The effects of Covid-19 pandemic on electronic commerce in Thessaloniki at decadence and consequences

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I hereby declare that the work submitted is mine and that where I have made use of another's work, I have attributed the source(s) according to the Regulations set in the Student's Handbook.

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Abstract

This dissertation was written as part of the MSc in e-Business and Digital Marketing at the International Hellenic University and its main purpose is to investigate the positive or negative change in the electronic transactions during the COVID19 pandemic outbreak. Certain users' behaviors upon electronic changes in electronic commerce industry have been observed throughout the years. One small improvement on a website from an aspect of either the delivery of the products or the customer experience can bring numerous inclines or declines in users' behaviors. When the unprecedented for the global economy outbreak broke out during 2020, the traditional transactions era was left behind and the electronic transactions conquered every aspect of the economy. This model's results contribute towards the understanding of the changes in electronic transactions before and after the outbreak of COVID19.

The supervisor of this endeavor and dissertation is the professor Konstantinos Assimakopoulos whom I would like to thank for his advice and goal driven mentorship.

Keywords: e-commerce, e-satisfaction, COVID19 outbreak, customers' satisfaction, customers' behavioral model

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Introduction

As of 11 March 2020 COVID19 has been identified as a global pandemic virus with the numbers reaching 2.5million confirmed cases and approximately 163000 deaths till the end of April according to the World Health Organization. The outbreak of the virus has shaken the foundations of economy in many aspects including financial and stock markets, industry and infrastructure, technology and telecommunications, transports and logistics and the list continues further on. Since G8 countries are the main sources of the pandemic and have been hit hard, large amounts of economic stimulus packages have been set in motion in order to counterbalance the large decline (Zhang et al., 2020). Taking a closer look in the global trade field, the World Trade Organization has presented an unprecedented decline of 21% in the global merchandise trade during the second quarter of 2020. While in the first quarter of 2020, the decline in some briefly mentioning areas like global exports was around 7,5% and fuels and minerals around 17%, during the second quarter the same fields of economy plunged an additional 12% (Jackson et al., n.d.). Not all sectors experienced this level of decline such as agricultural products having a small set back of 5%. Despite the fact that World Trade Organization does not have concrete data in the sector of services, there is strong evidence that it follows the same declining pattern like the trade of goods and products.

As governmental measures were being taken across all infected countries, a transition from the traditional transaction procedures to electronic ones was eminent. A specific example of households and private spending in Denmark extracted by the account movements via web banking of a Danish bank indicates that before the outbreak the online potential and the actual online spending were moving proportionally (Andersen et al., 2020). After the outbreak, the actual online spending increased in a large scale regarding goods, products and services directly connected with individual households. This change has not been observed only in Denmark where electronic payments are more usual than Greece (Eurostat, 2019) but also in countries were traditional transactions still occupy a big share of transaction economy.

This paper's goal is to analyze the difference and the effects in e-commerce created by the outbreak of the virus in a sample of Thessaloniki, Greece. A new proposed model will be tested on the sample based on essential features of electronic satisfaction. This model is a derivation of widely accepted theories of e-satisfaction borrowing variables and features from them as presented in the pages to follow. Specifically, e-satisfaction variables like Design and Functionality of Commercial Websites, Payment Method and Transparency will be analyzed and tested on the sample providing useful insight on the actual online spending behavior of Thessaloniki's residents. The objectives of this study are:

Observe, analyze and come to a conclusion whether those 4 variables have changed positively or negatively between the two time periods and thus any change in e-satisfaction. Those variables will include specific elements directly connected with the nature of the variables which will be measured in the two time periods and then compared to each other in order to able to come up to a conclusion. Since this model has not been tested in such an environment before, there is only a theoretical background regarding the 4 variables of e-satisfaction on samples of online buyers which prove the statistical importance by evidence and numbers. Each one of those variables have been tested separately throughout numerous former models and studies but have never been put together under this certain unprecedented time framework. This study will effort to cover such gap by measuring those variables on a sample of Thessaloniki.

Lastly, the paper is structured as stated below. In the literature review there will be an enhanced presentation of the four variables as well as a demonstration of the existing theories in order to showcase similarities and derivations of the current mode. In the presentation of the variables, there is an extensive analyzation of the produced elements of each variable and their combined importance in order to be studied and tested on a sample. Moving on, in Chapter 3 you can find the creation of the research hypotheses and the correspondent research methodology and sampling methods. Following there is the frequency tables presentation and after that there is the statistical deduction analysis with all the statistical tests run and presented. Lastly, there is the conclusions chapter with answers to the hypotheses set in the beginning and finalizing with the subchapter regarding the managerial implications and a presentation of a potential framework for future research.

Literature Review

Many researches have been undertaken for the e-service quality, with most of them having their basis on the SERVQUAL model proposed in 1985 by Dr. Parasuraman and each one of them adding an extra layer of attributes that create the puzzle of higher deliverance of e-service (Liu et al., 2015). As SERVQUAL is a proposed model for almost all service providers there has been quite many researchers that adopted the SERVQUAL model for the electronic commerce context (Lee & Kim, 2012), such as the WebQual model developed by firstly Loiacono (Hasanov & Khalid, 2015) and afterwards by (Barnes & Vidgen, 2012), the eTailQ proposed by (Wolfinbarger & Gilly, 2003)and the latest hierarchical e-ServQual model developed by (Blut, 2016).

To begin with, the WebQual model was applied as a scale in online bookstores, music websites, accommodation and hospitality websites and online airline tickets websites. The main attributes introduced are trust, relativity of information to specific requested tasks, ease of understanding, webpage response time, visual and emotional appearance of the website, innovative procedures and consistency (Hasanov & Khalid, 2015). This specific study provides a reliable scale in order to better conceive the website quality by showcasing all element of the usability of the website for better memorability of operations. Afterwards, (Barnes & Vidgen, 2012) introduced an important attribute that its main focus is the aforementioned usability of the websites. They suggested five elements of the websites which are also based in the Human Computer Interaction field of studies: Design, Information, Trust, Empathy and User-Friendliness. These elements were used accordingly by all next studies and reached in its finalization to the WebQual 4.0.

Later on, Wolfinbarger and Gilly (2005) by exploiting certain focus groups developed another approach to the matter. They created a list of elements and put them in four dimensions: privacy/security, design of the website, reliability and customer service. This categorization created the potential needed to combine different scientific fields in the improvement of e-service quality. After this approach, some extra layers had been added by Gounaris et al. (2010). In his research, he combined the e-service quality with the customer satisfaction created measured by website revisits, intention to buy and Word of Mouth both physical and electronic. He

actually based his research on the WebQual model (interaction, information, usability) but added two more elements: aesthetics and service after the purchase of the product. This specific study took place in Greece with 240 random online interviews showcasing the positive correlation between the customer satisfaction and e-service quality via their online behavioral patterns, their electronic word of mouth and their revisits that lead to repurchases.

After quite many studies and statistical tests, including the E-SQual and eTailQ predictive theories both which lacked in the assessment of online stores, there came the hierarchical model of Blut (2016). His model managed to predict the online behavior of the consumers better than eTailQ and even better than WebQual which eventually has limited field of appliance and focus. He created the model aiming to perceive the elements of a successful online store and he finalized his research to a four dimensional scheme. The four dimensions are: website design, security/privacy, accomplishment of what is promised (conversions) and customer service. According to Blut (2016), website design consists of all the following attributes: information consistency, personalization, convenience and usable process of purchase of the product or service. He highlighted the importance of the usability and memorability of the website by emphasizing the aesthetics used and the customer oriented layout. He put his theory to the test in 2016 where he interviewed 358 online customers in USA. The results showed that the overall level of quality delivered is the link from the dimensions he proposed to the direction of the transparency, security and accomplishment of goals. Moreover, the empirical test demonstrated the strong correlation between the fulfillment of goals and the actionable elements of the proposed scheme. Last but not least, it is important to note that many of the interviewed participants stated that they will assess the overall quality of service from any commercial website by assessing their own experience of purchasing, from the landing page till the exit page. Later studies have set their basis on this statement and in that direction we will build our hypotheses statements by exploring the following four elements: design of the website, functionality of the website, payment method/ transparency and communication.

Keeping under consideration the aforementioned theories, our model had to borrow four variables that could be measured on our sample. The model had to consider certain characteristics of the Greek online market as well as the average Greek online consumer. Therefore two variables were chosen which are irreplaceable when it comes to this kind of measurements (Design and Functionality) and two variables that could capitalize and help extracting correct deductions from Greek participants who are still immature regarding an electronic transaction environment and procedure (Payment Method & Functionality). The model schematically presented in the end of this chapter is considered to be part of a complete and integrated theory model.

