

Working paper

Title: eWOM and growth strategies for the tourism industry in maritime museum networks. The case of the Arca Adriatica tourist product.

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Abstract

Museum networks are proliferating in the Mediterranean area showing new forms of collaboration between public and private institutions. Museums and heritage conservation play a fundamental role in tourism development. The purpose of the present working paper is to provide an analysis of the museum network experience in order to define a set of useful and viable marketing strategies to be adopted by the museum management with respect to the relative tourist context. The case of the Arca Adriatica maritime museum network - a network of eight maritime museums representing the core asset of an elaborated tourist product - has been analyzed and considered particularly relevant and of peculiar interest. After the analysis of the museum network and its most important related points of interest, managerial recommendations within strategic and tactical perspectives are hence presented.

1. Introduction

Museum networks are proliferating in the world and in the Mediterranean area showing new forms of collaboration between public and private institutions (Scrofani & Ruggiero, 2013). The spreading of the museum networks is a phenomenon that is considered deserving of being studied (Alberti *et al.*, 2005). They represent museum systems able to generate value for visitors and prospects (Pencarelli & Splendiani, 2011). The literature on the matter has shown different tendencies that go from the adoption of new technologies and virtual museums with more traditional museums to the coordination and integration policies of museums among homogeneous and heterogeneous institutions. In general, museums and heritage conservation play an important role in tourism development (Cerquetti & Montela, 2015). European maritime heritage museums can usually count on a limited amount of resources to orient and support the management and marketing decision processes. eWOM can provide a valuable and easily accessible source of data to drive the museum management toward the right strategic and operative direction. The purpose of the present working paper is to provide an analysis of museum network

experience in order to define a set of useful and viable marketing strategies to be adopted by the museum management with respect to the relative tourist context. The study of the user generated content (UGC) related to the museums of the Arca Adriatica network provides a first insight on the satisfaction of the museum visitors. With this purpose it has been considered the case of the Arca Adriatica maritime museum network as deemed representative of this type of museum network and representing the core of the Arca Adriatica tourist product that the overall project aim at developing and promoting. The network is composed by eight maritime museums located in as many different locations corresponding to the cities where the eight Arca Adriatica partners are situated. The Arca Adriatica projects that allowed the creation of the museum network is a EU commission funded Interreg project having the purpose to create and promote a tourist product able to grant the economic sustainability, the conservation and protection of the material and immaterial maritime cultural heritage present along the Adriatic Sea coast. The project partners operate under the principles of social and ecological sustainability and have invested on the involvement of the so-called centers of excellence – local partner organization committed to the production and conservation of the maritime culture – as well as on interpretation centers – touch points preserving and sharing knowledge on the maritime culture.

The first part of the working paper focuses on the sentiment analysis of the museum visitors experiences through the examination of the respective reviews posted on the two most important User Generated Content (UGC) platforms freely available on the internet: TripAdvisor and Google Maps. Beside the comprehension of the overall sentiment concerning the Arca Adriatica museum network it has been deemed important to evaluate and understand the relationship between the tourist context in which each museum is situated and the museum itself. Through sentiment analysis and desk analysis on secondary data the working paper perform a situation analyses to formulate a series of marketing strategies and tactics aiming at the effective and efficient promotion of the Arca Adriatica tourist product. Given the peculiar characteristics of the majority of the maritime museum audience, for the market analysis and the definition of its segments a tribal marketing framework (Cova & Cova, 2002; Cova, Kozinets, Shankar, 2007) has been utilized and a combination of transactional and relationship marketing approaches has been proposed to be adopted.

2. The museum network and the maritime cultural heritage

The present chapter reviews the different points of view with which researchers have considered the museum networks in the literature with respect to the most important topics debated during the last two decades: the definition of a museum network, the application of new technologies, and the evaluation of the relative performance. It applies the relative results to the case of the Arca Adriatica museum network in order to provide a theoretical background to reflect on its specific case.

Organizations normally converge into the formation of a network to take advantage of potential synergies deriving from mutual cooperation (Grandori & Soda, 1995). Organizational networks can be of three types: bureaucratic, social and proprietary. Museum networks are typically bureaucratic networks, intended as groups of institutions based on an exchange contract or an associational agreement that result particularly useful to manage complex information or fulfill the governmental requirements to obtain state or state superordinate (i.e. E.U.) funding. Interpersonal and social relationship may also play an important role in the formation of museum networks, especially for private owned museums (Bagdadli, 2003). They have been considered, especially with reference to the Italian situation, as the best way to maximize efficiency

and effectiveness of museums (Iaffaldano & Mariella, 2014). Some museum networks have been criticized as considered lacking of the typical characteristics of a network and mainly conceived for promotional purposes (Montella, 2014). Anyway, forming museum alliances through networks is particularly useful to connect cultural institutions and arts sites capable to better satisfy museum visitors expectations increasing the overall competitiveness of its offering. In order to effectively pursue these goals the museum network must satisfy four conditions: keeping a long term orientation, promoting culture being involved in a "*protective political environment*", the complementarities between the museums must not deprive individual museums from their identity, and being committed to a continuous innovation attitude leading to the constant organization of new cultural initiatives and able to grant the long term sustainability of the network itself (Guintcheva, G., & Passebois-Ducros, 2012). The Arca Adriatica museum network represent a bureaucratic network that cannot avoid to respect the four above-mentioned condition in order to succeed in its populated and progressively more dynamic competitive arena.

In order to cope with seasonality and irregular flows of visitors during the different periods of the year a museum network is better off establishing institutional ties with schools and universities to promote the visits during the least crowded period of the year. In this way the organization would apply a demand smoothing technique able to optimize the exploitation of its premises. In order to cope with critical events - such as the covid pandemic - restricting the circulation of people and tourist, a web-based system should be employed to allow schools, researchers and other institutions to use the digital resources of the museum network (Iwazaki, 2002). The Arca Adriatica museum network is at the core of a tourist product that has developed seven centers of excellence and five interpretation centers using a lot of digital products in connection with the museums of the network. This material would be of great value for establishing reciprocal fruitful institutional bonds with schools, researchers and universities.

The nowadays pervasiveness of digital technologies and the impact of the digital age over museums has increased the museum visitor active participation to the fruition process of the museum and its work of arts. At the same time it has allowed the use of virtual reality (Bertacchini, *et al.*, 2006) and the creation of digital archives able to longitudinally narrate the history of the evolution of museums and their digital arts. The accumulation of documents and data allows the feeding of such archives representing rich and useful sources of data creating value for those interested in the field (Coones, & Rühse, 2017). Real time feeding of the museum network Wikipedia page as well as the application of a verification protocols to the glossary of the content creation management of online museum presentation or a joined portal for libraries, archives and museums represent just an example of how the MusIS (the South-Western German Museum Network) has employed new technologies for museums networks (Schweibenz & Sieglerschmidt, 2008). Following the examples of Jongno museum district in Seoul it appears that through clever museum app it would be possible to allow a museum network to be perceived by its visitors as a single big smart museum (Bae, Im, Lee, 2013).

