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and network of MIEMA**

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ANTE-OPERAM ANALYSIS

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Abstract:

This document contains a summary about current demand flows, surveys results, infrastructural and transport services network for the city of Genoa, in consistence with the survey model and in order to highlight sustainable mobility issues and benefits. Finally, the Report will pay attention to the predisposition for electric vehicles use, in particular e-scooters.



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2. Introduction

According to the Ele.C.Tra. Project proposal, deliverable D.2.1 named “Report on Current mobility and network” represents the main result of the whole WP2 “Ante-operam analysis”. This deliverable is referred to the island of Malta.

In this light this report will highlight the demand mobility flows:

1. to identify attractor places (parking, schools, commercial districts...) and the main elements about day trips number, trip hours, transport means and mobility reason, in order to acquire a specific and technical starting point for the model, contextualization and experimentations and not for having a complete framework of all day trips, that it's not a real focus of the Ele.C.Tra project;
2. to systematize the actions already ongoing or planned in every city about mobility networks and local attractors, in consistence with what was carried out in the best practices task and analysing the main local planning documents ;
3. to point out the main elements about the current scooters mobility, thanks to ex-ante surveys done in each project city, without to extend the activities to target group individuation and stakeholders involvement, that are activities planned in the next WPs;
4. to point out the predisposition for the e-scooters use by the current traditional scooters users and for those not using scooters (mainly car users) and issues perceived or identified by citizens and advice in terms of electric and sustainable mobility;

In terms of infrastructural and service network:

1. to identify the main infrastructural bottlenecks in the road network in every city, paying attention to the parking and interchange nodes situation in the urban area that are more suitable for scooters;
2. To systematize the main characteristics of the local public transport service in the main interchange nodes.



3. History of Transportation in *Malta*

Presently the Maltese bus ('Xarabank' in Maltese) is the most overwhelming form of public transport in Malta. In the older 'Xarabank' still serves as a major tourist attraction throughout the year. This is strongly correlated with its unique appearance, the bus ownership and operation model which used to be utilised in Malta before 3 July 2011. After this date the bus network was taken over by Arriva.

The uniqueness of the Maltese bus comes from the previous convention of local ownership of the buses by the drivers. Subsequently this resulted in a characteristic practice of customising them thus making each one of them unique. This consisted of a high notch of customisation, detailing and decoration. This uniqueness was also attributed to the fact that the drivers used to carry out the maintenance, rebuilding or modifying of bus bodies all by themselves.

3.1. *Omnibus*

This is the first documented Maltese bus and it was most popular in mid-1800. The other means of human transport at the time were the carts which were towed by horses and cows carts (Kales). The first Omnibus was imported to Malta in the year 1856 from England by a certain Ćensu Attard.

During the same year the public was informed that the omnibus would carry 16 passengers and would start operating on a daily basis as from the follow Sunday 30th November 1856.

The schedules were as follow:

- 6.30 a.m.: Departure from Lija to Valletta Belt passing from Balzan, Birkirkara, San Giuseppe (Hamrun), Tas-Samra, Floriana, Valletta.
- 8.00 a.m.: Return trip from Valletta to Lija on the same route.
- 3.30 p.m.: Another trip from Lija to Valletta followed by a return trip to Lija

The launching fare of Ćensu Attard's Omnibus was at 5 dinars for a return trip and it revealed itself as a success till the end of the 1800's.



Figure 1 The Omnibus in circa 1800's

3.2. THE TRAM

This service was first inaugurated on the 23rd of February, 1904 by the Malta Tramways Limited. The Trams' service linked Valletta with the Three Cities of Birgu, Bormla and Isla, Zebbug and Birkirkara.



Figure 2 Dissemination of bicycle station in Barcellona

The Tram consisted of two floors: the lower and the Upper Deck. The first floor hosted the driver, ten reversible seats carved out of wood in which 20 passengers could be seated. People carrying fruit, vegetables and livestock to be sold in Valletta, would pay for an economy ticket and stood standing up.

The 'Upper Deck' catered for 18 seats. Passengers were not allowed to stand up or stand up during the journey since the overhead lines were very dangerous. The Tram did not have any doors or windows while the Upper Deck had no roof. This was done with the purpose of lowering the Manufacturing and running costs.

The Malta Tramway service was phased out on the 15th December 1929 as a result of the increasing popularity in other modes of public transport.

3.3. BUSES

Buses have turned out to be the primary mode of public transport for the Maltese Islands since their inception. The oldest trace in Maltese literature which refers to the bus service dates back to 1905.