Design

The amount of studies that have shown the importance of the website design and its essential for success features is quite enormous and undisputable. These features are the key for influencing users' responses and experiences. To grasp the meaning of these, we can surely take a look of a new field in Web Development area called User Experience Design which embodies the full aspects of the Design for All approach of the design of a website. Design for All utilizes the development of online services, products, Web sites and software in such a way that meet the needs of all users including those with disabilities with a wide variety of preferences, abilities and requirements. Besides the aforementioned utilization, new developments of creation of information and business strategies must be based on the Design for All concept. It is a matter of accessibility and usability in the core design procedure till the final implementation of the product. Those multiple approaches have concentrated on one hand on specific elements like color, images and layout. On the other hand, other approaches focus on the practical uses of these design features. All of these studies derive to a common understanding that the experience of the users are created by the overall impact of the website rather than specific elements like an eye-catching image or a multimedia element that attracts the attention. Therefore, the design of a commercial website refers to the esthetic feeling the user receives and the perceived easiness of usage in order to memorize his course of action in the easiest way possible. We can assume that the easiness of usage can be also characterized by the level to

which a user believes that the interaction with a particular website or a system would be achieved effortlessly.

In Human Computer Interaction literature, the design of commercial websites that is observed in most cases is the emotional design model. This specific model illustrates how the different features of the product can influence feelings, which in their turn trigger new users' behaviors and stimulate their cognition. This model has been used extensively by many designers in a wide range of products (tangible or not) introducing new aspects even in the structure of the website. One representative newly introduced aspect is the dynamic landing page of many commercial websites, which by checking specific sources of the devices that the users use (such as the web browser, their operations system etc.) show different products that fit their marketing persona. In a designer's perspective, the success of dynamic landing pages comes through the collaboration of the programming, marketing and design team. Moreover, the emotional design model investigates and proposes aspects of the product that derive comfort, enjoyment and a holistic experience to the user.

Payment Method – Trust

Another aspect that will be covered in this study will be the payment method and its correspondent trust aspect. It is not difficult to assume that the endeavor to earn the user's trust in order to buy certain products from one commercial website is not easy task let alone the fact that there is no physical communication between the seller and the buyer. Many studies have shown that in order for users to reach the online payment section of a commercial website, trust must be built throughout their experiences during their stay in the website. Trust is connected with aspects like reentering the site at ease, e-loyalty (the event that the user propose certain websites to their friends/ colleagues), perceived website usability and usefulness, website's showcase of collaboration with certain credit cards companies in order to boost the company's market place and the website's flexibility to accept other kind of payments except for credit cards. Quoting McAllister (1995), trust is comprised by cognitive and affective dimensions. Acquired knowledge, rational evaluation and common sense are derived by cognition based trust. The showcase of collaboration with big credit

companies can be integrated in the paths that lead to a cognitive based trust. Besides that, credentials and statements of influencers empower the emotional attachment between the users and the commercial website. It is crucial to mention here the fact that trust is earned over time and is developed after quite many stages. Therefore, commercial websites that are committed to integrate generally acceptable practices in their layout and deliver to users what they promise through a secure online payment transaction environment are bound to succeed by instantly winning the users' trust.

In order to coherently grasp the meaning of gaining the users' trust and his subsequent online purchase of a service or product, we need to define his/her perceived level of risk when being online. This perceived risk conceptualizes the impression of invulnerability and insecurity while being in an online environment. The user assesses the environment by the ways we have described but the level of perceived risk grows even higher when it comes to products or services that are intangible, produced and consumed at the same time, subjected to legal framework originated from another country. One instance of such commercial websites are the ones that belong to the tourism and hospitality business area. Therefore, users that decide to purchase intangible products or services are more exposed to a potential risk than those of purchasing tangible goods. Furthermore, the fact that the buyer does not know whether he/she will actually receive the product makes the risk even more tangible, especially if there is a great distance between the buyer and the physical shop.

The connection between trust and the design aspect in order to reach the potential e-satisfaction of the customers and users has been investigated by Information Technology and Human Computer Interaction domains in features such as third party seals of approval, SSL Certificates, keyword density statistics, privacy statements, GDPR statements and many other. Besides those features, the visual design of the website and the usability via the easiness of navigation throughout the whole website create a positive user experience and both are essential and decisive aspects to earn users' trust. In the contrary, there are some studies (Koufaris & Hampton-Sosa, 2004) that statistically show only the website attractiveness produce

high level of trust to many users. However, it would be an omission not to mention that Hampton-Sosa and Koufaris set the website attractiveness as a prerequisite for perceived usefulness and enjoyment.

Functionality

The third variable we are going to put to our statistical test is the functionality of the website. It is widely observed that an increasing number of companies and institutions give more attention to the development of their software and ERP systems rather than their website which actually can be perceived as the window-shopping glass for their activities. Nowadays, as the speed and audacity of Big Data has increased, agile development cycles have been introduced to operations and management leaving crucial elements at their own fate. It is important to integrate such agile cycles to the structure of the websites and especially to their functionality features such as low page load time, backlink anchors inside the web page, social media extension buttons and provision of chat bots. Such agile cycles consist of small website releases that hold up to tests and builds that are run quite often in order to be evaluated and changed or kept. In this scenario, just keeping a low page load time by practical measurement hides quite some challenges. To begin with, programmers set out the web page on an online measurement tool but this kind of measurement may not be reasonable. In order to achieve a more realistic measurement, the web page must be set out with computing resources of an exampling production scale and after that, its version of the website is to be tested separately. Consequently, such endeavors are usually compressed in time so the developers settle down with not a fully representative version of the website; not to mention the fact that such endeavors are of high cost. The outcome of this are usually some performance problems and abnormalities that are found later in a following agile development cycle and some extra reconstructions may be needed by the developers. That's why, new page load time prediction models have been created and developed for amelioration of time, cost and effort bypassing the practical measurement of the many stages of the web page. These models can be used by the developers in all phases from the design from scratch to the final presentation and do not postpone their performance until the page is showcased. It is crucial to mention here that the

web pages becoming even more complex, the load time may increase due to other features of the site such as social media extensions that are connected with other sources than the web page itself.

In our research we will also try to identify the newly introduced term of s-commerce as a derivation of e-commerce by spotting if the commercial websites used have social media extensions as part of their customer building and not only as a marketing campaign medium. S-commerce stands for social commerce and in consumers' perspective it is one step forward for the holistic integration of social media profiles and electronic commerce. S-commerce insinuates that social media active users with their social media network and interests can discover, promote, rate, buy, sell and share products and services to each other and third party members. This newly introduced part of e-commerce has been recognized and the Social Shopping Websites (SSW) have been created to supply the ongoing demand of constructing such pages that will integrate social media extensions and the users' profiles to the customer profile of the e-shop and commercial websites. SSW are the websites that connect the marketing personas of the social media active users with the correspondent products of each certain commercial website. The landing page of an SSW is the same as a normal commercial website but instead of proposing same products to all of the audience, the SSW showcase products and services according to the marketing persona of the consumer. SSW contain a news feed of their selling products, as well, where active users can share, comment and rate the products they like or bought previously. Consequently, the level of complexity of such websites is high so for this period of time most commercial websites in Greece settle down to integrate the same profile from social media to create their own customer profile.

Transparency – Communication

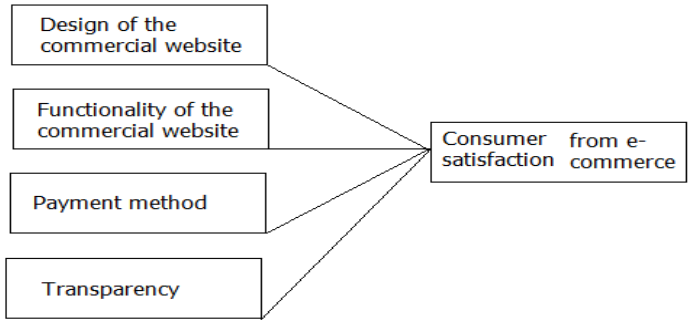
As previously stated, features that enhance the transparency and enable communication between the commercial website and the user are one of the four variables we are going to test. Features like constant communication and clear exploitation for every task, purchase, subscription, charge have shown that increase the perceived trust in users' perspective. Studies have shown that by constantly

projecting the buying cart or the purchases of the clicked products or services, can actually help the user have a better understanding not only with the interface and layout of the commercial website but also a better management of his purchase. Some commercial websites even show their discount percentages next to the buying cart or showcase their discount campaigns in order to reach certain payable amount to get the correspondent discount. The existence of SSL Certificates to commercial websites provides another layer of protection to the already quite unsafe environment of online financial transactions. SSL and its successor TLS manage to encrypt all messages coming in and out of the website and the browser of the user.

