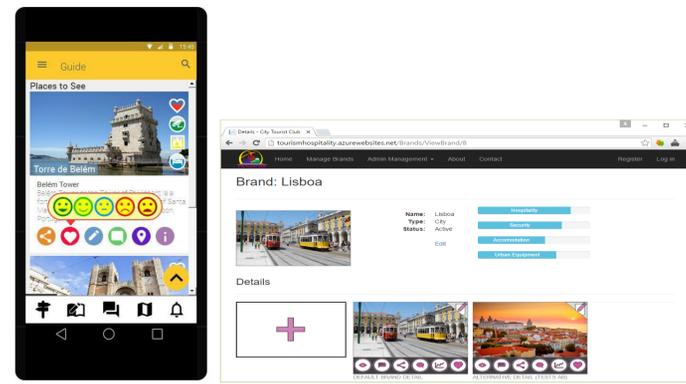


Figure 1. Perceptual Map of the City



Prototype Tourism & Hospitality Living Lab: Lisbon Edition (Web and Mobile)



RESEARCH RELEVANCE

City Tourism is one of the fastest growing economic segments in the world and its changing nature is becoming more prevalent in many cities, including the city of Lisbon, which is increasingly visited by short-term stays tourists. Thus a lack of timely information (Just-in-Time) is evident, and sometimes the desynchrony between the market's supply and the current consumer needs/desires for a more efficient and timely management of performance, innovation and development of tourist destination brands (i.e. Lisbon).

RESEARCH OBJECTIVES

The main objective is to survey of the most important criteria (inventory of determining aspects) for the evaluation of the satisfaction with tourism and quality of life in the city by its users. Secondary objectives are: (1) Creation of a User Centered Innovation Program for managing the touristic activity in a city (i.e. Lisbon) based on the Living Labs methodology and JIT Brand Model (Rosa, 2016), supported by a prototype of a technological device – the Tourism & Hospitality Living Lab and its aggregated App: City Tourist Club: Lisbon Edition.

RESEARCH QUESTIONS AND HYPOTHESIS

How to innovate to improve tourism and quality of life in the city? What are the (most important) determining factors for assessing tourism and the quality of life in a city. Which of these aspects are most strongly correlated for the evaluation of tourism and the quality of life in the city? H1. The sense of security is an important aspect for tourism and quality of life in the city; H2. The gastronomic offer is an important aspect for tourism and quality of life in the city; H3. The social and cultural offer is an important aspect for tourism and quality of life in the city; H4. The conditions of accommodation are a determinant aspect for tourism and quality of life in the city; H5. Urban equipment is an important aspect for tourism and quality of life in the city; H6. The experience with hospitality is an important aspect for tourism and quality of life in the city. H7. The aspects of accommodation, gastronomy and hospitality are the most strongly correlated; H8. The safety aspects and urban equipment are the most poorly correlated.

METHOD

Methodological design

The research was organized according to an empirical case study design applied to the city of Lisbon.

Research Plan

The study was carried out according to a flexible research plan (Robson, 2002, p.163-166) in two sequential phases. The first exploratory and the second confirmatory, using a sequence of mixed methods (quali-quant), carried out from March to May 2016 in Lisbon.

Procedures

The first exploratory quali-quant phase was carried out by in-depth personal interviews with subjects recruited by the ad hoc method of snow ball for stakeholders segments (residents, national and international tourists, traders, authorities, bloggers and journalists). The second phase, quantitative confirmatory, was carried out by a questionnaire web survey. All items of the Likert multi-item scale were anchored in 4 terms (1 = Not important, 2 = Not important, 3 = Important, 4 = Very important). The questionnaire provided by the Google docs tool was activated by email invitation to a list of potential participants. The final validation of the scale presents an excellent measure of internal consistency and reliability ($\alpha = 0.932$).

SAMPLE CHARACTERIZATION

Two convenience samples were obtained, with a total of 191 subjects

Exploratory Phase 1 (n = 85)	Confirmatory Phase 2 (n = 106)
48% Male	53.6% Male;
42% Up to 35 years; 58% from 36 up	32.1% Up to 29 years
49.4% Portuguese tourists and residents of Lisbon	31.1% From 30 to 44 years
22.4% International tourists	36.8% From 45 years up
21.2% Students	73.6% Portuguese and other European nationalities
4.7% Professionals and traders	
2.4% local authorities	

RESULTS

Perceptual Dimensions of the City

There are four determinant perceptual basic dimensions for the satisfaction with tourism in Lisbon: Security; Urban equipment Hospitality and Accommodation. Further identified, are the following determining factors: (1) The safety risks to human health,

in the streets and in the home ; (2) cleanliness and urban accessibility; (3) hospitality, service, services, civility, kindness and availability; and (4) quality accommodation, price and hotels.