Consequently buses have undermined the Malta Railway and the Malta Tramway service. As buses gained popularity, these two services were no longer economically feasible to run. It was on the 31st of March 1931 that the Malta Railway performed its last trip from Rabat to Valletta.



Figure 3 One of the oldest kinds of busses which was utilised in Malta

In 1905 a number of companies were granted the permission to import buses from England so as to provide a continuous connection between Valletta and St. Andrew's. This was granted in the context of Malta being a military and naval base therefore transport being essential.

These first buses came in in yellowish green and with a black stripe. As a result of this success, Maltese craftsmen bought chassis from the United Kingdom and converted them into buses. This eventually evolved in various kinds of busses which serviced the transportation needs of villages to and from Valletta.

1931 saw the first version of the Traffic Control Board which was constituted with the aim of mandating schedules and to also introduce new routes. Subsequently the service became more efficient.

Eventually, the owners of route buses became very proud of their trucks such that they kept their buses in an optimal condition, decorating them with trimmings and carried the names of the village's Patron Saint or battleships.

Each route featured a different colour. They were kept very clean from the outside and even from the inside.



Figure 4 One of the oldest kinds of busses which was utilised in Malta

4. The 2011 restructure

The Halcrow Group Limited was appointed to assess the bus system in Malta. In November 2005 it released a report which criticized the transport model and arrangements between ADT and ATP. This report highlighted a decline of 50% in the number of bus passengers between 1979 and 2004.



Figure 5 One of the new buses which composed the new Arriva fleet

A new transport strategy was announced in December 2008 for the first bus route restructuring since 1977. Within the European Union's legislative framework, the eligibility to operate the new network would not be transferred to the ATP. This brought to an end the state-subsidized owner-operator model, which in 2009 stood at 508 buses with an average age of 35 years which were operated by over 400 independent licensees.

