A policy framework for the facilitation of pedestrians in Thessaloniki Greece

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Abstract

Pedestrian activity is diminishing in many modern urban areas as a result among others of the dominant character of the private car in our everyday life. Although many efforts have been made to reverse this trend in the last decade, by promoting public transport, by pedestrianising streets and by upgrading open urban space, pedestrians still lack many facilities and provisions that could stimulate them to change their travel and everyday living behaviour. Thessaloniki, a large Greek city, is a typical such example where pedestrians feel all these undesired consequences of private car domination.

To reverse this situation an integrated transport policy is required, in which the pedestrians will be placed in the centre and not in the margin of the daily agenda. A policy that will be able to change some of the existing values that make people to behave the way they do. Especially for Thessaloniki a long term strategic plan and intermediate sustainable urban mobility plans need to be drafted along with the usual transportation plan which mainly focuses on the necessary new transport infrastructure.

This paper sets the main elements of such a Policy Framework for the facilitation of the pedestrians in the greater area of Thessaloniki, Greece, in view of a new strategic transport plan for the greater area. The Policy Framework takes into account the well known principles of pedestrian planning but it also builds upon the work and the findings of the COST-358 project “Pedestrian Quality Needs”. In other words the framework adopts specific elements that can lead to a different and hopefully better environment for the pedestrians both in the short and in the long run. Such elements include many quality aspects associated with the user needs, the interaction between pedestrian facility suppliers and users, and others. The proposed Policy Framework for pedestrians will be eventually combined with a major Institutional reform concerning transportation matters in the Thessaloniki conurbation.
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Introduction

Most urban areas in the world face severe transport and related environmental problems. Thessaloniki which is the second biggest city in Greece with a population just under one million inhabitants is a typical city with high values of air pollution due to high volumes of vehicles. According to local O-D surveys (1999) the daily person trips in Thessaloniki are just over 1,600,000, with car trips accounting for 44%, trips with public transport for 27%, trips with private bus for 3%, taxi for 7%, motorcycles for 6% and pedestrian trips for 12%. The lack of an integrated pedestrian street network and the relatively poor geometric characteristics of the space allocated to pedestrians (sidewalks, poor walking surfaces, blocked pathways, difficult street crossings, etc) among other reasons, lead to an unacceptable level of service for the movement of pedestrians.

In the late years, an attempt was made by local authorities to improve the road network for all road users but especially for the vulnerable ones by promoting the benefits of “walking”, the use of public transport and the development of new infrastructure for pedestrians.

The existing problems in pedestrian movement have been the reason for a large number of surveys taken place in Thessaloniki aiming at capturing the level of service for pedestrians. Many of them designed and executed along the requirements of the COST-358 project “Pedestrian Quality Needs”. The most important findings of these surveys along with the undesired consequences of car dominance over pedestrians are presented in the next sections.

Nowadays, a very important attempt is made from the Greek State to promote non-motorised travel and especially “walking” and offer an acceptable level of convenience, efficiency, comfort, safety and security to pedestrians with emphasis on vulnerable users. Thessaloniki Public Transport Authority is the responsible agency which has undertaken this task for the greater area of Thessaloniki. The target of this effort is to make walking an alternative transport mode for all people regardless of age, abilities, economic situation, etc, and Thessaloniki a city for all people by same terms for all.

Pedestrian needs

The needs of pedestrians are different between pedestrian groups. One main issue is to identify the pedestrian needs during the walking function. According to the COST-358 project (Cost Action Project 358, 2007), the basic needs of pedestrians, are: “the need for basic mobility”, “the need for safe mobility”, “the need for convivial mobility” and “Challenging Sojourn”. Pedestrian needs can be looked upon in different ways. COST-358 speaks about functional and perceived needs of pedestrians. Functional needs are the physical needs of pedestrians. One of the ways to identify the functional needs is by observation and surveys. Pedestrian behaviour reveals their functional needs. Functional needs differentiate among different pedestrian groups. Functional needs are supposed to be...
satisfied by legislative framework for walking and pedestrians – if available. The degree in which functional needs are not satisfied denotes the existing legislative, institutional and cultural gap in a society (Basbas et al., 2009).

