

“Imagining the future of my neighbourhood”:
Residents’ perceptions of sustainable mobility and
regeneration around metro stations in the city of
Thessaloniki

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Abstract: New development around public transport stations has long been seen as the main alternative to low-density urban sprawl and car dependent land use patterns. Less attention has been given, however, to involving local residents in the public discussion about the potential of public transport infrastructure for sustainable regeneration of their neighbourhoods. The present paper presents an experiment undertaken to seek out how local residents would actually conceive the future of their neighbourhood and its potential for sustainable regeneration based on the metro which is under construction in the city of Thessaloniki. The experiment focused on two metro stations under construction in two different neighbourhoods in terms of their socio-spatial characteristics. After a questionnaire survey to residents and businesses, two interactive workshops were held on the day of the nearby open market, one in each station. The survey and workshops operated as knowledge production for both sides: the local residents that were helped to envisage the metro as a future challenge and the research team that had to incorporate their expectations into an ongoing pilot urban project. The paper highlights the potential of the use of qualitative methods in the research and planning of sustainable mobility and neighbourhood regeneration.

Keywords: Transit-oriented neighbourhood regeneration; sustainable urban mobility; residents’ perceptions; Thessaloniki metro

1. Introduction

Public transport has long been seen as the backbone of the transition to urban sustainability whereas new development around public transport stations has been proposed as the main alternative to low-density urban sprawl and car dependent land use patterns (Cervero, 2015, Curtis *et al.* 2009, Papagiannakis *et al.*, 2017). Coupling public transport investments and urban development mainly through mixed use development around public transport stations, what is mostly known in the literature as a Transit-Oriented Development (TOD), is one of the more widely accepted policies seen as the undisputed path to achieving efficient and sustainable urban development forms.

As urban areas are continuously experiencing transformations of slow or more rapid paces, urban development characteristics and dynamics, mobility and accessibility patterns and in general a city’s spatial geography are all components which are interconnected in a complex way (Naaes, 2006). In places where new public transport services are provided in existing, compact, mixed-use areas which have been classified by some writers as high-density TODs (Thomas *et al.*, 2018), such transport investments not only transform neighbourhood identity but also reshape the lives of residents, in some cases by forcing the most vulnerable to leave (Chapple and

Loukaitou Sideris, 2019). Therefore, it is crucial to study patterns and changes that occur at a local scale and identify potential strategies that enhance local identity and the sense of space from a resident's perspective.

Among the main objectives of a TOD is to increase the quality of life of the local community inhabitants given that a TOD contributes to increased transport alternatives in congested urban areas, to the reduction of energy consumption and air pollution, to increased safety for pedestrians and cyclists and to the reduction of road accidents (Parker *et al.*, 2002) and consequently to more vibrant communities. Yet, policies that advocate a TOD pattern have given less attention to involving residents in the discussion about the potential of public transport infrastructure for a sustainable regeneration of their own neighbourhoods. It is worth noting here that recent research has shown the impact of compactness within a wider range of urban form typologies and found that the higher the density, the higher the neighbourhood satisfaction due to the main important components of the compact city that is public transport, accessibility to city centre and land use mix (Mouratidis, 2017).

Neighbourhood regeneration strategies are strongly associated to sustainable community development and to the overall sustainability of the cities as it combines multiple social, economic, environmental and institutional objectives (Kafkalas *et al.*, 2015). Additionally, these strategies promote compact forms of development in existing urban areas, while reducing the need for suburban development. The demand for prosperity along with the request for open-endedness and constant re-interpretation of urban places, more important when it concerns small urban spaces, have led to changes in the approaches of local scale planning, aiming to reconsider the quality of public space (Aravot, 2002, Whyte 1980). A subsequent practice of urban regeneration, especially at the neighbourhood level, is the placemaking approach, as this approach is based on working with the local community through participatory forms of planning involving residents and employees in the intervention areas (Laven *et al.*, 2016). In this way, social and economic productivity, and physical improvements are considered more successfully implemented in an area. Promoting local involvement through placemaking policies contributes to the redesign of dominant uses of specific public spaces, such as streets, changing them from simple transport corridors to significant spaces for human activity. Thus, their regeneration as a public space of shared nature, in other words as "shared spaces" (Clarke, 2006, Grey and Siddal, 2012), addresses basic objectives of neighbourhood regeneration such as good connectivity, safety and preservation of social cohesion. Such approaches and tools improve the integration of urban and transport planning by focusing on the implementation of measures that enhance accessibility and quality of the public realm giving priority to local community and vulnerable users.

