# THE FRAMEWORK FOR EVALUATING CHILDREN'S WELLBEING AS RELATED TO THEIR ACTIVE SCHOOL TRAVELING (AST)

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## Abstract

Investigating wellbeing-related concerns nowadays is greater than ever. This extends to all aspects of human beings' daily life. In this context, children's wellbeing is having an increasing interest as they are the core constituents of tomorrow's world. Studies have affirmed the vital role of children's physical activities as catalysts for all domains of their wellbeing. Active school traveling is one of these daily activities practiced by children frequently. The way it is practiced, and its interrelated activities are profoundly affecting children's feeling and accordingly their well-being. However, the paper builds an argument about conceptualizing an applicable understanding of wellbeing. Reviewing several approaches, it exploits the capabilities approach to investigate the correlation between children's active school traveling and their wellbeing. Using the outlines of children's mobility framework, a set of domains were concluded within three categories specifying the children's movement from home to school and vice versa, and the fourth one is a general category. Two questionnaires are used to validate the paper's theoretical approach. They were performed to a sample of two schools in Alexandria, Egypt targeting both students and their parents. The paper findings show the positive attitude of parents towards active school traveling as a means for conveying their children's wellbeing. The results show the validity of applying resources/challenges balancing approach for understanding wellbeing obstacles while active school traveling is practiced. However, the results concluded in this paper can inform future studies by drawing attention to aspects to contemplate while investigating children's wellbeing and mobility domain.

## Keywords

## 1. INTRODUCTION

Concerns about wellbeing are increasing worldwide. The start was the well-known definition of 'health' branded by the World Health Organization (WHO) in 1948. This definition made 'Wellbeing' -in its all dimensions; physical, mental, and social- a prerequisite to the complete healthy state (Misselbrook, 2014). Now, wellbeing is seen as an indication of both life satisfaction and a wide range of human feelings stretching from sadness and hopelessness to happiness and pleasurability (Diener, et al. 2009), (Frey, and Stutzer, 2002). The increased attention paid to wellbeing has covered all human beings in their different classifications. Now, children's wellbeing is at the core. Actually, the complexity of children increases as their well-being depends on a wide range of aspects. The Children's Resilience Programme' in a report entitled 'Understanding children's wellbeing', defines a set of these circumstances addressed within three envelopes; the child himself (age and gender); his/her family (stability, coherence, and life conditions); and finally the wider envelope is the community (belonging and being accepted within) (Terlonge, P, et al., 2012). In addition, it asserts the comprehensive children's wellbeing as consists of a number of domains: skills and knowledge, emotional and social wellbeing domains.

According to the Millennium Cohort Study and Understanding Society survey presented by Public Health England (PHE) (2013), health behavior is seen as the main pivot for attaining the aforementioned wellbeing domains for children. Physical activity is one of these catalysts that offer the opportunity for these domains to operate in the right way (PHE, 2013). Many studies have proved the direct relationship between physical activities and: improving concentration levels for children (Fedewa, and Ahn, 2011), social interaction with classmates (Sebire, et. al., 2013), decreasing the levels of anxiety and increasing the levels of happiness, satisfaction, and self-esteem (Holder, et. al. 2009). Active school traveling is the main source of physical activity for children (Kennedy and Mammen, 2017). However, it is a multi-facet investigation domain. On one hand, it is linked to urban planning, and transportation planning, on the other hand, it is related to children's preferences, safety conditions, and parents' beliefs and understandings.

This paper draws a framework for understanding the correlation between the active mobility for children while they are moving from home to school and vise-versa and their wellbeing. It uses this framework to evaluate the children's wellbeing concerning a number of domains according to the 'Capability Approach'. As a methodology for this paper, the study encompasses a three-stage approach. Firstly, a critical literature review is utilized to build an argument about wellbeing approaches and to develop a contextual understanding of children's active mobility framework. Secondly, is conducting a pilot study survey. Finally, conducting a final questionnaire was developed based on the feedback of the pilot study. The latter is designed to encompass both quantitative and qualitative data, which give insight to explaining the relationship between resources and challenges children face during their active school traveling and consequentially affects their wellbeing. Besides, respondents' comments are used to give more explanations or to show respondents' points of view (Jones et al., 2010).

The questionnaire is designed to evaluate children's feelings while their mobility from home to school and vice versa. It is divided into three sections resembling the mobility stages and the fourth is a 'General' section. Each of these sections covers the number of wellbeing domains which are consequently investigated using a couple of questions concerning 'Sources' and 'Challenges' facing children in their daily mobility. In addition to closed-ended questions, this questionnaire asks children to make their comments about their mobility experience in general. A Likert scale-based rating system is used (ranging from 1 to five in which 5 is excellent). The methodology comprises comparing the results of the questionnaire findings conducted to two samples; male and female preparatory schools located in close proximity to each other in El-Shatby, Alexandria, Egypt. A framework approach developed by Ritchie & Spencer, (1994), is used to analyze responses. It is used to code, examine, and collect comments sharing similar attitudes to endow with solid conclusions (Jones et al., 2008).