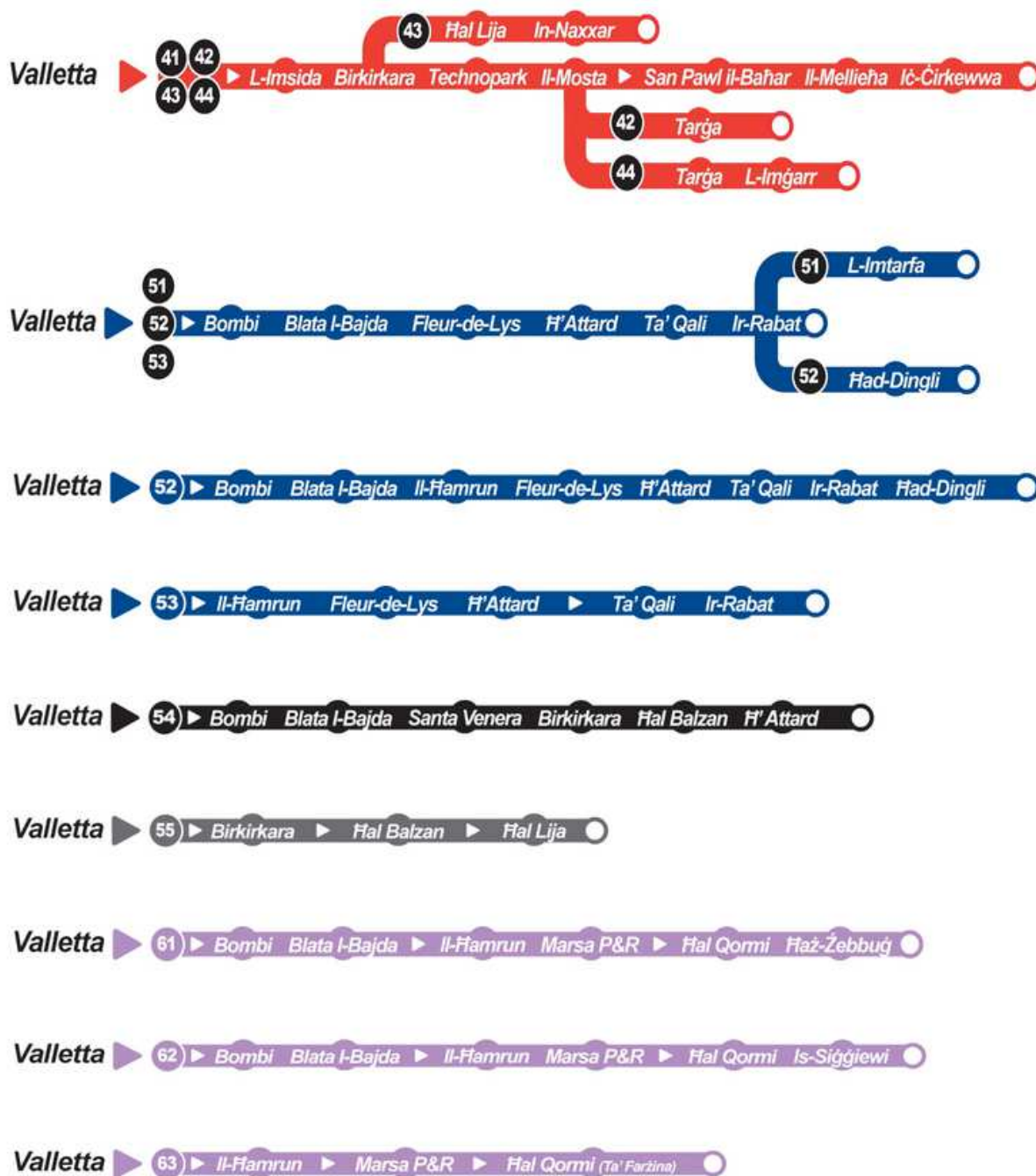


Figure 6 A substantial part of the route

Since 1977 the most prominent restructure of the public bus service took place on 3rd of July 2011 when the tender for the public bus network was awarded to Arriva. This was characterised by new low-floor buses and changes in fares.



Figure 7 the introduction of Arriva caused mayhem amongst all the road transportation network

4.1. Transport Planning

The previous public bus service operated till Saturday 2 July 2011. As from Sunday 3rd of July 2011, Arriva officially started operating the new bus service.

The service offered by Arriva consisted of 118 low floor buses. Previously there had been 508 buses in the old bus service.

Some of the older buses were kept by their owners for use as vintage buses, 73 were kept for private use, 127 were given to Heritage Malta and 164 were scrapped.

4.2. Present Situation

Transport Minister Joe Mizzi confirmed that Transport Malta had finalised a new schedule of routes following consultations with local councils. It was evident how more vehicles are required to cover these routes and these will feature the basis for negotiations on the new contract following the publication of the Expression of Interest.

A section within Transport Malta has created to ensure that the public bus service runs consistently and to rectify the transitional period in between Arriva and the new operator so that this will least inconvenient to passengers.

Transport Malta has overridden Arriva's buses and IT system, while the workers on its payroll were retained until a new operator is found.

4.3. Geographic Coverage

The administration of the public transport service in Malta and Gozo by Arriva was being operated using a fleet of modern, air-conditioned buses. The service is regarded as an affordable with a wide route network across all of the Maltese Islands.

The bus service includes:

1. Mainline Routes which service the main towns and finishing at the principal bus terminus outside Valletta;
2. Direct Routes which serve towns and villages throughout Malta directly, without the need to travel to Valletta;
3. Night Buses which run from San Ġiljan to various locations in Malta;
4. Gozo Service which cover all the main locations on the sister island;
5. Airport Express which connected the entire island to and from Malta International Airport;
6. Park & Ride - services at various locations.

4.4. Demand mobility flows

Malta is the smallest EU member state with albeit half a million inhabitants spread on an area of 316 square kilometres. The Maltese island feature an exorbitant population density exceeding 1,320 inhabitants per square km which is over 10 times the EU’s average.

Malta is often regarded as a “city state” in which 50% of the population lives in the north and south harbour areas in the vicinity of Valletta.

A National Household Travel Survey was conducted in 2010 and showed how 74% of all trips were being taking place using private passenger cars, either as a driver or a passenger. This translates in a modal share increase of private cars of more than 5% when matched with the same figures of the 1998 National Household Travel Survey. This variation was associated with a modal transfer of trips from public transport and walking.