The most observed online consumer is the one that while he has products in his online buying cart he abandons the site and leaves. But before understanding the reason behind this, we have to comprehend the motivation to use the online shopping cart. We have to mention that unlike the physical shopping cart which whatever the consumer puts inside he/she will most probably buy, some users use the online shopping as their online window shopping cart in order to check availabilities and prices versus other commercial websites. Many theoretical approaches have been developed on the basis that online shopping carts must be visible at all times and now there are more that support the possibility that each cart must fit the consumer's needs. This can be achieved by understanding the motivation of buying. The company must be in place to connect the usage of the online shopping cart and its following purchase of the contents. Studies have shown that some users tend to fill their carts to check if there is any discount when reached to certain price levels. Some others fill their carts to check if there will be transportation charges after certain price levels, underlining the aforementioned importance of communicating every extra charge by any means to the online customer. Another advantage of exploiting the online shopping cart at all times, is the fact that some users use the cart as a navigation checklist or a search tool in their shopping procedure so that they can cross out whatever they need. Therefore, we come to understand that constant communication and transparency not only in the layout of the website but in the financial part as well play a crucial role in the increase of e-service quality.

By comparing the variable of functionality and communication – transparency of actions, we can clearly find some connections. The functionality of certain features is a prerequisite for the communication of the website as the former contains some basic elements for the consumer to proceed to his/her desired actions. Having chat bots or by structuring the website via an agile development cycle in such a level that the load time of the website would be at a desired time, enhance the state of filling up the cart to the final moment of the intention of buying the content of the card. Commercial websites that use certain consumer profiles to keep track of their previously already bought products or services or to recalculate their unfulfilled buying shopping cart, already have a competitive advantage against other commercial websites.

Model Schematic Representation



Research Hypotheses Development

As we have stated before, attributes like design, trust in payment methods and transparency in communication lead to extents to which online customers consider factors for an online purchase (Blut, 2016). As observed in models WebQual (Alcántara-Pilar et al., 2018), e-SQual (Close & Kukar-Kinney, 2010) and the newly established model for e- service quality for Paypal (Assimakopoulos et al., n.d.), the higher the level of those 3 elements the higher the consumers' will to purchase online. We will attempt to create a new model based on the 4 elements that we have put to the statistical test of our sample (commercial websites' design, functionality, trust in payment methods and transparency in communication). In order to see if this model works before and after COVID19, we have to observe if those elements stay the same

or change positively/negatively throughout the COVID19. By the observed changes, we will be able to conclude whether those 4 elements that may lead to e-service consumer satisfaction have changed. Therefore the hypotheses go as following:

In order to test certain aspects of design features of the websites our sample interacted with, the design features are strongly predictive in customers' judgements of satisfaction (Celsi & Gilly, 2003). Features that lead to usable memorability of previous purchases, easiness of operations, support of operations, users being a net promoter to their friends and family and enjoyment of purchases made by our sample are the main features to be tested before and after the breakout of COVID19. Depending on the outcome of these features' change, we will conclude whether the consumer satisfaction has substituted positively or negatively. Based on the above, we formulate the following hypotheses:

H1. Features regarding the Design of commercial websites have changed positively because of COVID19.

In order to test certain aspects of functionality features of the websites our sample interacted with we will come up with another hypotheses. Even though subsequent studies have put functionality features in the equation of online consumer-satisfaction (Rita et al., 2019), in this model there will be a first time try in terms of before and after the COVID19 breakout. Those features include internal backlinks inside the website for better navigation, Social Media extension buttons, restrictions in an "undo" actions, presence of chatbots for better customer servicing and webpage load time. Depending on the outcome of these features' change, we will conclude whether the consumer satisfaction has substituted positively or negatively. Based on the above, we formulate the following hypotheses:

H2. Features regarding the Functionality of commercial websites have changed positively because of COVID19.

In order to test certain aspects of trust in terms of the payment procedures in commercial website our sample interacted with we will come up with a new hypotheses. This element has many aspects and it has been thoroughly investigated

in almost all aforementioned models in terms of privacy/security (Close & Kukar-Kinney, 2010) , or as a result of electronic word of mouth (Celsi & Gilly, 2003). A higher level of trust showed by consumers for the websites and e-shops they visit leads to higher consumer satisfaction (Pengnate & Sarathy, 2017) and therefore to higher conversions and purchases. The trust in payment method features include transferring user to a safe payment environment in the final part of his purchase, showcasing the collaborating credit card companies and the ability to propose different payment methods. . Depending on the outcome of these features' change, we will conclude whether the consumer satisfaction has substituted positively or negatively. Based on the above, we formulate the following hypotheses:

H3. Features regarding the Trust in Payment Method have changed positively because of COVID19

In order to test certain aspects of transparency in communication features of the websites our sample interacted with. This element can be interrelated with the empathy features introduced in WebQual 4.0 model (Hasanov & Khalid, 2015) where a potentially transparent webpage can create certain means of communications between the webpage and the consumer (Pengnate & Sarathy, 2017). The following features will be tested before and after the COVID19 breakout: webpages with SSL Certificates, clearness of every task / steps, mail sent for every step the user makes, notifications for any potential extra charges and showcasing the cart at all times during the user's visit. Based on the above, we formulate the following hypotheses:

H4. Features regarding the Transparency – Communication have changed positively because of COVID19.

Research Methodology

Sample

This study demonstrates the level of influence on service quality dimensions through users' expectation and perception throughout the outbreak of COVID19. The sampling method used is a stratified method but with certain critical confinements that contributed to the results of the statistical analysis to be more descriptive and concise. Those confinements are firstly the interaction and the, at least one time, purchase from an online commercial website. Secondly, it was the age where the selection was made upon people from 25 - 40 years old. Thirdly, in order to be cohesive in terms of location all the participants are inhabitants of Thessaloniki and an extra layer of segmented info is demonstrated where people stated if they live in the east or west side of the city. Regarding the gender of the participants, the sample followed a probability criterion based on Hellenic Statistical Authority (51% female, 49% male), hence the results.

Sampling Method

By combining these categorizations and by using Social Media reach out tools, the questionnaire was delivered to the participants. Summarizing all the aforementioned aspects, we finalized to a stratified sampling method which is based on the analogy of the population segments of Thessaloniki categorized by age and gender (introduced by the Hellenic Statistical Authority's census). This method was conducted in order to counterbalance the lack of a sampling frame alongside with the General Data Protection Regulation (GDPR) that may have restricted the whole endeavor in terms of time and effort. It is essential to state that the sampling method is not random but there is also none sampling method framework used. Since the sampling method due to the pandemic situation took place only with the bare necessities, we based the method on the analogies of the population of Thessaloniki for our sample created by the Hellenic Statistical Authority.

Response Rate

The general sampling unit to which the questionnaire was sent electronically is 380 people, from which the responses were 100 and the validated answers were 99. The response rate was approximately 26,3%.

Data Collection Procedures

As previously stated, the questionnaire was sent in an electronic format. The procedure was unfortunately solely electronic which undermined several aspects of the endeavor leaving small room for flexibility and actual observation of the sample. Nevertheless, the questionnaire was sent to this certain age group via social media platforms where each participant gave his/her consent in filling the questionnaire. Trying to improve the response rate, several reminder emails and notifications were sent for fulfilling the questionnaire. When the actual participants reached a satisfactory level in terms of proportionality with the analogies given by the Hellenic Statistical Authority, the questionnaire stopped receiving responses.

Questionnaire

The questionnaire sent to the general sampling unit was created in its majority on a five-point Likert scale (categorized by Strongly Disagree level to Strongly Agree level) and consisted of 3 clusters: creation of user profile, questions based on the four tested elements and general demographic information per user. In the first part, the questions are related to time, experience and effort given by the user alongside with their approximate money spending in product or service purchasing. In the second part, the questions are related directly with the 4 elements tested for the users' expectation and actual performance of the commercial webpage they visited. In the third and last part, the questions are setting the demographic background of each user. The first and third part are measured on nominal scale and there is one open question. The questionnaire was sent via Internet and was created in a Google Forms format. The questionnaire was in the Greek language in order to be understood by all participants. Moreover, there was an index after the last question section with explanations of digital market related terms to make clear any possible unknown words. In addition to those, it must be cleared out that the elements and items asked to the sample are inputs from the majority of the MSc courses taken during the academic term of 2019-2020. Last but not least, the respondents provided some extra inputs in terms of terminology and false structure of Google form that were taken into consideration and improved.

