

Boosting local economies at cruise destinations in Greece and Cyprus: A digital tool for integrating local products into cruise supply chains

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Abstract

The cruise sector is a heavy contributor to the Blue Economy of Europe and of the Mediterranean region in particular. Destinations in Greece are integrated in several cruise itineraries, while cruise traffic is also increasing in Cyprus. Despite that, the economic contribution of the sector to the local economies is quite limited. Besides efforts to increase home-porting activities in both countries, targeted actions should also be taken for increasing cruise expenditures at ports of calls. To this end, the promotion of local ‘traditional’ products and their integration into cruise supply chains accounts for a tremendous opportunity that can provide important benefits to all relevant stakeholders. This can be facilitated through the development of an online platform that is being presented herein, the development of which was based on targeted recommendations set via a series of consultation activities with relevant stakeholders, so that the final product is tailored to their needs.

Keywords: Cruise destinations, economic impact, local products, cruise supply chain, digital platform.

1. Introduction

The cruise sector is a substantial segment of maritime tourism, with a heavy economic impact considering the expenditures of both passengers and crew members at home ports and ports of call, as well as that of cruise companies (e.g. purchase of food and other supplies, port fees, etc.). The sector’s overall contribution to the Blue Economy of Europe is substantial

considering that (a) the largest cruise shipbuilding industry is located within the European context, (b) EU Member States account for the 2nd largest source of cruise passengers; and (c) the Mediterranean region is the 2nd most attractive cruise destination in the world after the Caribbean (EU, 2020). More specifically, in 2019, the sector's total economic output in Europe amounted to nearly \$64.5 billion, while it also represented a major source of employment supporting approximately 413.900 jobs (CLIA, 2020).

Within the Mediterranean region, Greece holds a leading position in the cruise network serving as the 3rd most popular destination (CLIA, 2018). Cyprus also represents a promising market. Despite a downturn in the past years, it now presents a significant growth potential. Increased cruise traffic does not however provide significant benefits to the local economies at the ports of call. It's worth noting that Greece ranks only 9th in Europe in terms of total economic impact of the cruise sector, which can be mainly attributed to two factors: (a) decreasing and currently limited homeporting activities, and (b) limited spending of passengers at the ports of call (CLIA, 2018). With regard to the latter especially, since the former depends on a wider range of parameters, there is particular interest to investigate solutions that can reverse this situation better balancing out the benefits derived versus the negative externalities generated. This should be done by taking into account all recent trends that are currently impacting the cruise sector (CLIA, 2021; CLIA, 2019):

- Onboard internet connectivity and use of smart technologies (i.e. keychains, necklaces, virtual assistants, etc.) for providing added-value services often personalized to the preferences of the respective cruise passenger. Several smartphone applications are now available to passengers (often developed by the cruise company itself) allowing them to make reservations onboard and more easily navigate on the vessel, order food and beverages, etc.
- Passengers going beyond conventional sightseeing, seeking now unique and memorable experiences at each destination. These also include cultural experiences, 'living as locals' and grasping a good taste of the local cuisine and products (e.g. local wines, 'traditional' products, etc.)
- Widening of the targeted social groups, including now generation Z (i.e. those born between mid and late 1990s), working nomads, female groups of travelers, solo travelers, etc. To this end, more diverse travel preferences and needs are to be satisfied
- Expansion of cruise seasonality, providing now off-peak season itineraries.

It is undisputable that digitalization and smart technologies already play (and will continue to play in the future) a prominent role in the cruise industry providing passengers with additional functionalities and services making their journey more relaxed and tailored to their preferences. Such opportunities can also be used for bringing passengers closer to the local cuisine and products and each port of call providing them with an additional 'tasting' experience that will create another memory of the respective destination. Of course this will be really beneficial for the local economies as well.

