Athens, Heraklion samples)					
		Athens		**Heraklion**	
Moderator	Variable	**Low**	**High**	**Low**	**High**
Age	PE	.50	.48	0.51	0.375
	HBC	**.184**	**.253**	0.199	0.249
	INT	**.722**	.641	**0.787**	0.683
Education	PE	0.447	0.413	0.293	0.212
	HBC	**0.303**	**0.183**	**0.351**	**0.333**
	INT	0.66	0.701	**0.503**	**0.743**
Experience	PE	0.384	0.473	0.291	0.254
	HBC	0.197	0.188	**0.372**	**0.327**
	INT	0.648	**0.733**	0.500	**0.736**
UA	PE	0.51	0.375	0.296	0.288
	HBC	0.199	0.249	**0.323**	**0.395**
	INT	**0.787**	0.683	**0.722**	0.623

Table III.87: Multi-group moderation. Summary table of hypothesis testing. Variant Paths for groups (Athens & Heraklion samples)					
Path	**Moderator**	**Hypothesis**	**Athens Estimate & Significance**	**Heraklion Estimate & Significance**	**Results**
H1m. INT←PE	**Age**	Stronger for low group	Low age: .48*** High age: .29***	Low age:.35 *** High age: .16 **	**Yes for Athens** **Yes for Heraklion**
	Education	Stronger for high group.	Low educ.: .31** High educ.: .54***	Low educ.: Ns High educ.: .43***	**Yes for Athens** **Yes for Heraklion**
	Experience	Stronger for high group.	Invariant	Low expr.: .19** High expr.: .40***	**Yes for Heraklion**
	UA	Stronger for low group	Low UA: .50*** High UA: .27**	Low UA: .43*** High UA: Ns	**Yes for Athens** **Yes for Heraklion**
H2m. INT←EE	**UA**	Stronger for low group	Low UA: .30* High UA: Ns	Path insignificant	**Yes for Athens**
H3m. PE←EE	**Age**	Stronger for high group	Low age: .44***. High age: 73***	Low age: .35*** High age: .53***	**Yes for Athens** **Yes for Heraklion**
	Experience	Stronger for low group	Low expr.: .72*** High expr.: .43***	Low Expr.: .73*** High Expr.: .45***	**Yes for Athens** **Yes for Heraklion**
H5m. INT←FC	**UA**	Stronger for high group	Low UA: Ns High UA:.22**	Path insignificant	**Yes for Athens**
H6m. INT←HBC	**Age**	Stronger for high group	Low age: -.26** High age: -.43***	Low age: -.25*** High age: -.42 ***	**Yes for Athens** **Yes for Heraklion**
	Education	Stronger for low group	Low educ.:-.25*** High educ.: Ns	Low educ.: -.55** High educ.: -.34**	**Yes for Athens** **Yes for Heraklion**
	Experience	Stronger for low group	Low expr.:-.30*** High expr.: Ns	Invariant	**Yes for Athens**
	UA	Stronger for high group	Low UA: Ns High UA:-.24***	Low UA:Ns High UA:-.74 ***	**Yes for Athens** **Yes for** Heraklion

Path	Moderator	Hypothesis	Athens Estimate & Significance	Heraklion Estimate & Significance	Results
H7m. INT←TOG	**Age**	Stronger for high group	Low age: .25*** High age: .40***	Invariant	**Yes for Athens**
	Education	Stronger for low group	Low educ.: .35** High educ.: Ns	Invariant	**Yes for Athens**
	Experience	Stronger for low group	Low expr.: .32** High expr.: Ns	Low expr.: .55*** High expr.: Ns	**Yes for Athens** **Yes for Heraklion**
	UA	Stronger for high group	Low UA: Ns High UA: .26**	Low UA: Ns High UA: .38***	**Yes for Athens** **Yes for Heraklion**
H8m. INT←TOI	**education**	Stronger for low group	Invariant	Low educ.: .38 *** High educ.: Ns	**Yes for Heraklion**
	experience	Stronger for low group	Invariant	Low expr.: .37** High expr.: .21**	**Yes for Heraklion**
	UA	Stronger for high group	Low UA: .31*** High UA: .76***	Low UA: Ns High UA: .44***	**Yes for Athens** **Yes for Heraklion**
Other no hypothesised relationships		**Athens Estimate**	**Heraklion Estimate**		
H9m. HBC←PE	**Age**	Low age: Ns High age: -.28***	Invariant	Stronger for high age group	
	Education	Low educ.: -.20** High educ.: Ns	Low educ.: -.19 *** High educ.: Ns	Stronger for low educ. group	
	Experience	Low expr.: -.21** High expr.: Ns	Low expr.: -.22* High expr.: Ns	Stronger for low expr. group	
	UA	Low UA: Ns High UA : -.27***	Low UA: Ns High UA: -.26 ***	Stronger for high UA group.	
H10m. HBC←TOG	**Age**	Low age: -.28*** High age: -.50***	Low age: -.18*** High age: -.38***	Stronger for high age group	
	Experience	Invariant	Low expr: -. 39*** High expr.: -.18**	Stronger for low expr. group	
	UA	Low UA: -.18** High UA: -. 38***	Invariant	Stronger for high UA group.	
H11m. HBC←TOI	**Age**	Invariant	Low age: -.36*** High age: -.54 ***	Stronger for high age group	
	Education	Low educ.: -.23** High educ.: Ns	Invariant	Stronger for low educ. group	
	Experience	Invariant	Low expr.: -.45*** High expr.: Ns	Stronger for low expr. group	
	UA	Low UA: -.23*** High UA :-.47**	Low UA :- .24*** High UA:-.42***	Stronger for high UA group.	
H12m HBC←TOC	**Experience**	Low expr.: .40** High expr.: .27**	Invariant	Stronger for low expr. Group	

Notes: ***: p-value<0.01, **: p-value<0.05, *: p-value<0.1. Ns: Not significant. PE: Performance Expectancy, EE: Effort Expectancy, SI: Social Influence, FC: Facilitating Conditions, TOI: Trust in the Internet, TOG: Trust in the Government, TOC: Trust of the CSCs, INT: Behavioural Intention, HBC: Habit of CSCs, expr.: Experience, educ.: Education, UA: Uncertainty Avoidance, $\Delta\chi 2$: chi-square difference.

APPENDIX IV: FIGURES.

Athens - Heraklion Sample

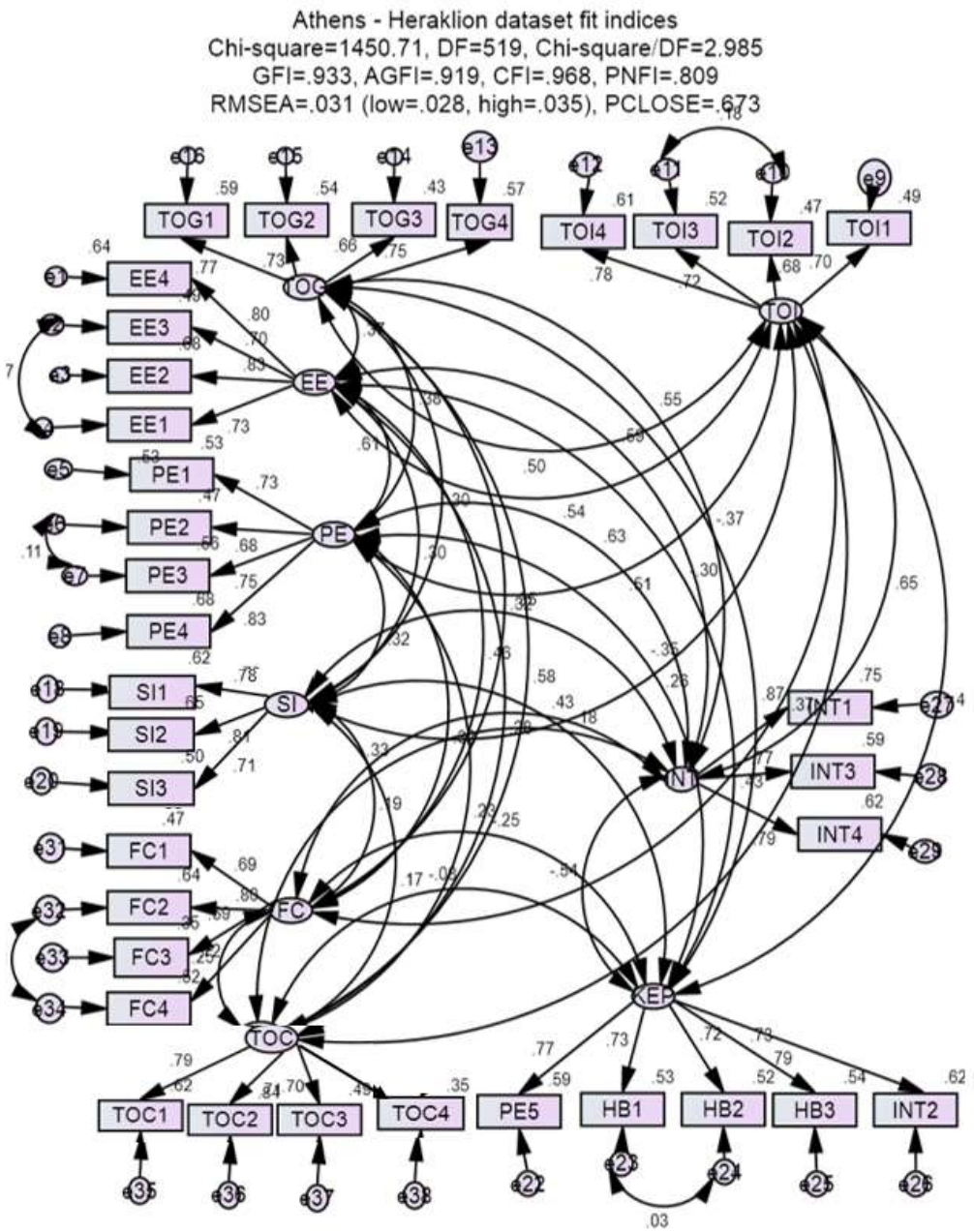


Figure IV.*Σφάλμα! Δεν υπάρχει κείμενο καθορισμένου στυλ στο έγγραφο.**1: The measurement model for Athens - Heraklion sample*