Figure 1 shows a Maslow-like hierarchy of functional needs, which are distinguished into 3 levels, namely preconditions, dissatisfiers and satisfyers.

![Maslow-like Hierarchy of Pedestrian Functional Needs](image)

On the other hand perceived needs pertain to pedestrian needs when examined from the emotional point of view. The study of pedestrians’ perception or potential pedestrians is an adequate way for their determination (Basbas et al., 2009). Peoples’ perceptions are affected by many factors such as general, environment, social norms, education, experiences, etc. As society changes many of these factors change and consequently perceptions about pedestrian needs change too. One major issue when examining perceived needs of pedestrians is the question what are the required facilities and provisions for pedestrians in order to perform pedestrian tasks adequately (Basbas et al., 2009).

**Pedestrian and the surrounding system**

Pedestrian activities at any moment take place in a complex environment which consists of the physical environment, the social environment and the transport system (Figure 2). These three components interact and affect pedestrians as to their decisions. According to COST-358 project (Cost Action Project 358, 2007) decisions and the respective pedestrian tasks can be stratified into three levels, namely strategic, tactical and operational. At the strategic level individuals decide and plan whether they will make a trip on foot or with another transport mode, at what time, etc. based on personal beliefs and social norms, transport system provisions, i.e. alternative options offered, quality of service provided per transport mode, and other relevant factors. At this level, availability of pedestrian infrastructure is important for their decisions. At the tactical level they make decisions as to what route to follow, based on quality and provisions of pedestrian infrastructure, existing levels of nearby traffic, quality of the immediate environment for each alternative
route etc. Finally at the operational level, pedestrians need to cope with issues and problems while walking such as barriers on the sidewalk, interference with other people, street crossing options, etc.

Figure 2: Pedestrian and the surrounding system

Figure 3 provides a diagrammatic presentation of the three decisions levels and some respective tasks falling in each level, which comprises the so called Conceptual Model of Pedestrian tasks and decisions.

Figure 3: PQN Conceptual Model of Pedestrian Tasks and Decisions. (Source: COST-358)

Pedestrian Rights

In Greece there is no special legislation for pedestrians and their appropriate facilities. The only part of Greek law which deals with pedestrians is the Highway Code which includes in its various articles clauses about the rights and the obligations of pedestrians relative to
the other transport system users (motorised vehicles) and with respect to traffic signs and signalling. Provisions can be also found in legislation about the needs of people with special mobility needs, but they mainly have to do with design elements at buildings and public space to facilitated these special categories. Many organisations in the world are supporting the pedestrian rights and attempt to improve pedestrian movement relative to vehicular traffic. In this respect the European Charter of Pedestrians’ Rights has been established some years ago. Some of the most important parts of this Charter are presented in Table 1.

Table 1: The European Charter of Pedestrians’ Rights

<table>
<thead>
<tr>
<th>I.</th>
<th>The pedestrian has the right to live in a healthy environment and freely to enjoy the amenities offered by public areas under conditions that adequately safeguard his physical and psychological well-being.</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.</td>
<td>The pedestrian has the right to live in urban or village centres tailored to the needs of human beings and not to the needs of the motor car and to have amenities within walking or cycling distance.</td>
</tr>
<tr>
<td>III.</td>
<td>Children, the elderly and the disabled have the right to expect towns to be places of easy social contact and not places that aggravate their inherent weakness.</td>
</tr>
<tr>
<td>IV.</td>
<td>The disabled have the right to specify measures to maximise mobility, such as the elimination of architectural obstacles and the adequate equipping of public means of transport.</td>
</tr>
<tr>
<td>V.</td>
<td>The pedestrian has the right to urban areas which are intended exclusively for his use, are as extensive as possible and are not mere ‘pedestrian precincts’ but in harmony with the overall organisation of the town.</td>
</tr>
<tr>
<td>VIII.</td>
<td>Each Member State must ensure that comprehensive information on the rights of pedestrians is disseminated through the most appropriate channels and is made available to children from the beginning of their school career.</td>
</tr>
</tbody>
</table>

[Source: European Parliament, 1988]

The rights of pedestrians should be an integral piece in the design process of a road network in order to take into account the needs and rights of pedestrians and make the communities walkable for all.