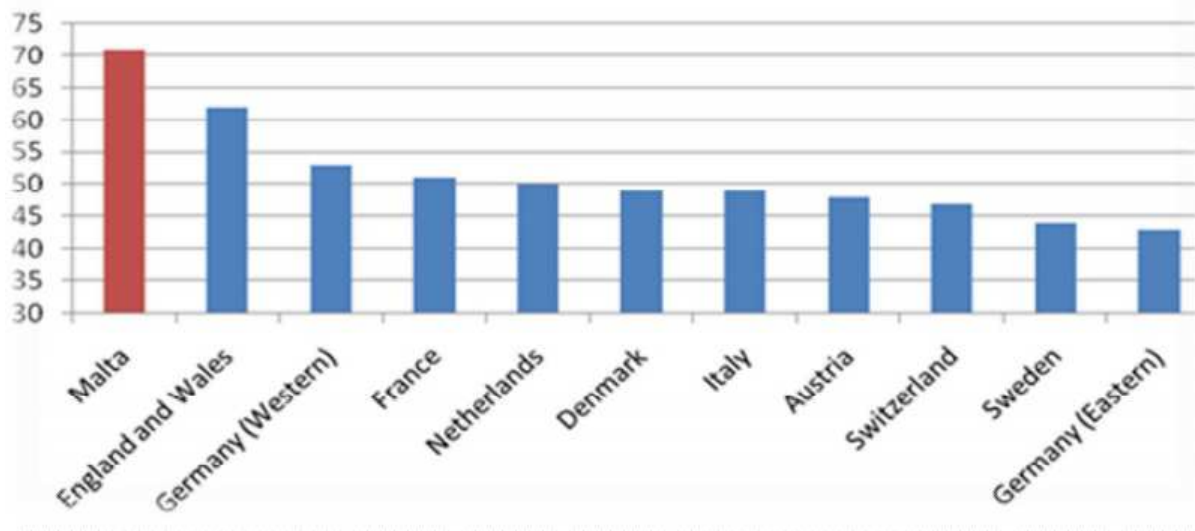


Figure 8 Share of Car as % age of all trips

In spite of having a financial administration that levies comparatively high taxation heights for vehicle registration, above EU average fuel costs and an annual road tax that is intended to dampen the purchase of high contaminating cars, the traffic congestion and ecological impacts, private car ownership and its utilisation have been increasing as a result of increased mobility.

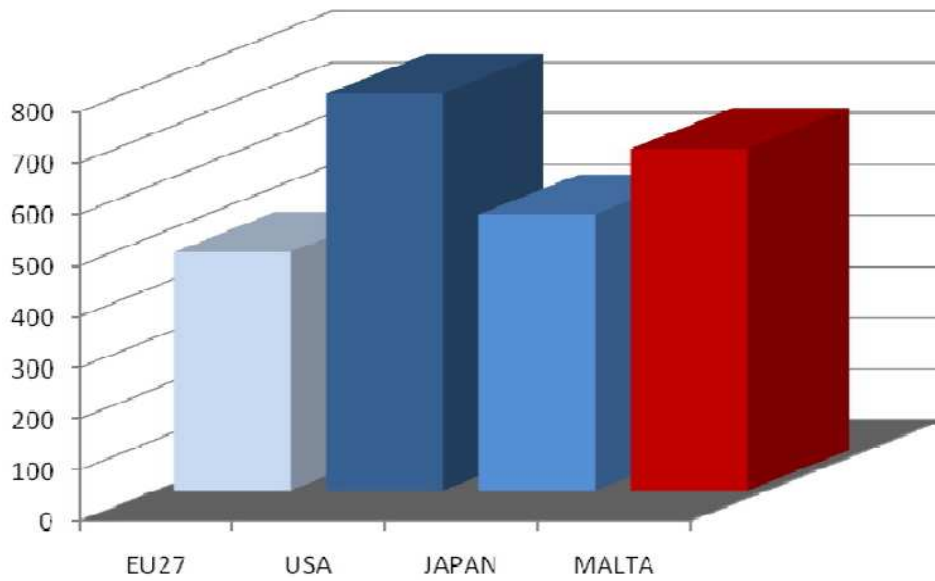


Figure 9 Motorisation (cars/1000 persons)

As shown in figure 9 Malta owns one of the highest car ownership levels in the EU with 19.4% of households possessing 3 or more cars

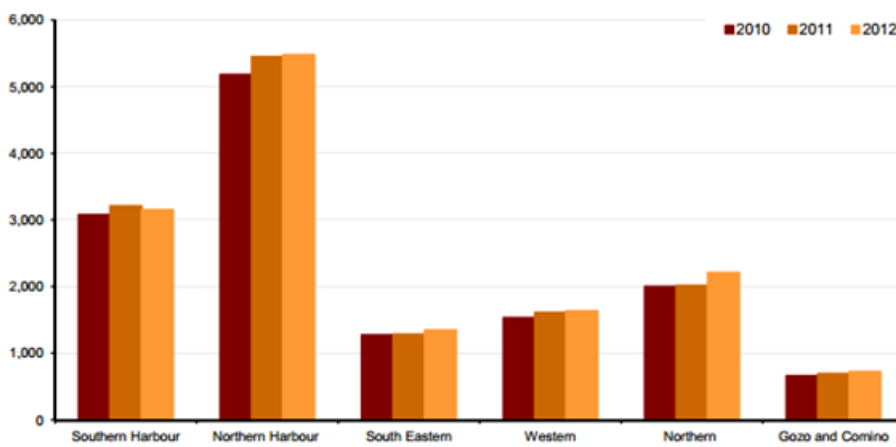


Figure 10 Geographical spread of traffic accidents which were reported in Malta between 2010 and 2012

The exponential increase in motor vehicles has been exerting great burden on the Maltese transport infrastructure in terms of the availability for parking space and road capacity.