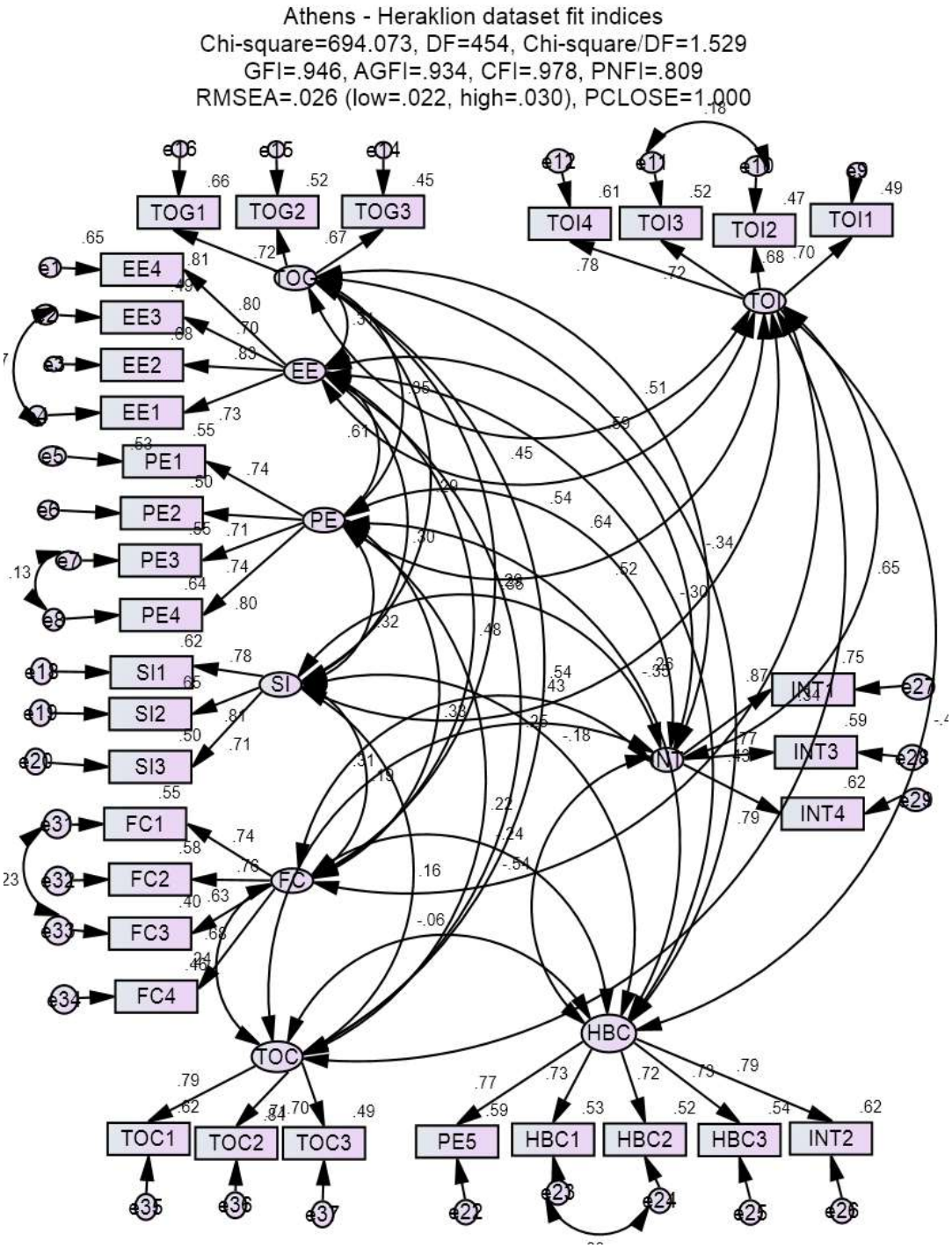


Figure IV.2: Refined measurement model for Athens - Heraklion sample

Athens Sample

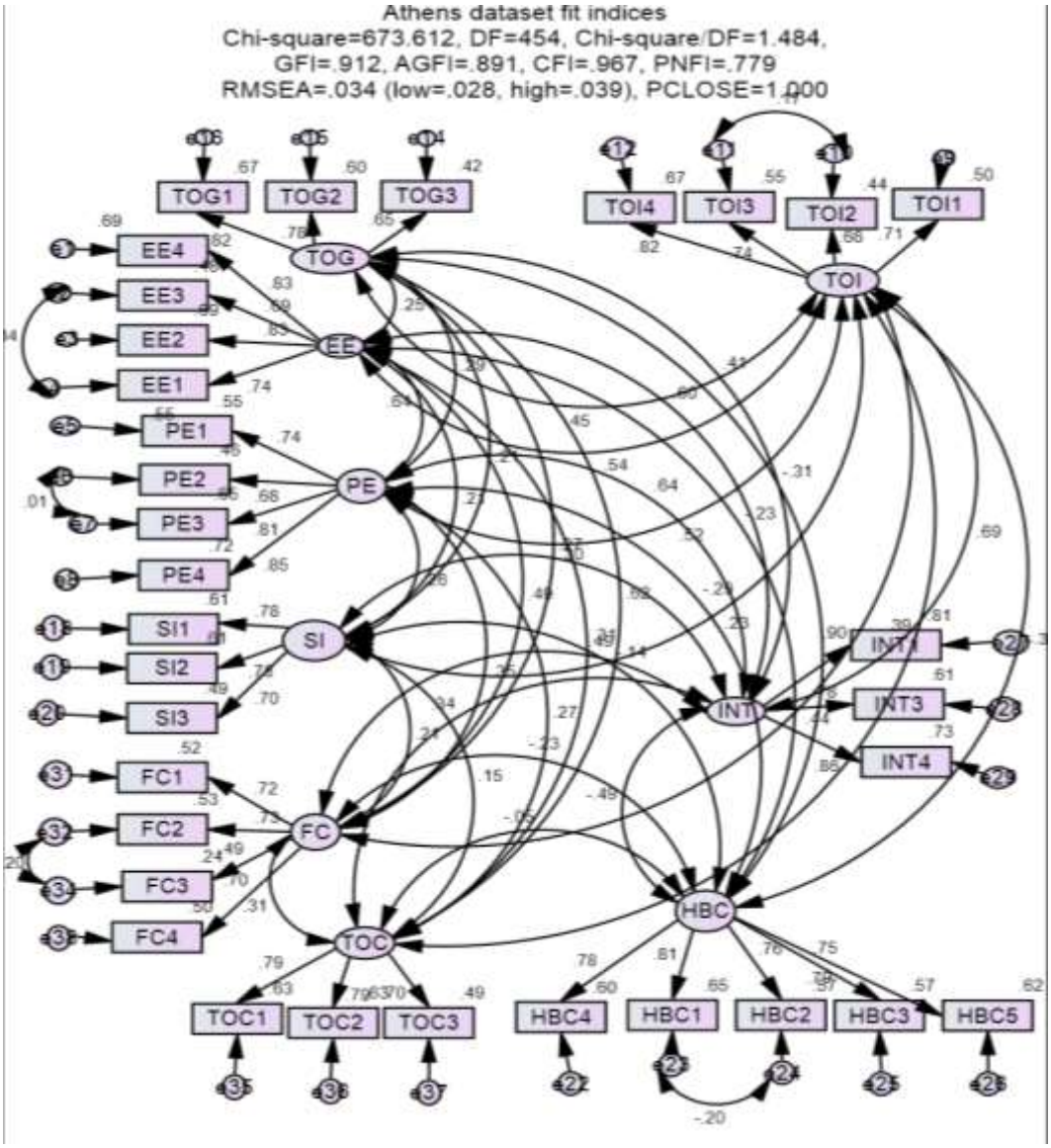


Figure IV.3: The measurement model for the Athens sample

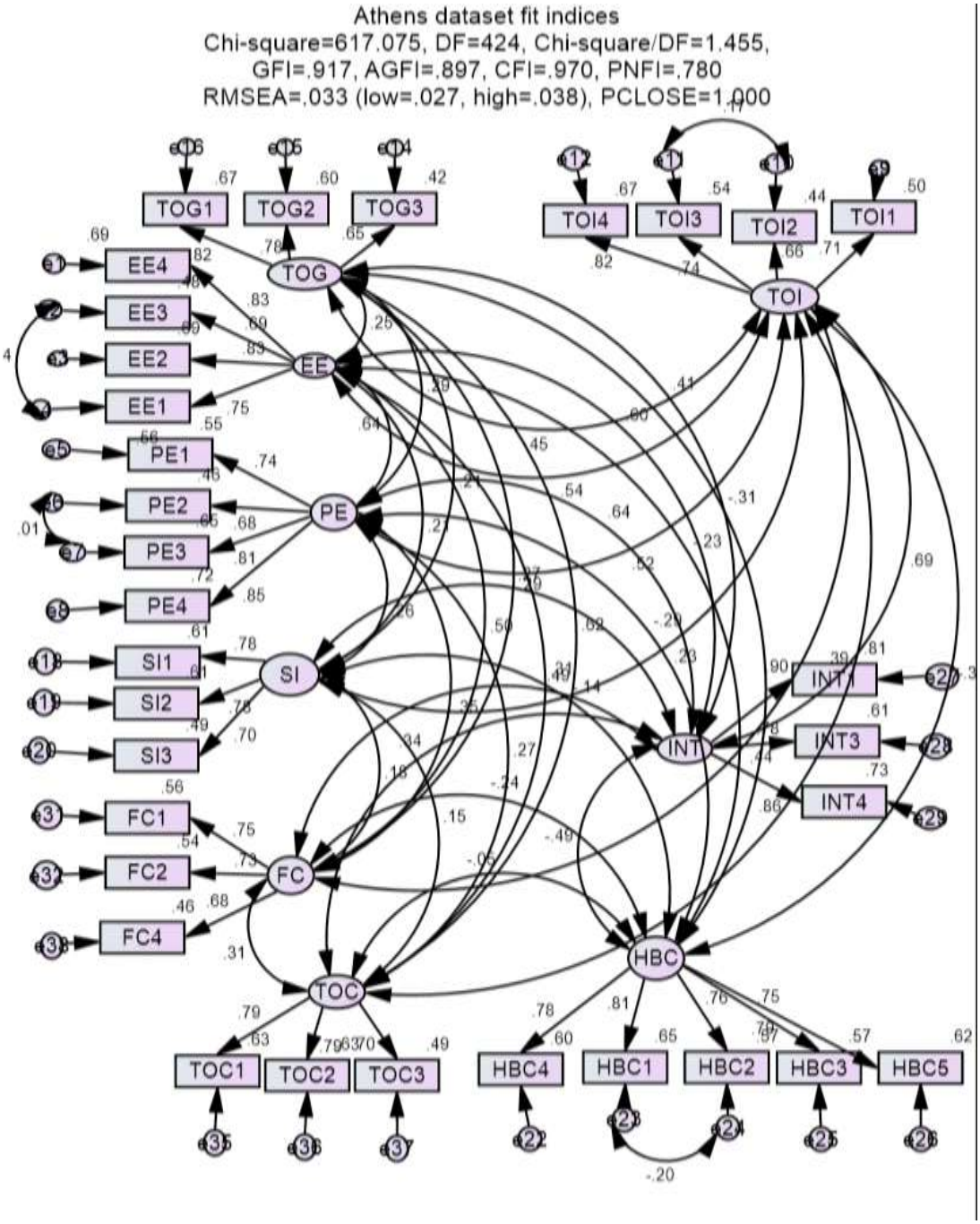


Figure IV.4: Refined measurement model for the Athens sample (after FC3 deletion)

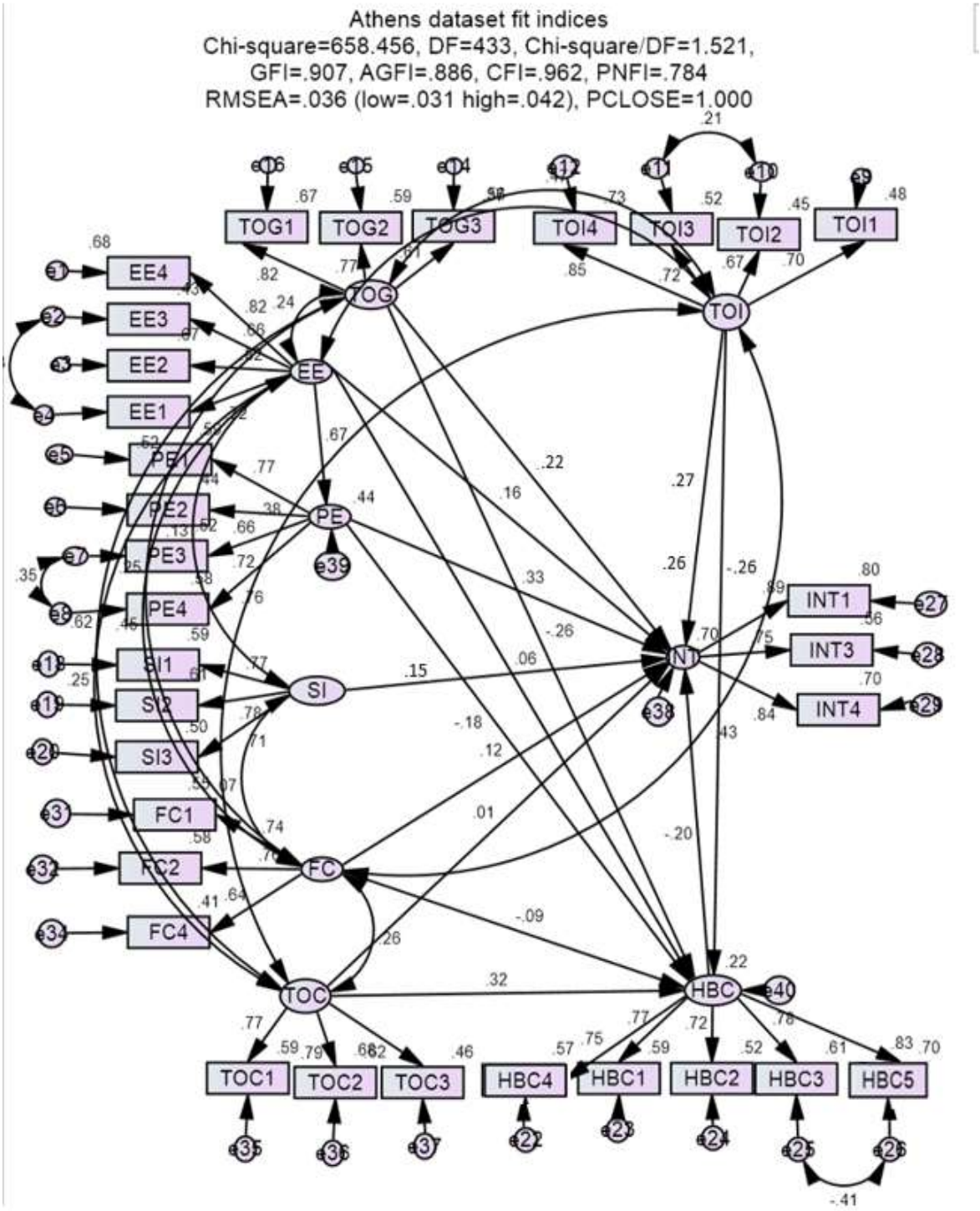


Figure IV.5: The structural model for the Athens sample

Heraklion Sample

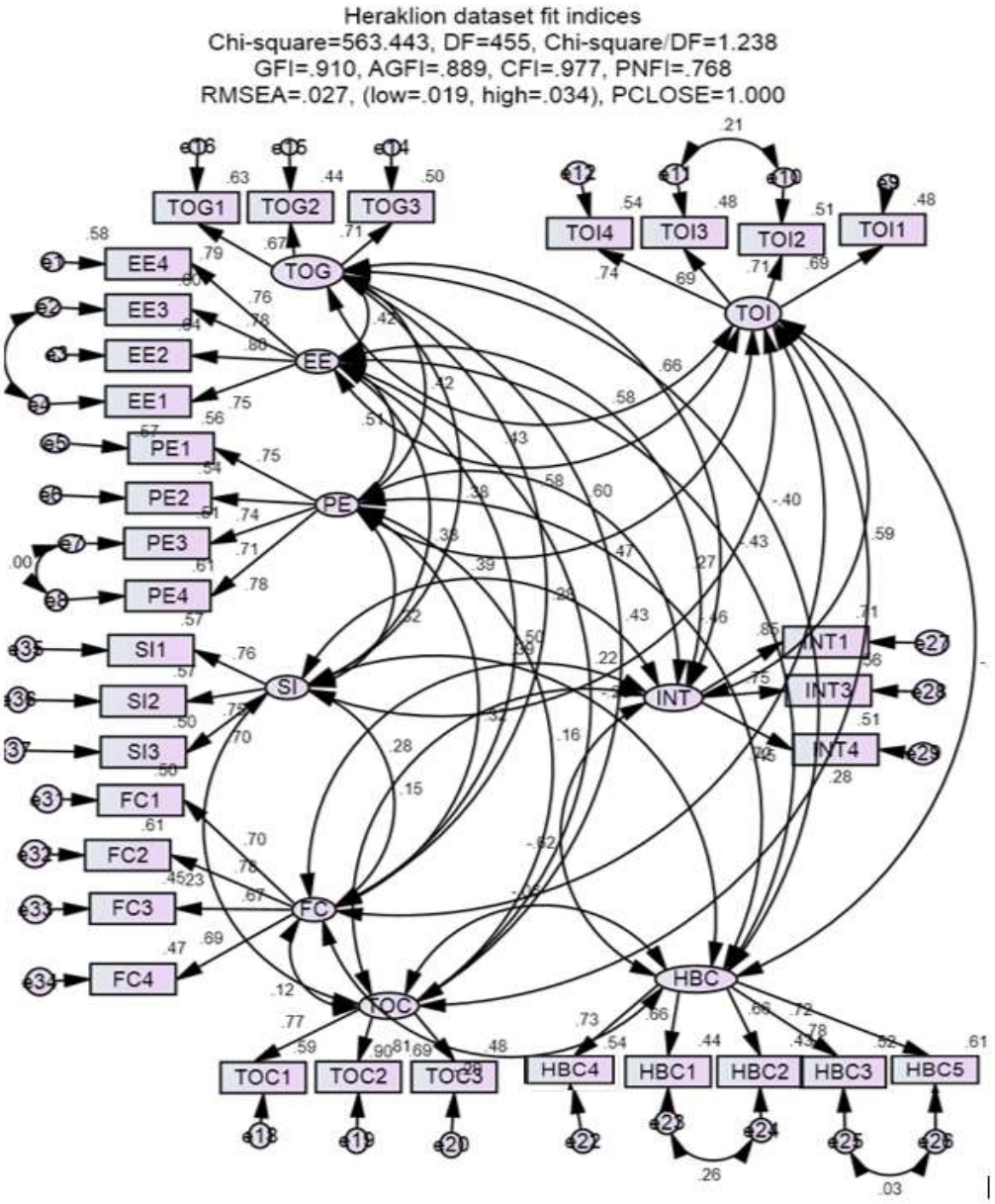


Figure IV.6: Initial measurement model for the Heraklion sample

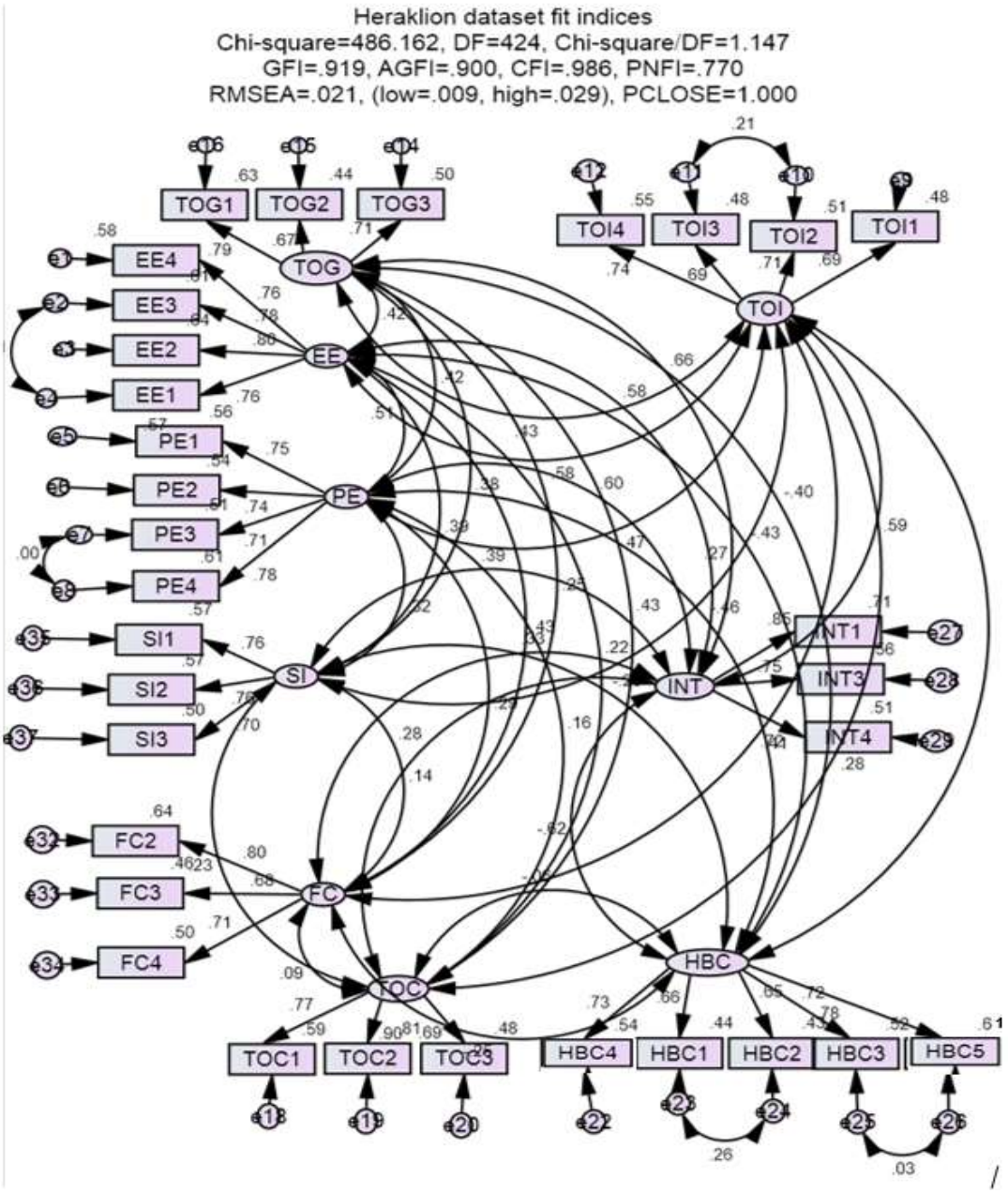


Figure IV.7: Refined measurement model for the Heraklion sample (after FC1 item deletion)