Pedestrian Survey Results

Thessaloniki as an urban environment creates numerous difficulties to pedestrians’ trips which are associated with high vehicle volumes, many illegally parked cars, high volumes of pedestrians, inadequate infrastructure for pedestrians and people with special mobility needs, unattractive waking environment due to vehicle presence, inadequate lighting in many areas, not suitable for walking pavements, inadequate signing etc. The above factors create as a result feelings of unsafety to many pedestrians and consequently barriers for walking. In order to understand and analyse the various factors and barriers pedestrians experience while walking, several surveys were carried out in the Metropolitan area Thessaloniki during the life of the COST Project. These surveys enable researchers to better understand the pedestrian needs, the difficulties which pedestrians face during their trips and their general opinion about walking as an alternative transport mode in the city. The pedestrians’ opinion was also sought with respect to the quality of walking infrastructure.
The following Table 2 presents the feeling of safety of pedestrians in different areas of Thessaloniki. As it can be noticed the majority of surveys shown that people feel unsafe during their trips on foot. More specifically 41% of pedestrians feel unsafe on the Aristotelous str., a major pedestrian street in the city centre while on Iktinou pedestrian street, which is also located the city centre, the percentage of those who feel unsafe is significantly lower (26%). According to another survey which carried out at other areas of Thessaloniki, the percentage of people who feel unsafe during their trips on foot in close to 74%, a very high figure, while at Tsimiski street, a central commercial road with hourly volumes of approximately 5,500 veh/h and high pedestrian volumes the respective figure of pedestrians who feel unsafe is 44% (Komnianou et al., 2008, Visba & Stamos, 2007, Apostolidis et al., 2008).

<table>
<thead>
<tr>
<th>Location</th>
<th>% of pedestrians feeling unsafe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aristotelous (Pedestrian Street) – city centre</td>
<td>41%</td>
</tr>
<tr>
<td>Iktinou (Pedestrian Street) – city centre</td>
<td>26%</td>
</tr>
<tr>
<td>Stavroupoli, Ampelokipi, Kato Toumpa, Aristotelous, Tsimiski, Gounari – city centre</td>
<td>74%</td>
</tr>
<tr>
<td>Tsimiski – city centre</td>
<td>44%</td>
</tr>
</tbody>
</table>

According to the difficulties pedestrians meet during their trips, the majority of the surveyed people believe that parked vehicles represent the most important factor for hindering their trips on foot. Table 3 presents the perceived difficulty in percentage terms pedestrians stated due to parked vehicles.

As it can be noticed, Iktinou pedestrian street, is associated with the higher level of annoyance as compared to other pedestrian areas in Thessaloniki. The number of pedestrians who stated annoyance from parked vehicles at this street reaches 60%, while in Aristotelous street 46%, in Stavroupoli, Ampelokipi, Kato Toumpa, Aristotelous, Tsimiski and Gounari 33% and finally at Tsimiski street just 20%.

<table>
<thead>
<tr>
<th>Location</th>
<th>% of pedestrians feeling annoyance from parked vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aristotelous (Pedestrian Street)</td>
<td>46%</td>
</tr>
<tr>
<td>Iktinou (Pedestrian Street)</td>
<td>60%</td>
</tr>
<tr>
<td>Stavroupoli, Ampelokipi, Kato Toumpa, Aristotelous, Tsimiski, Dim. Gounari</td>
<td>33%</td>
</tr>
<tr>
<td>Tsimiski</td>
<td>20%</td>
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</table>

The above findings can be attributed to the geometric and layout characteristics of the specific pedestrian streets. Aristotelous str. is in fact a very wide street with green islands where illegally parked vehicles seem to have a rather low impact on pedestrian feelings. On the other hand, in the other pedestrian street cases, parked vehicles create a lot of annoyance because the streets are narrow, with several obstacles. These findings call for differentiate rules in any pedestrian policy according to the geometric and other functional characteristics of pedestrian streets and space.