Frequency Tables

Demographic & Internet Usage Profiles

In this chapter, there will be an analyzation of frequencies of our sample via their demographic characteristics (Table Cluster No2), their Internet usage profile (Table Cluster No3) and their actual answers in the questionnaire. Hence the demographic characteristics (Gender, Age, Education, Monthly Income, and Thessaloniki Residence):

Table Cluster 1 Demographic Characteristics

GENDER	Frequency	Percent	Valid Percent	Cumulative Percent
Male	52	52,0%	52,0%	52,0%
Female	48	48,0%	48,0%	100,0%
Total	100	100,0%		
AGE	Frequency	Percent	Valid Percent	Cumulative Percent
25	34	34,0%	34,0%	34,0%
26	15	15,0%	15,0%	49,0%
27	13	13,0%	13,0%	62,0%
28	19	19,0%	19,0%	81,0%
29	9	9,0%	9,0%	90,0%
30	2	2,0%	2,0%	92,0%
31	2	2,0%	2,0%	94,0%
32	1	1,0%	1,0%	95,0%
34	1	1,0%	1,0%	96,0%
35	2	2,0%	2,0%	98,0%
36	2	2,0%	2,0%	100,0%
Total	100	100,0%		
EDUCATION	Frequency	Percent	Valid Percent	Cumulative Percent
Secondary Level	5	5,0%	5,0%	5,0%

Thirdly Level/ Bachelor Degree	71	71,0%	71,0%	76,0%
Master Degree Owner	24	24,0%	24,0%	100,0%
Total	100	100,0%		
THESSALONIKI RESIDENCE	Frequency	Percent	Valid Percent	Cumulative Percent
West Thessaloniki	35	35,0%	35,0%	35,0%
East Thessaloniki	64	64,0%	64,0%	99,0%
Athens	1	1,0%	1,0%	100,0%
Total	100	100,0%		
MONTHLY INCOME	Frequency	Percent	Valid Percent	Cumulative Percent
<500	43	43,0%	43,0%	43,0%
<800	40	40,0%	40,0%	83,0%
>1000	11	11,0%	11,0%	94,0%
>1500	6	6,0%	6,0%	100,0%
Total	100	100,0%		

Regarding the Table cluster No1, we can see that the respondents are 52 male and 48 female so the percentages heed accordingly. Concerning the age of our sample, we can easily observe that 90% of the participants are below 30 years old while there is no participant between 36-40 years old. Delving deeper here we can see that the largest in terms of percentage age of participants is 25 years old while the next large age group is 28 years old. This might eventually prove a good statement and factor when the results and conclusions should take place. Meanwhile, in the residence demographic characteristic we leave out 1 respondent who answered Athens since our statistical model needs to include only respondents of Thessaloniki. Moreover, 64 participants reside in East side of the city while the rest of them reside in the West.

Here it is crucial to state that the residents living in the historical city center are included in the east side of the city. Moving on to the monthly income demographic characteristic, we can clearly see that most of the participants 83% have income below 800 euros and we can quite predict that since the age of our sample is mostly below 30 years old. Last but not least, we showcase the education level of our sample where 71% has taken their Bachelor Degree and only 24% have proceeded in a further academic studies completing their Master Degree.

Aiming to depict our sample in a more detailed way, the questionnaire included an internet user profile whose results we can see them following. The internet use profile questions include the Frequency of Internet Usage per Day, per Hours and the amount of money spent recently including before and after the COVID19 outbreak.

Table Cluster 2 Internet Usage Sample Profile

Daily Usage	Frequency	Percent	Valid Percent	Cumulative Percent
Everyday	99	99,0%	99,0%	99,0%
2-3 timer per week	1	1,0%	1,0%	100,0%
Total	100	100,0%		
Total Hours Usage	Frequency	Percent	Valid Percent	Cumulative Percent
<2 hours per use	24	24,0%	24,0%	24,0%
<5 hours per use	36	36,0%	36,0%	60,0%
>5 hours per use	40	40,0%	40,0%	100,0%
Total	100	100,0%		
Certain time per day Usage	Frequency	Percent	Valid Percent	Cumulative Percent

8 am - 12 pm	7	7,0%	7,0%	7,0%
12 pm - 4 pm	21	21,0%	21,0%	28,0%
4 pm - 8 pm	23	23,0%	23,0%	51,0%
8 pm - 12 am	45	45,0%	45,0%	96,0%
Anytime	4	4,0%	4,0%	100,0%
Total	100	100,0%		
Monthly Spenditure	Frequency	Percent	Valid Percent	Cumulative Percent
0-500	97	97,0%	97,0%	97,0%
501-800	2	2,0%	2,0%	99,0%
>1000	1	1,0%	1,0%	100,0%
Total	100	100,0%		

Regarding the Internet Usage Profiles of our sample, Table Cluster 2 clearly states the current condition of Internet of Things where everyone is constantly connected online even when outside of each one's house (99% of the respondents are online every day). What is more interesting is that the largest percentage of the respondents connected to the Internet are the ones that stay online at least 5 hours per use. The rest combined 60% of the sample uses the Internet for less than 5 hours per day. Moreover, the sample was questioned for their monthly expenditure regarding their online purchases with the vast majority of 97% answered that they spend 0-500 euros while only 1 respondent has spent above 1000 euros. Last but not least, the profile is completed by adding the exact time that the users are visiting those certain commercial websites for online window shopping or purchasing. 45% of the sample is making their online purchases at evening from 20:00 pm to 00:00 am while 21% is making them at midday hours from 12:00 pm to 16:00 pm and 23% is making them at afternoon hours from 16:00 pm to 20:00 pm.

Four constructive Variables Frequencies

Table Cluster No3

DESIGN ELEMENTS (pre+after_COVID19)

The procedure of buying via those websites is easy to learn / memorize (pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	7	7,00%	7,00%	8,00%
Neither Agree nor Disagree	76	76,00%	76,00%	84,00%
Agree	16	16,00%	16,00%	100,00%
Total	100	100,00%		

The basic functions are easy to cope on the next time you enter.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	2,00%	2,00%	2,00%
Disagree	5	5,00%	5,00%	7,00%
Neither Agree nor Disagree	76	76,00%	76,00%	83,00%
Agree	17	17,00%	17,00%	100,00%
Total	100	100,00%		

There are enough interface support features in the websites that you visited to help you out perform tasks(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	2,00%	2,00%	2,00%
Disagree	10	10,00%	10,00%	12,00%
Neither Agree nor Disagree	79	79,00%	79,00%	91,00%
Agree	9	9,00%	9,00%	100,00%
Total	100	100,00%		

You enjoy buying from those certain websites.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	5	5,00%	5,00%	6,00%
Neither Agree nor Disagree	88	88,00%	88,00%	94,00%
Agree	6	6,00%	6,00%	100,00%
Total	100	100,00%		

The procedure of buying via those websites is easy to learn / memorize.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	6	6,00%	6,00%	7,00%
Neither Agree nor Disagree	76	76,00%	76,00%	83,00%
Agree	17	17,00%	17,00%	100,00%
Total	100	100,00%		

The basic functions are easy to cope on the next time you enter.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	2	2,00%	2,00%	2,00%
Neither Agree nor Disagree	78	78,00%	78,00%	80,00%
Agree	20	20,00%	20,00%	100,00%
Total	100	100,00%		

There are enough interface support features in the websites that you visited to help you out perform tasks.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	2,00%	2,00%	2,00%
Disagree	5	5,00%	5,00%	7,00%
Neither Agree nor Disagree	74	74,00%	74,00%	81,00%
Agree	19	19,00%	19,00%	100,00%
Total	100	100,00%		

You enjoy buying from those certain websites.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	2,00%	2,00%	2,00%
Disagree	6	6,00%	6,00%	8,00%
Neither Agree nor Disagree	84	84,00%	84,00%	92,00%
Agree	8	8,00%	8,00%	100,00%
Total	100	100,00%		

In the tables cluster No1, we analyze with detailed frequency analysis of the variable of commercial websites' Design before and after the COVID19 outbreak in the sample of Thessaloniki for people aged 25-40 years old. Observing the answers of the sample, it is easily recognizable the fact that most of the people stayed indifferent regarding design features between the two time periods since in all shown elements the percentage is varying from 76% to 88% in this certain answer. But what is really interesting here is the observation of certain participants of the freshly added support features in those certain commercial websites. Before the virus outbreak, only 9% of the sample agreed to the existence of those features while after the outbreak this percentage increased to 19% and 5 people that firstly disagreed upon that statement, they changed their mindset afterwards and chose a different answer. That leads to the assumption that actually some of the websites considered their design environment and invested time and money to change it since more and more people would be visiting their webpage. Moreover, decrypting the answers of our participants regarding the easiness to use functions in every following visit we can see that before the outbreak 7% of the participants stated a "strongly disagree" and "disagree" answer, while after the outbreak the same answers reduced to only 2%. That can be transcribed by two explanations; one is that business put an effort to reduce the complexity of their websites for a better customer experience and another one can be that the participants stayed satisfied by their experience that visited the same webpage more than one time so their interaction became much easier. Furthermore, regarding the enjoyment feeling created by purchasing from a website, our sample stayed indifferent between the two times periods. In both cases, the percentages of people not enjoying the purchase procedure are not above 8% which can be considered a really good percentage, since online customers need constant care and rewarding marketing campaigns. An important element that should not be left out is the memorability that should be easy for every customer. Unfortunately, the percentage of people disagreeing for the easiness to memorize the purchasing procedure in both cases is 8% to 9% with no clear change while the positive percentage staying in the same levels as well 16% to 17%. This may be either connected to the fact that the sample keeps changing their source of online

purchasing or the websites changed few unimportant things that led to the indifference of the sample.