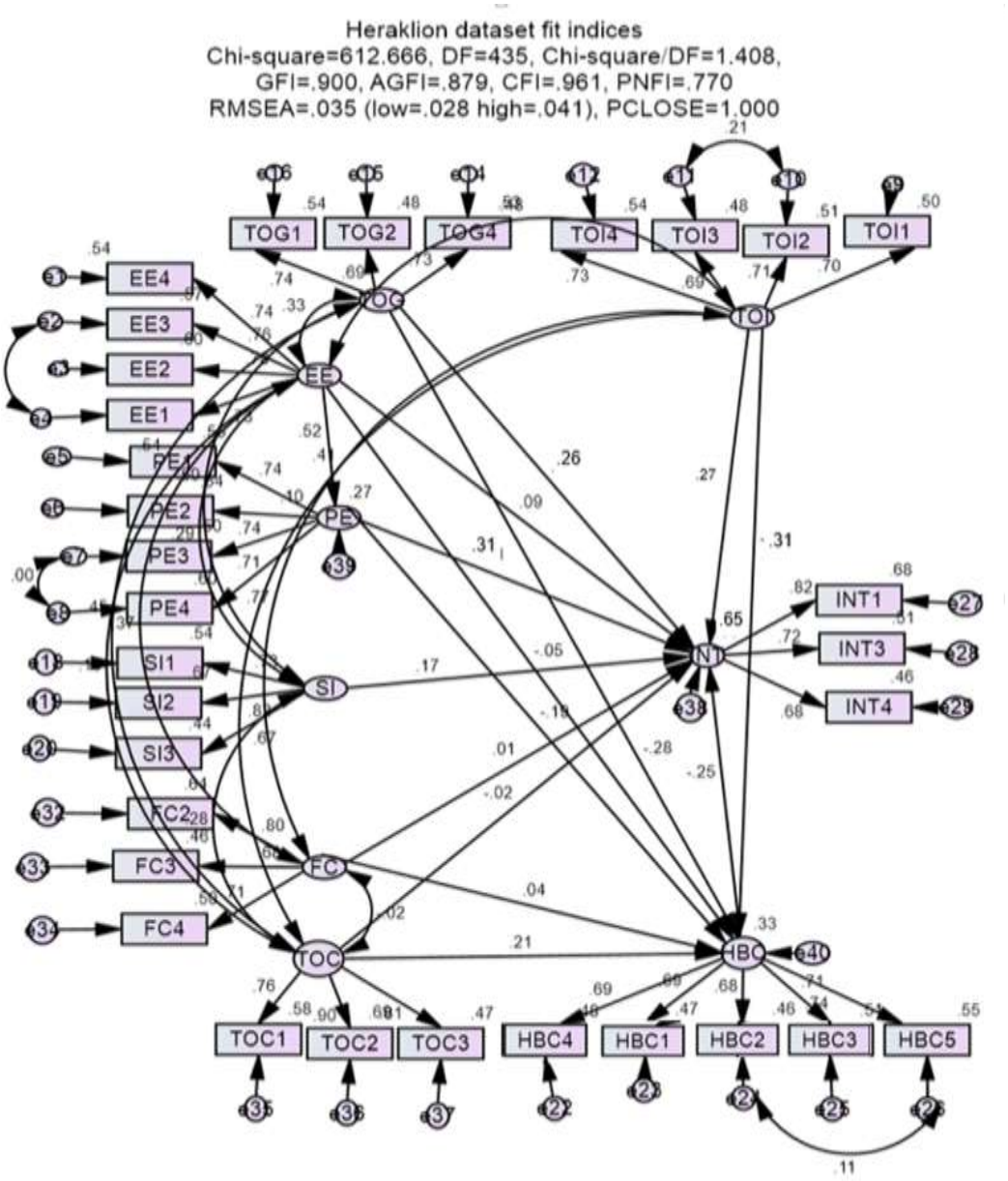


Figure IV.8: Structural model for the Heraklion sample

Multigroup Moderation

Athens Sample

a) Gender groups

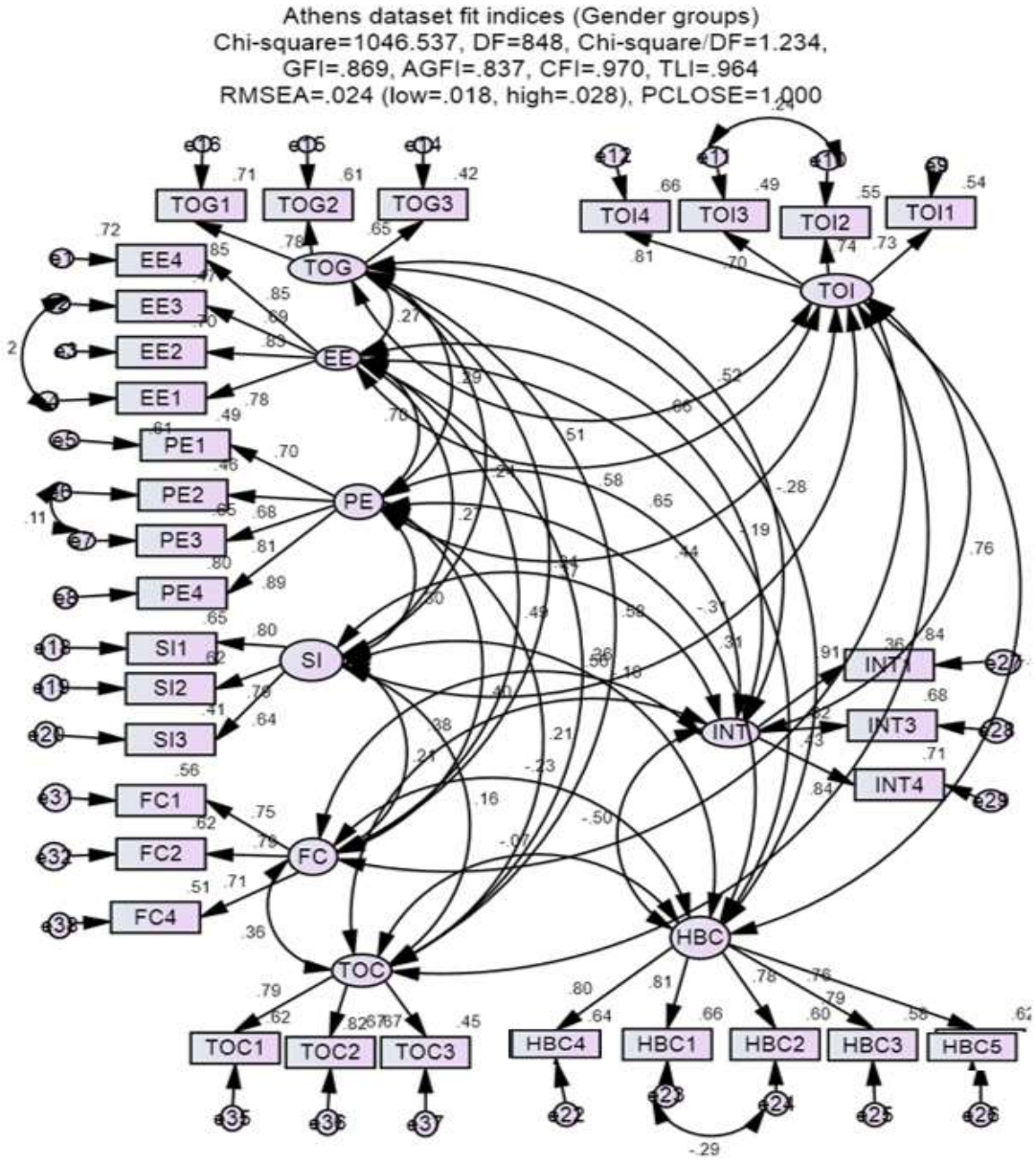


Figure IV.9: Athens sample measurment model for gender groups

b) Age Groups

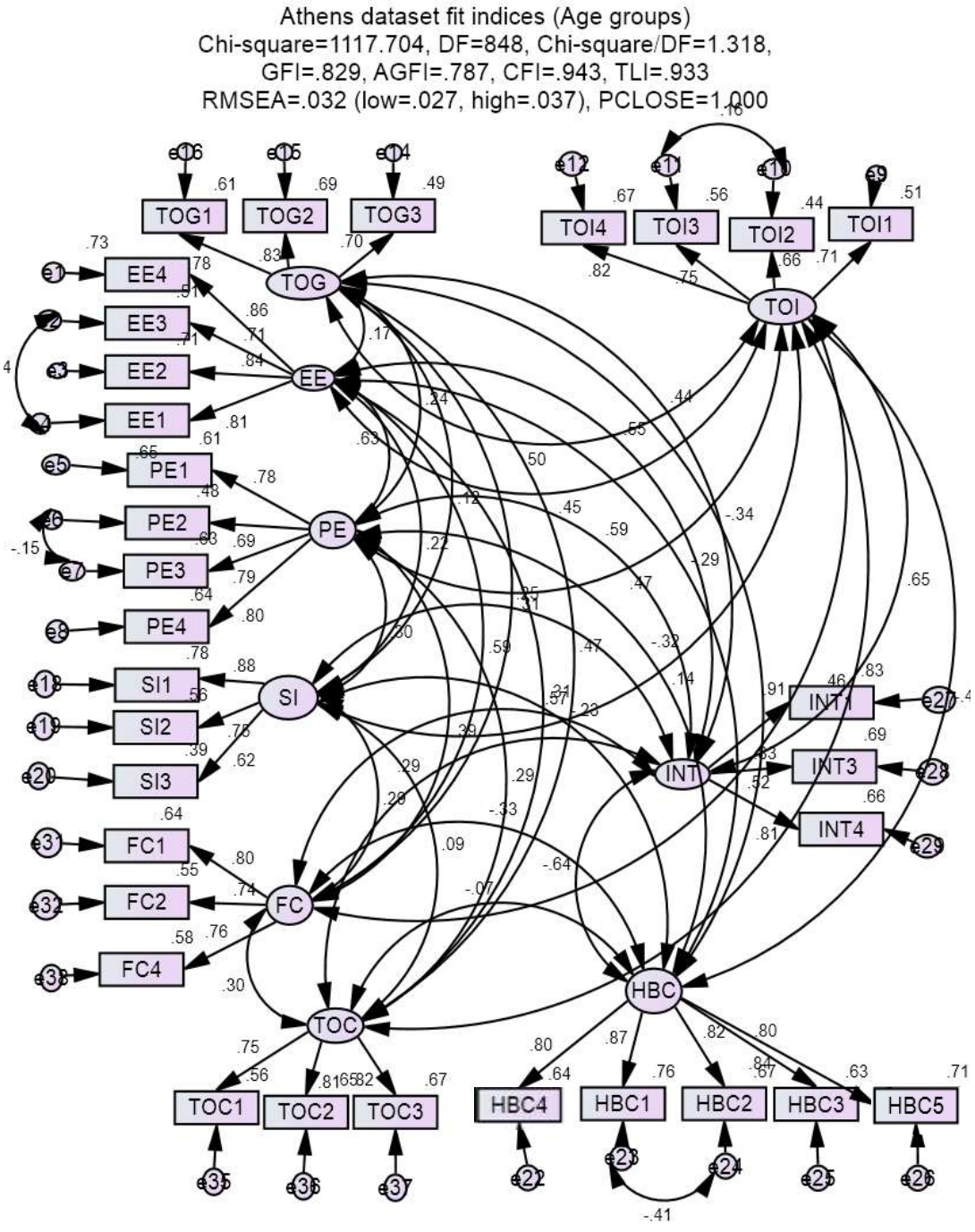


Figure IV.10: Athens sample measurment model for age groups

c) Educational groups

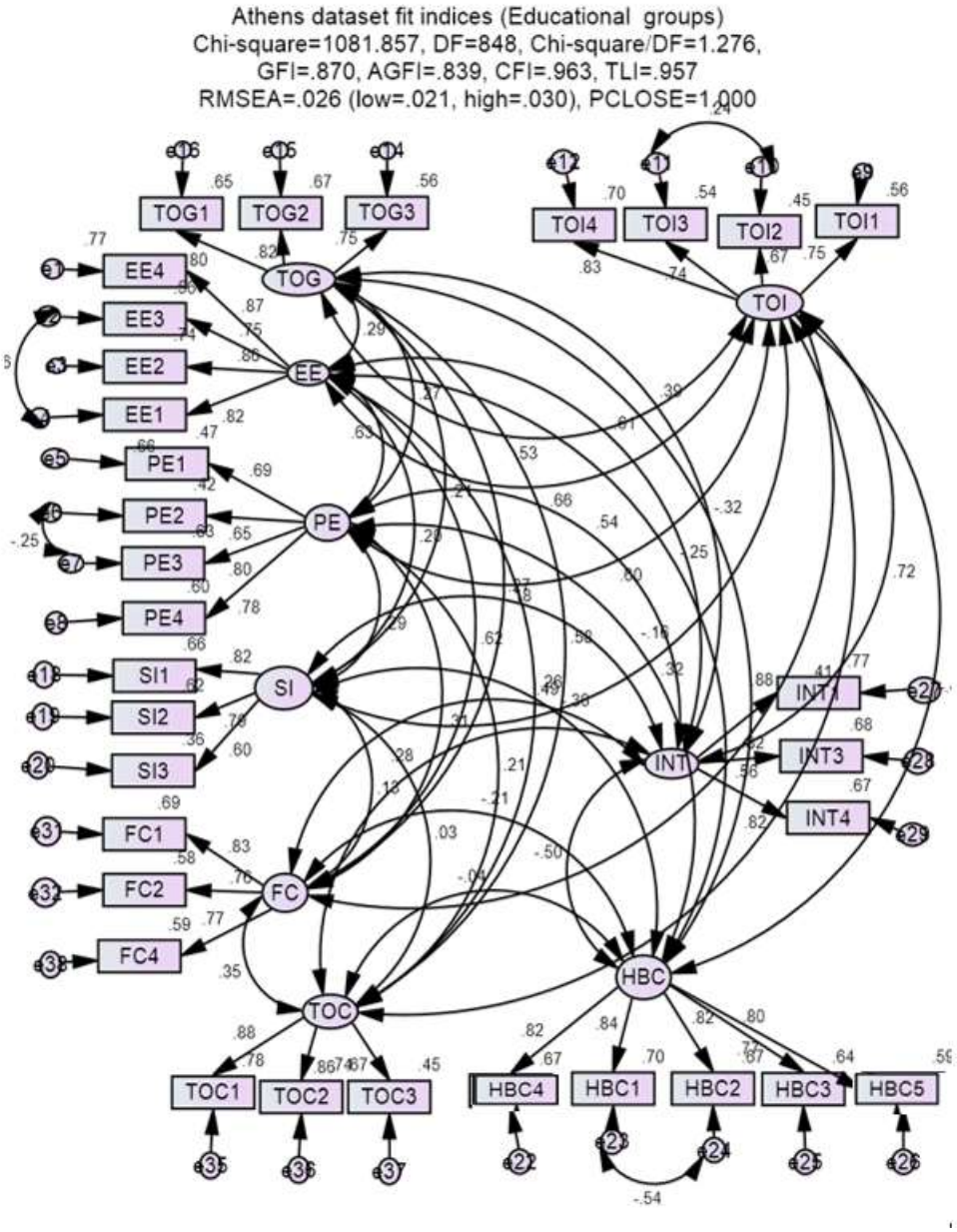


Figure IV.11: Athens sample measurment model for educational groups

d) Experience Groups

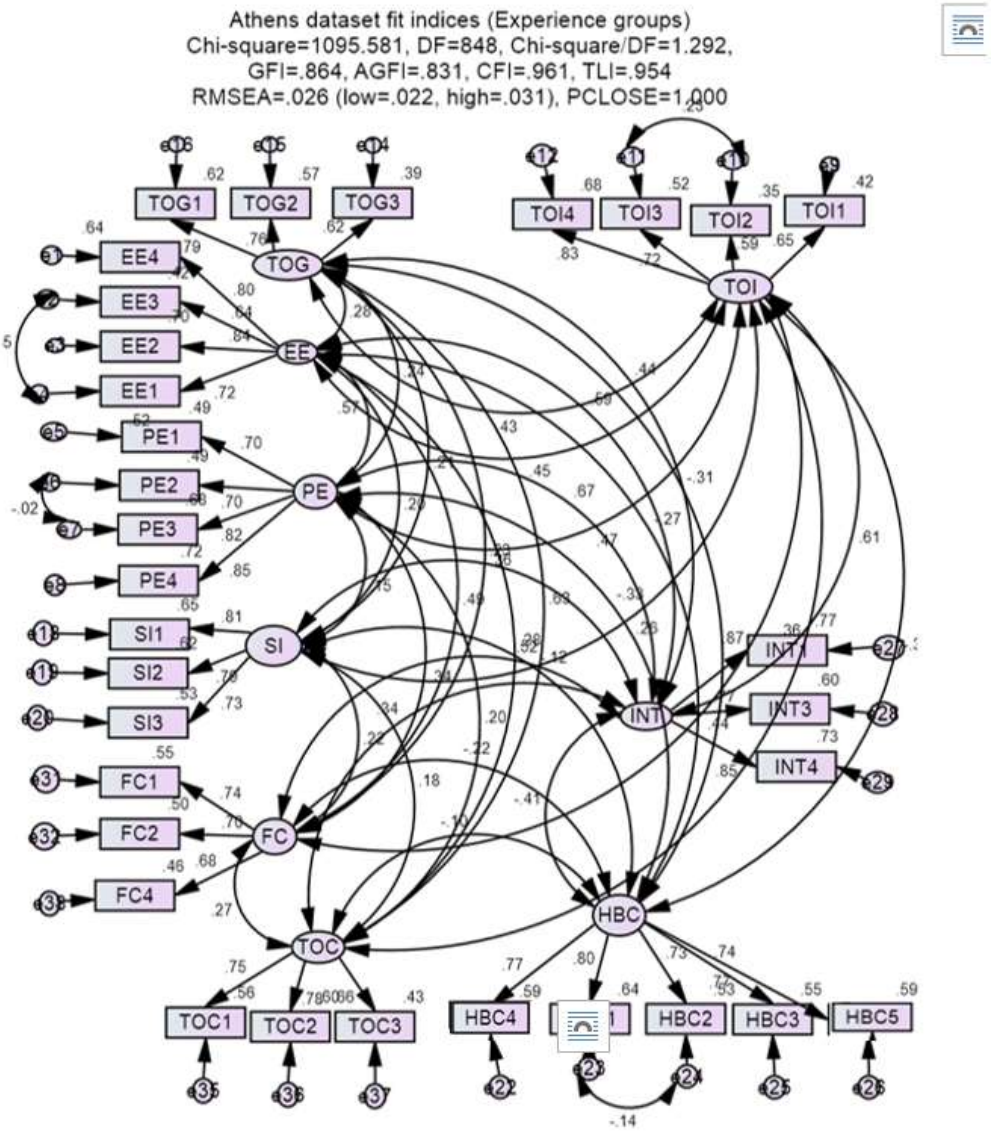


Figure IV.12: Athens sample measurment model for experience groups

e) Uncertainty Avoidance groups

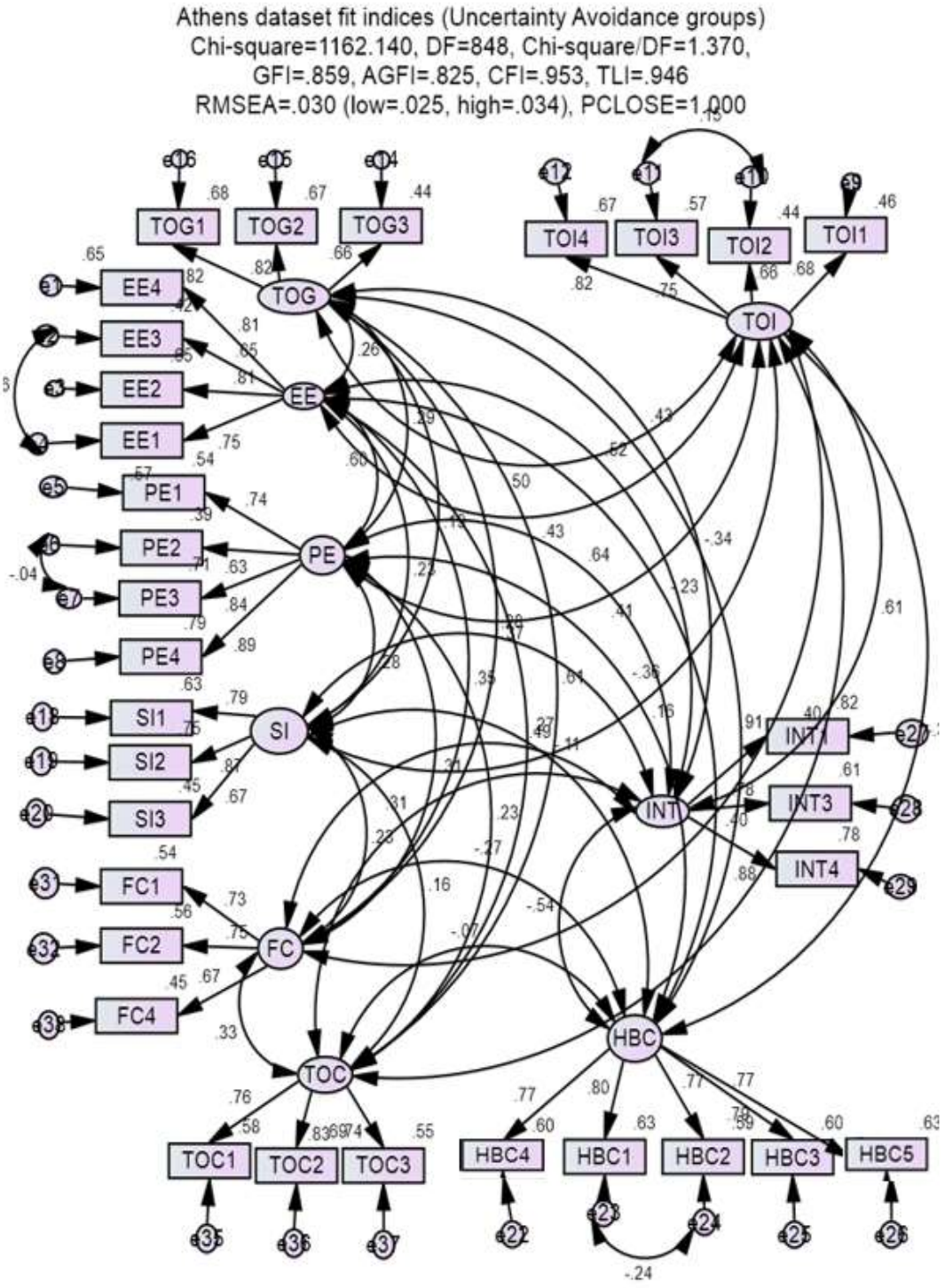


Figure IV.13: Athens sample measurment model fit for Uncertainty Avoidance groups