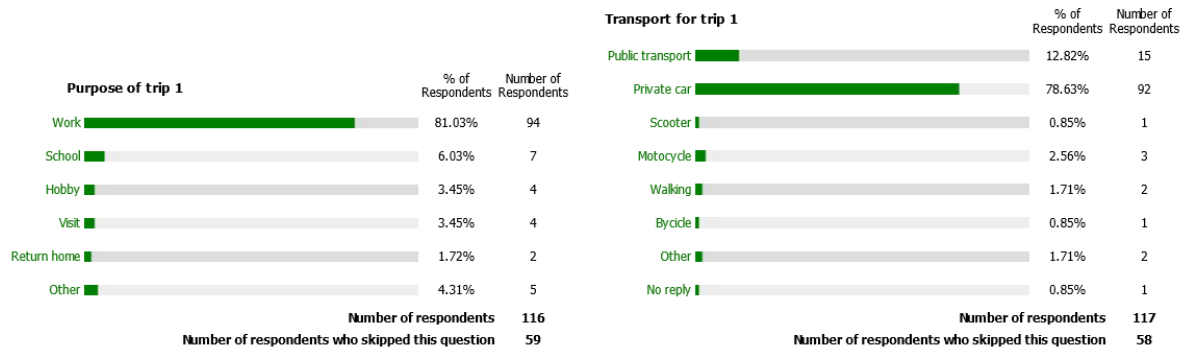


Figure 11 Modes of Transport

Challenges related with road capacity translates into a nationwide spree of critical locations particularly at major traffic intersections located on the 260km main strategic road network.

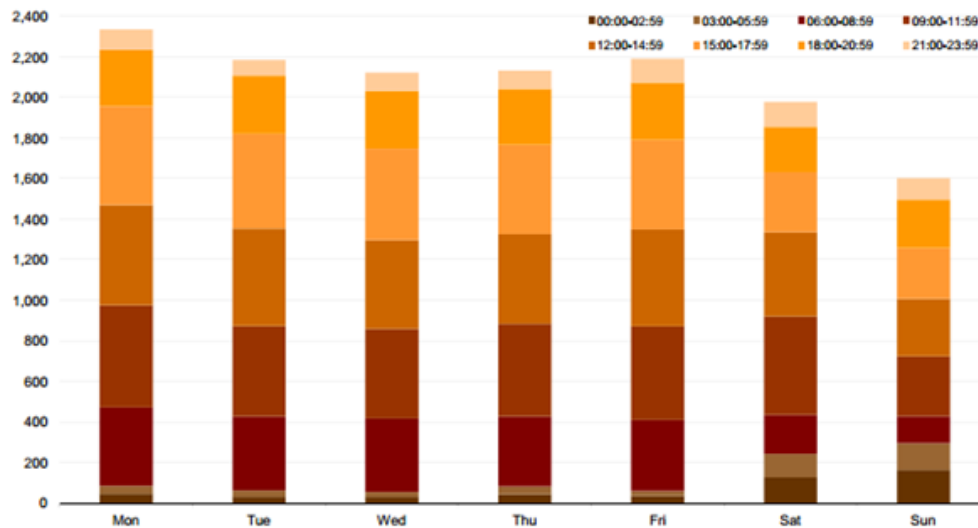


Figure 12 Traffic accidents occurrence according to the day of the week and time

The bottlenecks associated with problems are diffusing from the rush periods to other hours of the day and night. These challenges have been prioritised and addressed through fresh investment into the improvement of parts of the strategic road network.

Places of Attraction

Malta embraces over 7000 years of history which spanned the millennia with a remarkable array of features to unleash. The Islands' attractions are spread through the archipelago providing a spectacular experience in every part of it.

The Maltese Islands have been continuously featured as an open-air museum. Their uniqueness relies in the fact that its history is still visible and tangible today. A tourist may delve into the Islands' mysterious prehistory, retrace the footsteps of St. Paul and appreciate where the Knights of St. John defended Christendom.

The Maltese islands feature a large number of museums, galleries, archaeological sites, beaches, religious sites and natural attractions. These places feature a good number touristic attraction thus spreading the influx of touristic amongst the whole archipelago. In this light, the influx of tourists does not translate into substantial fluctuations in the demand for transport as much as experienced in other countries such as Rimini in Italy, which is overwhelmed during the summer period and almost deserted in winter.