Tables Cluster No4

FUNCTIONALITY ELEMENTS (pre+after_COVID19)

Those websites provide you a correspondent set of functionality features that help you carry out all the tasks you want. (pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,0%	1,0%	1,0%
Disagree	5	5,0%	5,0%	6,0%
Neither agree nor disagree	82	82,0%	82,0%	88,0%
Agree	12	12,0%	12,0%	100,0%
Total	100	100,0%		

The load time in those websites is unnecessarily long or is longer than I wanted.(pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,0%	1,0%	1,0%
Disagree	39	39,0%	39,0%	40,0%
Neither agree nor disagree	57	57,0%	57,0%	97,0%
Agree	3	3,0%	3,0%	100,0%
Total	100	100,0%		

You felt constrained when wanting to "undo" an action in any of those websites. (pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	5	5,0%	5,0%	5,0%
Disagree	43	43,0%	43,0%	48,0%
Neither agree nor disagree	50	50,0%	50,0%	98,0%
Agree	2	2,0%	2,0%	100,0%
Total	100	100,0%		

The internal links inside the website help you navigate better. (pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	2	2,0%	2,0%	2,0%
Disagree	11	11,0%	11,0%	13,0%
Neither agree nor disagree	81	81,0%	81,0%	94,0%
Agree	6	6,0%	6,0%	100,0%
Total	100	100,0%		

Those websites offer chat bots for better customer servicing and problem solving. (pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	9	9,0%	9,0%	9,0%
Disagree	38	38,0%	38,0%	47,0%
Neither agree nor disagree	53	53,0%	53,0%	100,0%
Total	100	100,0%		

Those websites have social media extensions. (pre-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	1	1,0%	1,0%	1,0%
Disagree	7	7,0%	7,0%	8,0%
Neither agree nor disagree	78	78,0%	78,0%	86,0%
Agree	14	14,0%	14,0%	100,0%
Total	100	100,0%		

Those websites provide you a correspondent set of functionality features that help you carry out all the tasks you want. (after-COVID)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	3	3,0%	3,0%	3,0%
Neither agree nor	80	80,0%	80,0%	83,0%
Agree	17	17,0%	17,0%	100,0%
Total	100	100,0%		

The load time in those websites is unnecessarily long or is longer than I wanted. (after-COVID)				
Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	5	5,0%	5,0%	5,0%
Disagree	29	29,0%	29,0%	34,0%
Neither agree nor disagree	62	62,0%	62,0%	96,0%
Agree	4	4,0%	4,0%	100,0%
Total	100	100,0%		

You felt constrained when wanting to "undo" an action in any of those websites. (after-COVID)				
Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	7,0%	7,0%	7,0%
Disagree	42	42,0%	42,0%	49,0%
Neither agree nor disagree	48	48,0%	48,0%	97,0%
Agree	3	3,0%	3,0%	100,0%
Total	100	100,0%		

The internal links inside the website help you navigate better. (after-COVID)				
Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	1	1,0%	1,0%	1,0%
Disagree	8	8,0%	8,0%	9,0%
Neither agree nor disagree	83	83,0%	83,0%	92,0%
Agree	8	8,0%	8,0%	100,0%
Total	100	100,0%		

Those websites offer chat bots for better customer servicing and problem solving. (after-COVID)				
Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	7	7,0%	7,0%	7,0%
Disagree	28	28,0%	28,0%	35,0%
Neither agree nor disagree	62	62,0%	62,0%	97,0%
Agree	3	3,0%	3,0%	100,0%
Total	100	100,0%		

Those websites have social media extensions. (after-COVID)				
Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	1	1,0%	1,0%	1,0%
Disagree	4	4,0%	4,0%	5,0%
Neither agree nor disagree	74	74,0%	74,0%	79,0%
Agree	21	21,0%	21,0%	100,0%
Total	100	100,0%		

In the tables cluster No4, we analyze with detailed frequency analysis of variable of commercial websites' Functionality before and after the COVID19 outbreak in the sample of Thessaloniki for people aged 25-40 years old. Observing the results of the questionnaire, there is a big percentage of participants who stayed indifferent to the questions with the numbers varying from 53% to 83% in some questions. Nevertheless, there can be interesting findings in the two time aspects of the questions. To begin with, participants did not pay attention to any change in functionality features in those websites with the percentages being 80% before and 83% after the outbreak, while the people who agreed upon this certain statement increased from 12% to 17% indicating a slight change that may have occurred during the outbreak by the companies running the commercial websites. The next question, although its negative nature could have confused the participants, it is clear that the sample stated their sincere and correct intentions to a very important element; the page load time. It is widely known that in order to achieve a high level of online satisfaction and customer experience the page load time should be less than 4-5

seconds from the landing page to the exit page (Lin et al., 2013). Despite the indifference level portrayed by our sample, the level of disagreement with this statement is quite high since the percentage of people disagreeing before the outbreak was cumulatively 40% while after the outbreak is reduced to 34%. This may have happened for various reasons such as high digital traffic at certain rush hours or malfunctions at a server. Nevertheless it is clear that commercial webpages have focused on this particular functionality feature. Moreover, regarding the "undo" restrictions in commercial webpages in both time periods half of our sample stayed indifferent but once again paid attention to this negative nature of the question. In this question not much has changed in all the percentages of the scale. Furthermore, regarding the question of internal anchor links for better webpage navigation for online users, a large indifference level of our sample is observed; 81% before the outbreak and 83% after it. This can be translated not only as an unimportant factor to online satisfaction but also to the lack of knowledge of the users to such digital marketing terms. Moving on to one of the most freshly introduced feature of the past 3 years where more and more webpages (not only commercial ones) apply them in order to achieve better customer experience, easiness of correspondence, practicality of service, automation of procedures and machine learning and Artificial Intelligence integration (Aoki, 2020). The feature of chatbots has been quite interesting and controversial in the sample since we see the largest change in whole questionnaire. Cumulatively 47% disagreed with the statement that chatbots exist to the majority of the webpages the participants visit before the outbreak, while after it that percentage decreased to 37% showing that more webpages saw the opportunity and adapted chatbots or similar applications. Lastly, a structured and functioning commercial webpage, regardless of the products or service it provides, should integrate ways of connecting its window shopping with their actual online "shelf"(McClure & Seock, 2020). The brand familiarity alongside with the delivery of services and products will enable a higher level of online customer satisfaction (McClure & Seock, 2020). Despite the fact that the indifference level here is quite high, our sample indicates a small increase in those who agree to the statement that most of their visited commercial webpages have connected their social media pages with the online shops. From 14% before the outbreak there is a slight increase to 21% after the outbreak.

Tables Cluster No5

PAYMENT METHOD ELEMENTS (pre+after_COVID19)

Those websites transfer you to the bank's safe transaction environment when you reached the payment section.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	3,00%	3,00%	3,00%
Disagree	4	4,00%	4,00%	7,00%
Neither Agree nor Disagree	68	68,00%	68,00%	75,00%
Agree	25	25,00%	25,00%	100,00%
Total	100	100,00%		

Those websites showcase their cooperation with certain credit card companies (e.g. Visa, Mastercard, American Express).(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	2	2,00%	2,00%	3,00%
Neither Agree nor Disagree	72	72,00%	72,00%	75,00%
Agree	25	25,00%	25,00%	100,00%
Total	100	100,00%		

Those websites provide other payment methods except for credit cards (e.g. bank transfer, PayPal).(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	9	9,00%	9,00%	10,00%
Neither Agree nor Disagree	71	71,00%	71,00%	81,00%
Agree	19	19,00%	19,00%	100,00%
Total	100	100,00%		

Those websites transfer you to the bank's safe transaction environment when you reached the payment section.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	4,00%	4,00%	4,00%
Disagree	2	2,00%	2,00%	6,00%
Neither Agree nor Disagree	65	65,00%	65,00%	71,00%
Agree	29	29,00%	29,00%	100,00%
Total	100	100,00%		

Those websites showcase their cooperation with certain credit card companies (e.g. Visa, Mastercard, American Express).(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	2,00%	2,00%	2,00%
Disagree	2	2,00%	2,00%	4,00%
Neither Agree nor Disagree	70	70,00%	70,00%	74,00%
Agree	26	26,00%	26,00%	100,00%
Total	100	100,00%		

Those websites provide other payment methods except for credit cards (e.g. bank transfer, PayPal).(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	8	8,00%	8,00%	9,00%
Neither Agree nor Disagree	63	63,00%	63,00%	72,00%
Agree	28	28,00%	28,00%	100,00%
Total	100	100,00%		

In the tables cluster No5, we analyze with detailed frequency analysis tables the allowed by the Cronbach Alpha ratio elements which create and lead to the computed variable of customers' Trust in Payment Methods of the commercial websites before and after the COVID19 outbreak in the sample of Thessaloniki for people aged 25-40 years old. Observing the sample's answers as a whole, we can see that again the majority stayed indifferent in any changes occurred in the payment procedures during the exit of their purchase in a commercial webpage. These percentages vary from 63% to 72% of the sample. To begin with, the percentages regarding the transfer to a safe environment provided by the correspondent bank have not changed much neither when it comes to negative answers nor positive ones. The cumulative percentage of negative answers before the outbreak is 6% as long as after the outbreak is 7%, while the positive ones before the outbreak is 25% as long as after the outbreak is 29%. That leads to an assumption that the amount of webpages cooperating and not cooperating (keeping the payment procedure in their environment) in an E-commerce environment with their banks is approximately the same between the two periods. Nevertheless, we must always keep in mind that for the majority of the sample this keeps them indifferent. Furthermore, showcasing the credit card companies that the commercial webpage cooperates can be quite useful since it may encourage online customers to carry on their purchases if they own such credit cards and receive their credibility as a proof of a better business image. It is clear that the large majority of the webpages showcase the cooperation with certain credit card companies as the percentages of disagreeing with the statement in the two time periods are 3% (before COVID19) and 4% (after COVID19). The percentage of people agreeing to this certain statement has remained the same before and after the outbreak indicating the importance of such showcase. Once again, the biggest percentage here is the neither agree nor disagree leaving the majority of the sample indifferent. An advantage of a commercial webpage can be the diversity that offers to their clients by giving them options not to pay only with credit cards. While the level of indifference in this element is the lowest in the whole computed variable, we can see a positive change in this regarding those who agree with it. Before the outbreak the percentage was 19% but after the outbreak it changed to 28% revealing us that an

increasing amount of webpages has added the extra payment feature to help out their customers make their purchases.