To this end, this paper puts forward a digital platform that is being developed within the framework of the NAYS research project¹ aiming to bring together local producers and

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suppliers at each cruise port in Greece and Cyprus with cruise companies and passengers calling there. More specifically, section 2 provides an overview of the cruise network in Greece and Cyprus (before the outburst of the Covid-19 global pandemic) highlighting key connections and destinations. Once the reference framework is set, the new digital platform is being described in section 3. More specifically, the consultation activities undertaken with local stakeholders are outlined placing particular emphasis on the feedback received which actually guided the platform development process introducing some changes with regard to the initial planning. The next steps to be undertaken for the testing of the platform and the development of its final version as well as the preparatory work that needs to be conducted for facilitating its commercialization and business success are outlined in section 4, along with a series of concluding remarks pointing out adoption challenges but also the prospective benefits to be realized for the producers / suppliers and cruise companies and passengers.

2. The status of the cruise sector in Greece and Cyprus

Greece is being acknowledged as a top cruise destination in Eastern Mediterranean, with Cyprus also depicting increasing attractiveness over the last few years after a period of downturn. Indeed, in the pre-Covid area (2015-2019), Greece accommodated every year on average nearly 5 million cruise passengers and 3.900 calls of cruise vessels (CLIA, 2018; HPA). In 2018, 56 ports in total accommodate cruise calls with most of them being on islands of South Aegean. In addition to them, the port of Piraeus and Katakolo also accommodated a large percent of cruise passengers considering their proximity to sites of invaluable touristic and archeological interest (i.e. Acropolis, Olympia, etc.). Overall, nearly 95% of the movements of cruise passengers and 80% of calls are concentrated on ten major cruise ports (i.e. Corfu, Katakolo, Piraeus, Mykonos, Rhodes, Santorini, Chania, Heraklion, Kefalonia and Patmos) (Pallis et al., 2017).

As previously noted, cruise traffic in Cyprus was significant smaller over the last years, though with an upward trend before Covid-19 disrupted all operations. More specifically, in 2018, 90.393 cruise passenger movements and 110 cruise calls were recorded.

In Greece, the cruise network comprised in 2019 (April-December) of nearly 277 itinerary legs served by 829 cruise vessels deployed by 28 cruise lines in total. The 2020 planning was far more ambitious (i.e. 333 itinerary legs served by 891 vessels) but unfortunately was not materialized due to multiple cancellations and the disruption of services as a result of the Covid-19 crisis. About 1% of the aforementioned itineraries are of national scale (i.e. confined at cruise destinations within the country) while the largest percent (95%) are international ones spanning across the Mediterranean Sea. The remaining ones are actually global cruises that connect Greece and the Mediterranean Sea with North Europe, North and South America, South Africa, South Asia, and Australia (NAYS Consortium, 2019).

Greek destinations are connected with different surrounding regions and countries. Greater, in number, are the connections with destinations at the Adriatic Sea (i.e. North Italy, Albania, Croatia, Montenegro, and Slovenia), followed by destinations in the Western and Eastern Mediterranean Sea (i.e. Spain, West Italy, and Malta - Cyprus and Israel respectively), the Red Sea (i.e. Egypt, United Arab Emirates, Jordan, and Israel), and the Black Sea (i.e. the

North coastline of Turkey and Bulgaria). Furthermore, multiple are also the connections of Greek islands with the western coastline of Turkey and South Italy and Sicily in particular.

Given the smaller scale of Cyprus, all cruises calling there are international ones, connected mostly with destinations in Eastern and Western Mediterranean countries (i.e. Jordan, Lebanon, Israel, Egypt, and Greece - Italy and Malta respectively), the Black Sea (i.e. Turkey) and the Red Sea, further extending to destinations in the Indian and Pacific Ocean as well as the southern coastline of Africa (i.e. United Arab Emirates and the Republic of Campos Verde) (NAYS Consortium, 2019).

In both countries, the number of homeports is very limited and thus the contribution of the sector to the local economy (which is even greater than that at ports of call) is minimal (Pallis et al., 2017; Urban Environment Lab NTUA, 2020). In Greece only the ports of Piraeus, Corfu, Heraklion, and Chania served as homeports in 2018, with Piraeus accommodating the larger number of cruises. On the other hand, all three ports of Cyprus serve as homeports, accommodating mainly short cruises to Israel (Port of Haifa), Egypt (Port Said), Greece and Lebanon (NAYS Consortium, 2019).

