

Emotional Intelligence Effect on E-Government Services Usage for the Duration of the Pandemic Covid-19

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Abstract

Emotional Intelligence (EI) influences are significant aspects for citizens' behaviour. In addition the impact of EI on decision making is worth mentioning. The main objective is to recognise patterns among EI and citizens' intention to use e-Government Services as well as satisfaction regarding e-Service Quality in Public Sector. EI is measure with respect to TEIQue-SF instrument. Well-being Self-control, Emotionality, Sociability and General Items of EI subscales are related to TEIQue-SF instrument. These subscales were measured by 30 items, rated on a seven-point Likert format, ranging from 1 (strongly disagree) to 7 (strongly agree). To test the research questions and hypotheses, a survey will be conducted using Greek citizens' intentions to e-Government Services. The instrument employed to assess citizens' satisfaction regarding e-Service Quality in Public Sector related to e-Government Services, is the SEVQUAL. The study intends to disclose the sources supporting the satisfaction of citizens using e-Government Services as well as those holding back it in relation to Emotional Intelligence (EI). The research findings reveal the significant effects of EI regarding the absence of fear toward Web site Reliability, Responsiveness, Security/Confidentiality, and Personalization/Privacy related to e-Government Services.

Key words: Emotional, Intelligence, e-Government, Services, Satisfaction, Quality, Covid-19

1. Introduction

The European Commission is taking concrete arrangements, measures and policies in order to advance cross-border digital public services. In addition effective digital public services, or eGovernment, can make available a widespread variety of benefits. These contain additional efficiency and savings for governments and businesses, enlarged transparency, and better contribution of citizens in political life (<https://digital-strategy.ec.europa.eu/en/policies/egovernment>).

The Greek Ministry of Digital Government is an innovative unit of public administration which for the first time brings together all the critical IT and telecommunications structures connected with the provision of electronic services to citizens and the wider digital transformation of the country. Furthermore, the purpose of the Ministry is before the conversion of any process to digital to simplify in order to avoid the digitization of the bureaucracy (<https://mindigital.gr/to-ypourgeo/apostoli>).

Thus in the era of big data and data computing an increasing attentiveness in the ground of their consequences on both telework and tele-education (Florou et al., 2021; Papademetriou et al., 2022; Souravlas & Anastasiadou, 2020; Souravlas et al., 2020; Souravlas et al., 2021; Souravlas et al., 2022; Tantalaki et al., 2019a; 2019b, Tantalaki et al., 2020; Souravlas, & Katsavounis, 2019; Souravlas, 2019; Valsamidis, et al., 2021) the demand of bureaucracy digitization is crucial as well as fundamental although the way that citizens handle digital public services depends on their Emotional Intelligence (EI). EI influences are significant aspects for citizens' behavior as well as the impact of EI on decision making is worth mentioning (Anastasiadis, 2020). In addition Anastasiadis (2020) claimed that Emotional intelligence affects all aspects of human behavior. It can also affect consumer behavior, shopping habits, shopping intentions, and loyalty intentions, beliefs about product / service and e service quality and satisfaction related to the services.

2. Purpose

The foremost objective is to distinguish patterns among EI and inhabitants' purpose to use e-Government Services as well as satisfaction concerning e-Service Quality related to Web sites quality and usability in Public Sector. To test the research questions and hypotheses, a survey will be conducted using Greek citizens' intentions to e-Government Services.

3. Instruments

Emotional Intelligence (EI) is measure with respect to TEIQue-SF instrument. Well-being Self-control, Emotionality, Sociability and General Items of EI subscales are related to TEIQue-SF instrument. The instrument employed to assess citizens' satisfaction regarding e-Service Quality in Public Sector related to e-Government Services, is the SEVQUAL. Web site design/ Tangibility, Reliability, Responsiveness, Security/ Confidentiality and Personalization/ Privacy subscales are related to SEVQUAL. E-S-QUAL scale measures service quality delivered by Web sites. Overall quality of the e-services was evaluated by one item using a five -point Likert scale whereas satisfaction is evaluated based on another five-point Likert scale statement. Below the specific instruments will be presented.

3.1. e-Service Overall Quality

The assessment of the overall quality of the e-services was evaluated using a five -point Likert scale, which examines the degree by which the overall view of the respondent on the e-Government Services is very positive (GPO) (e.g. I am positively dispositioned towards the services offered by the e-Government Services).

3.2 Satisfaction

The valuation of the respondent' degree of satisfaction is evaluated grounded on another five-point Likert scale statement, investigating the extent by which the respondent is satisfied from the purchasing experience he/she had with the e-Government Services (CSF) (e.g. I am satisfied from my purchasing experience with the e-Government Services).