As previously mentioned, many efforts have been made in several countries worldwide to identify and study pedestrian needs. Safety, security, aesthetics, low traffic noise, low levels of emissions and adequate infrastructure for pedestrian movements are identified as
some of the main pedestrian needs. Empirical evidence, coming from recent surveys carried out in Thessaloniki, Greece, mainly on pedestrian streets and pavements, indicates that the most important prerequisites for a good walking environment in an urban area are as follows (Komnianou et al, 2008):

- vehicles’ removal (44%),
- parked vehicles’ removal (39%),
- more trees (32%),
- adequate infrastructure for walking (24%),
- clean environment (24%),
- reduction/removal of tables and chairs from the sidewalks and pedestrian streets (24%)

According to Apostolidis et al. (2008), in another survey, the most important requirements for an attractive walking environment are:

- more trees (28%)
- clean environment 8%
- more pedestrian streets/pavements 13%

As it can be easily noticed more trees is the most important requirement in order walking become friendlier to pedestrians and attract new users to make their tips by foot.

**Pedestrian Policy Framework for Thessaloniki**

To reverse the situation described above, an integrated transport policy framework is required, in which the pedestrians become the “priority” for the city of Thessaloniki. Nowadays an attempt is made by different agencies to develop an adequate policy framework for gradually transforming the city of Thessaloniki into a walkable city for all. At this point it should be mentioned that a walkable community is one where it is easy and safe to walk to goods and services. Walkable communities encourage pedestrian activity, expand transportation option and have safe and inviting streets that serve people with different ranges of mobility (FHWA, 2008). In other words, walkable communities should be safe and accessible for everyone.

A Pedestrian Policy, as any other policy, is normally made up by a vision, goals, objectives and actions. For Thessaloniki, the **vision** cannot be other than making pedestrian movement a convenient, safe and preferred choice for a short trip by the majority of people and furthermore to establish Thessaloniki as a walkable community for everybody including people with special mobility needs.

In terms of **goals** the following ones constitute the main goals that the Public Transport Authority of Thessaloniki can set:

- a. Improve the walking quality especially as part of a longer trip including Public Transport means
- b. Make pedestrian trips safer
- c. Incorporate pedestrian planning as a key element in every transport plan drawn by local authorities. Integrate public transport planning with pedestrian planning. Give more emphasis on designing for pedestrian facilities and provisions.

The above goals are further specialised in terms of measurable **objectives** with specific time horizons as follows:
a. Increase the number of pedestrian trips in the next 10 years by 50% and in the next 20 years by 100%
b. Decrease the number of pedestrian related accidents by 50% in 5 years and by 75% in 10 years
c. Create pedestrian planning guidelines to be taken into account in all transportation plans within the next two-three years.

Finally, several actions must be designed and completed in order to achieve the above goals and objectives. The exact list of actions requires a special study which will result in a pedestrian policy plan of operational nature. This plan will have to be endorsed by all authorities involved since the responsibilities for pedestrian planning and implementation of measures is allocated to several authorities. To achieve all the above it will be necessary to create strategic partnerships among the main key-actors such as the Public Transport Authority of Thessaloniki, the Authority responsible for the Master Plan of Thessaloniki greater area and the Protection of the Environment, the Local Authorities, the Regional Highway Authority and others.

**Main Principles and targets towards a Pedestrian Policy**

In order to ensure that walking is safe, comfortable and suitable mode for all types of people, the city of Thessaloniki should take account of the following principles which other cities have already adapted (Toronto City Council, 2002):

- **Accessibility**
- **Equity**
- **Health and Well being**
- **Environmental Sustainability**
- **Personal and Community Safety**
- **Community Cohesion and vitality**

Thessaloniki targets to encourage pedestrians to make their trips by safe and comfort, to support walking and to attract new pedestrians by implementing the following strategies:

- Meet pedestrians’ needs and consider walking as transport mode with equal requirements and obligations as other transport modes.
- Ensure that walking environment is safe, accessible and comfortable for all ages and abilities.
- Provide convenient infrastructure for pedestrians in order to meet pedestrians’ needs.
- Reduce conflict points between pedestrians and other transport modes.
- Design areas for hosting mixed land use in order to reduce the trips by vehicles.
- Institute laws and regulations for promoting walking.
- Educate people and students for walking benefits by making campaigns to different areas and schools of the city.
- Safety policies and strategies.
- Acquiring knowledge to improve the quality and effectiveness of policy development and measures.
- Ensure connection between pedestrian network and public transport.