Thessaloniki is a typical Mediterranean city with high densities and a characteristic mixed-use pattern throughout its main compact area (Yiannakou, 2013). Since 2008, a metro transport system is under construction passing through the most densely and mixed-use parts of the inner city. Thessaloniki Metro has been for years a politically controversial mega-project as financial and other critical obstacles, especially major archaeological findings, led to a very slow pace of its construction. Degradation images and closures of many businesses in the surrounding areas have dominated the perception of local residents for this mega-project, almost exclusively conceived as a problem within the city's heart and less as a potential of upgrading the local quality of life.

Taking into consideration this dominant image of the residents regarding the metro under construction, the paper presents an experiment undertaken to seek out how local residents would actually conceive the future of their neighbourhood and its potential for sustainable regeneration based on the metro which is under construction in the city of Thessaloniki. The experiment focused on two new metro stations (currently under construction) in two different neighbourhoods of the city. For the needs of the study, a questionnaire survey to residents and businesses was initially undertaken followed by two interactive workshops that were held on the day of the nearby open market, one in each station. A profile of the study areas and the methodology followed is presented in the second section while the third section analyses the findings and discusses the main results of both the survey and the workshops.

2. A profile of the study areas and the methodology of the case study

For the purpose of the case study, two different neighbourhoods were selected within the dense compact area of Thessaloniki with different, however, socio-spatial characteristics: the first one (Patrikiou Station study area) is located within the older, typically residential, inner part of Thessaloniki, a former middle class area which has been gradually deprived over the last decades; the second one (Kalamaria Station study area) is located in one of the main municipal centres of Thessaloniki, a typical middle class area in the compact city.

a. Study area of Patrikiou Station

The study area of Patrikiou Station (Figure 1), located in the east part of the Municipality of Thessaloniki, the central and largest municipality of the city, is a typical compact and high density residential inner-city area. Densities in the area range between 600 and 700 inhabitants per Ha, with buildings up to 5 floors and mainly of an age of 40-50 years old. At a ground floor level, most uses consist of multiple retail outlets, freelancers, services and utilities which serve daily needs of local residents. A considerable number of the ground floor outlets are closed, without any use, which is partly due to the economic crisis of the country since 2010. Within walking distance of less than 10-minute walk of the metro station under construction, there are facilities of leisure, sports and green areas with the most significant one the Mina Patrikiou park, a neighbourhood park and one of its most characteristic public spaces. The study area is located within the wider zone of influence of nearby coastal zone of the city, known as Nea Paralia, which offers recreation facilities and activities for the residents of the entire east and south east part of the compact city. The study area is crossed by two main roads of the city (Vasilissis Olgas and Delphon), one of which functions as a major arterial and entrance to the city and the second as one of its minor arterials. In terms of the mobility characteristics, the proximity of the area to public transport services (bus lines) is quite satisfactory. However, it lacks an integrated pedestrian and biking network.