3.3 TEIQue-SF

Emotional Intelligence will be evaluated by "Trait Emotional Intelligence Questionnaire" [Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF)], (Stamatopoulou, Galanis, & Prezerakos, 2016). This tool consists of 30 items referring to five different attitude sub-scales, as follows: Well-being, the first group related this conceptual construct comprises of 6 items (e.g. W_being3: On the whole, I have a shining perspective on most things) while the second one named Self-control comprises of 6 (e.g. S_cont1: I usually find it difficult to regulate my emotions). The third group regards conceptual construct named Emotionality comprises of 8 items (e.g. Emot8: I find it difficult to bond well even with those close to me*) while the fourth group regards conceptual construct named Sociability comprises of 6 items (e.g. Soci6: I don't seem to have any power at all over other people's feelings*). The fifth and final group regards conceptual construct named General items of EI comprises of 4 items (e.g. G_Item4: Generally, I'm able to adapt to new environments) (All items with * were reversed). These subscales were measured by 30 items, rated on a seven-point Likert format, ranging from 1 (strongly disagree) to 7 (strongly agree).

3.4 SEVQUAL

This tool, SEVQUAL, consists of 30 items referring to five different attitude sub-scales, as follows: Web site design/ Tangibility, the first group related this conceptual construct comprises of 7 statements (e.g. E1. e-Government web site will be excellent with an attractive appearance (7 statements/ items), while the second group regards conceptual construct named Reliability includes 4 items (e.g. E8. When the e-Government website undertakes to call me or send me an email message, I would like to commit them to this). The third group regards conceptual construct named Responsiveness comprises of 3 items (e.g. E12. I think that the e-Government website provides prompt service. The fourth group regards conceptual construct named Security/ Confidentiality is constructed by 4 items (e.g. E15. The e-Government website must provide security and protection) and the fifth and last group regards conceptual construct named Personalization / Privacy is constructed by 4 items (e.g. E19. I love the e-government website that offers option to build a personal profile.

3.5 E-S-QUAL

This tool consists of 21 items referring to four different attitude sub-scales, as follows: Efficiency, the first group related this conceptual construct comprises of 8 statements (EFF_i) (e.g. EFF5: It loads pages fast) while the second group regards conceptual construct System Availability (SYS_i) and comprises of 4 statements (e.g. SYS1: This site does not crash). The third group regards conceptual construct Fulfilment (FUL_i) and comprises of 7 statements (e.g. FUL3: It quickly delivers what I order, and, finally, the fourth and last group regards conceptual construct Privacy (PRI_i) and comprises of 3 statements (e.g. PRI3: This site protects information about my credit card). These four conceptual constructs contribute to the creation of Latent Variable, E-S-QUAL that measures service quality delivered by Web sites (Parasuraman et al., 2005). These four conceptual constructs contribute to the creation of Latent Variable, E-S-QUAL that measures service quality delivered by Web sites (Parasuraman et al., 2005).

4 Research Sample

The sample comprises of 305 respondents, of whom 128 were men and 177 were women. With respect to the respondents' age, 80 were from 18 to 24 years old; 55 from 25-34; 102 were from 35 to 44 years old; and 68 were from 45 to 54 years old (Table 1).

With respect to their marital status, 165 were single; 127 were married and 13 were separated or divorced. As for the respondents' education, 5 answered that they have completed elementary education, 95 secondary, 156 tertiary and, finally, 49 hold a Postgraduate studies / Doctorate title.

119 of the 305 respondents stated that their income is less than €10.000; 81 from €10.000 to €24.999; 40 from €25.000 to €49.999; 14 from €50.000 to €74.999 and, finally, 51 did not respond to this question (Table 1).

Table 1: Sample Demographics

Demographic data	Category	Frequency (N=305)
Sex	Male	128
	Female	177
Age	18-24	80
	25-34	55
	35-44	102
	45-54	68
Family status	Single	165
	Married	127
	Divorced/Separated	13
Education	Elementary education	5
	Secondary education	95
	Tertiary education	156
	Postgraduate studies / Doctorate	49
Income	<€10.000	119
	€10.000-€24.999	81
	€25.000-€49.999	40
	€50.000-€74.999	14
	Did not respond	51

5 Instruments' Cronbach's Alpha (*a*), CR and AVE

Below the instruments TEIQue-SF, SERVQUAL and E-S-QUAL of the study will be assessed regarding their reliability and validity based on Cronbach's Alpha (*a*), Composite Reliability (CR) and Average Variances Extracted (AVE) indices.

