Socio-demographic Tourist Profile and Destination Image in Online Environment

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Abstract—**This paper discusses the impact of tourist's socio-demographic characteristics on destination image formation process in the online environment specifically on the web. The goal is to analyse the influence of personal factors of tourists in different destination image components by inducing stimuli such as multimedia and information mediated by the web. Literature review on destination image in digital age has been done to examine the existing measurements on image formation and the advances in online environments. A three-dimensional destination model including cognitive affective and overall image was performed. The study evaluates the relationship between the dependent variables gender, age, marital status, education level, employment status and incomes, involving the destination image formation using several statistical tests appropriate to the type of data and sample distribution. Exploratory and confirmatory analyses were used to identify the perceived image measurement scales in a virtual environment. The results indicate that some socio-demographic characteristics influence the perception of destination image in virtual environment. Hence, the destination marketing organization (DMOs) has to pay attention of market segmentation in its marketing strategies.**

Index Terms—**destination image, Virtual tourism experience, Internet destination Marketing**

I. INTRODUCTION

Tourism is a dynamic economic activity where tourist products play an important role and should be presented with special care to potential consumer tourists. The tourism industry and tourist destinations sector have suffered changes due to globalization and competitive markets. Consequently, the tourism consumer behaviour attends these changes adapting to the new communication and commerce practices driven specifically by the innovations of technology in the sector [1], [2].

From that perspective the tourist destination must be conceived as brand that has to be skilfully managed from the point of view of marketing strategies.

The image of destinations has a critical factor in the success of the tourist destination marketing as it allows to form a mental image through a set of attributes that define the destination in all dimensions and exert a strong influence on consumer behaviour in the tourism sector. A positive and strong image of the destination results from a set of induced factors, in particular through information sources from various media. Currently, technological advances and the development of powerful multimedia features available through the web is possible to provide the tourist a pre-visit experience, which contributes to build a destination image similar to real visit (strong coherent, distinctive and recognizable) and satisfaction of the experience and desire to actually visit the destination.

The destination image contributes significantly to understand how people evaluate and act towards destinations, and consequently to develop the potential pull of a destination besides contributing to increase the satisfaction of the experience and desire to visit the destination in real. [3], [4], [5], [6].

Although there are many studies on destination image, few relate specifically to the new realities and focus on image formation based on online information sources and the personal and individual characteristics. In this article, we will focus on the relationship between the perceived image of the destination in the virtual environment and the socio-demographic characteristics including gender, age, marital status, education level, employment status and incomes.

This paper approaches the impact of the internal characteristics of tourists like socio-demographic profile, in the virtual destination image. The study is set in online tourism marketing context, more specifically in destination image formation process in the online environment, mediated by the information carried by the web. Through on empirical research applied to a representative sample of potential tourists who visited the official tourism website of the Canary Islands, Spain, the influence of tourists socio-demographic characteristics on destination image three-dimensional model has been analysed.

The paper focuses on the relationship between the perceived image destination and tourist's socio-demographics characteristics.

II. THEORETICAL BACKGROUND

A. Destination Image Measurement and Formation Model

In the literature many authors refer to destination image construct as a concept been widely studied but without a solid conceptual framework [7], [8]. Most authors [9], [10], [11], consider that the destination image is formed by rational and emotional interpretation of the consumer identifying three basic dimensions of image formation: 1) cognitive dimension/cognitive perception, which refers to knowledge and beliefs about the fate and 2) affective dimension/effective perception that refers to personal or individual feelings about the destination and 3) overall dimension, refers to global impressions of a destination.

The dimension cognitive and affective factors are also reported in recent studies that focus on particular image of virtual destinations [12].

The literature review is consensual about this: the cognitive component is an antecedent of affective component and the behavioural responses of consumers towards the destination [13]. In addition, the combination of the cognitive and affective image components results in the overall destination image, i.e. in the positive or negative assessment of the tourism product.

The literature review also shows that there are a wide number of studies on the measurement scales used in the field of destination image formation. A variety of methodologies used resulted on the heterogeneity of the measures, however we highlight the researches of [9],[14] because they are the few studies that have reliability and validity of the measurement instruments. As such, scales were selected highly valid and reliable scales based on high load factor grounded on studies using an empirical approach and based on quantitative methods. Therefore, we analysed a number of previous studies which have reliable and valid measures in order to extract a set of factors that allow to precisely measuring the destinations in virtualized image or virtual environment.