An important and very widespread trend in the museum industry concerns the use of new technologies to enrich the visitor experience. Downloadable app for smart phones are, in fact, often used by museums. Nonetheless a study proved quite uncomfortable for visitors the process of uploading the app before the museum visit and the deleting it right after the visit (Kovavisaruch, 2015). A museum app that can be used for visiting a series of museums connected within a network will last longer, incentivize the visit to all the museum of the network and considerably increase its customer value (Kovavisaruch, 2015). Aside from the consumer perspective there is the one of the cultural organization investing in the creation, promotion and distribution of the museum app. If integrated with the artificial intelligence solutions available nowadays (Kaplan & Haenlein, 2020; Haenlein & Kaplan, 2019) the app could retrieve and process a great deal of

essential data to optimize the visitor's museum experience, facilitating their customer journey starting with providing museum opening time, ticket purchasing options, work of arts information, within-museum directions, etc. Such type of investment should be considered for any museum network in between its growth and maturity stage of its lifecycle. Arca Adriatica museum network is currently experiencing its introduction stage. The decision to outsource the process of content generation feeding the app has to be taken considering potential coordination problem between the content of different museums in the network and the need to not distract critical managerial resources from the museum network core tasks.

Museum networks can improve the image of a geographic region not only at a national level but also internationally (Sizova & Ulianova, 2015; Kaulen, Chuvilova, Cherkaeva, 2015), attracting tourists and enhancing the educational programs (Takenouchi *et al.*, 2014). They may contribute to preserve through digitization the work of arts and democratize the access to arts and culture (Rehder, 2008; Šimat, M., & Harlović, 2004). The evaluation of the museum network performance, though, is particularly complicated. The need to deal with different institutions characterized by an heterogeneous set of goals such as not for profit, economic long term sustainability, profit, stakeholders satisfaction, etc. makes it necessary to use qualitative variables and not only quantitative ones in order to evaluate the managerial performance. Some research have shown how the fuzzy logic expert system can be extremely effective in measuring such performance as it employs both types of variables: qualitative and quantitative (Venturelli, *et al.*, 2015). In order to evaluate the social effectiveness as measure of museum networks effectiveness, a series of factors have been identified by the model: accessibility, social cohesion, absorptive capacity (absolute and relative), social capital and knowledge gatekeeper. These factors have been grouped in second order factors concerning: museum visitors, absorptive capacity, networking and economic impact (see figure 1).

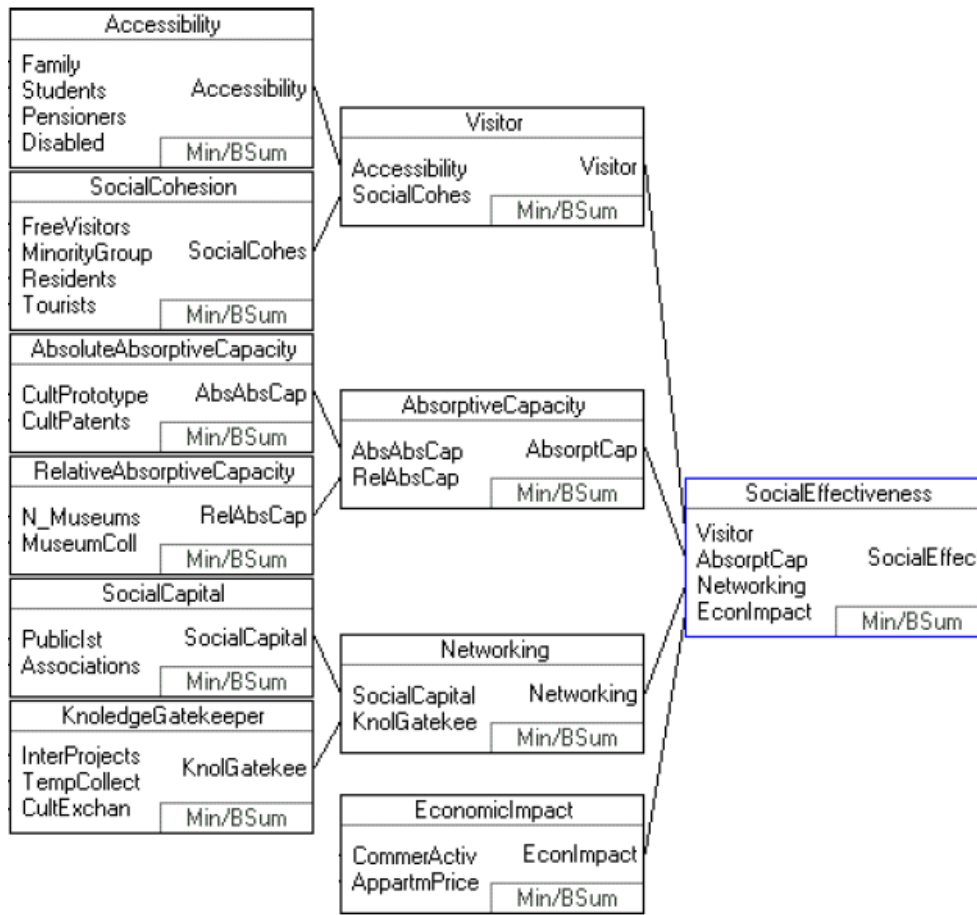


Figure 1 - The factors for the museum network performance evaluation (Venturelli et al., 2015)

In other cases, such as the one of the Balkan Museum Network, the relative performance has been qualitatively measured observing the quality of ties both, between any two nodes and at its overall network level. The quality of ties, in this case, depended on the nature of the knowledge exchanged and on the type of collaboration among the individuals involved in (Lozano, 2016). Of course the nature of the Balkan Museum Network shows clear specificities that make it hard to compare it with other museum networks. In the case of Arca Adriatica museum network the first model of performance evaluation (Venturelli, et al., 2015) appear to be the most suitable one.

In general, the museum network governance finds one of its best practice pillar in the elaboration of a thorough, complete and well conceived communication plan (Coluccio, 2013) or, in a even more complete and effective marketing plan. For this reason, in chapters 4 and 5 a set of marketing strategies and tactics stemming from the situation analysis of the Arca Adriatica museum network will be elaborated and proposed in order to lead the overall Arca Adriatica tourist product to the employment of its market potential. The study and the comprehension of its customers and their drivers of satisfaction and dissatisfaction is a crucial for the proper definition of a marketing plan (Biblinò & Amantini, 2016).

3. Methodology

The present working paper studies the phenomenon through a single case study research design (Yin, 2017) with an exploratory approach that uses desk analysis and text analysis as its main methods for collecting and analyzing data. The case study chosen is represented by the Arca Adriatica museum network.

The Arca Adriatica Museum network is formed by the eight museums shown in Table 1. For each museum all the reviews published on Tripadvisor and Google Business have been counted. The count report is shown in table 1.

Table 1 - The Arca Adriatica museum network and reviews

Partner	Museo	Review Google	Review Tripadvisor
Rovigno	Casa della Batana	204	22
Primorje – Gorski Kotar County e Kvarner Region	Maritime and History Museum	674	48
Cesenatico	Museo Marineria Cesenatico	1662	686
S. Benedetto del Tronto	Museo d'Arte sul Mare (MAM)	453	359
Cervia	Museo MUSA (Magazzini del Sale)	792	37
Venezia	Museo Storico Navale	676	567
Tkon	Zavicajni Muzej Biograd Na Moru	15	9
Tricase	Museo delle Imbarcazioni Tradizionali e dell'Arte Marinaresca	12	0
Malinska-Dubašnica	No maritime museum	-	-

As it can be seen from table n. 1, the network is formed by eight museums two of which (*Zavicajni Muzej Biograd Na Moru* of Tkon in Croatia and the *Museo delle Imbarcazioni Tradizionali e dell'Arte Marinaresca* of Tricase in Italy) show very few reviews. Because the number of reviews is not sufficient to grant the reliability of the results produced through the statistical analysis these two museums have not been considered in the analysis. The first data analysis considered at first 6216 comments of which 4488 from Tripadvisor and 1728 from Google. After the first round of analysis, thus, the 36 reviews concerning the two abovementioned museums with the least amount of reviews published, have been removed from the analysis.