5.1 . TEIQue-SF_Cronbach's Alpha (*a*), CR and AVE

Cronbach's *a* is equal to 0.79, 0.81, 0.86, 0.83 and 0.75 for Conceptual Constructs named Well-being, Self-control, Emotionality, Sociability and General items of EI respectively (Table 2). (Values that they are acceptable, Anastasiadis & Christoforidis, 2019; Anastasiadis, et al., 2016; Anastasiadou & Zirinolou, 2014; 2015; Anastasiadou, et al. 2016; Anastasiadou & Florou, 2013).

Composite Reliability (CR) is equal to 0.86, 0.92, 0.95, 0.90 and 0.83 for Conceptual Constructs named Well-being, Self-control, Emotionality, Sociability and General items of EI respectively (Values that they are acceptable, Anastasiadou, 2014a; 2014d; 2015; 2016; 2018d, 2018e; 2019; Anastasiadou, 2014a; Anastasiadou, 2014b) (Table 2).

Average Variances Extracted (AVE's) is equal to 0.53, 0.51, 0.59, 0.64 and 0.51 for Conceptual Constructs named Well-being, Self-control, Emotionality, Sociability and General items of EI respectively (Table 2).

Consequently Composite Reliability (CR) values range from 0.83 to 0.92 and Cronbach's *a* estimates range from 0.75 to 0.86, indicating the reasonable reliability and internal consistency of the measures (Formel and Larcker 1981; Nunally 1978; Anastasiadou & Dimitriadou, 2011; Anastasiadou, 2012; 2019; Anastasiadou, & Anastasiadis, 2019a; Anastasiadou, & Anastasiadis, 2019b; Anastasiadou, 2018a; Anastasiadou, 2018a; Anastasiadou et al., 2010; Anastasiadou, et al., 2007).

AVEs' for Psychological factor, Emotional factor, Social factor, Economic factor and Quality of life factor are over 0.50 indicating convergent validity (Anastasiadou, 2008a; 2008b; Anastasiadou, 2009; Anastasiadou et al., 2014a; Anastasiadou et al., 2014b; Anastasiadou, 2018c) (Table 2).

Table 2: Table of TEIQUE-SF_Cronbach's Alpha (*a*), CR and AVE

Dimensions	<i>a</i>	CR	AVE
Well-being	0.79	0.86	0.53
Self-control	0.81	0.92	0.51
Emotionality	0.86	0.95	0.59
Sociability	0.83	0.90	0.64
General items of EI	0.75	0.83	0.51

5.2 . SERVQUAL_Cronbach's Alpha (*a*), CR and AVE

Cronbach's *a* is equal to 0.76, 0.69, 0.78, 0.83 and 0.78 for Web site design/ Tangibility, Reliability, Responsiveness, Security/ Confidentiality and Personalization/ Privacy Conceptual Constructs respectively (Table 2). (Values that they are acceptable, Anastasiadou & Tiliakou, 2015; 2016a; 2016b; Anastasiadou 2007a; 2007d; 2007e; Anastasiadou, & Panitsides, 2014; Anastasiadou & Florou, 2012).

Composite Reliability (CR) is equal to 0.84, 0.75, 0.89, 0.91 and 0.87 for Web site design/ Tangibility, Reliability, Responsiveness, Security/ Confidentiality and Personalization/ Privacy Conceptual Constructs respectively (Values that they are acceptable, Anastasiadou, 2014a; 2014d; 2015; 2016; 2018d, 2018e; 2019; Anastasiadou, 2014a; Anastasiadou, 2014b) (Table 3).

Average Variances Extracted (AVE's) is equal to 0.54, 0.52, 0.66, 0.61 and 0.59 for Psychological factor, Emotional factor, Social factor, Economic factor and Quality of life factor respectively (Table 3).

Consequently Composite Reliability (CR) values range from 0.75 to 0.91 and Cronbach's *a* estimates range from 0.69 to 0.83, indicating the reasonable reliability and internal consistency of the measures (Formel and Larcker 1981; Nunally 1978; (Anastasiadou & Dimitriadou, 2011; Anastasiadou, 2019; Anastasiadou, & Anastasiadis, 2019a; Anastasiadou, & Anastasiadis, 2019b; Anastasiadou, 2018a; Anastasiadou, 2018a; Anastasiadou et al., 2010; Anastasiadou, et al., 2007).

AVEs' for Psychological factor, Emotional factor, Social factor, Economic factor and Quality of life factor are over 0.50 indicating convergent validity (Anastasiadou, 2008; Anastasiadou, 2009; Anastasiadou et al., 2014a; Anastasiadou et al., 2014b; Anastasiadou, 2018c) (Table 3).