4.5. Popularity of electric vehicle observed in the surveys

From the replies obtained from survey it was noticed how electric vehicles are not very popular. However, figure 12 shows how over 31% of user would be interested in trying an electric vehicle for some time or buying one. In this light it is evident how a pilot project or a demo project aimed at proving the effectiveness of electric cars would be a step in the right direction.

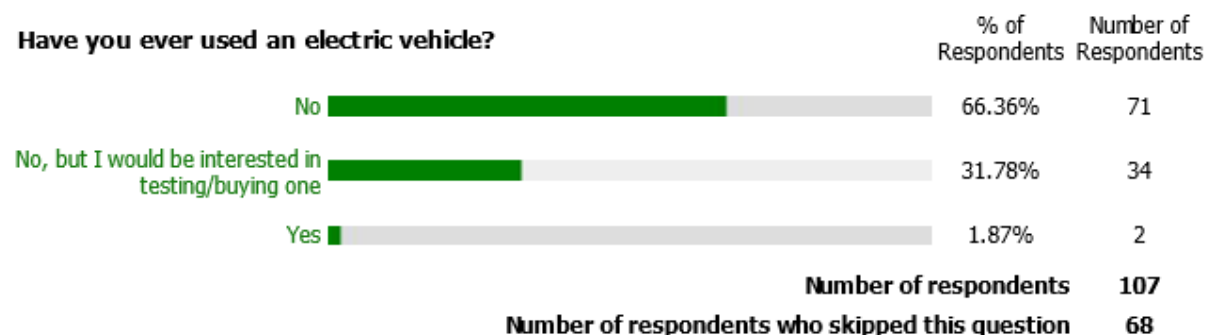


Figure 13 Popularity of Electric Cars

4.6. *Involvement and Impact of European financing*

The European Commission mandates that the public transport system in Malta needs to be redesigned. The realm for people to opt for public transport instead of relying on private cars while making roads safe for cyclists and pedestrians.

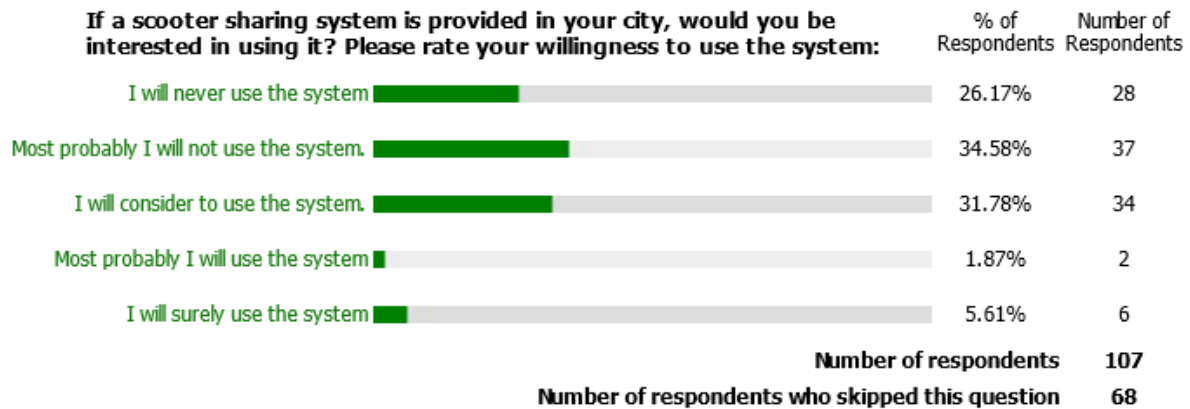


Figure 14 Perception of Scooter Sharing

On the 27th of September 2011 the European Parliament recommended that urban zones must reduce their traffic limits so as to safeguard walking and cycling safe. In this light the funds allocated by the European Commission will be specifically aimed at street re-design projects. In this way there will be generous European Union funding, exceed €6 billion until 2020.

Most of these funds will be focused at utilising bicycle-related travel initiatives alone. So Malta in participating in the Electra project in order to aid at meeting the 2020 targets while making the best use of these funds. As observed in Figure 13 the Maltese Public is sceptical about the reliability and effectiveness of electric scooters. In this light is evident how the Maltese Public requires more ensure to this kind of technology and how European funds may support the road infrastructure while encourage the use of electric scooters and bicycles.