Cluster Tables No6

TRANSPARENCY in COMMUNICATION ELEMENTS (pre+after_COVID19)

Those websites use SSL Certificates.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	7	7,00%	7,00%	7,00%
Neither Agree nor Disagree	80	80,00%	80,00%	87,00%
Agree	13	13,00%	13,00%	100,00%
Total	100	100,00%		

You consider those websites' features visible enough to know what to do next.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	6	6,00%	6,00%	6,00%
Neither Agree nor Disagree	85	85,00%	85,00%	91,00%
Agree	9	9,00%	9,00%	100,00%
Total	100	100,00%		

Those websites provide you with an email for every task you perform (e.g. subscription, product acquire).(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	5	5,00%	5,00%	5,00%
Neither Agree nor Disagree	74	74,00%	74,00%	79,00%
Agree	21	21,00%	21,00%	100,00%
Total	100	100,00%		

Those websites inform you clearly for every potential extra charges that might occur (e.g. transportation charges).(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	8	8,00%	8,00%	8,00%
Neither Agree nor Disagree	71	71,00%	71,00%	79,00%
Agree	21	21,00%	21,00%	100,00%
Total	100	100,00%		

Those websites (in their majority) show you permanently your buying cart.(pre-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	10	10,00%	10,00%	11,00%
Neither Agree nor Disagree	72	72,00%	72,00%	83,00%
Agree	17	17,00%	17,00%	100,00%
Total	100	100,00%		

Those websites use SSL Certificates.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	6	6,00%	6,00%	6,00%
Neither Agree nor Disagree	79	79,00%	79,00%	85,00%
Agree	15	15,00%	15,00%	100,00%
Total	100	100,00%		

You consider those websites' features visible enough to know what to do next.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	4	4,00%	4,00%	4,00%
Neither Agree nor Disagree	85	85,00%	85,00%	89,00%
Agree	11	11,00%	11,00%	100,00%
Total	100	100,00%		

Those websites provide you with an email for every task you perform (e.g. subscription, product acquire).(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	5	5,00%	5,00%	5,00%
Neither Agree nor Disagree	68	68,00%	68,00%	73,00%
Agree	27	27,00%	27,00%	100,00%
Total	100	100,00%		

Those websites inform you clearly for every potential extra charges that might occur (e.g. transportation charges).(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	0	0,00%	0,00%	0,00%
Disagree	9	9,00%	9,00%	9,00%
Neither Agree nor Disagree	69	69,00%	69,00%	78,00%
Agree	22	22,00%	22,00%	100,00%
Total	100	100,00%		

Those websites (in their majority) show you permanently your buying cart.(after-COVID19)

Value Label	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	1,00%	1,00%	1,00%
Disagree	8	8,00%	8,00%	9,00%
Neither Agree nor Disagree	74	74,00%	74,00%	83,00%
Agree	17	17,00%	17,00%	100,00%
Total	100	100,00%		

In the tables cluster No6, we analyze with detailed frequency analysis tables the allowed by the Cronbach Alpha ratio elements which create and lead to the computed variable of Transparency in Communications of the commercial websites before and after the COVID19 outbreak in the sample of Thessaloniki for people aged 25-40 years old. Once again in all those elements of the computed variable, the percentages of our sample's indifference is between 68% and 85% indicating their lack of concern or the feeling of an absolute must-have regarding all features asked as self-implied. Regarding the SSL Certificate element question, the percentages stay the same as people tend not to watch it and consider it operational without any further search. There is only a small increase of 2% in the percentage of people agreeing to the element question changing their minds from disagreeing (the indifference level stays the same) indicating that there is no change in this direction by the commercial websites. Furthermore, an easy and clear to view commercial webpage can show much more elements, products, campaigns and features to their customers and here our sample shows the largest percentage of indifference in the whole questionnaire. This may indicate that they consider the visibility an essential part and not giving any more attention to such features or actually ignoring. In addition to those, we observe that a slight increase to the element of informing for every task being carried out has taken place. Despite the repeated indifference level of the sample, the percentage of the participants who disagree stay the same 5% while the 6% of the people who stayed indifferent before the outbreak saw certain changes after the outbreak and stated Agree so the percentage changed from 21% to 27%. The transparency in the procedures and the communication of every task can be proven essential for the e-satisfaction of customers. In this element however we see no change in the percentages despite a 2% which is divided equally to the "disagree" and the "agree" statements in the second time period. A 22% of our sample agrees to this fact observed after the outbreak which indicates the existence of such actions performed by the webpages. Last but not least, the constant projection of the buying cart may lead to many positive aspects, such as mistakes avoidance, detailed preview of products and a table for discounts price goals. Despite the indifference level of the sample, the level of those agreed stay the same between the two time periods. The only change that we see here is 2% of those who disagreed. This indicates either the

already existence of the projection of the buying cart or the fact that the sample actually consider it a feature not worth giving any attention.

Statistical Deductions - Results

In this chapter, an endeavor to build the model of online satisfaction before and after the outbreak will take place. Firstly, there will be an assessment of the reliability of the computed variable so to be considered as accepted for our model. Following there will be the presentation of the model that lead to online satisfaction and its correspondent change between the two time periods, before and after the outbreak of COVID19. In the chapter 5.3 there will be statistical tests in order to actually assess numerically the difference of the computed variables between the two time periods.

Reliability of Elements of Variables

To begin with, the reliability of the computed variables need to be assessed in order to be considered as accepted for our model. Those variables will be passed though Cronbach Alpha via the PSPP statistical tool. A value of 0.70 in Cronbach Alpha is considered as accepted and an internal validity is derived (Tavakol & Dennick, 2011). The computed variables are categorized by the 4 previously discussed elements while separated in pre-COVID19 (PCV initials) and after-COVID19 (ACV initials). Hence the results:

Table No7 Cronbach Alpha Reliability Ratio Value

Computed Variables	**Cronbach Alpha Value**
Design.PCV (100 responses) Design Features Pre-COVID19 as per user	0.73
Design.ACV (100 responses) Design Features After-COVID19 as per user	0.72
Functionality.PCV (80 responses) Functionality Features Pre-COVID19 as per user	0.69
Functionality.ACV (80 reponses) Functionality Features After-COVID19 as per user	0.38
Payment.PCV (100 responses) Trust in Payment Method pre-COVID19 as per user	0.71

Payment.ACV (100 responses) Trust in Payment Method After-COVID19 as per user	0.71
Comm.Transp.PCV (100 responses) Transparency in Communication pre-COVID19 as per user	0.70
Comm.Transp.ACV (100 responses) Transparency in Communication After-COVID19 as per user	0.75

Dismantling the table 7, we can say that all the computed variables are internally validated and accepted, but not all elements and features of the variables managed to pass the Cronbach alpha Value. Regarding the Design features of the commercial websites, the kept for statistical purposes elements both in pre and after – COVID19 state are the following:

1. The procedure of buying via those websites is easy to learn / memorize.
2. The basic functions are easy to cope on the next time you enter.
3. There are enough interface support features in the websites that you visited to help you out perform tasks.
4. You enjoy buying from those certain websites.

With the Cronbach alpha ratio above 0.70 in both time periods, we consider it as acceptable therefore our model accepts the elements of this variable in order to form a computed variable before and after COVID19 (.pcv and .acv)

Regarding the Functionality features of the commercial websites, the potentially kept for statistical purposes elements both in pre and after-COVID19 state would be the following:

1. Those websites provide you a correspondent set of functionality features that help you carry out all the tasks you want.
2. The internal links inside the website help you navigate better.