Table 3: Table of SERVQUAL_Cronbach's Alpha (*a*), CR and AVE

Dimensions	<i>a</i>	CR	AVE
Web site design/ Tangibility	0.76	0.84	0.54
Reliability	0.69	0.75	0.52
Responsiveness	0.78	0.89	0.66
Security/ Confidentiality	0.83	0.91	0.61
Personalization/ Privacy	0.78	0.87	0.59

5.3. E-S-QUAL_Cronbach's Alpha (*a*), CR and AVE

Cronbach's *a* is equal to 0.84, 0.79, 0.71 and 0.75 for Conceptual Constructs named Efficiency, Availability, Fulfilment and Privacy respectively (Table 4). (Values that they are acceptable, Anastasiadis & Christoforidis, 2019; Anastasiadis, et al., 2016; Anastasiadou & Zirinolou, 2014; 2015; Anastasiadou, et al. 2016).

Composite Reliability (CR) is equal to 0.89, 0.81, 0.78 and 0.83 for Conceptual Constructs named Efficiency, Availability, Fulfilment and Privacy respectively (Values that they are acceptable, Anastasiadou, 2014a; 2014d; 2015; 2016; 2018d, 2018e; 2019; Anastasiadou, 2014a; 2014b) (Table 4).

Average Variances Extracted (AVE's) is equal to 0.54, 0.57, 0.55 and 0.58 for Conceptual Constructs named Well-being, Self-control, Emotionality, Sociability and General items of EI respectively (Table 4).

Consequently Composite Reliability (CR) values range from 0.78 to 0.89 and Cronbach's *a* estimates range from 0.75 to 0.84, indicating the reasonable reliability and internal consistency of the measures (Formel and Larcker 1981; Nunally 1978; (Anastasiadou, 2007a; 2007b; 2007c; 2007f; 2008a; 2008b; Anastasiadou & Dimitriadou, 2011; Anastasiadou, 2019; Anastasiadou, & Anastasiadis, 2019a; Anastasiadou, & Anastasiadis, 2019b; Anastasiadou, 2018a; Anastasiadou, 2018a; Anastasiadou et al., 2010; Anastasiadou, et al., 2007).

AVEs' for Psychological factor, Emotional factor, Social factor, Economic factor and Quality of life factor are over 0.50 indicating convergent validity (Anastasiadou, 2008; Anastasiadou, 2009; Anastasiadou et al., 2014a; Anastasiadou et al., 2014b; Anastasiadou, 2018c) (Πίνακας 4).

Table 4: Table of E-S-QUAL Cronbach's Alpha (*a*), CR and AVE

Dimensions	<i>a</i>	CR	AVE
Efficiency	0.84	0.89	0.54
Availability	0.79	0.81	0.57
Fulfilment	0.71	0.78	0.55
Privacy	0.75	0.83	0.58

6. Research questions

The present study will examine the following research questions:

RQ1: Emotional Intelligence Traits have an effect on e-Service Overall Quality

RQ2: SERVQUAL Traits have an effect on e-Service Overall Quality

RQ3: Emotional Intelligence Traits has an effect on Satisfaction

RQ4: SERVQUAL Traits have an effect on Satisfaction

RQ5: Emotional Intelligence Traits has an effect on SERVQUAL Traits

RQ6: E-S-QUAL service quality regarding Web sites has an effect on e-Service Overall Quality

RQ7: E-S-QUAL service quality regarding Web sites has an effect on Satisfaction

RQ8: Emotional Intelligence Traits have an effect on E-S-QUAL service quality regarding Web sites

RQ9: SERVQUAL Traits have an effect on E-S-QUAL service quality regarding Web sites

RQ10: Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) is a reliable instrument

RQ11: Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) is a valid instrument

RQ12: SEVQUAL is a reliable instrument

RQ13: SEVQUAL is a valid instrument

RQ14: E-S-QUAL is a reliable instrument

RQ15: E-S-QUAL is a valid instrument.

7. Hypotheses testing results

The present study will examine the following research hypotheses:

Ho1: Emotional Intelligence Traits is significantly correlated with E-S-QUAL service quality Latent Variable

Ho2: SERVQUAL Traits is significantly correlated with e-Service Overall Quality Latent Variable

Ho3: Emotional Intelligence Traits is significantly correlated with Satisfaction

Ho4: Emotional Intelligence Traits is significantly correlated with e-Service Overall Quality

Ho5: Emotional Intelligence Traits is significantly correlated with SERVQUAL Traits

Ho6: E-S-QUAL service quality regarding Web sites is significantly correlated with e-Service Overall Quality Latent Variable

Ho7: E-S-QUAL service quality regarding Web sites is significantly correlated with Satisfaction

Ho8: e-Service Overall Quality Latent Variable is significantly correlated with Satisfaction

Ho9: SERVQUAL Traits is significantly correlated with E-S-QUAL service quality regarding Web sites

Ho10: SERVQUAL Traits is significantly correlated with Satisfaction.