## 2. CHILDREN'S ACTIVE SCHOOL TRAVELING FRAMEWORK (CASTF)

The correlation between children's mobility and the surrounding built environment has been examined extensively in the literature (McMillan 2007; Mitra et al 2010; Panter, et al., 2008). One of these visions is a comprehensive framework developed by Mitra (2012) (Figure 3). It defines macro and micro-urban environment scales for investigating children's mobility correlations. The former encompasses all the regional context, urban density, and land-use mix, while the latter focuses on a neighborhood level. It incorporates factors related to four interconnected domains; the individual child, the family tolerance regarding children's mobility, the urban environment, and the external influences.

### 2.1 The Individual Child Domain

Based on a postmodernist interpretation of mobility, this framework highlights the correlation between all of a child's physical characteristics, attitude, way of life, manners, preferences, and his/her decisions about individual mobility. Studies introduced by Kullman and Palludan (2011) on a group of students aged 7-12 years old shows that their mobility patterns, routs, and activities to and from school were continuously changing to match different temporal, spatial, and technological updated circumstances such as daily schedules, and communication methods with their parents. Meanwhile, this framework highlights the child's individuality as the starting point for studying children's mobility, it asserts the commonalities of experiences that children gain while enrolling in these activities.
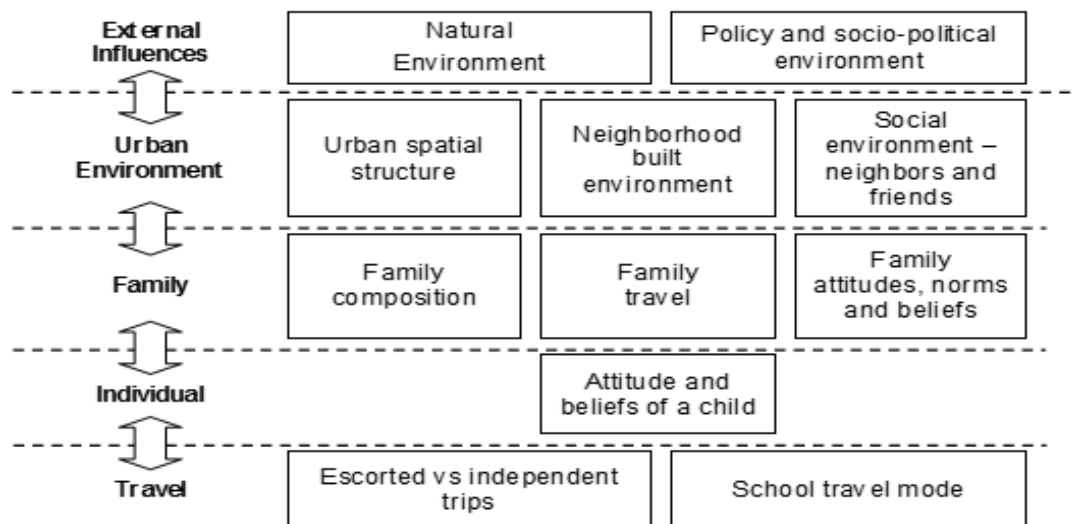


Fig.1: Active School Travelling Framework.
(Reference: The Author based on Mitra, 2012)

### 2.2 The Family Domain

According to Hartas (2008), the way that families care about their children in their earlier life stages and their definition to what is called 'protective space' is responsible for preparing them to be more independent concerning decisions about individual mobility. Hillman et al. (1990), argue that 'licenses' given by parents to their children is the keyword that shapes their individual mobility limits. They define six types of licenses: four are concerned with walking and two are related to active traveling using cycling or public transportation. The walking licenses include children's permission to crossroads, go to other places than school, come home back from school alone, and go out in the dark. The other two licenses are the permission to ride a bicycle on road and catch tramways or buses. In addition, family characteristics: profile (size, social/economic class, and vehicle ownership); general travel pattern (the way family members go to work, especially the mother) (Schwanen, 2007); and social standards (thoughts and beliefs, and the way parents perceive safety) (Handy et al., 2008), have direct influences on permissions they give to their children related their individual active traveling patterns.

## 2.3 The Urban Environment Domain

Children's safe active traveling is the base upon which all of the neighborhoods' planning principles and spatial configurations are tailored. As mentioned by Forrest & Kearns (2001), these spatial configurations have direct impacts on empowering social cohesion and sense of belonging and consequently children's wellbeing. The social security that the neighborhood offers allows parents to make more tolerant permissions to their children regarding mobility licenses. However, according to Harden (2000), social discourse could have negative impacts in this regard. Based on individual cases, social media and internet-based communities and social groups, have the power to influence public opinion negatively towards the safety options regarding the neighborhood public domain. In addition, the economic factors could have also negative impacts. On one hand, the lower economic areas don't have the chances to enrich the children's experiences while going to or coming back from school due to a dearth of spaces of good quality. On the other hand, these areas represent a source of danger that limits the chances of permission licenses that their parents can give (Veitch et al 2007).