Heraklion Sample

a) Gender groups

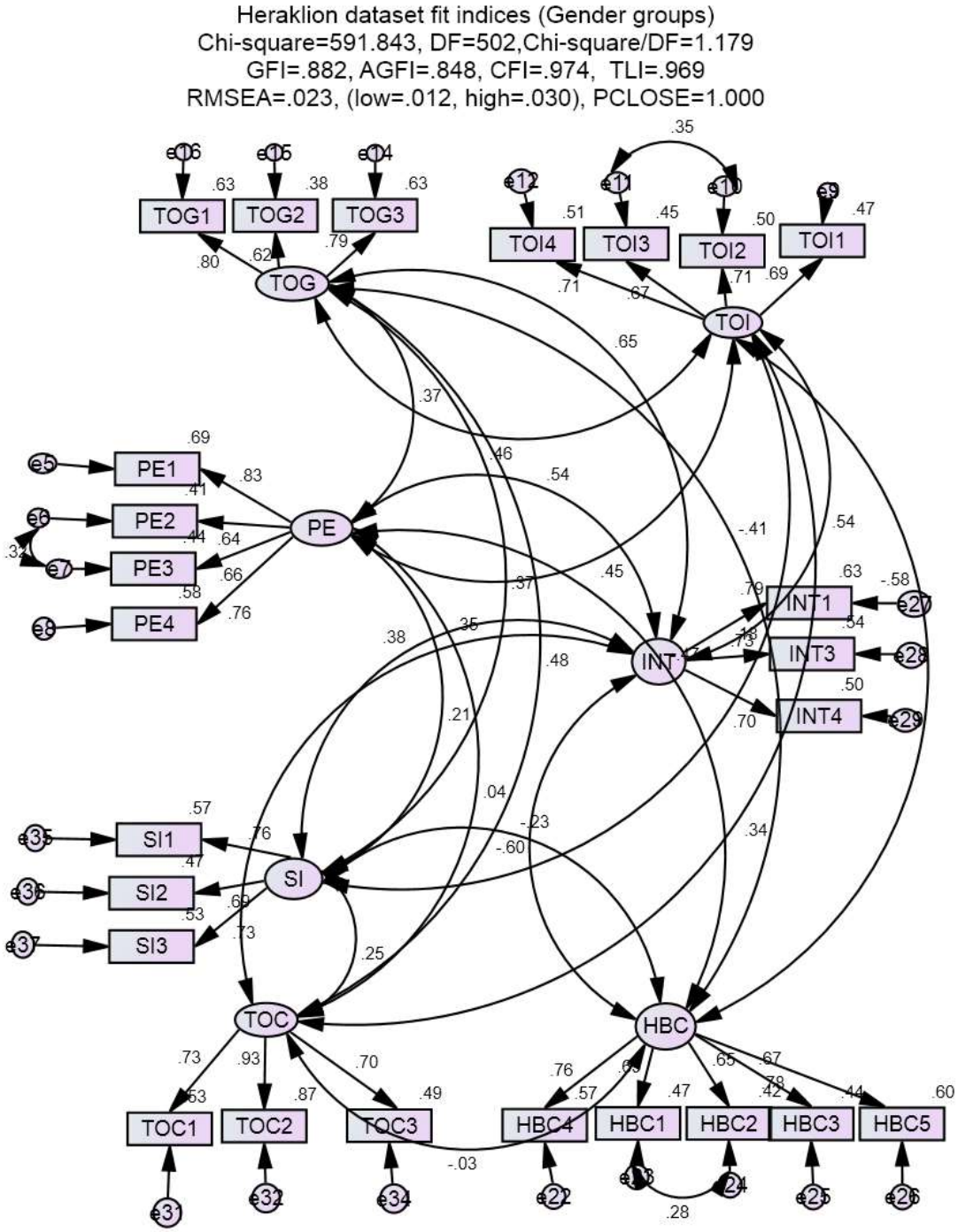


Figure IV.14: Heraklion sample measurment model for gender groups

b) Age Groups

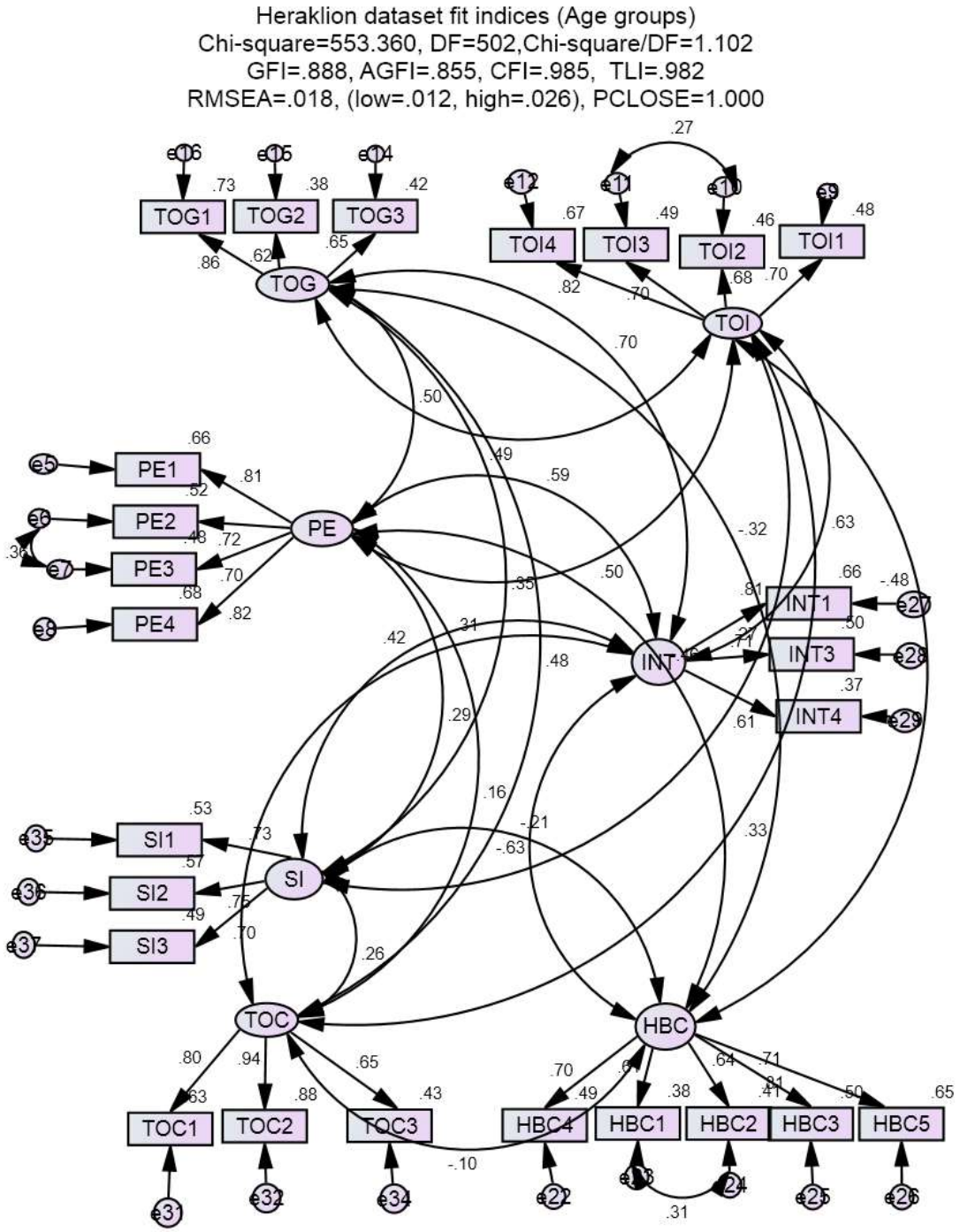


Figure IV.15: Heraklion sample measurment model for age groups

c) Educational groups

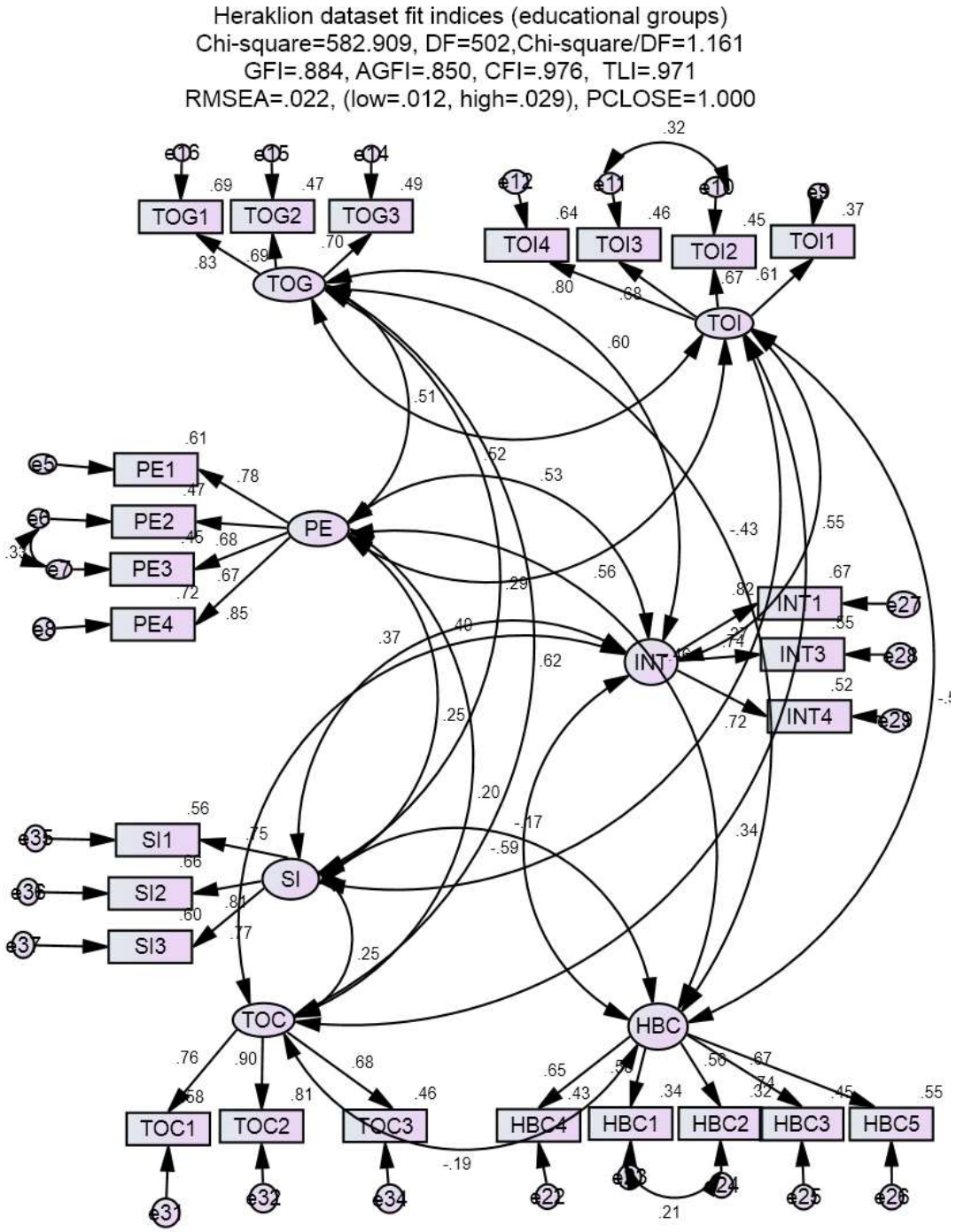


Figure IV.16: Heraklion sample measurment model for educational groups

d) Experience Groups

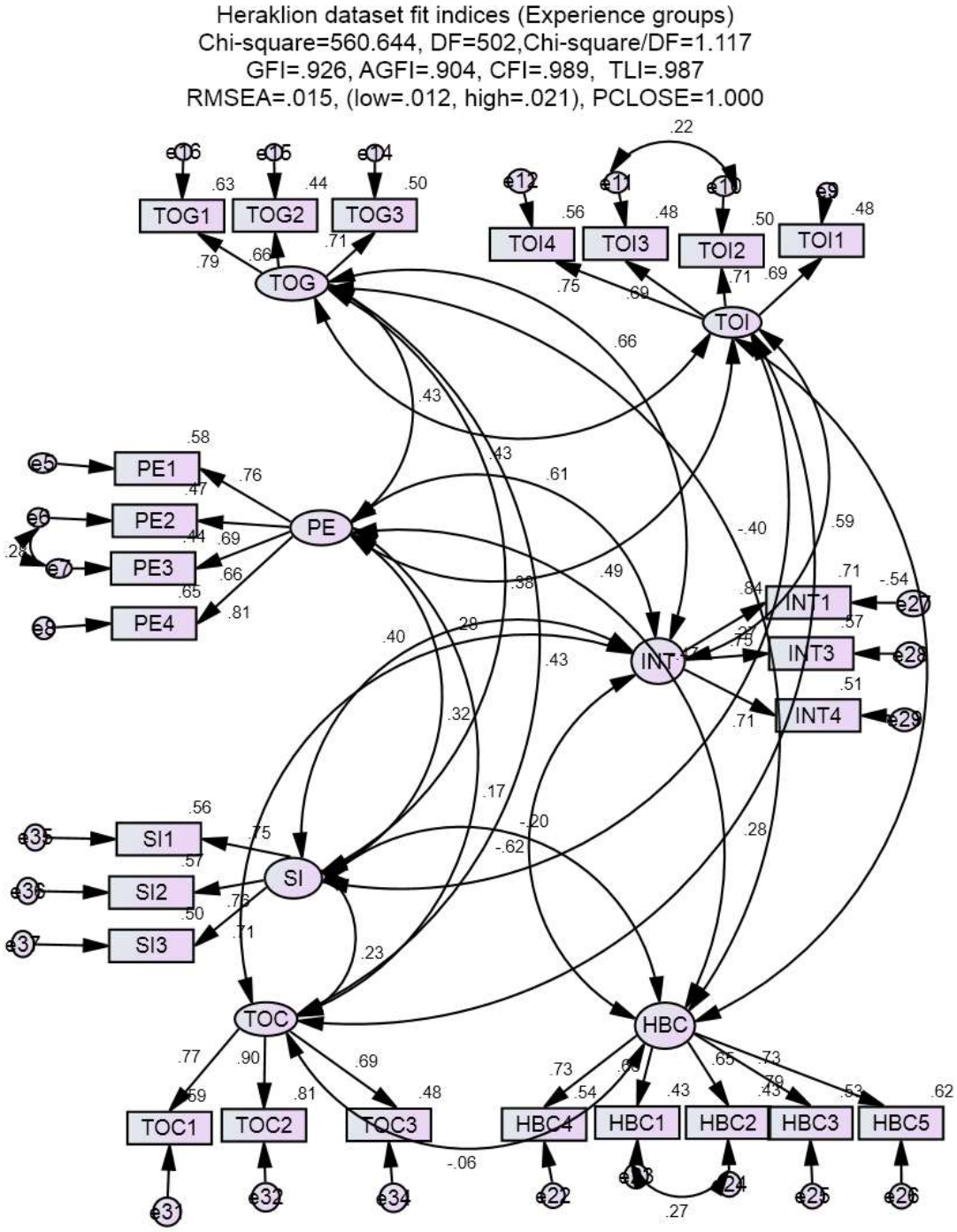


Figure IV.17: Heraklion sample measurment model for experience groups

e) Uncertainty Avoidance

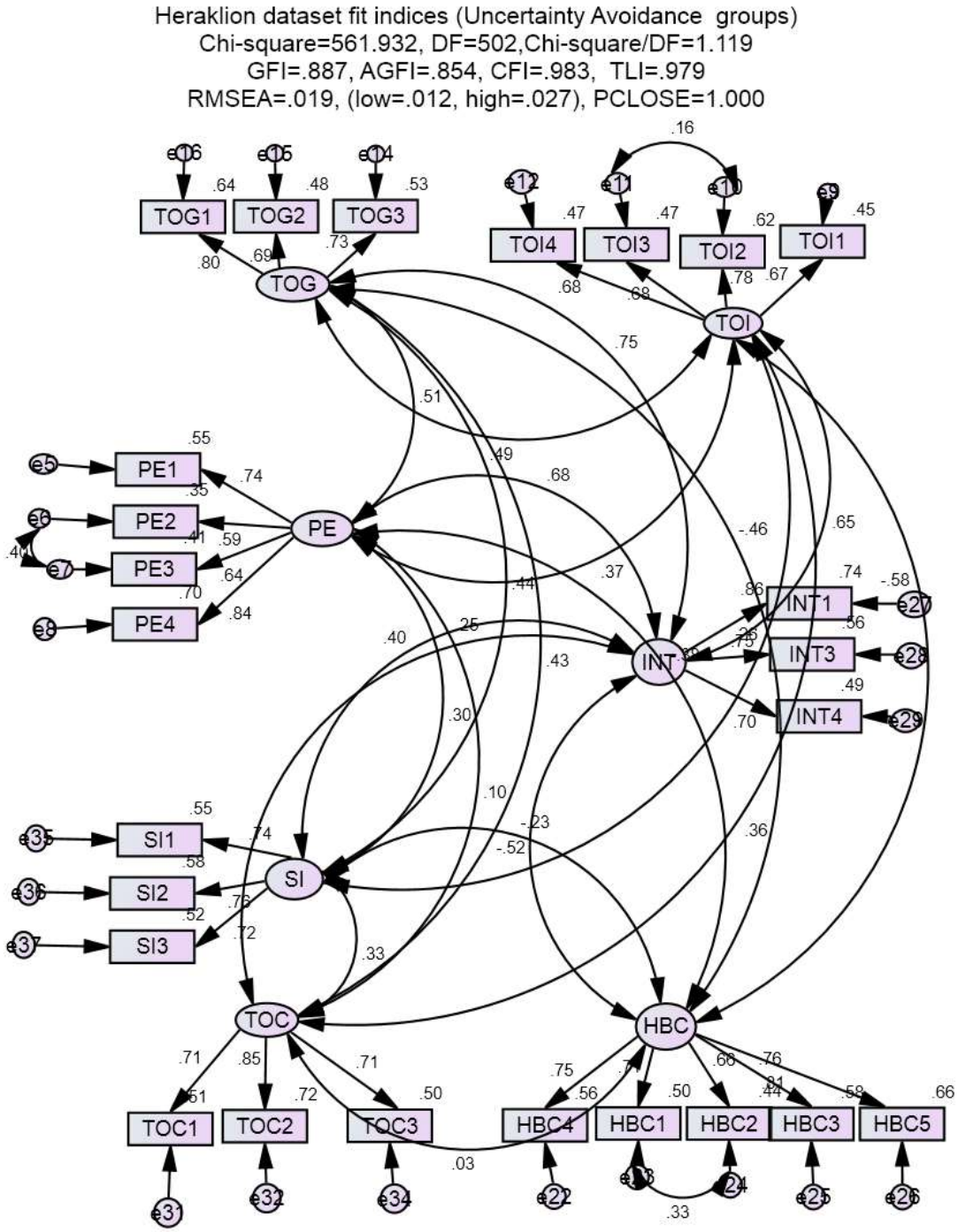
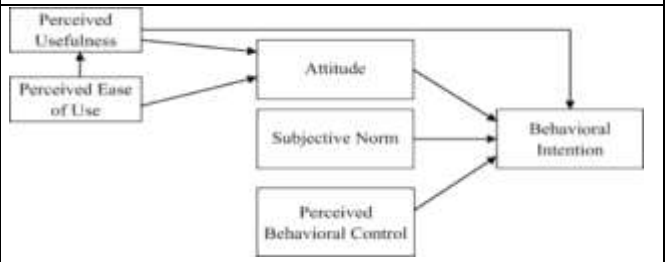
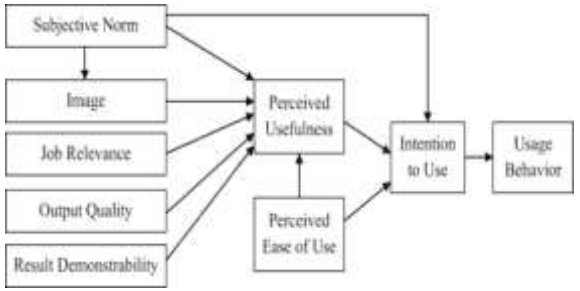


Figure IV.18: Heraklion sample measurment model for uncertainty avoidance groups

APPENDIX V: OTHER TABLES

Table V.1: ICT and eGovernment Indicators for Greece and the EU average, for 2015.		
Indicator	**Greece's Percentage 2015**	**Average EU28 Percentage**
Households with Internet access at home	68.1%	82%
Population aged 16 - 74 using the Internet regularly	66.8%	94.3%
Enterprises with Internet access	87%	95%
Individuals using the Internet at least once a week	63%	73%
Households with a broadband connection at home	67%	80%
Average broadband connection speed	8.93 mbps	8.79 mbps
Enterprises with broadband connection	85%	95%
Individuals having purchased/ordered online in the last three months	24%	43%
Individuals using the Internet for interacting with public authorities	46%,	46%
Obtaining information from public authorities websites (2014-2015)	42%	40%
Downloading official forms from public authorities	24%,	28%
Sending filled in forms sites	25%	26%
Enterprises having received orders online within the previous year	6%	17%
User-Centric eGovernment (2012-2013)	50%	70%
Transparency	22%	49%