8. Research Results

The results showed that Emotional Intelligence Traits (EI) is significantly correlated with SERVQUAL latent variable ($r=0.452^{**}$, $p<0.01$), with E-S-QUAL latent variable ($r=0.499^{**}$, $p<0.01$), with GPO latent variable ($r=0.589^{**}$, $p<0.01$), and finally, with CSF factor ($r=0.609^{**}$, $p<0.01$) (Table 5). Thus the null hypotheses Ho5, Ho1, Ho4 and Ho3 are accepted (Table 6).

The results showed that SERVQUAL latent variable is significantly correlated with E-S-QUAL latent variable ($r=0.514^{**}$, $p<0.01$), with GPO latent variable ($r=0.470^{**}$, $p<0.01$), and finally, with CSF factor ($r=0.408^{**}$, $p<0.01$) (Table 5). Thus the null hypotheses Ho9, Ho2 and Ho10 are accepted (Table 6).

The results showed that E-S-QUAL latent variable is significantly correlated with GPO latent variable ($r=0.432^{**}$, $p<0.01$), and finally, with CSF factor ($r=0.413^{**}$, $p<0.01$) (Table 5). Thus the null hypotheses Ho6 and Ho7 are accepted (Table 6).

Finally, the results showed that GPO latent variable is significantly correlated with CSF factor ($r=0.548^{**}$, $p<0.01$) (Table 5). Thus the null hypothesis Ho8 is accepted (Table 6).

Table 5: Constructs Correlations

	Correlations				
	EI	SERVQUAL	E-S-QUAL	GPO	CSF
EI	1	,452 ^{**}	,499 ^{**}	,589 ^{**}	,609 ^{**}
SERVQUAL		1	,514 ^{**}	,470 ^{**}	,408 ^{**}
E-S-QUAL			1	,432 ^{**}	,413 ^{**}
GPO				1	,548 ^{**}
CSF					1

^{**}. Correlation is significant at the 0.01 level (2-tailed)

Table 6: Hypotheses testing

Hypothesis	Proposed relationships	p-value	Hypothesis Supported
Ho₁	Emotional Intelligence Traits - E-S-QUAL service quality	p<0.01	accepted
Ho₂	SERVQUAL - e-Service Overall Quality Latent Variable	p<0.01	accepted
Ho₃	Emotional Intelligence Traits - Satisfaction	p<0.01	accepted
Ho₄	Emotional Intelligence Traits - e-Service Overall Quality	p>0.05	accepted
Ho₅	Emotional Intelligence Traits - SERVQUAL	p<0.05	accepted
Ho₆	E-S-QUAL - e-Service Overall Quality	p<0.01	accepted
Ho₇	E-S-QUAL - Satisfaction	p<0.01	accepted
Ho₈	e-Service Overall Quality - Satisfaction	p<0.01	accepted
Ho₉	SERVQUAL - E-S-QUAL service quality	p<0.01	accepted
Ho₁₀	SERVQUAL - Satisfaction	p<0.05	accepted

9. Conclusions

The study intended to disclose the sources supporting the satisfaction of citizens using e-Government Services as well as those holding back it in relation to Emotional Intelligence (EI).

The research findings reveal that the research instruments TEIQue-SF, SERVQUAL and E-S-QUAL were verified regarding their reliability and validity based on Cronbach's Alpha (α), Composite Reliability (CR) and Average Variances Extracted (AVE) indices.

The research findings reveal the significant effects of EI regarding the absence of fear toward Web site, Reliability, Responsiveness, Security/Confidentiality, and Personalization/Privacy related to e-Government Services. More especially, Emotional Intelligence Traits is significantly correlated with E-S-QUAL service quality Latent Variable, with Satisfaction, with e-Service Overall Quality and with SERVQUAL Traits.

In addition the research finding proved that SERVQUAL Traits is significantly correlated with e-Service Overall Quality Latent Variable, with E-S-QUAL service quality regarding Web sites and with Satisfaction. Furthermore E-S-QUAL service quality regarding Web sites is significantly correlated with e-Service Overall Quality Latent Variable and with Satisfaction. On the whole, there was a significant correlation between e-Service Overall Quality Latent Variable and Satisfaction.

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