The attributes considered relevant for this study were selected according to the attractions and nature of destination, its positioning, and on the objectives of the assessment of perceived image in online environment, based on a wide range of variables collected from the literature [4], [5], [8], [9], [15], [16], [17]. These particularities of the destination will also determine whether specific or more general attributes are chosen. In most cases the formation and measurement image destinations were grouped into seven main categories: General infrastructure, Tourist infrastructure, Leisure and entertainment, Environment factors, Social factors, Cultural, historical and artistic factors and Political and economic factors. Table I summarizes the dimension and their indicators mentioned in the literature as determinants for image formation of tourism.

TABLE I. DIMENSIONS AND ATTRIBUTES FOR THE DESTINATION IMAGE PERCEPTION USED IN PREVIOUS STUDIES

DIMENSIONS	ITEMS
General Infrastructures	Public and private transport Telecommunications Commercial infrastructure Extent of buildings development
Tourist Infrastructures	Hotels Restaurants Bars and nightclubs Ease of access to destination Tours on destination Availability of many tour packages in/to destination Tourist offices
Environment	Beauty of the scenery and landscape Nature Beauty of cities and towns Climate Beaches, sea and sun Natural scenery Variety of fauna and flora Cleanliness Pollution Traffic Crowding and overcrowding of space
Social	Hospitality and friendliness of local Quality of life Language barrier
Culture, History and Art	Heritage (museums, monuments, ...) Festivals, concerts, ... Gastronomy Dances Handicraft Religion Customs and ways of life
Political and Economic	Political stability Political tendencies Economic development Technological development Safety Prices / Cost of living
Leisure and recreation	Theme parks Recreation activities and sports Night life

Literature refers that potential tourists' destination images are formed by two main components: cognitive and affective [9],[11]. The cognitive component refers to the individual's and personal knowledge and beliefs about the destination, and the affective component is associated with emotions and feelings about a destination. The affective component includes semantic opposites (antonyms such as unpleasant vs. pleasant or exciting vs. relaxing), for example, represented by the bipolar dimensions [18].

B. Socio-demographic Factors Influence on On-line Destination Image Formation

The model of decision process in tourism destination includes the individual and personal characteristics, namely gender, age, marital status, education level, employment status and incomes and many studies emphasize the influence of these factors on the perceptions of destinations [19].

Some empirical researches identify differences in the perceived image depending on socio-demographic characteristics [5], [9].

Beerli & Martín [6] found statistically significant differences with socio-demographic factors and factors that explained the destination image. They concluded that there is a significant, but moderate, relationship between the affective and cognitive components of image and the

socio-demographic characteristics related to gender, age, level of education, and social class.

According to Gunn [19], the destination image formation following multi stages including the accumulating mental images forming - organic image; modifying the initial image through commercial information - induced image; deciding to visit destination; visiting the destination; sharing opinions information about destination; modifying the image based on the experience.

The destination formation image is a complex process, in which tourists develop a mental representation constructed by a few selected impressions recollected from a high amount of impressions (Echtner & Ritchie, 2003). These first impressions are based in information espoused from non-tourist, non-commercial sources which contribute to the formation of the organic image, such as media (news reports, magazines, books, and videos), education (school courses) and the opinion of family or friends [19].

On the other hand, the formation image process involves the induced image provided by the commercial information derive from a conscious effort from travel and businesses agents (e.g. advertising literature, magazine articles, guidebooks, television promotion, travel tour packages). In this context, tourism marketing plays a critical role in the formation of the tourist's destination-induced image. The organic image is beyond the control of the destination area, the induced image is directed by the destination's marketing efforts, carrying with it great attention, in order to communicate and promote the destination from travel agents and DMOs.

Stern & Krakover [13] proposed a model where the formation destination image is influenced from different sources, and by the individual characteristics. The individual factures affects the relationship between perceived images and reflects on the overall image.