In order to study the context within which each museum of the network is placed it has been asked to each Arca Adriatica partner to point out the five most relevant maritime tourist attractors of their territory. Each tourist attractor has been named "point of interest" (PoI) and each cluster of point of interest has been labeled "group of interest" (GoI). In case the number of Trip Advisor or Google reviews of a single point of interest hadn't enough reviews it has been removed from the analysis and marked with an asterisk. The list of the attractors is reported below:

Municipality of Cervia

- la Casa delle Farfalle (Milano Marittima)
- Centro Visite Salina di Cervia
- Magazzini Sale (Museo Musa)
- Torre San Michele

- Case dei salinari*

Municipality of Cesenatico

- Piazza Spose dei Marinai
- Piazza delle Conserve
- Museo della Marineria
- Porto Canale Leonardesco
- Casa-museo Marino Moretti*

Municipality of Malinska-Dubašnica

- port of Malinska
- port of Porat
- shipyard Kraljić
- port of Rova
- port of Vantačić

Municipality of Porto Museo di Tricase

- l'Ecomuseo di Venere
- Torre Palane
- Porto Turistico
- Il Santuario della Madonna Assunta
- Palazzo Gallone*

Municipality of Rovinj

- Chiesa di Sant'eufemia
- Ecomuseum Batana
- Port of St. Catherine – Katarina Island
- Limska Draga Fjord*
- The Palud marsh and the Due Sorelle Islands*

Municipality of San Benedetto Del Tronto

- MAM (Museo d'Arte sul mare) del Molo Sud
- la Palazzina Azzurra
- il lungomare di San Benedetto del Tronto
- la Rotonda Giorgini
- la Torre dei Gualtieri

Municipality of Tkon

- Parapet (Harbor)
- Small traditional shipyard (in the area of the Parapet)– škver
- Regatta „Đir po konalu“ in Ugrinić

- Kolečće (name of the square) - there is a pot (kamenica) which was used before fifty years and more for colouring fishing nets on traditional way
- Gnalić - a slightly sunken ship from the 16th century nearby island Gnalić

Venice

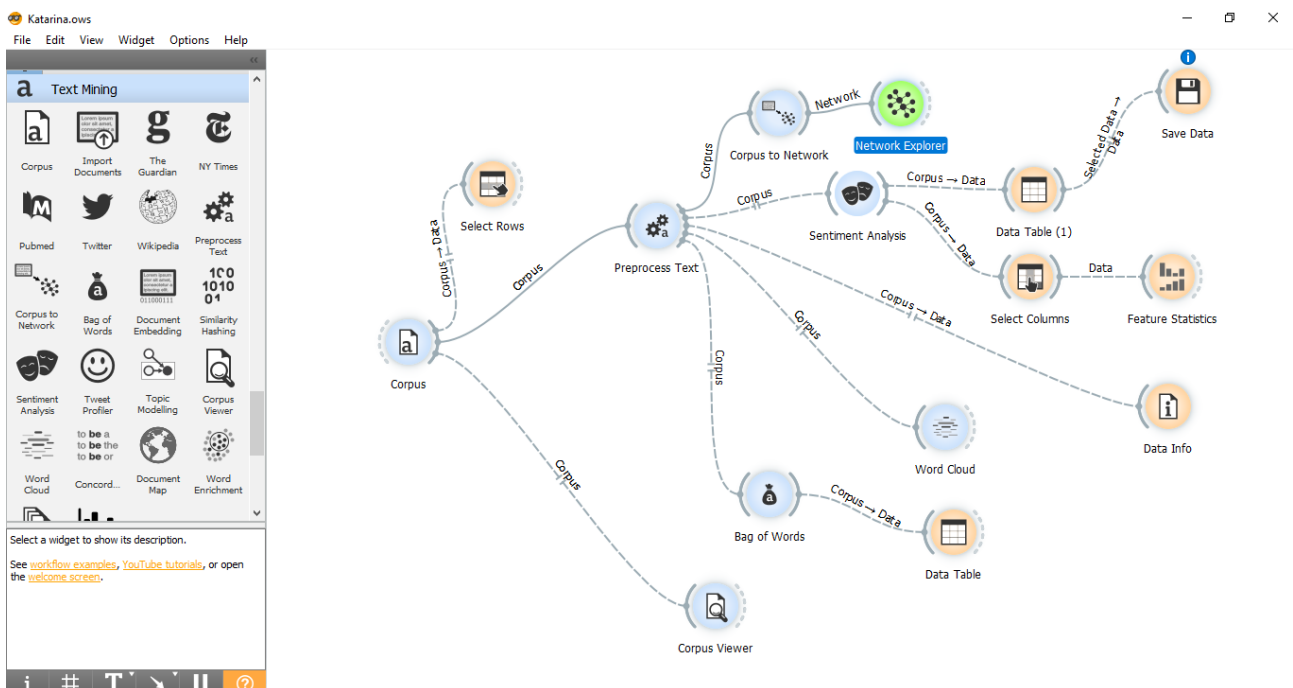
- Palazzo ducale
- Arsenale
- Murano Island
- Burano Island
- Corte dei Cordami alla Giudecca*

A total amount of 31621 reviews have been then analyzed. In this way it has been made possible to measure the correlation between the elements characterizing the reviews of the museums of the network and the elements characterizing their context, and carry out the relative sentiment analysis.

The statistical analysis software employed to analyze the reviews are:

- Orange 3.26.0
- PASSW 18.0.0

In particular, Orange has been used during the phases of Text analysis and sentiment analysis following the flowchart reproduced below in Graphic 1.



Graphic 2 - Orange 3.26.0 text analysis workflow

The analytical tool employed for the sentiment analysis is Vader: lexicon- and rule-based sentiment analysis (Hutto & Gilbert, 2014). The tool has been developed considering the features and performances of the main alternatives software available, such as: ANEW, LIWC, SentiWordNet, the General Inquirer, together

with machine learning oriented techniques that rely on Maximum Entropy, Support Vector Machine (SVM) algorithms, and Naive Bayes. It employs a combination of quantitative and qualitative methods to construct and empirically validate a gold-standard list of lexical features that suit perfectly micro-blog and reviews text analysis (Hutto & Gilbert, 2014).

The data categories reported are:

- ID
- Source
- Point of Interest
- Evaluation in
- pos
- neg
- neu
- compound
- Author's name
- Review Date
- of Contributions
- Comment

4. The case of the Arca Adriatica maritime museum network: the situation analysis

It is possible to analyse the ARCA ADRIATICA museum network in comparison with other museum networks in the cultural field. From this comparison we can draw a chart explaining four different types of museum networks (see table 2).