As mentioned above however, since March 2020, the global pandemic of Covid-19 completely disrupted cruise operations imposing a heavy economic impact (CLIA, 2021; Cruise Critic, 2021a). During this time and for being able to safely restart operations, the cruise industry consulted and received targeted guidance from health scientists and relevant experts who set-up strict health protocols included specific set of measures (e.g. testing, vaccination certificates, physical distancing, different ventilation strategies, etc.) that can ensure the health safety of passengers during the whole cruise (CLIA, 2021). To this end, in July 2020, the suspension of cruise operations was partly revoked by a conditional sail order for cruise vessels of small capacity (i.e. under 250 passengers) (CLIA, 2021). At a bigger scale, according to the latest information, cruise operations in Greece are scheduled to restart in late May 2021 with AIDA Cruises deploying the first vessels (Cruise Critic, 2021b).

3. A new digital tool for boosting local economies at cruise destinations

Besides being a highly attractive cruise destination, Greece holds only the 9th position within the Mediterranean region in terms of total economic impacts (i.e. direct, indirect and induced) and thus relevant benefits for its local economies are quite restrained in comparison to other countries (CLIA, 2018). More specifically, the cruise sector contributed, in 2017, € 913 million to the Greek economy supporting in total 10.721 jobs (CLIA, 2018). The absence of homeporting activities plays a major role in the generated economic impact since passengers' expenditures in homeports are generally two to three times higher than those in a transit port (Urban Environment Lab NTUA, 2020).

Besides providing incentives for increasing homeporting activities, efforts should be also placed to increase expenditures at transit ports. Promoting local, 'traditional' products is a great opportunity to do so and should be exploited to the benefit of both producers / suppliers as well as the cruise companies and passengers. Local products can be effectively integrated into the cruise supply chains enabling cruise companies to provide to passengers a 'tasting' experience of each destination they are visiting. Passengers may also be informed, before arrival, of the 'traditional' products that can find at the respective destination and select to order some of their preference saving in that way time for exploring other activities during

their visit. A digital tool (i.e. a platform) can facilitate such a process, considering the example of similar tools (e.g. DBluemart, Procureship, etc.) that are targeting though other types of ship supplies (e.g. marine equipment, spare parts, etc.).

The NAYS platform, named after the project within the framework of which it is being developed, will focus on food and beverages since (a) a greater interest was recorded by the stakeholders that participated in the consultation activities undertaken, and (b) they successfully represent the ‘local character’ of many Greek and Cypriot destinations. Through this tool, producers and suppliers will be able to list in detail their products and cruise companies as well as passengers will be able to make orders with the products being delivered to the cruise vessel upon arrival. In order to facilitate the preparation of all available orders, information with regard to the estimated arrival of the respective cruise vessel will be made available through the platform.

A number of consultation activities were undertaken in both Greece and Cyprus for better shaping the original idea for this platform, tailor-making it to the needs of the prospective users so that the final product that will be delivered can immediately provide added value (Sdoukopoulos et al., 2020). More specifically, local workshops were organized and a questionnaire survey was issued for collecting feedback on (a) functionalities to be provided, (b) data to be requested and (c) roles of users. The aforementioned activities resulted in a set of recommendations (Table 1) which guided the development process.

Table 1: Platform development recommendations extracted from consultation activities

Users

- Besides local producers / suppliers and cruise companies, (a) passengers, (b) companies managing speciality restaurants and other shops onboard the cruise vessels, as well as (c) logistics providers would be also worth to be granted access and rights in the platform
- Users will have to set-up their profile in the platform by inserting all requested information.
- After every transaction facilitated through the platform, users should be asked to evaluate each other (i.e. provide a grade) describing also any problems that might have been encountered. Grades of users (e.g. displayed by a star rating system) as well as any comments made will be visible to all users in the platform so that it is taken into consideration when deciding to make an order.
- Users with a low grade must be warned to enhance their performance and receive some penalty if they fail to do so within a given time framework.