It is important to mention that COST 358 Project considers Public Transport and walking as parts of the same trip and each one of them can be seen as an extension of the other. It explicitly mentions: *Public transport attractiveness relates to high public transport speeds,*
high frequencies and high comfort. A primary factor regarding attractiveness is the type of stop/station and service offered there. The walking distance to the public transport stop comes second. Next walking comfort plays a role. The attractiveness can be calculated through a formula that is provided in a dedicated article in the report [9].

Table 4 presents the different types of pedestrians and the potential strategies which can make walking more safe and accessible (FHWA, 2008).

**Table 4: Strategies for different group of pedestrians**

<table>
<thead>
<tr>
<th>Audience</th>
<th>Important messages</th>
<th>Potential strategies</th>
</tr>
</thead>
</table>
| Child pedestrians       | Pedestrian safety skills tailored to their level of development and personal safety (e.g., stranger danger) | • Hold a school assembly, health fair, or have classroom or physical education lessons.  
  • Get parents involved.  
  • Offer structured skills practice. |
| College age pedestrians | Reasons to walk or bike, tips for walking safely around campus and town | • Partner with campus offices, organizations, or student groups.  
  • Take advantage of campus life and university events to distribute information.  
  • Give incentives. |
| Alcohol consumers       | Recognize that heavy drinking increases the risk of a crash, whether you are walking or driving. | • Initiate public awareness campaigns.  
  • Work with law enforcement officers, engineers, and public health professionals to address alcohol-related issues. |
| Adult and older pedestrians | Threats associated with each age group and ways to improve personal safety and law abidance | • Initiate campaigns to targeted settings/situations.  
  • Contact and work with established organizations, such as AARP or a senior centre, which may already have a strong network with the pedestrian community. |
| Drivers                 | Safe driving practices near pedestrians                 | • Plug into local media — have driver safety awareness campaigns on TV and in newspapers, host a commute-time radio talk series on pedestrian safety issues, or develop an ad campaign to be displayed on billboards, in parking garages, or in other places most visible to drivers.  
  • Couple education with enforcement |
Conclusions and Discussion

It is tangible that pedestrians in the city of Thessaloniki have not been given the essential attention by Local and National Authorities than the rest users of road network enjoy (in relative terms of course). The increases in the number of vehicles in absolute terms and the subsequent deterioration in air and nose pollutions, along with visual intrusions, create an unattractive walking environment. In addition this situation has an impact on health and overall it downgrades the quality of life for the citizens of Thessaloniki. Therefore, it is necessary that all authorities and citizens understand the benefits arisen from walking and make an effort to improve walking environment and quality of life.

The following comprises an indicative list of interventions that need to be made from the Transportation point of view in order to reach some of the above mentioned improvements:

- **Engineering**: improvements to current infrastructure (walk streets, crossings, bus stops, signals, signs, pavements, etc). In this point it should be referred that the most important indicators for walking and sojourning quality are the amount of space devoted to pedestrian mobility, the density of the pedestrian network, the amount of streets with traffic calming, the amount of parking areas and accessibility of public transport (Cost Action website).
- **Education**: efforts to teach people about the benefits of walking and the behaviour to pedestrians and people with kinetic difficulties.
- **Enforcement**: prescription of laws and regulation for pedestrians’ rights and duties.
- **Encouragement**: promotion of walking and its benefits for changing peoples’ behaviour and attract new ones.
- **Preconditions improvements** for policy development and implementation.

In conclusion it should be said that Pedestrian Policy is not a well known concept in Greece and the relevant practice is rather limited. Pedestrian Policy is not integrated in Strategic Plans of relevant authorities and there is not legislation that enforces the implementation of walking measures.

For tackling this tough situation the first action point is to develop either a Pedestrian Policy Plan along the lines described in this paper or alternatively an integrated strategic plan of urban mobility which is covers all transport modes. The set of specific objectives for meeting pedestrian needs is essential, in order to constitute a rational basis for the definition and implementation of appropriate policies and measures. The strategy of urban mobility with alternative transport modes must be set as a main objective for greener environment and a better quality of life in Greek cities.

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