Table 2 - Types of museum networks

		Nature of the museum network offering	
		Heterogeneous	Homogenous
Geographic localization	Scattered	Balkan Museum Network	ARCA ADRIATICA
	Concentrated	Portuguese Museum Network, Lodi, Mantova, Syberia	Contemporary art

The ARCA ADRIATICA museum network falls into the category showing homogeneous offering with a scattered geographic localization.

Beside the different museums, the ARCA ADRIATICA tourist product offers several important cultural products represented within the different **Centres of Excellence** and **Interpretation Centres**. Each partner

is also located within a tourist and cultural context characterized by the presence of other tourist stakeholders with which a relationship has been established (see the Synoptic Table of Partner Actions at the end of the present document) and several other cultural points of interest (or attractors) that contribute to enrich the overall tourist package and make it more appealing for prospects and customers.

5. Results

After a first descriptive analysis of the reviews reported on TripAdvisor and Google it turns out that most of the words used in the comments are neutral and that only very few reviews use negative or very negative words. The compound index for the different points of interest is satisfactorily with an overall mean value of .344, a minimum value of .057 for the Gangaro point of interest in Tkon - Croatia, and a maximum value of .630 for the point of interest of Porto Canale Leonardesco in Cesenatico - Italy (see table 3).

Table 3 - Point of Interests: Descriptive Statistics for positive/negative/neutral and compound scores

Points of Interest	Positive			negative			neutral			compound			Evaluation in Numbers		
	Count	Mean	STD Deviation	Count	Mean	STD Deviation	Count	Mean	STD Deviation	Count	Mean	STD Deviation	Count	Mean	STD Deviation
Arsenale di Venezia	1916	,255	,242	1916	,025	,064	1916	,720	,237	1916	,483	,377	1916	4,470	,747
Beach Dražice, Soline	1502	,117	,258	1502	,008	,052	1502	,160	,309	1502	,114	,258	1502	4,403	,893
Casa Della Batana	222	,120	,251	222	,004	,019	222	,264	,387	222	,152	,287	222	4,477	,955
Casa delle Farfalle	1727	,245	,221	1727	,019	,048	1727	,631	,293	1727	,507	,381	1727	4,159	,950
Cathedral of Our Lady of the Assumption	68	,180	,160	68	,014	,029	68	,717	,270	68	,541	,366	68	4,029	,772
Centro Visite Salina di Cervia	1297	,150	,224	1297	,014	,052	1297	,408	,394	1297	,279	,392	1297	4,230	1,026
Chiesa di Sant'eufemia	2421	,267	,194	2421	,021	,048	2421	,712	,189	2421	,613	,351	2421	4,461	,728
Cokovac Monastery	211	,178	,265	211	,006	,029	211	,300	,362	211	,246	,333	211	4,697	,699
Croatian Littoral	719	,143	,260	719	,009	,044	719	,258	,363	719	,190	,327	719	4,531	,834
Faro del Porto	134	,156	,110	134	,020	,040	134	,824	,108	134	,506	,367	134	4,157	,734
Franciscan monastery	12	,176	,130	12	,009	,030	12	,816	,120	12	,575	,441	12	4,333	1,155
Frankopan Castle	1293	,254	,307	1293	,014	,054	1293	,384	,367	1293	,303	,357	1293	4,415	,827
Fulfinum Mirine	264	,135	,228	264	,021	,072	264	,298	,368	264	,193	,324	264	4,311	,932
Galesnjak Island	179	,178	,301	179	,021	,113	179	,298	,382	179	,156	,312	179	4,609	,979
Gangaro island	19	,112	,288	19	,044	,190	19	,160	,334	19	,057	,273	19	4,737	,562
Imbarcazioni Tradizionali	12	,228	,323	12	,021	,073	12	,251	,317	12	,219	,404	12	4,667	,492
Island of Krk	1290	,475	,300	1290	,015	,067	1290	,510	,290	1290	,561	,313	1290	4,736	,671
Island of Lošinja	855	,188	,268	855	,007	,028	855	,328	,369	855	,318	,388	855	4,661	,742
Katarina Island	182	,200	,184	182	,016	,037	182	,630	,312	182	,518	,410	182	4,280	,965
Magazzini Sale	843	,198	,276	843	,005	,034	843	,340	,373	843	,274	,341	843	4,319	,886
Museo Civico della Laguna Sud	296	,161	,287	296	,006	,040	296	,249	,364	296	,198	,317	296	4,355	,879
Museo Civico della Navigazione Fluviale	223	,176	,238	223	,009	,031	223	,411	,386	223	,331	,398	223	4,475	,837
Museo d'Arte sul Mare	812	,170	,219	812	,013	,040	812	,468	,387	812	,378	,394	812	4,574	,652
Museo della Marineria	1654	,235	,251	1654	,009	,036	1654	,590	,347	1654	,453	,370	1654	4,580	,683

Museo Storico Navale	1243	,149	,192	1243	,028	,065	1243	,554	,375	1243	,317	,430	1243	4,200	1,055
Palazzina Azzurra	279	,116	,182	279	,013	,053	279	,391	,404	279	,219	,355	279	4,215	,943
Piazza delle Conserve	1186	,130	,220	1186	,007	,038	1186	,412	,417	1186	,238	,334	1186	4,418	,806
Piazza Spose dei Marinai	857	,131	,254	857	,011	,064	857	,261	,373	857	,167	,309	857	4,448	,823
Porto Canale Leonardesco	4508	,254	,184	4508	,010	,033	4508	,736	,182	4508	,630	,309	4508	4,668	,558
Porto Turistico	66	,214	,214	66	,016	,062	66	,559	,344	66	,495	,440	66	4,500	,809
San Benedetto del Tronto	3466	,236	,182	3466	,014	,041	3466	,621	,285	3466	,605	,377	3466	4,585	,685
Santuario della Madonna Assunta	22	,163	,121	22	,030	,054	22	,715	,253	22	,429	,491	22	4,773	,429
Squero di San Trovaso	319	,133	,167	319	,014	,032	319	,696	,339	319	,359	,368	319	4,524	,672
St. Apolinar parish church	27	,180	,275	27	,020	,050	27	,244	,314	27	,195	,454	27	4,407	1,010
Torre Palane	36	,224	,266	36	,019	,058	36	,535	,370	36	,430	,374	36	4,722	,513
Torre San Michele	1028	,129	,261	1028	,007	,066	1028	,243	,371	1028	,156	,288	1028	4,441	,816
Torrei Gualtieri	409	,151	,238	409	,008	,026	409	,413	,407	409	,270	,360	409	4,433	,722
Zavicajni Muzej Biograd Na Moru	24	,161	,168	24	,014	,041	24	,450	,371	24	,385	,413	24	4,333	,761

In the column “positive”, “negative” e “neutral” it is reported, respectively, the distribution in percentage of the positive, negative and neutral components according to the sentiment indicator¹. provided by Vader. The value of the compound index named "compound" represents the valence score defined as follow²: "It is a score assigned to the word under consideration by means of observation and experiences rather than pure logic.