5. Mobility Problems in Malta

Recently the transport infrastructure was characterised by frequent changes in the bus routes. It is recognised how the Public transport system is the major contributor efficient commuting to work is the backbone of every country’s economy. The Ministry is still working hard to address Malta’s ineffective public transport system which has intensified Malta’s car-dependency to such an extent that traffic congestion has stretched to an unsustainable level. Figure 14 proved how traffic congestion is the most overwhelming negative factor on Maltese roads.

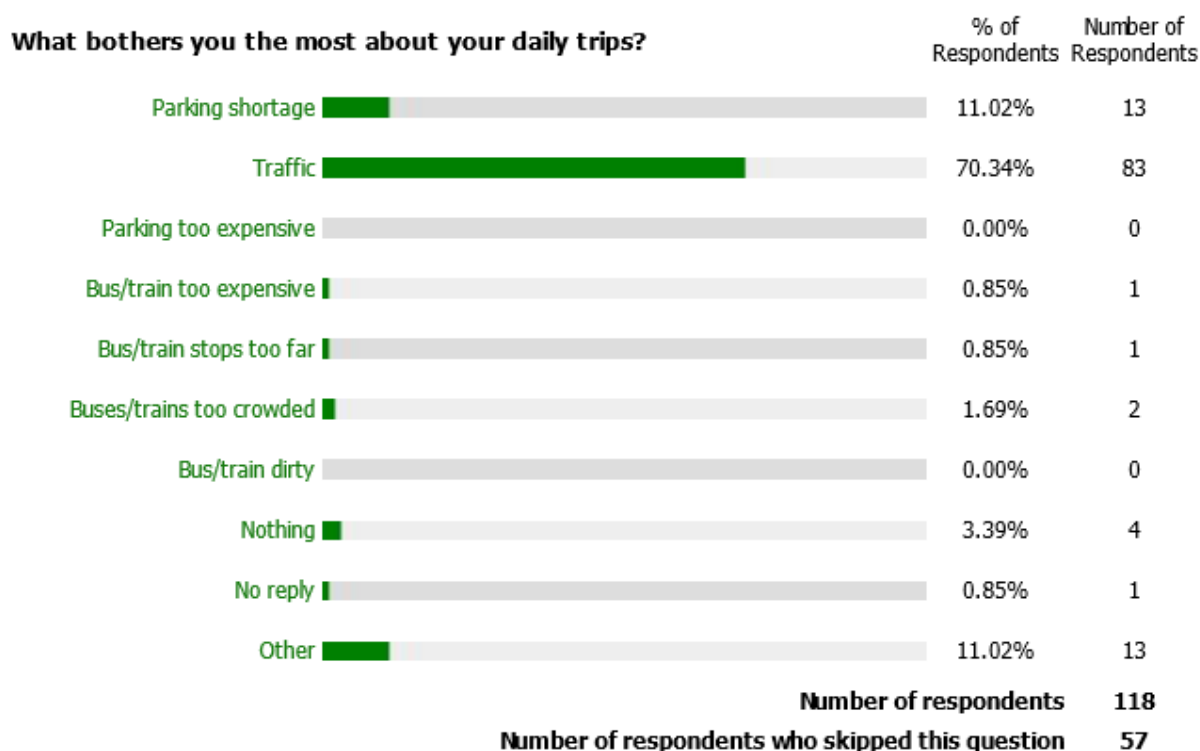


Figure 15 Results from the survey about the greatest issues during the daily trips

The congestion is so overwhelming that Transport Malta has also highlighted how we have a huge area of the harbour sea which could be exploited for transport. The Grand Harbour features a densely populated urban area of Malta.

Traveling to and from Valletta from these towns is a highly inefficient and time consuming since it involves a huge route on congested roads around the Harbour area.