This research investigates the influence of personal factors refering to socio-demographics characteristics of the individual, such as gender, age, marital status, education level, employment status and incomes [8]. The personal factors affect the cognitive evaluation and therefore also influence the overall perceptions.
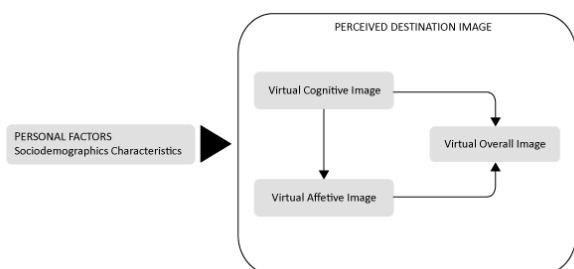

Figure 1.   Model of the Formation of Perceived Virtual Destination Image influenced by socio-demographic characteristics

III.   HYPOTHESES FORMULATION

In this session the hypotheses for the empirical study are formulated based the literature analysis.

H1. Gender significantly influences the cognitive and affective components of the perceived image.

H2. Age significantly influences the cognitive and affective components of the perceived image.

H3. Level of education significantly influences the cognitive and affective components of the perceived image.

H4. Marital status significantly influences the cognitive and affective components of the perceived image.

H5. Employment status significantly influences the cognitive and affective components of the perceived image.

H6. Incomes significantly influence the cognitive and affective components of the perceived image.

IV.   METHODOLOGY/RESEARCH METHOD

Literature review on destination image in digital age has been done to examine the existing measurements on image formation and the advances in online environments. The empirical research was concluded using representative sample submitted to a virtual visit destination experience on DMO website tourism destination – Canary Island Tourism.

The study evaluates the relationship between the dependent variables gender, age, marital status, education level, employment status and incomes involving the destinations image formation, using several statistical tests appropriate to the type of data and sample distribution.

To make decisions about the statistical test to be used to verify the influence of socio-demographic factors on the destination image formation, it was verified if the dependent variables, in this case the variables related to the destination image, have normal distribution. The assumption of normal distribution of virtual destination image variables was evaluated using the Kolmogorov-Smirnov test. The test provided $p < 0.05$, in most cases with values $p < 0.01$, so, that it does not verify the normality assumption. It was then determined using non-parametric tests for analyzing the influence of socio-demographic factors on the virtual cognitive, affective and overall destination image.

To assess whether the socio-demographic factors significantly affect the virtual destination image perception, first was used to the Kolmogorov-Smirnov test, followed by the Wilcoxon-Mann-Whitney test for gender and Kruskal-Wallis test for the remaining socio-demographic items when there are differences statistically significant.

The statistical analyses presented in the results section were performed with SPSS software (v. 21, SPSS Inc, Chicago, IL).

A.   Data Collection and Sample

The research was concluded using representative sample of Portuguese individuals, potential tourists, who use the Internet for travel information search, over 18 years old, since they are a relevant target group of the study.

To carry out this research, a personal survey was conducted by means of a structured questionnaire on potential tourists who visited the DMO website of Canary Islands a popular destination in Spain, the fourth country most visited in the world according UNWTO[1] .

The web site target of the study was selected through a previous study and a 'sun and sand' destination, the Canary Islands was chosen [20].

The questionnaire was active from April to June 2015. The participants were instructed to carefully look at the website multimedia features and experiment the virtual tour 360° and see more about the vacation destination provided as if they were looking for information for a next vacation.

A sample of 381 potential tourists was determined using the most conservative estimate for a single proportion (0.5), a confidence level of 95% and a margin error of 5%.

B. Measurements and Scales

To measure the perception of cognitive destinations image study was based on scales of [6],[12],[18],[21][23].

To measure the affective image component was used a semantic differential 7 point scale of five emotional attributes. The scale of virtual affective image construct results from a single question with a semantic differential item that is used to estimate this unobservable latent variable directly, according to [9],[5]. The question "After visiting the site and carry out the virtual tour experience, how is regarded the image of the destination?", aims to capture the level of affective feelings that the participant has after visiting the Destination Marketing Organization Canary Islands website. This previous studies provides items such as measures of affective destination image, based on semantic differential of 7-point scale: boring-fun, exciting-depressing, nasty-nice, stressing- relaxing, artificial-authentic.

Finally, the overall image was measured with three items with a semantic differential 7 point scale whose extreme values are extremely positive-extremely negative, unfavourable-favourable and bad-good [9], [12]. Also, Griffith & Chen, [22] measure overall impressions of a product promoted by online advertising with semantic differential scales: bad-good, unsatisfactory- satisfactory and unfavourable-favourable.