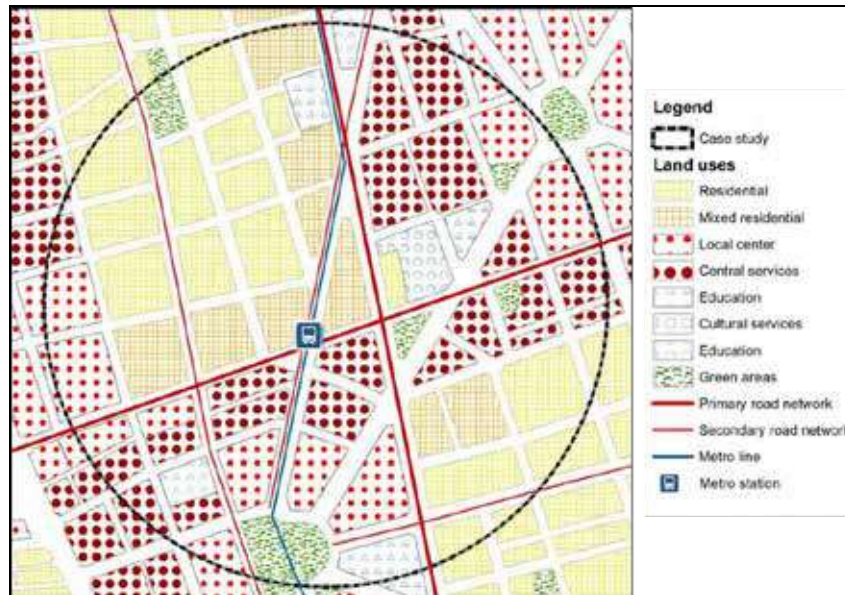


Figure 1: Land uses in Patrikiou Station study area

b. Study area of Kalamaria Station

The study area of Kalamaria Station (Figure 2) is located in the centre of the Municipality of Kalamaria, situated in the south east compact area of Thessaloniki. This study area is also distinguished by mixed uses of a local centre nature that are developed along a pedestrian zone as well as other main streets of the area. The area is compact with rather lower densities ranging between 120 to 270 inhabitants per Ha, with buildings of 4-5 floors and mainly of an age of 20-40 years old. The immediate zone of influence of the metro station bears common urban characteristics with those of Patrikiou Station area. At a ground floor level, there are multiple commercial and recreational uses as well as education, care and cultural services all developing along the main road axis (Metamorphoseos, Aigaiou and Pontou). In the case of Kalamaria Station study area, there is a much smaller number of closed stores without use comparing with that of Patrikiou Station, along with a greater number of residential ground floor uses and parking lots. Regarding the mobility characteristics, the area is also characterized by satisfying accessibility and proximity to public transport (bus lines). Despite the long length pedestrianized streets of Metamorphoseos and Kominon, the wider area lacks an integrated pedestrian and biking network.

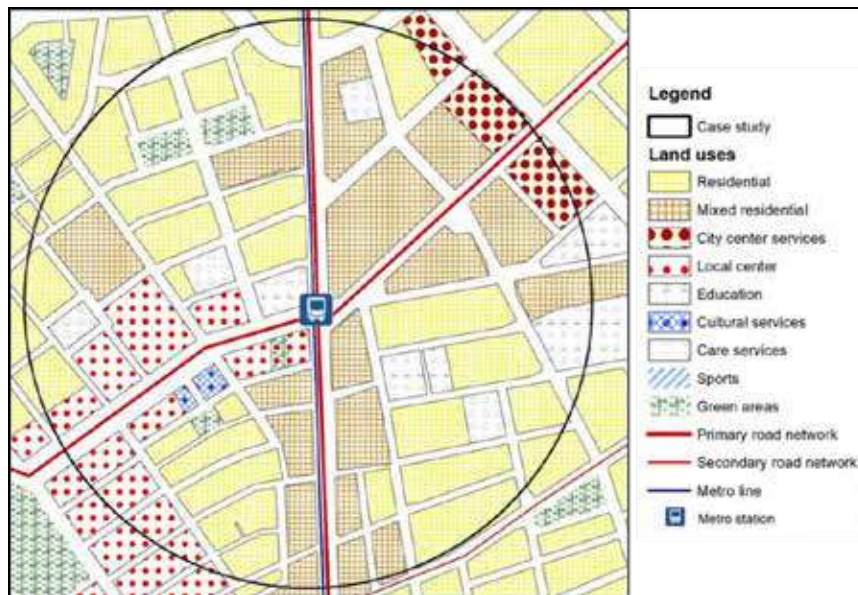


Figure 2: Land uses in Kalamaria Station study area

c. Methodology

The methodology of the present case study included the following three steps: 1) An analysis of the two study areas based on field recording and mapping of their critical urban and mobility characteristics. 2) A questionnaire survey in order to understand the main characteristics of the users of the study areas, to evaluate these areas based on the respondents' perceptions about the local problems and to record their views and expectations regarding the potential of upgrading the neighbourhood around the future metro stations. The questionnaire survey was held in the first week of December 2017 and was addressed to a sample of 180 people (90 questionnaires in each study area) who work, live and visit the two study areas. The questionnaires were conducted in public places, retail and leisure stores of the study areas. 3) The organization of two participatory workshops, in order to involve people living, working and visiting the study areas in a future neighbourhood regeneration project based on the metro stations.