Dimensional Correlations

Th highest correlated are among the dimensions: Cultural, Historical, Urban and Hospitality (Pearson bivariate > 0.5).

Latent Dimensions of the City

In order to deepen the understanding of the data structure, an artificial scale was compiled by 10 dummy variables (D1 to D10) calculated by the aggregate scores of the 52 original variables (sub-dimensions) resulting in a new variance of city perception.

D1	Security	D6	Urban equipment
D2	Landscape	D7	Clima (weather)
D3	Cultural and social	D8	Gastronomy
D4	Hospitality	D9	Historical
D5	Information	D10	Lodging

Further, an exploratory factorial principal components analysis (EFA) with a varimax rotation revealed two latent dimensions, named: L1 - City physic; L2- City Spirit. The analysis test are adequate (KMO = 0.864, χ^2 (45) 353,461, $p < 0.001$). The two-dimensional structure explains 55.3% of the total variance. The resultant Perceptual Map of the City – figure 1 - shows a strong adjustment of the latent dimensions ($R^2 = 0.791$) determining the satisfaction with tourism and quality of life in the city of Lisbon.

TEST OF HYPOTHESIS

H1, H4, H5 and H6 are confirmed as the most important aspects for the evaluation of tourism and quality of life in the city. H2, H3, H7 and H8 are inferred. The strongest and positive correlations are between: Cultural, Historical, Urban and Hospitality dimensions

DISCUSSION AND OUTLOOK

In the light of the research findings an experimental technological device composed by smart webplatform was developed and pre-tested: named Lisbon Tourism & Hospitality Living Lab with the an aggregated Mobile App - City Tourist Club: Lisbon Edition. It presents interaction functionalities among the stakeholders of the city: Share, Learn, Act, Compare, Test and Classify. In order to obtain a continuous flow of perceptions about consumption experiences (the insights and experiences of using the city and its

equipment, infrastructures, services, commerce, interactions with other tourists and inhabitants, etc.) to facilitate the management of city, performance improvement and induce innovative ideas for brand-city development.

It allows recruiting and activating (motivating and involving) the city's users (i.e. tourists, inhabitants and other stakeholders) as active participants and scientific researchers "conjugated in real-life contexts for the collection and sharing of ideas and suggestions, anthropological observation (life stories videos and Instagrams), discussion of ideas of new development and innovation solutions for the territory.

Discussion

City tourism needs to build smart tourism destinations (STDs) that exploit the potential offered by technologies (ICT). Research reveals a framework of determinant aspects to measure the satisfaction of tourists with the city and its quality of life; and to manage the innovation of the city, just-in-time. The two latent dimensions : L1 - City physic; L2- City Spirit, reveal the strong complementarity and intercorrelation between the importance (a) of the functional aspects and (b) the imaginary (emotional) aspects of city perception.

Conclusion

It can be concluded that: (1) it is empirically validated an Inventory of the main factors determining satisfaction with tourism and quality of life in the city; (2) it is further identified an hierarchy of the most important aspects for evaluating the city: (a) the sense of security; (b) the hosting means; (c) urban equipment; and (d) the hospitality experience (civility, kindness, availability, etc.); (3) two important latent dimensions are revealed for the management of the city-brand: L1- City Physic, composed by the dimensions: Security, Urban/Cultural Equipment and Accommodation; L2 City Spirit, composed by the dimensions: Climate, Gastronomy and Natural Landscape.

Future Research

The project contemplated the development of a prototype for a technological platform - that needs to be further tested and validated as to its full usability; Regarding the exploratory phase where the interviews were conducted in depth, although it was possible to achieve minimally all segments, the sample could have been larger for a better deepening and validation of the information collected. Finally, further attention and curiosity about the study and dissemination of this findings is necessary. It is recommended the validation and operational development of the device, which will be a very important contribution to the tourism industry and management of urban spaces.