Although, in most studies is used a scale with only 1 item, we decided to opt for the use of 3 items to enhance this factor in assessing the destination after performing a virtual experience.

In addition, socio-demographic characteristics were included which, according to the literature, can affect the image formation. These variables refer to gender, age, marital status, education level, employment status and incomes.

The items used can be seen in section 5, Table III, which shows the exploratory factor analysis of the virtual cognitive destination image scale.

V. RESULTS

A profile of the sample is shown in Table II. Table II contains some socio-demographic data with tourism destination website of respondents. The sample age range is predominantly between 18-49 years old (ranging from 18 to +70) and the majority of respondents were in the 21-29 year old group with 32.3%. A large percentage of the participants were females (68.5.1%). In the educational level, higher school stands out with high percentage (73.5%).

The purpose of principal components analysis and varimax is to reduce data and identify the number of components as an exploratory method. The exploratory measures of cognitive image and affective image will be analysed.

TABLE II. SAMPLE PROFILE

Characteristic	Distribution of answers
Gender	Male: 31.5 %; Female: 68.5%
Age	18-20: 11.5%; 21-29: 32.3%; 30-39:29.4%; 40-49: 19.2%; 50-59: 6.3%; 60-69: 0.8%; +70: 0.5%
Education level	Basic School: 0.3%; Grade School: 26.2%; Higher School: 73.5%
Marital status	Single: 59,6%; Married: 28,3% ; Living with partner: 7.1%; Divorced or widowed: 5.0%
Employment status	Student: 8.1%; Self-employed: 58.8%; Employed Worker for others: 29.7%; Unemployed: 2.4%; Retired: 1.0%
Incomes.	Without income: 26.0%; Low income: 20.2%; Middle income: 36.2%; Higher income: 17,6%

To assess the validity of the Exploratory Factorial Analiys and regarding appropriateness of the factoring model was used the criterion KMO according to Sharma (2006) [24]. It was found a KMO = 0.937 indicating appropriateness for factoring: Bartlett's test of sphericity $(X2 = 5100,435; df=120; p<. 000)$ (see Table III).

Cognitive image was factored into two components, named "Virtual Cognitive Image - Artificial Attributes"(Factor 1) and "Virtual Cognitive Image – Natural Attributes" (Factor 2). The first component arises from twelve measures: IC3, IC4, IC5, IC6, IC7, IC8, IC9, IC12, IC13, IC14, IC15, e IC16, while the second arises from four measures: IC1, IC2, IC10 e IC11. The eigenvalues of the two components were 9.256 and 1.704, respectively, accounting for 58,996% of the total variance.

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[1] World Tourism Organization

TABLE III. FACTOR ANALYSIS OF VIRTUAL COGNITIVE DESTINATION IMAGE

Factor	Item	Communality	%Variance Explained	Initial Eigenvalues	α	Loading
F1 VCI-AA	IC3 - Historical Heritage	,807	57,850	9,256	0,952	,584
	IC4 - Hospitality and friendliness	,791				,817
	IC5 - Infrastructure, transport and services	,534				,825
	IC6 - Quality of Life	,720				,649
	IC7 - Prices	,731				,817
	IC8 - Different customs and cultures	,609				,799
	IC9 - Evening activities and entertainment	,691				,746
	IC12 - Tourism Recreation and sports activities	,716				,584
	IC13 – Security	,645				,817
	IC14 - Events Festivals and Concerts	,716				,825
	IC15 - Gastronomy	,638				,649
	IC16 - Customs and ways of life	,618				,817
F2 VCI-NA	IC1 – Landscape	,681	10,878	1,740	,879	,881
	IC2 - Natural environment	,679				,871
	IC10 - Beaches sun and sea	,710				,808
	IC11 – Climate	,711				,689
	KMO	=,937				
Bartlett's Test of Sphericity	Chi-Square(X²) = 5100,435		df = 120	p <,000		

VCI-AA – Virtual destination cognitive image Artificial attributes;
VCI-NA – Virtual destination cognitive image Natural attributes

The communalities of all measures exceeded 0.5. All factor loadings were larger than 0.5. Reliability of each component reached the acceptable level (larger than 0.80) by showing Factor1 (0.952) and Factor2 (0.879), which provides evidence of internal consistency. As a result, no measures were deleted.