eGovernment usage by citizens	35%	41%

Source: European Commission, Digital Agenda Scoreboard, (2016). ELSTAT, Division of Statistical Information and Publications of ELSTAT (2016). Available at: http://www.statistics.gr/el/statistics/-/publication/SAM03/- (Accessed 16 February 2017)

Table V.2: Other models based on the major models, in ICT acceptance and Use			
Model	**Core Constructs**	**Annotation**	
Combined TAM and TPB (C-TAM-TPB) (Taylor and Todd 1995a)	**Attitude** **PU** **PEOU** **SBN** **PBC** **INT**	It includes the predictors of TPB with PU and PEOU from TAM.	
TAM2 A Theoretical Extension of the TAM (Venkatesh and Davis, 2000).	**PEOU** **PU** **SBN** **Image** **Job Relevance** **Output Quality** **Result Demonstrability**	SI is decomposed to SBN and Image. The antecedents of PU (Job Relevance, Output Quality, and Result Demonstrability) and PEOU affect INT. SBN has a direct effect on INT over PU. TAM explains 40–50% of technology acceptance, while TAM2 60%.	
Social Cognitive Theory (SCT) (Bandura, 1986; Compeau and Higgins, 1995).	**Outcome Expectations – performance: '**The performance – related consequence of the behaviour. Specifically, performance expectations address job-related outcomes.'		SCT is one of the most comprehensive theories of human behaviour. Compeau and Higgins (1995) extended and applied SCT to the context of computer utilisation
	Outcome Expectations – personal: 'The personal consequence of the behaviour. They address the individual esteem and sense of accomplishment.'		
	Self-efficacy: 'Judgment of one's ability to use technology to accomplish a particular job or task.		
	Affect: 'An individual's liking for a particular behaviour.'		
	Anxiety: 'Evoking anxious or emotional reactions regarding performing a behaviour.'		