- Consider the words 'terrible' , 'hopeless', 'miserable'. Any self-aware Human would easily gauge the sentiment of these words as Negative.
 - While on the other side, words like 'marvelous', 'worthy', 'adequate' are signifying positive sentiment. According to the academic paper on VADER, the Valence score is measured on a scale from -4 to +4, where -4 stands for the most ‘Negative’ sentiment and +4 for the most ‘Positive’ sentiment. Intuitively one can guess that midpoint 0 represents ‘Neutral’ Sentiment, and this is how it is defined actually too. [...]
- Valence score of some context-free text are:

- Positive Valence: "okay" is 0.9 "good" is 1.9, and "great" is 3.1,
- Negative Valence: "horrible" is -2.5, emoticon ':(' is -2.2, and "sucks" and it's slang derivative "sux" are both -1.5.

The compound score is computed by summing the valence scores of each word in the lexicon, adjusted according to the rules, and then normalized to be between -1 (most extreme negative) and +1 (most extreme positive). This is the most useful metric if you want a single one-dimensional measure of sentiment for a given sentence.

As explained in the paper, in order to obtain a normalized value ranging from 0 to 1 the following normalization formula has been applied:

$$x = \frac{x}{\sqrt{x^2 + \alpha}}$$

Where x is equal to the sum of valence scores of constituents words and alpha is equal to the normalization constant (with default value of 15)".

As it can be seen in table 4, the mean evaluation of the different Arca Adriatica groups of interest, given by the most relevant point of interests within the territory of each Arca Adriatica partner is around 4,5 on a scale ranging from 1 to 5.

Table 4 - Groups of Interest: Descriptive Statistics for Evaluation in numbers

GroupOfInterest	Evaluation in Numbers			
	Count	Mean	STD Deviation	Median
Batana	2825	4,451	,767	5,000
Cesenatico	8205	4,591	,663	5,000
San Benedetto del Tronto	4557	4,560	,704	5,000
Cervia	4895	4,264	,940	5,000

¹ <https://medium.com/ro-data-team-blog/nlp-how-does-nltk-vader-calculate-sentiment-6c32d0f5046b>

² [https://blog.quantinsti.com/vader-sentiment/#:~:text=Compound%20VADER%20scores%20for%20analyzing,1%20\(most%20extreme%20positive\).](https://blog.quantinsti.com/vader-sentiment/#:~:text=Compound%20VADER%20scores%20for%20analyzing,1%20(most%20extreme%20positive).)

Porto Museo di Tricase - Ecomuseo di Venere	136	4,618	,667	5,000
Malinska-Dubašnica	303	4,320	,945	5,000
Tkon Municipality	1911	4,458	,886	5,000
Venezia	3997	4,382	,873	5,000
LP – Primorje – Gorski Kotar County e Kvarner Region	4792	4,551	,777	5,000

The analysis of the compound index distribution has signaled that parametric indicators (mean as measure of centrality and standard deviation as measure of variability) cannot be applied. Thus the median is used as a centrality measure and the interquartile percentile is used as a measure of variability. The analysis of the points of interest has been performed and in order to establish whether there are any median values non-significantly different the parametric test Mann-Whitney has been run in order to compare two independent samples.

Tabella 5- Points of Interests: Descriptive Statistics for compound index (order by median value)

Points of Interest	compound					
	Count	Mean	STD deviation	Percentile 25	Median	Percentile 75
Zavicajni Muzej Biograd Na Moru	15	,616	,357	,550	,7501	,840
Museo d'Arte sul Mare	528	,599	,318	,457	,6705	,842
Museo della Marineria	1381	,547	,327	,372	,6249	,818
Museo Storico Navale	909	,425	,448	,061	,5719	,785
Maritime and History Museum	295	,462	,357	,226	,5719	,748
Imbarcazioni Tradizionali	6	,570	,211	,459	,5709	,637
Magazzini Sale	458	,471	,341	,351	,4588	,754
Casa Della Batana	87	,388	,346	,000	,4215	,710

At this point the analysis of the group of interest has been performed (see table 6) and the different G.o.I. have been ordered by rank. Data concerning the eight museums (points of interest) have been excluded from the analysis. For the same reasons of the previously test, the parametric test Mann-Whitney has been run in order to compare two independent samples. the analysis comparing all the possible couples of group of interest has shown significant results. This means that there are no median values within the list ordered by rank that can be considered "not-significantly different". The analysis of all couples of values has always shown significant results. As it can be easily observed in table 6, the San Benedetto del Tronto group of interest shows the highest median value (.7955) and the Tkon Municipality group of interest exhibits the lowest median value (.4754).

Tabella 6 - Groups of Interests: Descriptive Statistics for compound index (order by median value)

GroupOfInterest	compound					
	Count	Mean	STD deviation	Percentile 25	Median	Percentile 75
San Benedetto del Tronto	3164	,677	,322	,598	,7955	,898
Batana	2575	,610	,339	,475	,7184	,863
Porto Museo di Tricase - Ecomuseo di Venere	100	,586	,356	,411	,7168	,872
Cesenatico	5504	,601	,311	,458	,6881	,844
Cervia	2682	,502	,382	,280	,5994	,807
LP – Primorje – Gorski Kotar County e Kvarner Region	3014	,528	,339	,402	,5994	,785
Venezia	2441	,495	,347	,275	,5916	,772
Tkon Municipality	630	,398	,351	,000	,4754	,637

The analysis comparing points of interest (P.o.I.) and groups of interest (G.o.I.) has been conducted. Once again the Mann-Whitney non-parametric test for independent groups has been run. The column labeled with "p-level" shows whether the test is significant with respect to a significance level of 95% ($p < 0.05$). In the "comparison" column it can be identified the type of relationship between P.o.I. and G.o.I. when the p-test is significant. It can be noticed that in the case of Porto Tricase there isn't a significant difference between the median value of the respective P.o.I. and G.o.I. The median value of Tkon P.o.I. is significantly higher than its G.o.I. In all the other cases the G.o.I. exhibit higher median values than their respective P.o.I.

Tabella 7 - Comparison between points of interest and groups of interest

		compound		
		Mediana	p-level	Comparison
BATANA	Gol: Batana	,7184	<0,001	Gol>Pol
	Pol: Casa della Batana	,4215		
CESENATICO	Gol: Cesenatico	,6881	<0,001	Gol>Pol
	Pol: Museo della Marineria	,6249		
SANBENEDETTO	Gol: San Benedetto del Tronto	,7955	<0,001	Gol>Pol
	Pol: Museo d'Arte sul Mare	,6705		
CERVIA	Gol: Cervia	,5994	,001	Gol>Pol
	Pol: Magazzini Sale	,4588		
PORTOTRICASE	Gol: Porto Museo di Tricase	,7168	n.s.	Gol Pol not significantly different
	Pol: Imbarcazioni Tradizionali	,5709		
TKON	Gol: Tkon Municipality	,4754	,006	Pol>Gol
	Pol: Zavicajni Muzej Biograd Na Moru	,7501		
VENEZIA	Gol: VENEZIA	,5916	0,04	Gol>Pol
	Pol: Museo Storico Navale	,5719		
LPPRIMORJE	Gol: LPPRIMORJE	,5994	,002	Gol>Pol
	Pol: Maritime and History Museum	,5719		