Regarding the third step, in order to make sure that people would participate in some way or another, both workshops were held as open interactive events organizing the whole event as part of people's regular activity in

their neighbourhoods. Thus, the two workshops were conducted on a day when the weekly open market is held in the study areas. The workshops were promoted with the slogans “Imagining the future of my neighbourhood” and “The Metro in our neighbourhood: I participate, I propose, I make the place where I live” and were carried out in cooperation with the Municipalities of Thessaloniki and Kalamaria and with the support of the company responsible for the construction of the metro project, Attiko Metro SA. The events took place in 6 and 14 June 2018. A total of 150 people took part in the events, 76 and 74 people at Patrikiou and Kalamaria Station areas respectively. During the events, the participants were invited to express their everyday difficulties encountered in their neighbourhood and their perception on how these problems affect the quality of the urban environment, the local economic activities, the identity of the area, the mobility patterns and the housing prices. They were also asked to state their suggestions and expectations for future regeneration interventions envisioning their neighbourhood after the accomplishment of the metro construction.

The study group provided the participants with guidelines for the evaluation of the areas as well as example ideas in order to encourage them to take part in the event. The participatory process included the use of post-it notes, where participants could write down specific problems as well as their personal ideas for a future regeneration plan. On satellite maps of the study areas the participants could assess specific places that they consider problematic, attractive or prosperous as well as their own proposals for the regeneration of the study areas. In the proposal maps, participants were able to mark up the zones which they prefer to be developed with commercial uses, leisure uses, green areas, as well as the creation of traffic calming or pedestrian streets.

3. Main findings

Table 1 presents the main characteristics of the respondents in the questionnaire survey in both study areas. The findings from the field research as well as the results from the questionnaire survey were mapped (Figures 3 and 4) in order to understand critical issues and correlate them with the results of the participatory workshops.

Table 1: Sample characteristics

Gender	Female	Male					
Patrikiou	52%	48%					
Kalamaria	41%	59%					
Age range	16-24	25-34	35-49	50-64	65+		
Patrikiou	11%	27%	31%	26%	5%		
Kalamaria	36%	18%	23%	14%			
Profession	Free lancer	Retired	Unemployed	Public servant	Private servant	Student	Household
Patrikiou	38.7%	5.6%	5%	37.1%	2%	8.2%	3.4%
Kalamaria	21.4%	10%	2%	11.3%	24.3%	22.9%	8.1%
Annual income (€)	0-5,000	5,000-10,000	10,000-20,000	20,000-40,000			
Patrikiou	53%	36%	8%	3%			
Kalamaria	51%	29%	4%	6%			
Status of Respondents	Residents	People working in the area	People visiting the area				
Patrikiou	56%	35%	9%				
Kalamaria	70%	22%	9%				

Looking into the main findings from Patrikiou Station study area (Table 2, Figure 3), it can be observed that, according to the users, the area is well accessible due to its easy connection to the city centre by public

transport. However, they indicate the lack of an integrated pedestrian and bicycle network. The users think the operation of the metro in the area will allow public transport multimodality, as the area will be served by metro and bus connections. A notable problem for the users is the lack of parking spaces and of an integrated parking management plan for residents and visitors. Real estate prices, which are considered to be ranging at low levels due to the economic crisis, are expected to increase up to 20% with the launch of the metro. Finally, the area was evaluated as having considerable open and free spaces and greenery areas, with the presence of Mina Patrikiou park, in about 5 minutes' walk from the station.

Table 2: A summary of the results of the questionnaire survey

	Evaluation of Patrikiou				Evaluation of Kalamaria			
	Dissatisfied	Partly Satisfied	Satisfied	Very Satisfied	Dissatisfied	Partly Satisfied	Satisfied	Very Satisfied
Degree of satisfaction by public transport	14%	29%	52%	5%	14%	29%	52%	5%
Housing price rates	High		Low		High		Low	
Distance from the city center	73%		27%		56%		44%	
Green areas	Sufficiency		Absence		Sufficiency		Absence	
Public spaces	12%		88%		15%		85%	
Parking spaces	20%		80%		46%		64%	
Pavement quality	24%		76%		41%		59%	
	40%		60%		35%		65%	