TABLE IV. FACTOR ANALYSIS OF AFFECTIVE DESTINATION IMAGE

Factor	Item	Communality	% Variance Explained	Initial Eigenvalues	α	Loading
	IA1 boring-fun	,692				,832
AI	IA2 exciting-depressing	,818				,904
Affective Image	IA3 nasty-nice	,849	76,736	3,837	0,923	,921
	IA4 stressing-relaxing	,828				,910
	IA5 artificial-authentic	,649				,806
		76,736 %			,923	
	KMO	= ,861				
Bartlett's Test of Sphericity	Chi-Square(X2) = 1537,994		df = 10	p <,000		

The method used to measure the affective component was a bipolar 7-point semantic differential type scale made up of the two emotional attributes that are needed to adequately represent the affective space of image, on the basis of the empirical works of Russell, Ward, & Pratt (1981). Table IV shows the results of the reliability analysis of the affective image measure model.

To test the influence of socio-demographic characteristics on virtual cognitive and affective image components was used non-parametric tests: MannWitney) and KruskalWallis.

A. Virtual Cognitive, Affetive and Overall Image – Gender

The hypothesis that men and women have significantly different scores in relation to variables that measure the cognitive, affective and overall image is evaluated by the test Mann-Whitney.

With respect to the relationship between gender and perceived image, there is a statistically significant relationship between gender and the only item of cognitive image factor related to the artificial attributes.

Being p=0.022 <α= 0, 05 H0 reject concluding that the scores of the variable IC3- Heritage (museums, monuments, ...)"are significantly different in the two genders: male and female.

The female gender has the highest scores, meaning that women value this cognitive factor more than men, i.e. the females give more importance to cultural and historical factors than males.

The reminding variables have not recorded statistically significant differences between gender and other items related to cognitive virtual image. Likewise, there were no statistically significant differences between gender and the items related to the affective image and global image.

Therefore, Hypothesis 1, which states that gender significantly influences the perceived image, is confirmed, though very partially.

B. Virtual Cognitive, Affetive and Overall Image - Age

To test whether there are significant differences between cognitive image classification - variable measured in ordinal 7-point scale: 1 very negative, 7- doing exceptionally positive - and the different age groups, we used the nonparametric Kruskal-Wallis. After was performed one-way ANOVA test on the variables of the ranks of cognitive image as dependent variables and regrouped age as a factor and then evaluated the multiple comparison of the means of ranks using the Post-Hoc Tukey HSD test.

The age groups were regrouped because there were verified reduced frequency values in the age over 50 years. In the age groups 60-69 and over 70 years the percentage of respondents is rather small (less than 1%), so we gathered a new variable that brings together the respondents over 50 years.

The results reveal that the virtual cognitive destination image includes variables that are influenced by age, such as the cases: IC4- "Hospitality and friendliness," IC5- "Infrastructure, transport and services," IC6- "Quality of Life", IC8 - "Different customs and cultures," IC9-

"Evening activities and entertainment," IC10- " Beaches, sun and sea" IC12- "Tourist Recreation and sports activities", IC13- "Security", IC14- "Events Festivals and Concerts, and IC16- " Customs and ways of life". That is, the distribution of cognitive image values, differs significantly from the distributions seen in at least one of the age groups with p values <0.0,5.

According to the analysis, the age group of 18-20, has a distribution significantly different image classification of other age groups, and at this age are observed the highest levels of classification, i.e. are young people who evaluate more positively the attributes of cognitive image, such with IC4, IC6, IC8, IC12, IC14 and IC16. 5

Generally the young people are the ones who value more favourably variables that measure the cognitive destination image in the online environment, in particular the dimensions of artificial attributes. With regard to natural attributes, there are no statistically significant differences, making it possible to conclude that age does not influence this dimension (cognitive image variables - nature elements), i.e. the different age groups classify these factors similarly.

There were no statistically significant differences between age and the items related to the affective image and overall image.

Therefore, **Hypothesis 2**, which states that age significantly influences the perceived image, is partially confirmed, only for the cognitive factor.