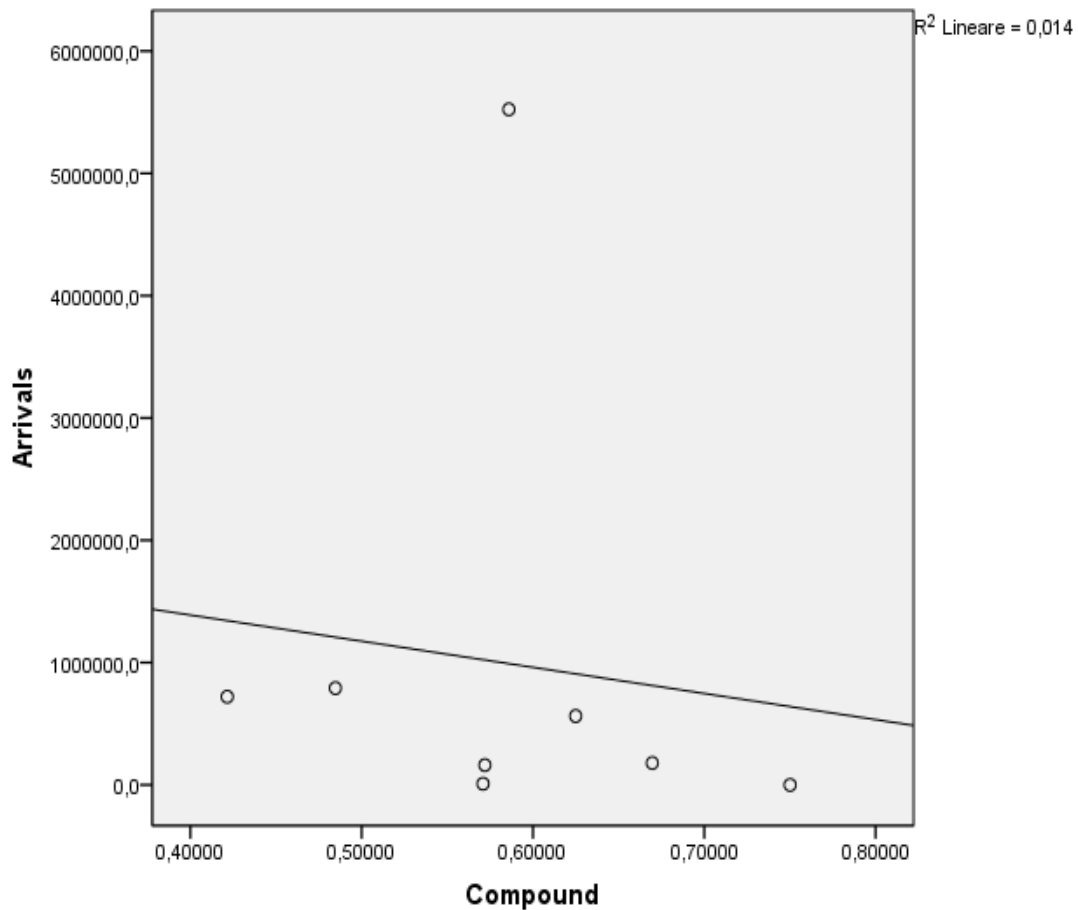
It has then been performed a correlation analysis between the compound index of each point of interest and the respective data on the tourists arrivals. Given that the compound index follows a not-normal distribution a Rho of

Spearman correlation test has been performed (Gauthier, 2001; Wissler, 1905).

Tabella 8 - Spearman correlation between the 8 P.o.I. and the arrivals

			Arrivals	Compound
Rho di Spearman	Arrivals	Coefficiente di correlazione	1,000	-,429
		Sig. (2-code)	.	,289
		N	8	8
	Compound	Coefficiente di correlazione	-,429	1,000
		Sig. (2-code)	,289	.
		N	8	8

As it can be noticed in graphic 3, the dot in the upper part of the graphic represents the "Museo Storico Navale" of Vencie. Because of the very high number of visitors and the relative higher number of reviews with respect to the other P.o.I., it is considered an outlier. The correlation index in this first run of the analysis is not significant (.289).



Graphic 3- Correlation chart between the 8 P.o.i. and arrivals

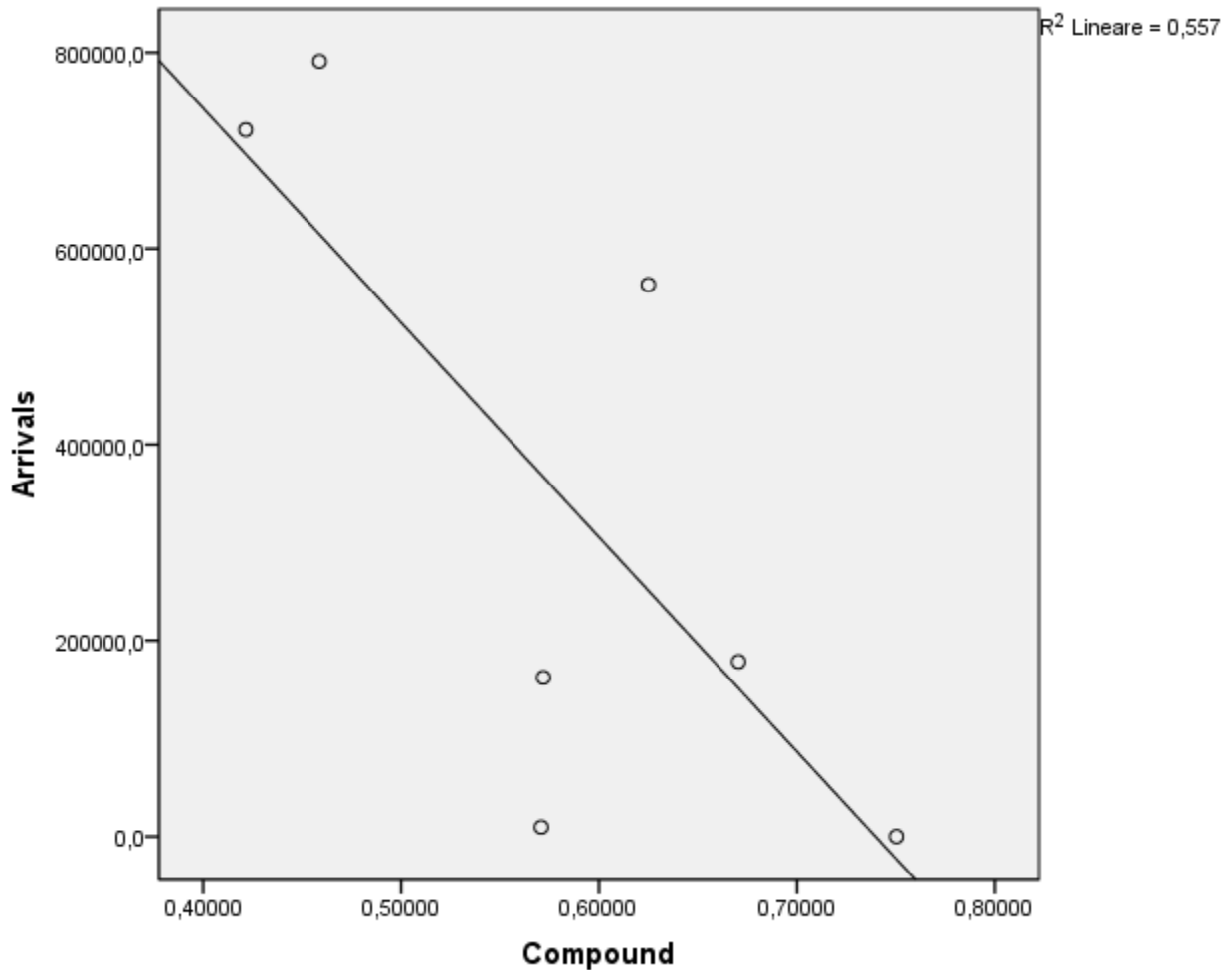
The Point of Interest of "Museo Storico Navale" shows many more reviews than the other point of interest and may represent a problem in order to reach a significant correlation index. Even eliminating it from the analysis the results show that the correlation test Rho of Spearman (Croux & Dehon, 2010) is not significant but very close to be significant ($p = 0.119$) showing a clear tendency toward an inverse proportionality ratio ($Rho = 0.643$).