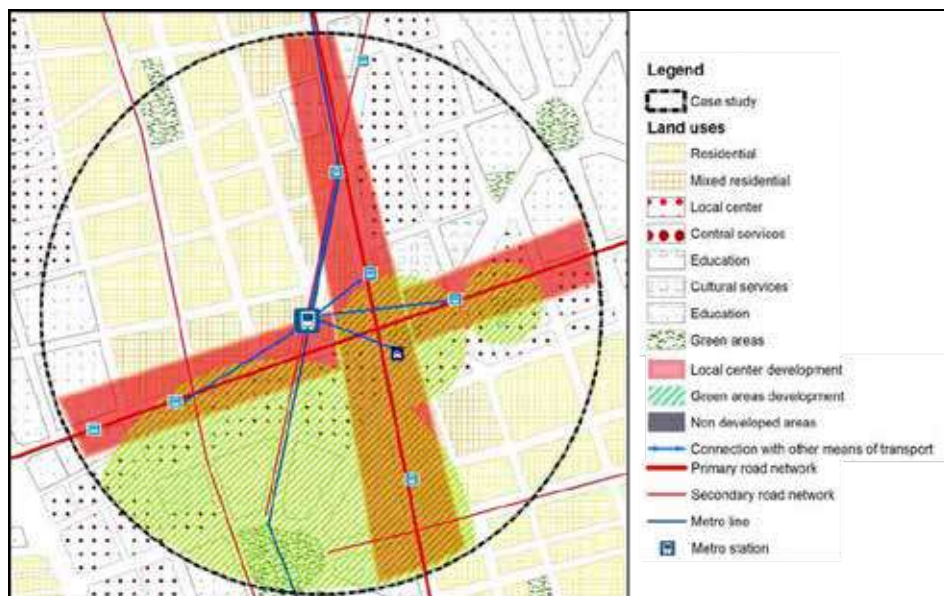


Figure 3: Evaluation map of the Patrikiou Station study area

Regarding the main findings from Kalamaria Station study area, the users find as the most forceful characteristic of the area the main pedestrian street which is the most central and vibrant street of the municipality with

immediate proximity to the station. The connectivity of the area to the centre of Thessaloniki is also considered satisfactory, although the area is in larger distance from the city centre than the Patrikiou Station one. It was also stated that the proximity of the bus stops from the station will enhance public transport intermodality. The users agree that the lack of parking space in the area makes necessary the implementation of a parking management plan. Regarding open space and green areas in the zone of influence of the station, residents and visitors seem to enjoy the operation of the central pedestrian street which functions as the urban centre of the municipality. Housing prices in the area are higher than the ones in Patrikiou Station, however, a decline in the prices during the last years as a result of the financial crisis was also recorded. These prices are expected to change due to the metro operation in the area, with an increase of 20% -25%.

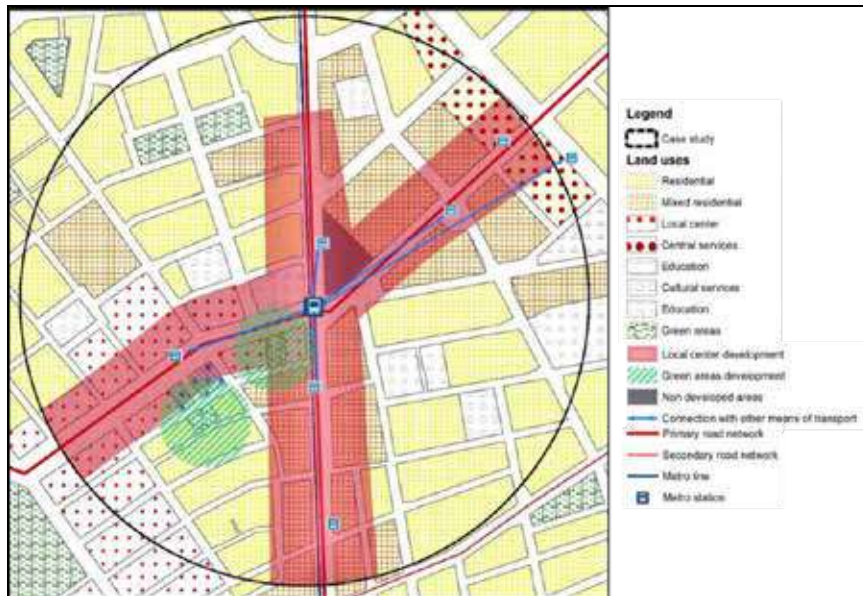


Figure 4: Evaluation map of Kalamaria Station study area

Based on the results underlined from the workshop "The Metro in our neighbourhood", in Patrikiou Station study area the participants noted more or less all the above mentioned problems that were identified in the evaluation based on the questionnaire survey and made the following specific suggestions regarding the regeneration of their neighbourhood and the public realm enhancement:

- Maintenance of the pavements and construction of necessary facilities for people with disabilities
- Establishment of a bicycle network and creation of parking facilities next to the station area
- Implementation of a parking management plan and development of parking spaces also suitable for disabled people
- Redesign of the Mina Patrikiou park with standards oriented to children and disabled people
- Informative signs, either with information about the area and the available public infrastructure and how people could make the best of it
- Protection and enhancement of all open and green areas and more specifically of the Mina Patrikiou park.