With the Cronbach alpha ratio below 0.70 in both time periods, we consider it as questionable therefore our model cannot accept the elements of this variable in order to form a computed variable before and after COVID19 (.pcv and .acv)

Regarding the Trust in Payment Method features of the commercial websites, the kept for statistical purposes elements both in pre and after-COVID19 state are the following:

1. Those websites transfer you to the bank's safe transaction environment when you reached the payment section.
2. Those websites showcase their cooperation with certain credit card companies (e.g. Visa, MasterCard, American Express)
3. Those websites provide other payment methods except for credit cards (e.g. bank transfer, PayPal)

With the Cronbach alpha ratio above 0.70 in both time periods, we consider it as acceptable therefore our model accepts the elements of this variable in order to form a computed variable before and after COVID19 (.pcv and .acv)

Regarding the Transparency in Communication features of the commercial websites, the kept for statistical purposes elements both in pre and after-COVID19 state are the following:

1. Those websites use SSL Certificates.
2. You consider those websites' features visible enough to know what to do next.
3. Those websites provide you with an email for every task you perform (e.g. subscription, product acquire).
4. Those websites inform you clearly for every potential extra charges that might occur (e.g. transportation charges).
5. Those websites (in their majority) show you permanently your buying cart.

With the Cronbach alpha ratio above 0.70 in both time periods, we consider it as acceptable therefore our model accepts the elements of this variable in order to form a computed variable before and after COVID19 (.pcv and .acv)

Model Development

Hereby our tested model will be analyzed bearing in mind the Cronbach alpha ratio. Throughout our testing, there is a certain constant differentiation which eventually helps our model indicate changes and reach certain conclusions. This constant is the time period differentiation categorizing the answers given to those before the outbreak and to those after the outbreak. All the elements of the four variables (Design, Functionality, Trust in Payment methods and Transparency-Communication) are conducted to our sample comparing the two time periods. All four variables lead to consumers' satisfaction from their e-commerce experience. Consequently, the model is testing the level of such satisfaction between the two time periods. In this direction, computed variables are developed by their correspondent elements which are examined for their reliability. Unfortunately the elements to compute a Functionality variable did not meet the requirement ratio despite the fact that features of Functionality are factors of consumer satisfaction in e-commerce, as previously analyzed in a great scale in the literature review chapter.

Computed Variables

That leaves us with three computed variables between the two time periods (Design, Trust in Payment methods and Transparency-Communication). The elements (questions of the questionnaire) that combined, result in an acceptable Cronbach alpha ratio for each variable to be computed, are shown as following in the second column of the table No9. These elements are reliable enough for both time periods and that is an additional layer of statistical importance in our model.

Table No8 Reliable Elements used to construct/compute Variables

Computed Variables	Reliable Elements to be computed
Design (before & after COVID)	The procedure of buying via those websites is easy to learn / memorize.
	The basic functions are easy to cope on the next time you enter.
	There are enough interface support features in the websites that you visited to help you out perform tasks.
	You enjoy buying from those certain websites.
Trust in Payment Methods (before & after COVID)	Those websites transfer you to the bank's safe transaction environment when you reached the payment section.
	Those websites showcase their cooperation with certain credit card companies (e.g. Visa, Mastercard, American Express)
	Those websites provide other payment methods except for credit cards (e.g. bank transfer, PayPal).
Transparency - Communications (before & after COVID)	Those websites use SSL Certificates
	You consider those websites' features visible enough to know what to do next

	Those websites provide you with an email for every task you perform (e.g. subscription, product acquire)
	Those websites inform you clearly for every potential extra charges that might occur (e.g. transportation charges)
	Those websites (in their majority) show you permanently your buying cart

Compute – Construction of Variables

Having our variables computed and bearing in mind the fact that we need to perform a measurement in two different time periods, it is advised to use paired samples T-Test (Williams & Quave, 2019). The outcome will determine whether the means between the two computed variables are significantly other than zero. The outcome will also be tested with the hypotheses created. The measurement, as shown in cluster table No10, consequently occurs for:

1. Design.PCV (pre-COVID) – Design.ACV (after-COVID)
2. Payment.PCV (pre-COVID) – Payment.ACV (after-COVID)
3. Comm.Transp.PCV (pre-COVID) – Comm.Transp.ACV (after-COVID)

As previously stated, the variable of Functionality is left out since none of the constructive variables passed the Cronbach Alpha ratio. Therefore, the model cannot integrate either this variable or its correspondent hypotheses for the two time periods (before and after the outbreak of COVID).

Hypotheses Testing

Before analyzing the 3 hypotheses (reminding that one variable is left out), a paired sample correlation test is used for the pairs of the computed variables between the two time periods. All 3 pairs, as shown in cluster table No10, are observed to be correlated regarding the satisfaction of e-commerce during the outbreak of the virus. A strong correlation is considered with a value of $r > 0.7$ (Baringhaus & Gaigall, 2017) while any value between $0.5 < r < 0.7$ is considered moderate. In our model, all pairs indicate a strong correlation with their respective values to be at the level of 0.747, 0.934 and 0.955.

H1. *Features regarding the Design of commercial websites have changed positively because of COVID19.*

According to cluster table No10, H1 is denied since the sign of the T test is positive. This means that features regarding the Design of commercial websites have worsened after the outbreak of the virus with quite a significant value of 2.54 which indicates a potential neglect from commercial websites. This conclusion is one essential factor drawn by the sample. Certain elements like easiness of operations and purchase enjoyment contributed to this decline and deterioration of the Design variable between the two time periods.

H3*. Features regarding the Trust in Payment Method have changed positively because of COVID19*

According to cluster table No10, H3 is accepted since the sign of the T test is negative. This means that features regarding the Payment Method of commercial websites have ameliorated after the outbreak of the virus with small value of (+) 0.13 which indicates that commercial websites have taken into consideration features of their online payment procedures and have not neglected them. This conclusion drawn from the sample of Thessaloniki indicates that there is still big focus on the Business to Client relation (B2C) in terms of payment providing a safe environment. Certain elements like online safe payment environment and showcasing collaborating credit card companies are still on the spot and are considered important both for clients and businesses.

H4. *Features regarding the Transparency – Communication have changed positively because of COVID19.*

According to cluster table No10, H4 is accepted since the sign of the T test is negative. This means that features regarding the Transparency and Communication of commercial websites have improved after the outbreak of the virus with a small value of (+) 0.15 which like H3 hypotheses indicate that those features have been neglected neither by consumers nor by the owners of the websites. Certain elements like mailing every operation conducted by the user, having the website protected and pertained to SSL Certificates and constant showcasing of the shopping cart in order to avoid misunderstandings of any potential extra charges are on the same level of importance both for our sample as their answers indicate and for the commercial websites as the sample's preferences show

Cluster Table No9 Paired Sample T-test

```
T-TEST
    PAIRS =  Design.PCV Payment.PCV Comm.Transp.PCV WITH  Design.ACV Payment.ACV Comm.Transp.ACV (PAIRED)
    /MISSING=ANALYSIS
    /CRITERIA=CI(0.95).
```

Paired Sample Statistics

		N	Mean	Std. Deviation	S.E. Mean
Pair 1	Design.PCV	100	14,89	1,80	,18
	Design.ACV	100	12,35	1,47	,15
Pair 2	Payment.PCV	100	9,44	1,36	,14
	Payment.ACV	100	9,57	1,47	,15
Pair 3	Comm.Transp.PCV	100	15,43	1,63	,16
	Comm.Transp.ACV	100	15,58	1,74	,17

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Design.PCV & Design.ACV	100	,747	,000
Pair 2	Payment.PCV & Payment.ACV	100	,934	,000
Pair 3	Comm.Transp.PCV & Comm.Transp.ACV	100	,955	,000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	S.E. Mean	Lower	Upper			
Pair 1	Design.PCV - Design.ACV	2,54	1,20	,12	2,30	2,78	21,15	99	,000
Pair 2	Payment.PCV - Payment.ACV	-,13	,53	,05	-,23	-,03	-2,48	99	,015
Pair 3	Comm.Transp.PCV - Comm.Transp.ACV	-,15	,52	,05	-,25	-,05	-2,89	99	,005

Conclusions – Further Research –Managerial Implications & Limitations

In this final chapter, there will firstly be an interpretation of the results and deductions. Secondly, there will be space for presenting further research and strategies that can be developed for achieving more concrete and precise results. In the last part of the chapter, there will be a short report of the current implications of this project and the limits that this model faced.

Conclusions

Summarizing this endeavor to scope the effects of the pandemic on the e-commerce in Thessaloniki, the model has given diverse results on multiple variables. Having tested certain young age group (25-40 years old), the results showed not only the constant connection of the participants with the Internet but also their monthly expenditure before and after the pandemic. Moreover, the majority of them stated the exact time during a day of their expenditures and their total time being online which was 5 hours. The participants were all residents of Thessaloniki and stated their local residence in the city. Combining several models from the literature review, this tested model consisted of many different elements that lead up to electronic satisfaction from e-commerce. The tested variables of Design, Functionality, Payment Method – Trust and Communication – Transparency of commercial websites have been affected between the two time periods. Unfortunately, the variable of Functionality was not reliable enough to continue its exploitation. The variable of Design has shown a substantial decline and neglecting from the commercial websites' part. The remaining two variables have shown a slight increase over time. An analyzation of this fluctuation can lead to several deductions bearing in mind the certain computed elements of each of the three variables. Despite the low levels of money expenditure of this age group compared to other European countries, participants indicated a detailed overview of what they observe when buying online and just window shopping. This may be happening due to the general Greek environment lacking stability and to the uncertainty that pandemic brought.