Motivational model (MM) (Davis et al., 1992)	**Extrinsic Motivation:** 'The perception that users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions'.	Several studies in psychology have sustained the Motivational Theory as an explanation for behaviour.
	Subjective Norms: 'The perception that users want to perform an activity for no apparent reinforcement other than the process of performing the activity per se'.	
Model of PC utilisation MPCU (Thompson et al., (1991)	**Job-fit:** 'The extent to which an individual believes that using a technology can enhance the performance of his or her job.'	It is based on the theory of human behaviour and is a competing model of TRA and TPB. It is best suited to understand and explain computer usage behaviour in a voluntary environment. Thompson, Higgins, and Howell (1991) adapted and refined the model for intermediate system contexts. It is used for individual acceptance and use in the IS context.
	Complexity: 'The degree to which an innovation is perceived as relatively difficult to understand and use.'	
	Long-term consequences: 'Outcomes that have a pay-off in the future.'	
	Affect toward use: 'Feelings of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act.'	
	Social factors: 'The individual's internationalisation of the reference group's subjective culture and specific interpersonal agreements that the individual has made with others, in specific social situations.'	
	Facilitating conditions: 'Provision of support for users of PCs may be one type of facilitating condition that can influence system utilisation.'	

Note: PE: Performance expectancy, PEOU: perceived ease of use, PU: perceived usefulness, EE: Effort expectancy, SI: Social influence, FC: Facilitating conditions, SEF: Self-Efficacy, SBN: Subjective Norms, INT: Behavioural intention

Sources:

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall: NJ, USA.

Compeau, D. R. and Higgins, C. A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test, MIS Quarterly, 19(2): 189-211.

Davis, F. D. Bagozzi, R. P. and Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace, Journal of Applied Social Psychology, 22(14): 1111-1132.

Thompson, R. L. Higgins, C. A. and Howell, J. M. (1991). Personal Computing: Toward a Conceptual Model of Utilization. *MIS Quarterly*, 15(1), 124-143.

Table V.3: Previews Studies that use UTAUT2 the context applied and results				
Study, Cited Author & Year	**Domain of measure**	**Variables used**	**Results**	
			Supported	**Not supported**
Ally and Gardiner, (2012)	Consumer acceptance of smart mobile technology	HM, SI, FC, HB, PV	Conceptual study	
Baptista and Oliveira, (2015)	Consumer acceptance of mobile banking	PE, EE, SI, FC, HB, PV, HM	PE, HM, HB → INT SI→INT HB→USE	EE→INT FC→INT HM→INT PV→INT
Xu, (2014)	Social network game players' continuance intention in China.	SI, HB, PV, HM, fantasy, enjoyment, achievement	SI, HB, fantasy, enjoyment, achievement and PV.	
Cohen et al., (2013)	Acceptance of e-prescribing technology in an African context	PE, EE, SI, FC, PV, Use	PE→USE FC→ USE	EE, SI, PV→ USE
Lewis et al., (2013)	Adoption of new Technology in higher education	PE, EE, S , FC, HM, HB, INT, USE	PE→ INT PE→Use SI→ INT HB→ INT INT→USE	EE→ INT HM→INT SI→USE HB→ USE HM→ USE
Baabdullah, et al., (2014)	Consumer acceptance of M-Internet and M-Government in Saudi Arabia	EE, PE, SI, FC, HB, HM, PV and Risk and Trust.	Conceptual study	
Nikou and Bouwman, (2013)	Consumer's behaviour towards the adoption of the mobile social networks, in China	SI, HB, INT	SI, HB→ INT	—
Raman and Don, (2013)	Pre-service teacher's acceptance of learning management software	PE, EE, SI, FC, HM, HB, INT, USE	PE, EE, SI, FC, HM →INT FC→ USE INT→USE	HB→INT HB→USE
Ain et al., (2016)	Learning management system, in Malaysia	PE, EE, SI, FC, HM, HB, INT, USE	PE, SI →INT FC, INT →USE	EE→INT FC→INT HM→INT, HB→INT HB→USE
Chong and Ngai, (2013)	Location-based social media adoption and usage for the travel planning, in China	PE, EE, SI, FC, HM, HB, INT, USE	PE, EE, SI, FC, HM, HB, →INT INT→ USE	HB→ USE negative
Slade et al., (2015)	Adoption of m-payments in the UK	PE, EE, SI, FC, HM, HB, PV, TP, PR, INT,	PE→INT TP→INT PR→INT HB→INT	EE→INT PV→INT FC→INT HM→INT

Note: PE: Performance expectancy, EE: Effort expectancy, SI: Social influence, FC: Facilitating conditions, HB: Habit, HM: Hedonic motivation, PV: Price value, INT: Behavioural intention, USE: Use behaviour.

Sources that are not included in the Reference Section

Ain, N. U. Kaur, K. and Waheed, M. (2016). The influence of learning value on learning management system use: An extension of UTAUT2. *Information Development*, 32(5), 1306-1321.

Baabdullah, A. Dwivedi, Y. and Williams, M. (2014). Adopting an Extended UTAUT2 to predict consumer adoption of m-technologies in Saudi Arabia. In *UK Academy for Information Systems Conference.* The UK.

Chong, A., and. Ngai, E. (2013). What influences travellers' adoption of a location based social media service for their travel planning?. In *Pacific Asia Conference on Information Systems*. June 18-22, Korea.

Raman, A. and Don, Y. (2013). Preservice Teachers' Acceptance of Learning Management Software: An Application of the UTAUT2 Model. *International Education Studies*, 6(7), 157–164.

Xu, X. (2014). Understanding Users' Continued Use of Online Games: An Application of UTAUT2 in Social Network Games*: In 6th International Conferences on Advances in Multimedia.* February 23 - 27, Nice, France, 58-65.

Table V.4: The Greek cultural scores according to the Hofstede cultural 6-D Model		
Dimension	**Greece's Score**	**Annotation**
Power Distance (PDI)	**60**	Greece is a medium ranking PDI society (with a slight tendency to the higher side), which means that people believe in hierarchy and inequalities among people are acceptable. Status symbols of power are very important to indicate social position.
Individualism-Collectivism (IDV)	35	Greece is a collectivist culture, which means that Greeks from birth onwards are integrated into strong, cohesive in-group (primarily represented by the extended family), which continues protecting its members in exchange for loyalty.
Masculinity-Femininity (MAS)	57	Greece has an intermediate score in MAS, i.e. success oriented and driven. Men consider it a personal honour to take care of their family.
Uncertainty Avoidance (UA)	100	Greece has the highest score on UA, which means a society that is not at all comfortable in ambiguous situations. Greeks have anxious and stressing feelings about life, and they need to have relaxing moments in their life. As in all high UA countries, bureaucracy, laws and rules are very important. Due to their high score in UA, Greeks are very passionate and demonstrative people and show emotions in their body language.
Long Term Orientation (LTI)	45	Intermediate score
Indulgence – Restraint (IND)	50	Intermediate score, thus no clear preference between Indulgence or Restraint can be established.

Source: Hofstede, (2008) (https://geert-hofstede.com)

Table V.5: Smart-Cities definition and axes
A report Mapping Smart Cities in the EU, commissioned by ITRE (the European Parliament's Industry Research and Energy Committee), provides context for the European Innovation Partnership on Smart Cities and Communities. The report is based on the work of the European Smart City Project (http://www.smart-cities.eu/). It defines a Smart City as: '*a city seeking to address public issues via ICT-based solutions on the basis of a multi-stakeholder, municipally based partnership.*' It suggests six 'Smart City' axes:
Smart Governance: Refers to interconnected governance using ICT. It includes services and interactions that connect and integrate public, private, and civil and EE organisations so that the city can function efficiently and effectively as one organism.
Smart Economy: Refers to the existence e-business and e-commerce, advanced manufacturing, increased productivity, and innovation, as well as new products, delivery of new services and business models based on ICT. There exists local and global connectivity, which allows physical and virtual flows of goods, services and knowledge.
Smart Mobility: Refers to ICT supported and integrated transport and logistics systems. Sustainable, safe and interconnected systems for public transportation, cars, bicycles and pedestrians. There are clean and green options established and improved commuting efficiency by offering real-time information, which saves costs and reduces air pollution.
Smart Environment: Refers to smart energy use, ICT-enabled energy grids, metering, control and monitoring of pollution, green buildings, renovation of buildings and green urban planning. Urban services, i.e. street lighting, water resource systems, waste management all are monitored for efficiency and pollution reduction.
Smart People: Refers to individuals' skills, work, education and training, and capacity management all ICT-enabled, within an inclusive society that improves creativity and fosters innovation.
Smart Living: ICT-enabled lifestyles, behaviour and consumption. Healthy and safe living in a culturally vibrant city with cultural facilities and good quality housing; high levels of social cohesion and social capital also exist.
In this report, by reviewing the smart city projects across Europe, many European cities are trying to implement smart-city initiatives. It found that 241 out of 468 cities, with a population of over 100,000 inhabitants could be identified as 'smart', according to the above definition and axes. The 3 Greek cities that have implemented relevant initiatives and are mentioned as 'smart' in the particular axes are:
• **Athens**: Smart Governance, Smart Environment, Smart People, Smart Living
• **Heraklion:** Smart Governance, Smart Economy, Smart People
• **Thessaloniki:** Smart Economy, Smart Mobility, Smart Environment

Source:http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/507480/IPOL-ITRE_ET(2014)507480_EN.pdf

Table V.6: Sample size determination using Krejcie and Morgan equation

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

Where:
n = Required sample size
X = Z value (e.g. 1.96 for 95% confidence level)
N = Population Size
P = Population proportion (expressed as decimal) (assumed to be 0.5 (50%)
ME = Degree of accuracy (5%), expressed as a proportion (0.05); It is the margin of error.

For Athens City:

$$n = \frac{3.841(650{,}000)(.5)(.5)}{(.05^2)(649{,}999) + 3.841(.5)(.5)} = 384$$

For Heraklion City:

$$n = \frac{3.841(173{,}450)(.5)(.5)}{(.05^2)(173{,}449) + 3.841(.5)(.5)} = 383.25$$

Table V.7: The questionnaire used in the pilot study.				
Construct	**Items**	**Cronbach's alpha**	**New Items**	**New Cronbach's alpha**
Performance Expectancy (PE) (Venkatesh et al., 2003; Al–Sobhi, 2011)	**PE1** Using this local government organisation website will enable me to get services more quickly **PE2** If I use this local government organisation's website, I will spend less time to get information and services. **PE3**. This local government organisation website would enable me to access information and services when I need them – 24 hours/day, 7 days/week. **PE4** It would be helpful to interact online directly with this website. **PE5** It would be preferable interacting with the local government organisation through its website than interacting through its CSCs. (loaded to HBC construct)	**0.462**	**PE1** **PE2** **PE3** **PE4**	**0.780**
Effort Expectancy (EE) (Venkatesh et al., 2012)	**EE1** My interaction with this local government website would be clear and understandable **EE2** It would be easy for me to become skilful at using this website **EE3** Learning to interact with this website would be easy for me. **EE4** I find it easy to get to this website to do what I want it to do.	**0.765**	**EE1** **EE2** **EE3** **EE4**	
Social Influence (SI) (Venkatesh et al., 2012; Ajzen, 1991; Davis et al., 1989; Fishbein and Ajzen, 1975)	**SI1** People who are important to me think that I should use this local government website facilities **SI2** People who influence my behaviour think I should use this local government website services. **SI3** People whose opinions that I value prefer that I use this local government website.	**0.756**	**SI1** **SI2** **SI3**	
Facilitating Conditions (FC) (Venkatesh et al., 2012)	**FC1** I have the resources necessary to use this local government website **FC2** I have the knowledge necessary to use this local government website **FC3** Use of this local government website is compatible with other technologies I use **FC4** I can get help from others when I have difficulties using this website	**0.653**	**FC1** **FC2** **FC3** **FC4**	

Habit of going to CSCs (HBC) (Adapted from Venkatesh et al., 2012)	**HBC1** Going to the CSCs has become a habit for me. **HBC2** I am used to going to the CSCs, instead of using this local government organisation's website **HBC3** I must use the CSCs to get serviced by this local government organisation	**0.611**	**HBC1** **HBC2** **HBC3** **added** **PE5** **INT2**	**0.780**
Trust in the Government (TOG) (Bélanger and Carter, 2008)	**TOG1** I think I can trust this local government organisation. **TOG2** I trust this local government organisation keep my best interests in mind. **TOG3** In my opinion, this local government organisation is not trustworthy. **TOG4** This local government organisation can be trusted to carry out online transactions faithfully.	**0.733**	**TOG1** **TOG2** **TOG3** **TOG4**	
Trust in the Internet (TOI) (McKnight et al., 2002; Bélanger and Carter, 2008)	**TOI1** The Internet has enough safeguards to make me feel comfortable interacting with this local government website **TOI2** I would feel secure sending sensitive information across the Internet **TOI3** I feel assured that legal and technological structures adequately protect me from problems on the Internet **TOI4** In general, the Internet is now a robust and safe environment for eGovernment transactions.	**0.745**	**TOI1** **TOI2** **TOI3** **TOI4**	
Trust in CSCs (TOC) (Al-Sobhi, 2011**)**	**TOC**1 I think I can trust CSCs. **TOC2** In my opinion, CSCs are trustworthy. **TOC3** The CSCs have enough safeguards (passwords, secure computers etc.) to make me feel comfortable using them to interact with the government online **TOC4** I am not concerned that the information I submit through the CSCs could be misused.	**0.652**	**TOC1** **TOC2** **TOC3** **TOC4**	
Behavioural Intention (INT) (Venkatesh et al., 2003; Al-Sobhi, 2011)	**INT1** I intend to continue using this local government website in the future **INT2** I have to interact with government organisations through the CSCs in the future. (loaded to the HBC) **INT3** I intend to use this local government website directly. **INT4** I predict that I will use this local government website in the future.	**0.452**	**INT1** **INT3** **INT4**	**0.687**
Use Behaviour (adapted from Gefen, 2000)	**USE1** I am familiar with searching for information on the Internet. **USE2** I am familiar with conducting transactions on the Internet.			

	USE3 I am familiar with this local government website. **USE4** I am familiar with eGovernment sites, e.g. Frequency ranged from "never" to 'many times per day.' **USE5** I know the Central Government Portal 'Hermes'. **USE6** I use the Central Government Portal 'Hermes'.			
Uncertainty Avoidance (UA) (Hofstede, 1984)	**UA1** How often do you feel nervous or tense at work? 1. Never 2. Seldom 3. Sometimes 4. Usually 5. Always **UA2** One can be a good manager without having precise answers to most questions that subordinates may raise about their work **UA3** Competition among employees usually does more harm than good **UA4** A company's or organisation's rules should not be broken not even when the employee thinks it is in the company's best interest			

Table V.8*: *The questionnaire in English

Questionnaire

I am a PhD research student at Middlesex University- London conducting a study to investigate citizens' behaviour of eGovernment services in Greek Local Government. The research title is:

Determinants of User Adoption of eGovernment Services: The Case of Greek Local Government.