Tabella 9 - Correlation test Rho of Spearman between arrivals and compound index (= sentiment)

			Arrivals	Compound
Rho di Spearman	Arrivals	Coefficiente di correlazione	1,000	-,643
		Sig. (2-code)	.	,119
		N	7	7
	Compound	Coefficiente di correlazione	-,643	1,000
		Sig. (2-code)	,119	.
		N	7	7

Data show that there is a negative correlation between the sentiment for the museums and the arrivals in the tourist destinations hosting each museum of the network. It looks like that the more a tourist

destination is attractive the less its maritime museum is appreciated (see graphic 3). The explanation for this inverse relationship may depend on the fact that the cultural attractions standard in highly attractive tourist destinations such as Venice is pretty high and the average quality of the maritime museum in terms of display, labels, storytelling, technology implementation, is not at the same level of the other museums. Another reason may depend on the higher level of visitors' expectations for highly renown tourist destinations and the conversely lower expectations for less popular tourist destinations of the Arca Adriatica network such as Tricase.



Graphic 4 - Negative correlation between arrivals and sentiment

6. The maritime cultural heritage market and its segmentation

As shown by the conducted sentiment analysis, the individuals who visited the museums of the Arca Adriatica network shared their satisfaction through their reviews online reviews. Through participant observation it has been possible to assess the overall high level of enthusiasm among those visitors. In particular, the visitors of the maritime museums are characterized by a high level of interest and involvement for the maritime cultural heritage. This specific characteristic of the Arca Adriatica museums audience make it a very homogenous under the motivational point of view.

The potential market of the tourist product offered by the Arca Adriatica partners is made of many different segments of customers awaiting for being reached by an highly valuable marketing offering. In order to better identify and define the relevant segments in the market it can be useful to taken into consideration the tribal marketing perspective (Cova & Cova 2002; Pathak, & Pathak-Shelat, 2017; Cane, Bellag, & Fukada, 2020), which considers customers and prospects as groups of individuals sharing the same passion or interest for an activity or a product. If we consider the case of the passion and interest for the maritime material and immaterial heritage we may notice that these customers share also the same knowledge, language and tend to form a kind of groups named "tribes": sort of communities physically meeting together during occasions and gathering. The member of these tribe express their involvement through associations or other organizational forms focused on a specific interest (maritime material and immaterial heritage) generally on a local base. Multiple tribes sharing the same interest and passion form "tribal constellations" that represents articulated networks of passionate individuals coming from different countries and cultures very often characterized by a part of shared knowledge and a part of complementary knowledge on the specific interest of the maritime know how, traditions and, broadly speaking, culture. Members of the tribes can express their membership through gathering participation or particular roles played within recognized institutions such as associations, specific event organizing committee, etc. Other members of the tribe may be not clearly recognizable by the rest of the community as they show their passion or interest in a more intimate and private way, buying or collecting small artefacts, reading articles, watching events on TV or social media. They might even satisfy their passion on a daily basis by practicing sailing with their family or friends during the weekends.

Some of the main cultural events on the maritime heritage organized in Europe count hundreds of thousands of visitors. Some of them:

- Brest International Maritime Festival (700.000 visitors, France)
- Oostend Maritime Festival (250.000 visitors, Belgium)
- La Semaine du Golfe de Morbihan de Vannes (130.000 visitors, France)
- Irish Maritime Festival at Drogheda Port (40.000 visitors)
- Great Yarmouth Maritime Festival (30.000 visitors, Ireland)
- Baltic Sail Festival (different locations in seven different Baltic countries)

And many others maritime festivals. The audience of these festivals all together counts millions of visitors.

Beside the members of the tribal constellation revolving around the maritime heritage and culture there are the outsiders: individuals who don't share the same passion or knowledge as the members but who may be potentially interested if properly informed and who have the occasion. Tourists visiting the maritime locations within the ARCA ADRIATICA network, for instance, represent the most relevant market segment to consider within and effective targeting strategy. Other less relevant market segments may be represented by individual travelling for work along the areas of the ARCA ADRIATICA partners and residents living in the same areas.

Among the segments in the potential market the most important ones that should represent the primary target for the partners are:

1. Participants: individuals passionate for the maritime culture and interested in the maritime cultural heritage, both material and immaterial, who participate to gatherings, exhibitions, and other occasions in which the "tribe" meets.

2. Adherents and devotees: members of associations, event organization committee on maritime heritage and ancient ship restoration, etc.
3. Practitioners: individuals practicing on daily maritime activities, such as sailing on traditional boats, restoring old boats or small ancient ships, etc.
4. Sympathizers: individuals interested in the maritime cultural heritage who read magazines specialized on the topic, who love watching TV programs on the topic such as competitions, maritime cultural happenings, etc.
5. Tourists: individuals that are potentially interested in the tourist product proposed by ARCA ADRIATICA network who have access to the product as they are staying at hotels and other housing solutions within the ARCA ADRIATICA partners areas.

7. The general marketing strategy and the managerial implications

According to the segmentation analysis proposed we may distinguish among two types of segments: those referring to mature part of the market with potential customers that are informed and well acknowledged about the nature of the tourist product proposed, and the tourist segment referring to an audience who is not informed about the product offered and who, very likely, has not yet consumed similar product before. In cases like this a multiple marketing approach is recommended by the contemporary marketing practices (Coviello et al, 2002; Vassileva, 2017). Segments 1, 2, 3, and 4 should be addressed primarily through a relationship marketing approach (Gummesson, 2017; Gummesson, 2011), with the goal to develop long term loyalty relationship with the relative target customers.

Segment 5, on the other hand, should be mainly addressed through a transactional marketing approach, aiming at contacting and persuading new customers to try for the first time the ARCA ADRIATICA value proposition.

With this purpose in mind a differentiated marketing strategy is advisable. We recommend, thus, two different courses of actions for, respectively for segments 1 to 4, on one side, and segment 5 on the other one.

In order to effectively adopt a relationship marketing approach it is necessary to address the market through a customer relationship management perspective. With the purpose of developing a long term marketing relationship with prospects and target customers, it will be necessary to articulate the strategy in four phases:

1. Setting up a database listing the contact details of all the current and potential customers to address with the ARCA ADRIATICA value proposition. The database may be the result of the merging of the different partners' database of current and past contacts.
2. Profiling the customers by discriminating their customer lifetime value, purchasing attitudes and other valuable information.
3. Networking and interacting with the target customers, gathering precious data useful to update the database. Such data should be relative to the wants and needs characterizing the target customers leading to an effective implementation of phase 4.
4. Customization: differentiation of the offering according to the specific wants and needs showed by the customers recorded within the database.