C. Virtual Cognitive, Affetive and Overall Image – Education Level

There were no statistically significant differences between education level and the items related to the image destination. Therefore, **Hypothesis 3**, which states that education level significantly influences the perceived image, is not confirmed.

D. Virtual Cognitive, Affetive and Overall Image - Marital Status

There were no statistically significant differences between marital status and the items related to the image destination. Therefore, **Hypothesis 4**, which states that marital status significantly influences the perceived image, is not confirmed.

E. Virtual Cognitive, Affetive and Overall Image - Employment Status

The age had a statistically significant effect on items: IG1 ($\chi2$ (4) = 9.71: p = 0.045; IG2 ($\chi2$ (4) = 12.96, p = 0.011; IG3 ($\chi2$ (4) = 10.74: p = 0.030 which means that the employment status influences the overall image items IG1, IG2 and IG3.

The employment status influences the perception or general overall impression of the destination. Unemployed or unemployed individuals classify more favourably the overall image of the destination relative to other professional situations, particularly the self-employed, working for others and students.

There were no statistically significant differences between employment status and the items related to image destination. Therefore, Hypothesis 5, which states

that employment status significantly influences the perceived image, is partially confirmed.

F. Virtual Cognitive, Affetive and Overall Image – Income

There are statistically significant differences between respondents who have no income to those who earn above average income, and among respondents with low incomes who earn middle income above average. People with low incomes appreciate all the variables that contribute to the formation of the image of cognitive destinations, except in IC7- "Price" and IC11- "Climate".

Results reveal that the affective destination image and global image include variables that are influenced by income, as is the case of the variable that measures the emotional image of the destination, after visiting the site and perform the virtual experience, in scales A1-" boring-fun ", A2- "depressing-exciting" and (IA2) and (IA5)"artificial-authentic" with marginal value. Also in response to the image destination global assessment were found differences in destination image classification.

Analysed the results of means comparison of the ranks of the factors, it is concluded that there are significant differences between respondents with low incomes and those who earn above average income, and the first have a more positive perception of affective image and overall destination

There were statistically significant differences between incomes and the items related to the image destination. Therefore, Hypothesis 6, which states that incomes significantly influence the perceived image, is confirmed.

Summarizing, only three socio-demographic factors significantly influence the formation of the virtual image destinations: age, income and employment status. Age and income influence the cognitive virtual image and income and employment status influence the formation of affective and overall destination image.

VI. CONCLUSIONS

This study proposed to estimate destination image scale factors, an instrument used to measure the image perception based on the use of a sensory stimulus, through prior performing navigation destination website Canary Islands.

Exploratory factor analysis groups the cognitive image in two dimensions, the cognitive image based on natural attributes, such as the environment, the landscape and the innate characteristics of the destination sun and sand, and artificial cognitive image based on artificial attributes, such as the entertainment, infrastructure, quality of life history and culture.

Given the importance of internet destination marketing in digital information age, this study aims to investigate the three dimension of destination image cognitive, affective and overall recognized by previous [6]. According to the importance of socio-demographic factors on image dimension referred in [9], [18], [19] and the online information induced by a virtual experience of a destination marketing organization, these factors impact on the online destination formation process was analysed.

Classic studies of the destinations with the same characteristics concluded that gender influences cognitive image, in the case of tourists visiting for the first time the destination [6]. Relationships between the cognitive, affective and overall image components of image and the potential tourist's socio-demographic characteristics were found with reference to gender, age, employment status and incomes. Therefore, it is desirable to follow different communication strategies depending on the tourists' socio-demographic characteristics. The age was the socio-demographic characteristic exerting more influence on the cognitive and affective component of image. Hence, the DMOs should take account of market segmentation by age in its marketing strategies.

While conducting the study we identified a set of limitations, which condition the analysis and the obtained results. The statistical frequency gender of respondents in the sample analysis differs significantly. The percentage of respondents was female and substantially higher than in females. Insight in this it is considered that the future should be taken in a balanced sample of men and women answers. They were not considered visit antecedents, that is, are considered in this study that respondents are potential tourists who have never visited the destination or the website, and its first visit to experience the virtual tour [25]. The collected data do not compare the differences between those visiting for the first time and those who repeat the experience, which is meant to evaluate relevant in future work extending the range of the sample.

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