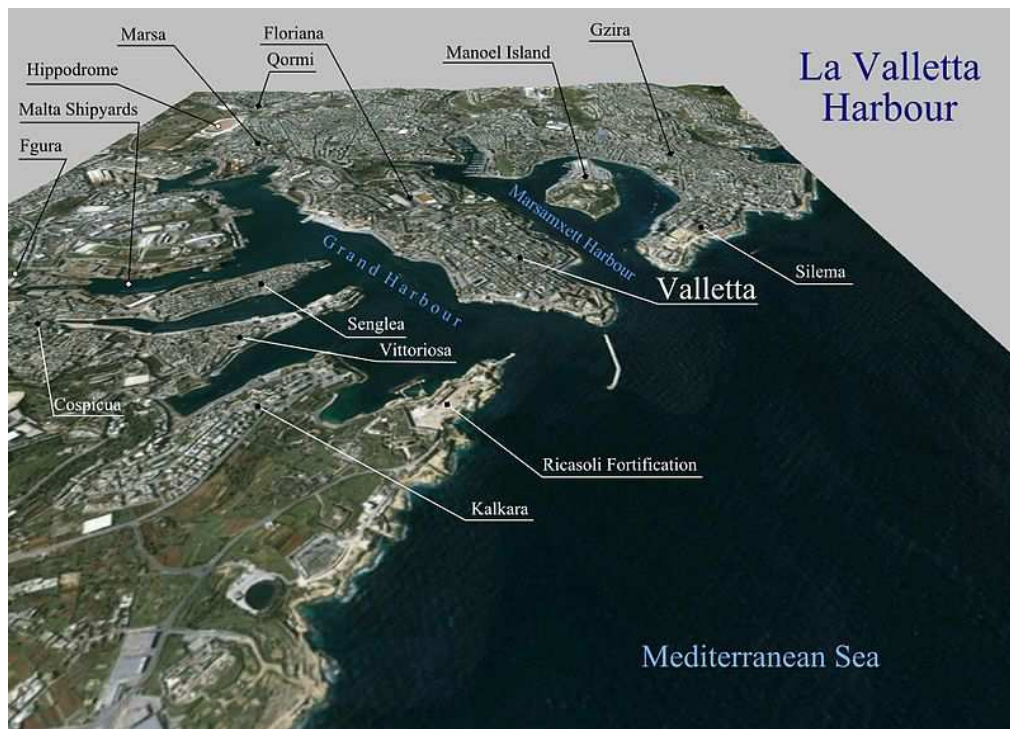


Figure 16 Cities located in the peninsulas around The Grand Harbour

A number of recommendations were received for a harbour ferry network. These were aimed at enabling easy travelling in between cities of the Grand Harbour. Anybody who has used the Marsamxett ferry will agree that this is a very agreeable way to travel. The ferry service would also boost add value to our tourism product in addition to providing commuters for connections between Sliema, Gzira, Msida, Pieta, Valletta, Senglea, Cospicua and Kalkara.

Another plus would be the discount on carbon footprint and pollution on the roads surrounding the harbour conurbation.

6. Lessons Learnt

Transport makes part of our lifestyles and it is featured by various modes of transport which offer the commodity of commuting from one place to another to meet people and fulfilling duties. Subsequently this has an impact on Malta's economic development and the quality of our environment.

The survey showed how the most popular mode of transport is the private car or a motorbike, to public transport, cycling and walking. The survey shed light upon the public's inclination towards pay-as-you-drive, the willingness to buy a cleaner vehicle and about creativities which can encourage citizens to reduce car usage.

The European Community features 53% users that opt for a car as their main transport and 22% use the public transport to travel around on a daily basis, in Malta the figure are slightly higher with 78% and 12% respectively. Only 1.7% of Maltese walk it to work, while none of the people interviewed, cycled, to get around.

Those people who primarily use their car to get around on a daily basis were asked to propose improvements that would encourage car users to combine different modes of transport. A substantial amount of the Maltese respondents expressed their inclination towards combining different modes of transport if it would be possible to transfer easily from one method of transport to another. This included the use of electric scooters for errands within the City of Valletta and its surroundings.

The results of the survey demonstrated how traffic is one of the features which disturbs daily trips. Thus it is evident that a substantial portion of the general public is still determined to rely on privately owned vehicles for commuting from one location to another.

However, a substantial amount of respondents are willing to try electric vehicles even though they never tried one. It also emerged how the general public is aware of the benefits of electric mobility however little is known of their effectiveness within the local context. Subsequently it was noted how the public is also willing to lease such a mode of transport in aim not to lose the availability of a privately own vehicle. Therefore, transport authorities must be aware of the fact that a multi modal way of commuting is a way to introduce electric mobility in Maltese lifestyles.



7. Conclusions

This study has learnt how an exorbitant population density and concentration of vehicles per square kilometre is not shy of turning Malta into a tarmac desert to maintain traffic flow while providing enough parking spaces. It is projected that in the coming years, car ownership will continue to grow. This will be featured with the importation of hundreds of cars per month since there is no way of prohibiting car-ownership.

In this light it could be recognised how the public perception is that of abiding to the privately owned car even though a journey may take up a lot of time. So it is essential that conditions are created which offer opportunities for alternative mobility rather than the traditional car.

In this way the road infrastructure would also cater for a more attractive and pedestrian-friendly in order to encourage people to do without their car by walking or cycling short distances and using electric scooter for longer distances.

This will also contribute to a more healthy consciousness so as to put the message across to all those commuters who would be keen to try less cumbersome transport a try. A small percentage of the general public could cause the butterfly effect.



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