This approach requires a shared consciousness among the ARCA ADRIATICA partners of the importance of the customer role which implies the adoption of the well-known slogan: "customer is king" (Kim, & Aggarwal, 2016; Levitt, 1993). A series of operative techniques related to this approach will be described further on.

In the long run the ARCA ADRIATICA Network strategy would be better off through the organization of an Adriatic Sea Maritime Festival, getting all the different partners involved in its organization. Similarly to what happens for the Baltic Sail Festival, it may be simultaneously organized among the locations (cities) of the ARCA ADRIATICA partners with the purpose to deliver and create a valuable marketing offering to the customers. They would be able to purchase the ARCA ADRIATICA tourist product taking advantage of the relative close distance among the different partners' locations following the experiential trend of enriching the consumption experience through variety and simultaneity (Pulh, Marteaux, & Mencarelli, 2008).

For segment 5 - tourists - the marketing strategy should focus on attracting and persuading target customers to try and purchase the tourist offering proposed by the ARCA ADRIATICA partners. With this purpose in mind to take advantage of logistic hubs such as train station, port, airport or hotels in order to get in touch with prospects a series of techniques will be described in the following section.

In general we recommend the creation of a strong brand based on brand awareness, brand reputation and brand protection. The ARCA ADRIATICA network brand is related to the logo, the brand symbols and the other elements associated to the brand. Such elements should be: sustainability of the maritime activities, maritime traditions and craftsmanship protection, inclusiveness.

A potential set of strategies that would lead the network to grow into the market is listed here below:

Market penetration strategy

- Increase of the audience persuading non visiting residents to become visitors
- Increase the consumption rate of the current customers

Market development strategies

- Address and persuade visitors of other maritime and cultural networks to consume or try the ARCA ADRIATICA tourist product

Product development strategies

- Audio-visual and multimedia products: creation of short movies narrating the history of the maritime heritage culture through extraordinary stories on historic boats and traditions).
- Consumption experiences within the museum networks: "augmented" guided tours through technology and the creation of a virtual museum experience
- Consumption experiences external to the different city centres:
 - a. Organization of boat tours connecting two or more partners within the ARCA ADRIATICA network (connecting museums, city centres, etc.)
 - b. Organization of on-boat guided tours to the wrecks sunk along the Adriatic coast with the possibility to dive and explore the deep sea along with the increasing trend of participative archaeological diving.
 - c. Organization of a competitive or non-competitive regatta between historic boats

Diversification strategy

- Brand extension strategies through the development of agreements with other boat makers aimed at creating new line of boat products sponsored by the ARCA ADRIATICA network
- Brand extension strategies aimed at providing ARCA ADRIATICA certifications and quality legitimating to artisans and firms involved in the boat restoration process; a sort of brand licensing to the best shipyards and boatyards offering their services in the market
- Development of agreements with manufacturers and suppliers of parts, components and furniture within the nautical market
- Creation and organization of an ARCA ADRIATICA Maritime Festival

8. The tactical marketing recommendations

The first goal is to achieve a high level of authority for the ARCA ADRIATICA website and social media. A benchmark analysis of the most important website and social media of similar tourist products available in the European market should be performed. High level of authority will turn into better communication performances leading toward positive results in terms of awareness of the ARCA ADRIATICA tourist product and engagement of the target audience. An important effort has to be exerted by the ARCA ADRIATICA network in the short-medium term with the purpose to foster:

- growth through organic social content of the ARCA ADRIATICA social media and website
- growth through paid social content of the ARCA ADRIATICA social media and website
- the optimization of the SEO positioning

To nurture, maintain and improve the relationship with current customers, communication activities would be crucial for ARCA ADRIATICA. A series of personalized messages should reach the target audience, such as:

- newsletters generated through a dedicated tool (e.g Sendinblue, Campaign Monitor, etc.) integrated with the customer relationship management database would be fundamental;
- targeted messages from the main ARCA ADRIATICA social networks should be conceived on a regular base, following the seasonal trends.
- brochures, leaflets and other promotional tools, such as electronic billboards at the most visible touch points should be distributed during gatherings and maritime festivals in Europe and the rest of the world;
- the presence of an ARCA ADRIATICA promotional kiosk should be arranged during the most important European maritime festivals.

A dedicated budget should be allocated for each of the aforementioned activity.

In order to attract new potential customers, billboards, and other promotional tools (leaflets, brochures, etc.) should be present at the most attended hotels in each of the ARCA ADRIATICA partners' city, and logistic hubs (i.e. train station, airports, ports, etc.).

The presence of the ARCA ADRIATICA network should be assured in the following contexts:

- nautic shows (Dusseldorf, Cannes, Parigi, Monaco, Amsterdam, Bologna, Venice, etc.)
- boat competitions (Barcolana in Trieste, Historic Regata in Venice, etc.)
- maritime festivals (Oostend, Vannes, Brest, etc.)

9. Conclusions

The competitive environment of the Arca Adriatica the maritime museum network is rich in terms of number of direct competitors and product substitutes. Other museum networks and maritime tourist events represent a competitive threat for the Arca Adriatica tourist product. At the same time, other tourist destinations that are not directly related to the maritime cultural heritage invest a considerable amount resources in promotion to increase their competitiveness and attract visitors. Considering the discretion with which the contemporary consumers allocate their share of wallet on the leisure time consumption, also indirect competitors represent a serious threat able to distract prospects from the Arca Adriatica tourist product. On the one hand, thus, a strong investment on promotion to establish a renown brand awareness and attract visitors is then recommended to the network of partners. On the other, the need to interact with the international maritime cultural institutions and establish durable institutional ties such as the presence of the Arca Adriatica network at the most important maritime festivals is considered crucial for the success of the network. The community of visitors of maritime museums and consumers of maritime cultural heritage, in fact, is mainly constituted by passionate individuals and secondarily represented by occasional visitors that come to visit the territory for its seashore or other tourist drivers. Those visitors passionate for maritime culture will continue to visit maritime museums and maritime festivals. For this reason it is recommended not only to systematically feed their passion in order to make it grow, but also to overcome the traditional perspective putting in competition museums with similar offerings. International alliances between maritime museum networks and other maritime institutions as sort of tribal constellations have to be further develop and promoted with the propose to culturally enrich their audience and convert those who don't attend maritime cultural events or museums into passionate visitors.

The present study would have greatly benefited of the integration with a participant observation research method to collect primary data within the museums and the respective territories. The spreading of the covid-19 pandemic has prevented the researcher from conducting such observation. Also the possibility to interview museum visitors to triangulate and confirm the reliability of the results elaborated through the sentiment analysis would have represented an important source of data. The possibility to observe the implementation of the different proposed managerial recommendations in a longitudinal way would represent a further development of the study able to permit the evaluation of the effectiveness of such proposed solutions.

The importance of the maritime cultural heritage in the Adriatic is very important (Bender, 20015). Together with the growing phenomenon of maritime heritage festivals observed in the desk analysis, it provides a promising local and foreign audience to the museum network. The favorable situation that is expected to manifest after the end of the covid disease, would lead to assign a great potential of growth to the Arca Adriatica network which will thus be entirely dependent on the ability of its managerial team to select and implement the right set of management and marketing strategies and tactics.

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