If you use the e-services and the Citizen Service Centers, I would be very grateful if you fill out this questionnaire. I am interested in your perceptions of using the internet to provide information and to complete transactions with your municipality. An electronic service provided by your municipality would be to ask for a birth or marriage certificate or to pay the fine for illegal parking online.

Take a few minutes to navigate on the website to look for the relevant services.
For each of the following questions, please check the most appropriate response.

Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire.

Responses will be completely anonymous; your name will not appear anywhere on the survey. All of the information you kindly provide will be treated as entirely confidential, and it will not be possible for anyone to identify the information you supply.

The questionnaire will only take 10-12 minutes of your time to fill out.

Your cooperation is highly appreciated and will contribute to the success of this study.

If you have any questions or concerns, please contact me at: avoutinioti@teikal.gr

Thank you

Anastasia Voutinioti

Please circle the answer that best reflects your opinion	Absolutely disagree	Disagree very much	Disagree	Neither agree nor disagree	Agree	Agree very much	Absolutely agree
TOI1 The Internet does not have enough safeguards to make me feel comfortable interacting with this local government website.	1	2	3	4	5	6	7
TOC1 I think I can trust CSCs.	1	2	3	4	5	6	7
TOG4 This local government organisation can be trusted to carry out online transactions faithfully. (Dropped)	1	2	3	4	5	6	7
TOI4 In general, the Internet is now a robust and safe environment for eGovernment transactions.	1	2	3	4	5	6	7
TOG1 I think I can trust this local government organisation.	1	2	3	4	5	6	7
TOC2 In my opinion, CSCs are trustworthy.	1	2	3	4	5	6	7
TOI3 I feel assured that legal and technological structures adequately protect me from problems on the Internet.	1	2	3	4	5	6	7
TOC3 The CSCs have enough safeguards (passwords, secure computers etc.) to make me feel comfortable using them to interact with the government online.	1	2	3	4	5	6	7
TOG3 In my opinion, this local government organisation is not trustworthy.	1	2	3	4	5	6	7
TOI2 I would feel secure sending sensitive information across the Internet.	1	2	3	4	5	6	7
TOG2 I trust this local government organisation keep my best interests in mind.	1	2	3	4	5	6	7
TOC4 I am not concerned that the information I submit through the CSCs could be misused. (Dropped)	1	2	3	4	5	6	7
EE1 My interaction with this local government website would be clear and understandable.	1	2	3	4	5	6	7
PE4 It would be helpful to interact on-line directly with this website.	1	2	3	4	5	6	7
SI1 People who are important to me think that I should use this local government website facilities.	1	2	3	4	5	6	7
EE2 It would be easy for me to become skilful at using this local government website.	1	2	3	4	5	6	7
FC1 I have the resources necessary to use this local government website.	1	2	3	4	5	6	7
PE2 If I use this local government organisation's website, I will spend less time to get information and services.	1	2	3	4	5	6	7
HBC2 I am used to going to the CSCs, instead of using this local government organisation's website.	1	2	3	4	5	6	7
INT3 I intend to use this local government website directly.	1	2	3	4	5	6	7
EE4 I find it easy to get to this local government website to do what I want it to do	1	2	3	4	5	6	7

PE3. This local government organisation website would enable me to access information and services when I need them, 24 hours/day, 7 days/week.	1	2	3	4	5	6	7
FC2 I have the knowledge necessary to use this local government website.	1	2	3	4	5	6	7
HBC1 Going to the CSCs has become a habit for me.	1	2	3	4	5	6	7
EE3 Learning to interact with this local government website would be easy for me.	1	2	3	4	5	6	7
HBC4 It would be preferable interacting with the local government organisation through its website, than interacting through its CSCs.	1	2	3	4	5	6	7
SI3 People whose opinions that I value prefer that I use this local government website.	1	2	3	4	5	6	7
FC3 Use of this local government website is compatible with other technologies I use.	1	2	3	4	5	6	7
PE1 Using this local government organisation website will enable me to get services more quickly.	1	2	3	4	5	6	7
HBC3 I must use the CSCs to get serviced by this local government organisation.	1	2	3	4	5	6	7
INT1 I intend to continue using this local government website in the future.	1	2	3	4	5	6	7
SI2 People who influence my behaviour think I should use this local government website services.	1	2	3	4	5	6	7
FC4 I can get help from others when I have difficulties using this local government website. (Dropped)	1	2	3	4	5	6	7
HBC5 I have to interact with government organisations through the CSCs in the future.	1	2	3	4	5	6	7
INT4 I predict that I will use this local government website in the future.	1	2	3	4	5	6	7
Please think of an ideal job, disregarding your present job, if you have one. In choosing an ideal job, how important would it be to you to ...							
UA1 How often do you feel nervous or tense at work? (1. Never 2. Seldom 3. Sometimes 4. Usually 5. Always)	1	2	3	4	5		
'To what extent do you agree or disagree with each of the following statements? (1. Strongly agree, 2. Agree, 3. Undecided, 4. Disagree, 5. Strongly disagree)							
UA2 One can be a good manager without having precise answers to most questions that subordinates may raise about their work.	1	2	3	4	5		
UA3 Competition among employees usually does more harm than good.	1	2	3	4	5		
UA4 A company's or organisation's rules should not be broken not even when the employee thinks it is in the company's best interest.	1	2	3	4	5		
Demographics.							
1. Gender: □ Male □ Female							
2. Age: □ below or equal 20 □ 21-30 □ 31-40 □ 41-50 □ above 51							
3. Which is your level of education? □ Below secondary education degree □ Secondary education degree □ Bachelor's degree □ Postgraduate degree							
Frequency ranged from 1. Rarely 2. A few times a year, 3. A few times a month, 4. A few times a week, 5. Daily.							
USE1 How often you use the Internet?	1	2	3	4	5		

USE2 I search for information on the Internet.	1	2	3	4	5
USE3 I conduct transactions on the Internet.	1	2	3	4	5
USE4 I use this local government website for information.	1	2	3	4	5
USE5 I use eGovernment websites for information.	1	2	3	4	5
USE6 I use this local government website for transactions. (Frequency: 1. Never 2.Rarely 3. A few times a year 4. A few times a week).	1	2	3	4	5
USE7 I use the eGovernment websites for transactions. (Frequency: 1. Never 2.Rarely 3. A few times a year 4. A few times a week).	1	2	3	4	5
USE8 I know the Central Government Portal 'Hermes'. (Yes, No)	1	2			
USE9 I use the Central Government Portal 'Hermes'. (Yes, No)	1	2			
USEI0 I go to CSCs to get serviced. (Yes, No)	1	2			

Note: Abbreviations in bold are negative questions.

Table V.9*: *The eGovernment adoption questionnaire in Greek

Ερωτηματολόγιο

Η Αποδοχή των υπηρεσιών Ηλεκτρονικής Διακυβέρνησης που προσφέρει ο Δήμος σας.

Το ερωτηματολόγιο που πρόκειται να απαντήσετε σχεδιάστηκε για να διερευνηθούν οι παράγοντες, που διαμορφώνουν τη συμπεριφορά των Ελλήνων, έναντι των υπηρεσιών Ηλεκτρονικής Διακυβέρνησης των φορέων Τοπικής Αυτοδιοίκησης και το ρόλο των ΚΕΠ. Είναι μέρος εκπόνησης έρευνας για την διδακτορική μου διατριβή στο Πανεπιστήμιο Middlesex του Λονδίνου. Ο τίτλος είναι:

ΠΑΡΑΓΟΝΤΕΣ ΠΟΥ ΕΠΕΙΡΕΑΖΟΥΝ ΤΗΝ ΥΙΟΘΕΤΗΣΗ ΤΩΝ ΥΠΗΡΕΣΙΩΝ ΗΛΕΚΤΡΟΝΙΚΗΣ ΔΙΑΚΥΒΕΡΝΗΣΗΣ. Η ΠΕΡΙΠΤΩΣΗ ΤΗΣ ΤΟΠΙΚΗΣ ΑΥΤΟΔΙΟΙΚΗΣΗΣ ΣΤΗΝ ΕΛΛΑΔΑ.

Εάν χρησιμοποιείτε το διαδίκτυο και τα ΚΕΠ, θα σας ήμουν ευγνώμων αν συμπληρώνατε αυτό το ερωτηματολόγιο. Ενδιαφέρομαι για την άποψή σας στη χρήση του διαδικτύου για λήψη πληροφοριών και υπηρεσιών από τον Δήμο σας. Μια ηλεκτρονική υπηρεσία μπορεί να είναι να συμπληρώστε την αίτηση και να την στείλετε προκειμένου να πάρετε ένα πιστοποιητικό οικογενειακής κατάστασης. Μια άλλη μπορεί να είναι πληρώσετε το πρόστιμο της δημοτικής αστυνομίας για παράνομο παρκάρισμα. Περιηγηθείτε για λίγα λεπτά στον ιστότοπο του Δήμου σας και ψάξτε για αυτές τις υπηρεσίες.

Για κάθε μια από τις παρακάτω απαντήσεις τσεκάρετε το κουτάκι που σας αντιπροσωπεύει καλύτερα.

Η συμμετοχή σας είναι εθελοντική. Εάν δεν επιθυμείτε να απαντήσετε, απλά μην το κάνετε. Σας ενημερώνουμε ότι το ερωτηματολόγιο είναι ανώνυμο, και δεν μπορεί κανένας να ξέρει ποιος/ποια είστε. Για όλες τις πληροφορίες που θα δώσετε θα υπάρχει εμπιστευτικότητα.

Η συμπλήρωση του ερωτηματολογίου θα σας πάρει 10-12 λεπτά.

Η συμμετοχή σας θεωρείται πάρα πολύ σημαντική για την ολοκλήρωση αυτής της έρευνας και σας ευχαριστώ πολύ, εκ των προτέρων.

Είμαι στην διάθεσή σας για οποιοδήποτε διευκρίνιση. Email Επικοινωνίας:
avoutinioti@teikal.gr
Αναστασία Βουτυνιώτη

Σε κάθε μια από τις παρακάτω ερωτήσεις επιλέξτε το νούμερο που νομίζετε ότι σας ταιριάζει καλύτερα.	**Διαφωνώ απόλυτα**	**Διαφωνώ**	**Διαφωνώ εν μέρει**	**Ούτε διαφωνώ ούτε συμφωνώ**	**Συμφωνώ εν μέρει**	**Συμφωνώ**	**Συμφωνώ απόλυτα**
TOI1 Το διαδίκτυο δεν έχει αρκετές δικλείδες ασφαλείας, ώστε να αισθάνομαι άνετα όταν το χρησιμοποιώ στις δοσοληψίες μου με το Δήμο.	1	2	3	4	5	6	7
TOC1 Νομίζω ότι μπορώ να εμπιστεύομαι τα ΚΕΠ.	1	2	3	4	5	6	7
TOG4 Ο Δήμος είναι άξιος εμπιστοσύνης, για διεκπεραίωση ηλεκτρονικών δοσοληψιών (συναλλαγών) με αξιοπιστία.	1	2	3	4	5	6	7
TOI4 Γενικά, το διαδίκτυο αποτελεί ένα σταθερό και ασφαλές περιβάλλον, για συναλλαγές ηλεκτρονικής διακυβέρνησης (π.χ. ηλεκτρονική υποβολή της φορολογικής δήλωσης, υποβολή αιτήσεων για πιστοποιητικά σε δήμους ή άλλες δημόσιες υπηρεσίες).	1	2	3	4	5	6	7
TOG1 Νομίζω ότι μπορώ να εμπιστεύομαι το Δήμο.	1	2	3	4	5	6	7
TOC2 Κατά την άποψή μου τα ΚΕΠ είναι αξιόπιστα.	1	2	3	4	5	6	7
TOI3 Είμαι πεπεισμένος/η ότι το νομικό πλαίσιο και οι τεχνολογικές δομές, με προστατεύουν ικανοποιητικά από προβλήματα στο διαδίκτυο.	1	2	3	4	5	6	7
TOC3 Τα ΚΕΠ έχουν αρκετές δικλείδες ασφαλείας (κωδικούς ασφαλείας, ασφαλείς συνδέσεις) ώστε να αισθάνομαι ασφαλής όταν τα χρησιμοποιώ για τις δοσοληψίες μου με το Δήμο ή το Δημόσιο.	1	2	3	4	5	6	7
TOG3 Κατά την γνώμη μου, ο Δήμος δεν είναι αξιόπιστος.	1	2	3	4	5	6	7
TOI2 Αισθάνομαι ασφαλής όταν πραγματοποιώ ηλεκτρονικές συναλλαγές (αγορές προϊόντων, λήψη υπηρεσιών και πληρωμές μέσω διαδικτύου).	1	2	3	4	5	6	7
TOG2 Πιστεύω ότι ο Δήμος ενδιαφέρεται για το συμφέρον μου.	1	2	3	4	5	6	7
EE1 Η επαφή μου με τον ιστότοπο του Δήμου είναι ξεκάθαρη και κατανοητή.	1	2	3	4	5	6	7
TOC4 Δεν ανησυχώ ότι οι προσωπικές μου πληροφορίες που έχω υποβάλει μέσω των ΚΕΠ θα μπορούσαν να χρησιμοποιηθούν καταχρηστικά ή με τρόπο που να με βλάψουν. (Αφαιρέθηκε)	1	2	3	4	5	6	7
PE4 Όταν έχω δοσοληψίες με το Δήμο, με βολεύει να χρησιμοποιώ τον ιστότοπό του.	1	2	3	4	5	6	7
SI1 Οι άνθρωποί που είναι σημαντικοί για μένα πιστεύουν ότι πρέπει να χρησιμοποιώ τις υπηρεσίες του ιστοτόπου του Δήμου.	1	2	3	4	5	6	7
EE2 Είναι εύκολο να γίνω επιδέξιος στη χρήση του ιστοτόπου του Δήμου	1	2	3	4	5	6	7
FC1 Διαθέτω τα απαιτούμενα (υπολογιστή και πρόσβαση στο διαδίκτυο), για να χρησιμοποιώ τον ιστότοπο του Δήμου.	1	2	3	4	5	6	7