Further research & Managerial Implications

The sudden, unprecedented and radical reshaping of e-commerce due to the virus outbreak indicates the huge potential of this area of economics. As literature reviews extendedly suggest that not all part of online buying and selling have been brought to investigation, the same must be stated in this tested model on this current sample. Not only must this model be tested in a larger group, but also on much more elements of those four big variables (Design, Functionality, Payment Method and Transparency – Communication). There can even be an adaptation of this model immerged with WebQual proposed by Loiacono or eTailQ proposed by Wolfinbarger and Gilly since the variables tested are derivatives from their original theoretical models. The model indicates connections both between the payment method and the online buyers' perceived risk and between the communication and the clear messages and information the commercial website gives to the buyers. Furthermore, since COVID19 has hit Greece proportionally like other big European countries, such investigations should be conducted in other big cities of the country such as Athens, Patra and Heraklion in order to achieve a better and more qualified sampling level.

In spite of the interesting and comprehensive outcome and deductions that this model produced, bearing in mind the aforementioned potential follow ups, there were some serious limitations. To begin with, the questionnaire was distributed during the outbreak of the lockdown therefore the physical distribution was not an option. The questionnaires were shared only in digital form depriving the ability to qualitative research that would definitely bring more concrete and precise answers and therefore conclusions. The lockdown of the residents of Thessaloniki complicated the procedure of filtering the sample and even gather a larger amount of participants. In addition to that, the timeframe of this project was short leaving small periods for observing, gathering, filtering, setting up and summarizing all the data gathered in order to produce and obtain useful information. A more qualified and larger amount of participants and responses may have led to finest outcomes such as a bigger variation in terms of the Internet Usage profile of the participants or a more structured demographics or even better reliability of our tested variables to compute better results.

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Appendix – Questionnaire

Προφίλ Καταναλωτή					
Πόσο συχνά χρησιμοποιείτε το Διαδίκτυο;		Καθημερινά	2-3 φορές την εβδομάδα	4-5 φορές την εβδομάδα	
Πόση ώρα είστε συνδεδεμένος/η κατά προσέγγιση στο Διαδίκτυο;		<2 ώρες ανά χρήση	<5 ώρες ανά χρήση	>5 ώρες ανά χρήση	
Για ποιο λόγο χρησιμοποιείτε το Διαδίκτυο?					
Τι ώρες συνήθως μέσα στην ημέρα επισκέπτεστε κάποια εμπορική ιστοσελίδα για να πραγματοποιήσετε τις αγορές σας;		8πμ – 12πμ	12πμ – 4μμ	4μμ – 8μμ	8μμ – 12μμ
Τι ποσό δαπανάτε σε αγορές ανά μήνα κατά προσέγγιση μέσα από το Διαδίκτυο πριν και μετά τον COVID19;		0-500	501-800	801-1000	>1000
Πριν COVID19					
Μετά COVID19					
	Διαφωνώ Τελείως	**Διαφωνώ**	**Ούτε Διαφωνώ/ Ούτε Συμφωνώ**	**Συμφωνώ**	**Συμφωνώ Τελείως**
Σχεδίαση Εμπορικών					

Ιστοσελίδων που έχετε επισκεφτεί					
Βρήκατε το προϊόν που ψάχνατε μέσα στην ιστοσελίδα σε λιγότερο από 4 clicks.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες προτείνουν διαφορετικά προϊόντα κάθε φορά που εισέρχεστε (Δυναμική Αρχική Σελίδα)					
Πριν COVID19					
Μετά COVID19					
Η διαδικασία της αγοράς προϊόντων στις συγκεκριμένες ιστοσελίδες είναι ευκολομνημόνευτη.					
Πριν COVID19					
Μετά COVID19					
Οι βασικές λειτουργίες είναι εύκολα διαχειρίσιμες κάθε					

φορά που επισκέπτεστε τις συγκεκριμένες ιστοσελίδες.					
Πριν COVID19					
Μετά COVID19					
Υπάρχουν αρκετά χαρακτηριστικά υποστήριξης στο περιβάλλον των συγκεκριμένων ιστοσελίδων για να σας βοηθήσουν να εκτελέσετε τις ενέργειες που θέλετε.					
Πριν COVID19					
Μετά COVID19					
Απολαμβάνετε τις αγορές σας από τις συγκεκριμένες ιστοσελίδες.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες σας παρακινούν να τις μοιραστείτε με τους φίλους ή την οικογένεια σας.					

Πριν COVID19					
Μετά COVID19					
Λειτουργικότητα των εμπορικών ιστοσελίδων που έχετε επισκεφτεί					
Ο χρόνος φόρτωσης των συγκεκριμένων ιστοσελίδων είναι περιττός ή μεγαλύτερος από αυτόν που υποθέσατε.					
Πριν COVID19					
Μετά COVID19					
Αισθανθήκατε περιορισμένος/η όταν θέλατε να "αναιρέσετε" μία ενέργεια σας στις συγκεκριμένες ιστοσελίδες.					
Πριν COVID19					
Μετά COVID19					
Οι εσωτερικοί σύνδεσμοι μέσα στις συγκεκριμένες ιστοσελίδες σας βοήθησαν να					

περιηγηθείτε ευκολότερα.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες προσφέρουν ρομπότ συνομιλίας (chat bots) για καλύτερη εξυπηρέτηση πελατών και επίλυση προβλημάτων.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες προσφέρουν επεκτάσεις προς Μέσα Κοινωνικής Δικτύωσης (π.χ. Facebook, Instagram, Twitter, Pinterest κ.α.)					
Πριν COVID19					
Μετά COVID19					
Τρόποι πληρωμής στις εμπορικές					

ιστοσελίδες που έχετε επισκεφτεί					
Οι συγκεκριμένες ιστοσελίδες σας μεταφέρουν στο ασφαλές διαδικτυακό περιβάλλον συναλλαγής της Τράπεζας που ανήκει η χρεωστική / πιστωτική κάρτα σας.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες αναδεικνύουν την συνεργασία τους με συγκεκριμένες εταιρίες χρεωστικών / πιστωτικών καρτών (π.χ. MasterCard, VISA, American Express κ.α.)					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες προσφέρουν και άλλους τρόπους πληρωμής εκτός					

από χρεωστική / πιστωτική κάρτα (π.χ. διατραπεζική μεταφορά, PayPal κ.α.)					
Πριν COVID19					
Μετά COVID19					
Αισθάνεστε πως μπορείτε να εμπιστευτείτε την πλειοψηφία των ιστοσελίδων που χρησιμοποιείτε όσον αφορά την διαδικασία πληρωμής.					
Πριν COVID19					
Μετά COVID19					
Διαφάνεια & Επικοινωνία στις ιστοσελίδες που έχετε επισκεφτεί					
Οι συγκεκριμένες ιστοσελίδες χρησιμοποιούν πρωτόκολλα προστασίας (ή αλλιώς SSL Certificates).					
Πριν COVID19					
Μετά COVID19					

Τα χαρακτηριστικά των συγκεκριμένων ιστοσελίδων είναι αρκετά σαφή ώστε να ξέρετε πώς να κινηθείτε σε κάθε βήμα.					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες αποστέλλουν ηλεκτρονικό μήνυμα (e-mail) για κάθε ενέργεια που πραγματοποιείτε (π.χ. συνδρομή/εγγραφή μέλους, αγορά προϊόντος)					
Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες σας ενημερώνουν με σαφή τρόπο για τυχόν έξτρα χρεώσεις που ενδέχεται να γίνουν (π.χ. Μεταφορικά έξοδα)					

Πριν COVID19					
Μετά COVID19					
Οι συγκεκριμένες ιστοσελίδες προβάλλουν μόνιμα το καλάθι αγορών σας.					
Πριν COVID19					
Μετά COVID19					
Δημογραφικές Ερωτήσεις					
Φύλο		Άνδρας	Γυναίκα		
Ηλικία	25	26	…	39	40
Εκπαίδευση	Δευτεροβάθμια Εκπαίδευση	Τριτοβάθμια Εκπαίδευση	Κάτοχος Μεταπτυχιακού Τίτλου	Κάτοχος Διδακτορικού Τίτλου	
Κατοικία στην Θεσσαλονίκη		Δυτική Θεσσαλονίκης	Ανατολική Θεσσαλονίκη		
Μηνιαίο Εισόδημα	<500€	<800€	<1000€	>1000€	>1500€
Παράρτημα Εννοιών					