As mentioned above, during the event the participants were asked to mark on a map the preferable type of development in the area (commercial, recreational, green uses, traffic calming streets or shared spaces) (Figure

5). The majority of the participants proposed to pedestrianize or implement traffic-calming measures on Solonos street, as well traffic-calming or shared space measures around the Mina Patrikiou park in order to protect children playing in the park during the day. A smaller percentage of participants suggested to pedestrianize or implement traffic-calming measures on Kritis street in order to restore economic vitality in the area. Both these streets function today as collector roads and are congested with parking. Similar suggestions were made for specific local streets aiming to protect children crossing these streets to access their school.

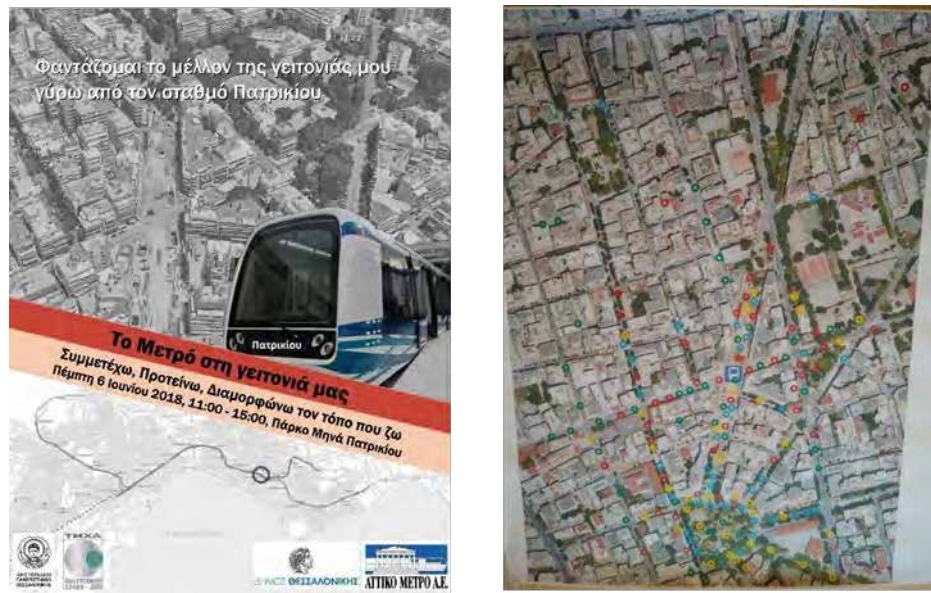


Figure 5: Invitation poster and map with the participants' proposals (Patrikiou Station study area)

Regarding commercial development, the majority of participants stated that greater development of commercial functions after the metro operation should be promoted in the streets Solonos, 25 Martiou and Delphon, as they represent the main arterial or collector roads of the area and they are directly connected with the station. In addition, it was highlighted that Kritis street, the street that trespasses the study area, which has also been stated as downgraded zone with a decrease of commercial stores due to economic crisis in the last years, is expected to be upgraded after the operation of the metro. Considering green areas that should be developed, the participants stressed the lack of greenery mainly on 25 Martiou street as well as on the local streets Chalkidikis, Alexandrias and Christovasili. In addition, they mentioned that the metro will affect positively the aesthetic and environmental enhancement of nearby Mina Patrikiou park, which is and the most popular area during the day.

In the case of Kalamaria Station study area, the results of the workshop "The Metro in our neighbourhood", underlined the following suggestions regarding the regeneration of this neighbourhood and the public realm enhancement:

- Restructuring the mobility patterns of the area oriented to pedestrians, to children and to people with disabilities
- Development of an integrated bicycle network
- Implementation of a parking management plan and parking facilities near the station as well as construction of underground parking infrastructure in connection with the station
- Redesign of an open parking space into a green space with an underground parking
- Playgrounds installation on the parks

The majority of the participants suggested the implementation of traffic-calming measures in Aigaiou and Pontou streets in order to reduce the speed of the vehicle and protect pedestrians. Furthermore, it was suggested to pedestrianize most of the local streets (Soumelas, Vazelonos, Iasonidou, Kyriakidou) which are connected to the main pedestrian street Metamorphoseos, because they have very narrow sidewalks. In the new car free streets, only residents would be allowed to park their vehicles and as a result, the walkability will be improved.