PE2 Θα εξυπηρετηθώ πιο γρήγορα, αν χρησιμοποιήσω τον ιστότοπο του Δήμου.	1	2	3	4	5	6	7
HBC2 Είμαι συνηθισμένος/η να πηγαίνω στα ΚΕΠ, αντί να χρησιμοποιώ τον ιστότοπο του Δήμου.	1	2	3	4	5	6	7
INT3 Θα κάνω χρήση του ιστοτόπου του Δήμου απ' ευθείας.	1	2	3	4	5	6	7
EE4 Το βρίσκω εύκολο να μπω στον ιστότοπο του Δήμου και να πραγματοποιήσω ότι χρειάζομαι.	1	2	3	4	5	6	7
PE3 Ο ιστότοπος του Δήμου μου δίνει την δυνατότητα να έχω πρόσβαση σε πληροφορίες και υπηρεσίες 24 ώρες την ημέρα/ 7 ημέρες την εβδομάδα.	1	2	3	4	5	6	7
FC2 Έχω τη γνώση που απαιτείται, για να χρησιμοποιώ τον ιστότοπο του Δήμου.	1	2	3	4	5	6	7
HBC1 Το να πηγαίνω στα ΚΕΠ να εξυπηρετούμαι μου έχει γίνει συνήθεια.	1	2	3	4	5	6	7
EE3 Είναι εύκολο να μάθω να περιηγούμαι στον ιστότοπο του Δήμου.	1	2	3	4	5	6	7
HBC4 Είναι προτιμότερο να ζητήσω τις υπηρεσίες του Δήμου από τα ΚΕΠ, από το να τις πάρω ευθείας από τον ιστότοπό του.	1	2	3	4	5	6	7
SI3 Οι άνθρωποι των οποίων εκτιμώ - ακούω τη γνώμη πιστεύουν ότι πρέπει χρησιμοποιώ τον ιστότοπο του Δήμου.	1	2	3	4	5	6	7
FC3 Η χρήση του ιστοτόπου του Δήμου είναι συμβατή με τις άλλες τεχνολογίες που χρησιμοποιώ.	1	2	3	4	5	6	7
PE1 Αν χρησιμοποιήσω τον ιστότοπο του Δήμου, θα χρειαστώ λιγότερο χρόνο για να πάρω τις πληροφορίες και υπηρεσίες που χρειάζομαι.	1	2	3	4	5	6	7
HBC3 Πρέπει να πηγαίνω στα ΚΕΠ για να εξυπηρετηθώ στις δοσοληψίες μου με τον Δήμο ή το δημόσιο.	1	2	3	4	5	6	7
INT1 Προτίθεμαι να κάνω χρήση του ιστοτόπου του Δήμου στο μέλλον.	1	2	3	4	5	6	7
SI2 Οι άνθρωποι που με επηρεάζουν πιστεύουν ότι πρέπει να χρησιμοποιώ τις υπηρεσίες του ιστοτόπου του Δήμου.	1	2	3	4	5	6	7
FC4 Μπορώ να έχω βοήθεια από άλλους όταν έχω δυσκολίες στη χρήση του ιστοτόπου του Δήμου. (Αφαιρέθηκε)	1	2	3	4	5	6	7
HBC5 Θα πηγαίνω στα ΚΕΠ για να εξυπηρετούμαι για τις διάφορες υποθέσεις μου με το δημόσιο ή το Δήμο στο μέλλον.	1	2	3	4	5	6	7
INT4 Προβλέπω ότι θα χρησιμοποιώ τον ιστότοπο του Δήμου στο μέλλον	1	2	3	4	5	6	7
Παρακαλώ σκεφτείτε ένα ιδανικό εργασιακό περιβάλλον, αγνοώντας την παρούσα εργασία σας. Σε ποιο βαθμό συμφωνείτε ή διαφωνείτε με καθεμία από τις ακόλουθες δηλώσεις; (1. Συμφωνώ Απόλυτα, 2. Συμφωνώ, 3. Ούτε Συμφωνώ ούτε Διαφωνώ 4. Διαφωνώ, 5. Διαφωνώ Απόλυτα)							
UA2 Κάποιος/α μπορεί να είναι καλός/ή διευθυντής/ρια χωρίς απαραίτητα να έχει πάντα συγκεκριμένες απαντήσεις σε κάθε ερώτηση που τυχόν να του/της υποβάλουν οι υφιστάμενοι του/της	1	2	3	4	5		
UA3 Ο ανταγωνισμός μεταξύ συναδέλφων συνήθως προκαλεί περισσότερο κακό απ' ό,τι καλό	1	2	3	4	5		

UA4 Οι κανόνες μίας εταιρείας ή οργανισμού δεν θα πρέπει να παραβιάζονται- ακόμη και όταν ένας υπάλληλος θεωρεί πως είναι για το συμφέρον της εταιρείας	1	2	3	4	5
UA1 Πόσο συχνά νιώθετε αγχωμένος/η ή σε υπερένταση στην εργασία; 1: Ποτέ, 2. Σπάνια, 3. Μερικές φορές, 4.Συνήθως, 5. Πάντα.	1	2	3	4	5
Χρήση διαδικτύου και πυλών ηλεκτρονικής διακυβέρνησης (1. Σπάνια, 2. Μερικές φορές το χρόνο, 3. Μερικές φορές το μήνα, 4. Μερικές φορές την εβδομάδα, 5. Κάθε μέρα)					
USE1 Πόσο συχνά χρησιμοποιείτε το διαδίκτυο;	1	2	3	4	5
USE2 Χρησιμοποιώ το Διαδίκτυο για αναζήτηση πληροφοριών	1	2	3	4	5
USE3 Πραγματοποιώ συναλλαγές μέσω Διαδικτύου.	1	2	3	4	5
USE4 Χρησιμοποιώ τον ιστότοπο του Δήμου για πληροφορίες.	1	2	3	4	5
USE5 Χρησιμοποιώ τους ιστοτόπους των δημόσιων υπηρεσιών για πληροφορίες π.χ. του Υπουργείου Οικονομικών για δήλωση φορολογίας εισοδήματος, του Υπουργείου Παιδείας, ιστοτόπους Πανεπιστημίων και ΤΕΙ, του ΙΚΑ, ΟΑΕΔ κλπ.	1	2	3	4	5
USE6 Χρησιμοποιώ τον ιστότοπο του Δήμου για συναλλαγές (1. Ποτέ, 2. Σπάνια, 3. Μερικές φορές το χρόνο, 4. Μερικές φορές το μήνα, 5. Μερικές φορές την εβδομάδα.)	1	2	3	4	5
USE7 Χρησιμοποιώ τους ιστοτόπους των δημόσιων υπηρεσιών για συναλλαγές. (1. Ποτέ, 2. Σπάνια, 3. Μερικές φορές το χρόνο, 4. Μερικές φορές το μήνα, 5. Μερικές φορές την εβδομάδα.)	1	2	3	4	5
USE8 Γνωρίζω την Κεντρική Κυβερνητική Πύλη 'Ερμής' (Ναι, όχι)	1	2			
USE9 Χρησιμοποιώ την Κεντρική Κυβερνητική Πύλη 'Ερμής' (Ναι, όχι)	1	2			
USEI Πηγαίνω στα ΚΕΠ να εξυπηρετηθώ. (Ναι, όχι)	1	2			
Δημογραφικά Στοιχεία: Παρακαλώ βάλτε ένα Χ στο αντίστοιχο κουτάκι.					
5.1 Φύλο: □ Άνδρας □ Γυναίκα					
5.2 Ηλικία: □ κάτω των 21 □ 21-30 □ 31-40 □ 41-50 □ άνω των 51					
5.3 Ποιο είναι το επίπεδο εκπαίδευσής σου; □ Υποχρεωτικό □ Δευτεροβάθμια □ Τριτοβάθμια □ Μεταπτυχιακό-Διδακτορικό					

Table V.10: Calculation of Uncertainty Avoidance Index (Athens sample)		
Hofstede Questions measuring the Uncertainty Avoidance	**N**	**Mean**
UA1: How often do you feel nervous at work?	422	3.09
UA2: Good manager wouldn't have answers to most questions that subordinates raise	422	3.71
UA3: Competition among employees does more harm	422	2.84
UA4: Company rules should not be broken even if employees think it is in the company's	422	2.314
Hofstede index calculation formula of means		
UAI = 25 (mean of UA1) + 20 (mean of UA2) - 50 (mean of UA3) -15 (mean of UA4) +120 UAI = 25 (3.09) + 20 (3.71) – 50 (3.30) -15 (2.842) +120 = 93.33.		

Table V.11: Calculation of Uncertainty Avoidance Index (*Heraklion sample)*		
Hofstede questions measuring the Uncertainty Avoidance	**N**	**Mean**
UA1: How often do you feel nervous at work?	421	3.31
UA2: Good manager wouldn't have answers to most questions that subordinates raise	421	3.25
UA3: Competition among employees does more harm	421	2.87
UA4: Company rules should not be broken even if employees think it is in the company's	421	2.59
Hofstede indices calculation formula of means		
UAI=25(mean of UA1)+20(mean of UA2)-50(mean of UA3)-15(mean of UA4) +120 UAI = 25 (3.11) + 20 (3.38) – 50 (2.88) -15 (2.414) +120 = 85.071		

Table V.12: *Calculation of AVE*	
AVE equals the total of all SMCs of constructs' items divided by the number of items.	AVE= $\sum_{i=1}^{n} \lambda^2 i/n$, where λ^2 represents the SMCs and n represents the number of items (Hair et al., 2006).

Table V.13: *Calculation of Composite Reliability(CmR)*	
CmR = $\frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)}$	Where $(\sum \boldsymbol{\lambda_i})^{\mathbf{2}}$ = squared summary of all factor loadings and, $\sum Var(\varepsilon_i)$=summary of all error variances of each indicator

Scoring the eGovernment adoption Questionnaire (in Greek)

Βαθμολόγηση των απαντήσεων μέσω του εργαλείου αξιολόγησης της υιοθέτησης των ηλεκτρονικών υπηρεσιών.

Το εργαλείο αξιολόγησης αποτελείται από 30 στοιχεία ερωτηματολογίου, που πρέπει να ομαδοποιηθούν με τον ακόλουθο τρόπο, προκειμένου να βαθμολογηθούν οι απαντήσεις και να εκτιμηθεί το σκορ σε κάθε έναν από τους οκτώ διακριτούς παράγοντες που επηρεάζουν την υιοθέτηση των ηλεκτρονικών υπηρεσιών του οργανισμού:

Α/Α	**Παράγοντες Υιοθέτησης**	**Στοιχεία Ερωτηματολογίου**				
1	TOI: Εμπιστοσύνη στο Διαδίκτυο	**1**	4	7	10	
2	TOG: Εμπιστοσύνη στο Δήμο	3	5	**9**	11	
3	TOC: Εμπιστοσύνη στα ΚΕΠ	2	6	8		
4	PE: Αναμενόμενη Απόδοση	13	16	20	25	
5	EE: Αναμενόμενη Προσπάθεια	12	15	19	22	
6	SI: Εξωτερικές επιρροές	14	24	28		
7	HBC: Συνήθεια εξυπηρέτησης στα ΚΕΠ	17	21	**23**	26	29
8	INT: Πρόθεση Χρήσης	18	27	30		

Η βαθμολόγηση των απαντήσεων γίνεται σύμφωνα με την ακόλουθη κλίμακα:

Διαφωνώ Απόλυτα	Διαφωνώ	Διαφωνώ εν Μέρει	Ούτε Συμφωνώ ούτε Διαφωνώ	Συμφωνώ εν Μέρει	Συμφωνώ	Συμφωνώ Απόλυτα
1	2	3	4	5	6	7

Ειδικά, όμως, για τα στοιχεία ερωτηματολογίου που είναι σκούρα (1, 9 & 23), οι απαντήσεις πρέπει να βαθμολογηθούν αντίστροφα, ως εξής:

Διαφωνώ Απόλυτα	Διαφωνώ	Διαφωνώ Εν Μέρει	Ούτε Συμφωνώ ούτε Διαφωνώ	Συμφωνώ Εν Μέρει	Συμφωνώ	Συμφωνώ Απόλυτα
7	6	5	4	3	2	1

Στη συνέχεια, αθροίζονται οι βαθμολογίες κάθε ομάδας στοιχείων (δηλαδή κάθε παράγοντα υιοθέτησης), ανά πολίτη που απάντησε. Επομένως, για κάθε πολίτη υπολογίζεται ένα άθροισμα, που διαιρείται δια του αριθμού των στοιχείων (για παράδειγμα, η πρώτη ομάδα αποτελείται από 4 στοιχεία ερωτηματολογίου, επομένως το συνολικό άθροισμα διαιρείται με 4, ενώ η τρίτη με το 3), ώστε να προκύψει η μέση

βαθμολογία για τη συγκεκριμένη ομάδα στοιχείων ερωτηματολογίου, ανά πολίτη. Για να υπολογιστεί η μέση βαθμολογία όλων των πολιτών, ανά παράγοντα, αθροίζονται οι μέσες βαθμολογίες όλων των πολιτών που απάντησαν στο ερωτηματολόγιο, και το συνολικό αυτό άθροισμα διαιρείται με τον αριθμό των πολιτών και κατόπιν διαιρείται με τον αριθμό 7, όσες και οι πιθανές απαντήσεις. Οι παραπάνω υπολογισμοί επαναλαμβάνονται για κάθε ένα από τους οκτώ παράγοντες της υιοθέτησης.

Ακολουθεί παράδειγμα βαθμολόγησης και υπολογισμός του σκορ σε έναν από τους οκτώ παράγοντες, έστω την Εμπιστοσύνη στο Διαδίκτυο. Έστω ότι 10 πολίτες απάντησαν ως ακολούθως, στα 4 στοιχεία που συνιστούν τον παράγοντα:

Στοιχεία ερωτηματολογίου (**Εμπιστοσύνη στο Διαδίκτυο**)					
Αριθμός απαντήσεων		**1**	4	7	10
	1	2	7	2	4
	2	2	5	1	6
	3	3	4	2	5
	4	3	5	3	5
	5	2	6	1	5
	6	1	4	4	6
	7	2	7	3	7
	8	3	6	2	5
	9	4	5	3	4
	10	3	4	2	6

Ακολουθεί η βαθμολόγηση των απαντήσεων, προσέχοντας η βαθμολόγηση των στοιχείων με σκούρα γράμματα, όπως η 1, να ακολουθήσει την αντίστροφη κλίμακα βαθμολόγησης:

Στοιχεία ερωτηματολογίου (**Εμπιστοσύνη στο Διαδίκτυο**)					
Αριθμός απαντήσεων		**1**	4	7	10
	1	6	7	2	4
	2	6	5	1	6
	3	5	4	2	5
	4	5	5	3	5
	5	6	6	1	5
	6	7	4	4	6
	7	6	7	3	7
	8	5	6	2	5
	9	4	5	3	4
	10	5	4	2	6

Στη συνέχεια, το άθροισμα των ατομικών απαντήσεων ανά στοιχείο (στήλη 6), πρέπει να διαιρεθεί αρχικά με τον αριθμό τους (στήλη 7), που εδώ τα στοιχεία είναι 4:

Στοιχεία ερωτηματολογίου (**Εμπιστοσύνη στο Διαδίκτυο**)						Αθροίσματα	
		1	4	7	10	(6)	(7)
Αριθμός απαντήσεων	1	6	7	2	4	19	4.75
	2	6	5	1	6	18	4.5
	3	5	4	2	5	16	4
	4	5	5	3	5	18	4.5
	5	6	6	1	5	18	4.5
	6	7	4	4	6	21	5.25
	7	6	7	3	7	23	5.75
	8	5	6	2	5	18	4.5
	9	4	5	3	4	16	4
	10	5	4	2	6	17	4.25

Τέλος, αθροίζονται οι μέσες βαθμολογίες (8) και το συνολικό αυτό άθροισμα διαιρείται με τον αριθμό των μελών που εδώ είναι 10 και το αποτέλεσμα διαιρείται πάλι με τον αριθμό των πιθανών απαντήσεων (9), που είναι πάντα 7:

Άθροισμα μέσων βαθμολογιών (8):	4,6
Σκορ Εμπιστοσύνη στο Διαδίκτυο (9):	**0.66**

Frame of comparison for a government organisation to examine its own scores (in Greek). Πλαίσιο σύγκρισης σκορ.

Σύγκριση με τη μέση βαθμολογία των παραγόντων από τους δήμους Αθηναίων και Ηρακλείου, Κρήτης (2014):

Παράγοντες		**Εμπιστοσύνη στο Διαδίκτυο**	**Εμπιστοσύνη στον κυβερνητικό οργανισμό**	**Εμπιστοσύνη στα ΚΕΠ**	**Ευκολία Χρήσης**	**Αναμενόμενη Απόδοση**	**Κοινωνικές Επιρροές**	**Συνήθεια ΚΕΠ**	**Πρόθεση Χρήσης**
ΜΕΣΗ	Δ. Αθηναίων	0,62	0,69	0,80	0,75	0,79	0,59	0,64	0,76
	Δ. Ηρακλείου	0,64	0,67	0,89	0,77	0,76	0,63	0,67	0,73

Total count of words: 49,800