Listing of products

- As previously mentioned, the platform will emphasize on food and beverages.
- For facilitating the insertion of products, specific forms must be used requesting detailed information (e.g. product name, origin, weight, quantity, price, type of package, photos, etc.). The platform should also provide producers / suppliers some interoperability functionalities with their inventory systems so that products are more easily and rapidly inserted and updated (e.g. quantities).
- Quality certificates of products should be also provided and shared with interested users when

requested.

Product searching

- Multiple categorization of products should be facilitated (per type, origin, etc.). Free text search functionality (i.e. through keywords) should be also offered.
- Besides Greek, all information in the platform should also be available in the English language

Matching supply and demand

- After the different products are available on the platform, cruise companies (as well as the other users mentioned above) should be able to place an order. Alternatively, they can also post their needs and producers / suppliers can respond if willing to address them. In the latter case, cooperation between different producers / suppliers may be needed so that all needs are met (i.e. in terms of different products or quantities). Price may be specified or indicative ranges may be mentioned and then exact price is specified once the order is placed (i.e. a discount rate may be given to larger orders)
- Specific time windows (i.e. in respect of the estimated time of arrival of the respective cruise vessel) need to be considered in order placement, so that producers / suppliers are given enough time to prepare and deliver all orders on time.

Order processing

- Once the order is placed, contact details of the contracted parties will be shared so that they can easily communicate any change / other detail.
- It was suggested payments not to be processed by the platform but be executed out of it (exact process to be specified by the contracted parties)

The aforementioned recommendations were efficiently integrated into the platform's high-level architecture based on which the development process was initiated. The platform will be coupled with an information portal where relevant information and updates will be shared with any interested web-user.

The development process is currently progressing in accordance to the SCRUM framework. The latter breaks down development into a series of short-term sprints, during which a component of the overall product is being built and then shared with a dedicated group for receiving feedback / comments to be addressed in the next sprint. To this end, deviations from users' expectations during the development process are minimized and the platform to be pilot-tested is more close to the final version to be delivered. The dedicated group comprises of a few project partners and selected stakeholders interested to support the process.

Within the development process, particular attention is being placed on ensuring the platform's scalability so that new services / functions can be easily introduced considering user needs in the future. It should be also noted that in order to facilitate the time window setting mentioned in Table 1, the platform's interoperability with maritime information systems is also foreseen (Efthymiou et al., 2021). The National Maritime Single Window in each country was originally targeted but both prove not to be fully operational. To this end, information shared through port systems will be targeted instead.

4. Next steps and conclusions

The development process is currently reaching each last phase and the platform's pilot-testing has already started to be planned. Timing is considered to be appropriate since cruising is just restarting in both Greece and Cyprus and thus feedback from some passengers can also be collected.

The stakeholders that have participated in the consultation activities but also additional ones will be invited to test the platform and provide their views and comments assessing a number of aspects. More specifically, the platform's overall structure and functionalities will be assessed in terms of usability and user-friendliness pointing out also any gaps that might exist. The platform is to be populated with a high number of users testing also information completeness as well as interoperability opportunities with their systems for seamless information entry and sharing. Pilot-testing activities will take place in multiple cruise destinations in Greece and Cyprus and specific forms will be utilized to this end so that the feedback to be received can be easily processed and respective changes in the platform are undertaken.

Through this process, engaged stakeholders will have the opportunity to develop a more clear idea of the benefits the platform can provide to its users. Although it is understandable that it is not easy to disrupt the current structure and operation of cruise supply chains, if it is welcomed by the cruise passengers and companies (i.e. the demand side) because of the new experience to be gained and the fact it may further enhance the attractiveness of their product respectively, changes will have to be undertaken in order to fulfil this new demand. Of course the latter will depend on the intensity of this demand. To this end, the platform needs to be actively promoted by multiple actors in both countries (e.g. the regions of North and South Aegean as well as the regions of Crete are partners in the project with the latter serving also as the coordinator) so that it gains visibility and trust is built. The platform's governance model is also expected to contribute to the latter and will form a key part of its commercialization plan. So will its pricing policy. Both issues will be carefully studied at the last phase of the project so that evidence-based decisions can be taken after the project's end aiming to ensure the platform's sustainability, scale-up and added value.

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