Figure 6: Invitation poster and map with the participants' proposals (Kalamaria Station)

Most participants stated that the greatest development of commercial functions after the operation of the metro will take place on the main arterials Pontou and Aigaiou as well as in the part of Metamorphoseos which is today closed due to metro construction. As they acknowledged, this will arise as result of their proximity with the station. A significant observation for the case study is that most of the participants claimed that the area is full of commercial and leisure stores in the main pedestrianized zone of Metamorphoseos and Komnion streets and therefore there is no need for further development of such land uses in the area. Regarding the development of green areas, the participants stressed the importance of the sustainable upgrade of the outdoor parking area between the streets Chaldias, Karolidou, Kiouptsidou, with the creation of a park and underground parking. Finally, a smaller percentage of participants suggested the redesign of an existing park between the streets of Metamorphoseos, Amisou and Soumela.

4. Discussion and conclusions

Public participation represents a tool whereby the community can express its needs and desires. Incorporating a public participation process regarding new policies or policy changes for sustainable mobility and neighbourhood regeneration, is one step, and perhaps the 'easy' one as the real challenge is 'implementation' (Public Participation and Citizen Engagement, 2015). So, the main purpose of the present paper was in fact to bring experimentally into the broad public the question of the future of their neighborhood in connection to a large transit infrastructure under construction, which for years was creating negative attitudes on behalf of the local residents due to its impacts during the construction stage. This experiment attempted to study whether we can build a broad local support to such big projects through a neighborhood regeneration plan around public transport, in other words through a transit-oriented regeneration, and through that to urge for the implementation of more sustainable forms of development and mobility at the local scale.



Figure 7: Pictures from the two citizen workshops

The overall results of both the questionnaire survey and the workshops indicated that in both study areas a TOD regeneration plan based on the metro station were very welcome by the citizens involved. As a matter of fact, it was notable that the citizens didn't comment at all on the problems and impacts of the construction of the metro.

The most important benefit of applying such a methodology was the interactive education between planners and participants. Planners can educate and inspire participants by explaining the planning guidelines and presenting already successful examples, and therefore participants can express ideas, problems and needs that the planner missed or haven't taken into consideration. In an effective public participation, citizens' involvement can result in better and more informed decisions and thereby, generate durable and sustainable solutions. It goes without question that an authentic public participation requires rethinking the underlying roles of, and relations between the involved parties (King *et al.*, 1998) such as the citizens, experts and public authorities. The survey and workshops of the present research operated as knowledge production for both sides: the local residents that were helped to envisage the metro as a future challenge and the research team that had to incorporate their expectations into an ongoing pilot urban project. Public involvement in the present research, through questionnaire surveys and interactive workshops, showed the potential of the use of qualitative methods in the research and planning of sustainable mobility and neighbourhood regeneration. Furthermore, these methods helped to identify different types of citizens and the way they may affect or be affected by decisions taken in the process. Overall, such an approach can enable to integrate local knowledge into urban planning and regeneration policies (Berman, 2017).

Public involvement includes the promise to the public that its contribution will influence decisions in a planning process and thereby represents a way of building trust between local government and citizens. For such an experiment to be useful and effective further elaboration is necessary to draw the attention of the local authorities and encourage the drawing of a neighbourhood plan and the implementation of specific interventions based on placemaking practices and advocating for social, human-scale places. It is also important to ascertain that the citizens' individual ideas will be implemented in some way or another and that closer attention will be paid to their needs and desires. Planning a sustainable neighbourhood based on the citizens' perspective

represents a tool for upgrading public space with an emphasis on human scale. It is a policy of revitalizing public space in cooperation with its users and residents, aiming at the creation of attractive places that will satisfy their needs. A collaboration between residents, planners and decision-makers along with a continuous contact and communication among them can increase the added value and may bring significant positive effects at the local scale as well of large scale public transport investments which usually are evaluated only by their contribution to city and metropolitan scale development.

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