## 2.4 The External Influences (Socio-Political Context) Domain

Decisions about children's active traveling are merely contextually oriented. Urry (2000, 2004) discusses extensively the role of auto-mobility in redefining the socio-political dimensions of mobility within wider understandings of the modern technologies and changing transportation systems as a consequence. Patton (2007) asserts that a balanced coexistence between auto-mobility and other sorts of mobility has to be built upon a trade-off between these two modes and their requirements. Both physical configurations and socio-political aspects have to be built to come to an accepted compromisation between the needs of car users and the right of individuals to practice any of their mobility activities without being threatened. Public opinion practices represent pressure to induce decision-makers to have radical decisions concerning prioritizing children's safe walking. In the seventieth of the last century in the Netherlands protests raised the slogan of "stop child murder", and now it witnesses the highest rates of children individual mobility all over Europe (Garrard 2009).

## 3. WELLBEING APPROACHES

Three main approaches are widely used to address wellbeing. The first is based on the subjective notions of wellbeing, in its broad understandings, this includes, pleasure, happiness, pain relief, and achievements. The second approach is based on meeting the essential human needs. According to Phillips (2006), needs are prerequisites for 'what constitutes a good quality of life". However, this approach is criticized for several points among them are time factor (Andresen et al 2010). This is clear in judgment's contradiction between short and long term experiences of the environment. The third approach -capabilities approach- presents a more holistic vision to wellbeing compared to the previous two ones where people's satisfaction and happiness are the criteria upon which wellbeing is evaluated. Their feeling free to participate and achieve (whether their achievements are realized or not) compared to their targets are the main source of satisfaction and happiness and consequently wellbeing state (Nussbaum and Sen 1993). This approach incorporates endless findings based on environmental potentials and people's perception conditions. It is more related to circumstances that people confront to realize their wellbeing rather than gaining defined feelings or meeting their pre-defined needs.
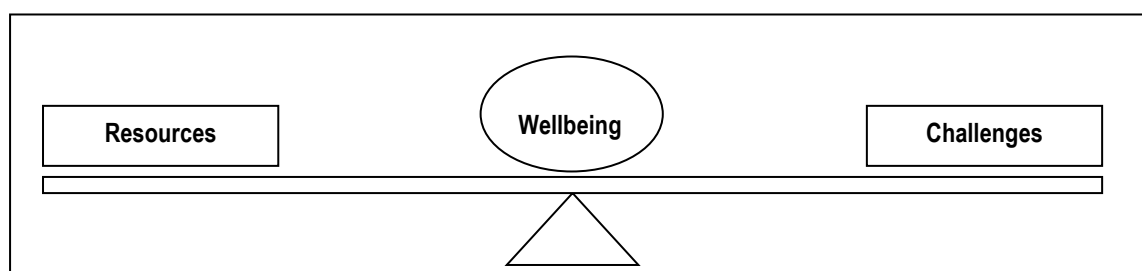
Fig.2: The Equilibrium Theory.
(Reference: The Author based on Dodge et al. 2012)

In this context, equilibrium theory developed by Dodge et al. (2012) is used to put 'Capabilities Approach' in an applicable way. According to 'Equilibrium Theory' (figure 1), keeping a committed wellbeing is an indication of the balance between resources and challenges. When a person meets a challenge he/she is motivated to reconsider his/her resources to keep the equilibrium state. And wellbeing stability is achieved when physical, social, and psychological resources are available to meet physical, social, and psychological challenges. It could be noticed that, this definition presents a dynamic understanding to wellbeing and links it to both resources (support and autonomy) and, challenges (demand and intensity) (Wassell, and Dodge, 2015). It argues that a stagnation state of wellbeing could be reached when the challenges are dimmed. In addition, Dodge et al. (2012) asserts the positive psychology that this approach shows. They highlight the role of individuals as active beings in influencing their wellbeing through their choices and decisions. In this regard, the individual shows jurisdiction over his/her wellbeing by increasing resources or challenges to attain the needed equilibrium state. In addition, this approach is asserted by the Expert Patient Programme (EPP) initiated by the National Health Service in the UK in 2002, which raised the slogan of "self management wellbeing". Actually these understandings pave the way to quantitative scale to hand over the measurements of wellbeing by identifying physically the available resources and the faced challenges.

## 4. MOBILITY AND WELLBEING

Mobility and wellbeing have a dialectical manifold correlation. This could be understood within the previously addressed wellbeing approaches. According to De Vos et al. (2013) (Friman et al. 2018), mobility could affect subjective wellbeing in several ways. The pressures one got while traveling from one destination to another may affect negatively the commuters. This includes delaying on public transport or in traffic jams. Another aspect is getting people engaged in traveling activities. Let them have an increased possibility to engage in social interactions, either directly or indirectly, such as chatting, for example. Besides, according to Mokhtarian and Salomon (2001), and Sager (2006) mobility itself could be a source of satisfaction and wellbeing to commuters whether they have already practiced it. Sager (2006) asserts that "People may experience feelings of satisfaction or pleasure from having the freedom to travel without actually traveling".
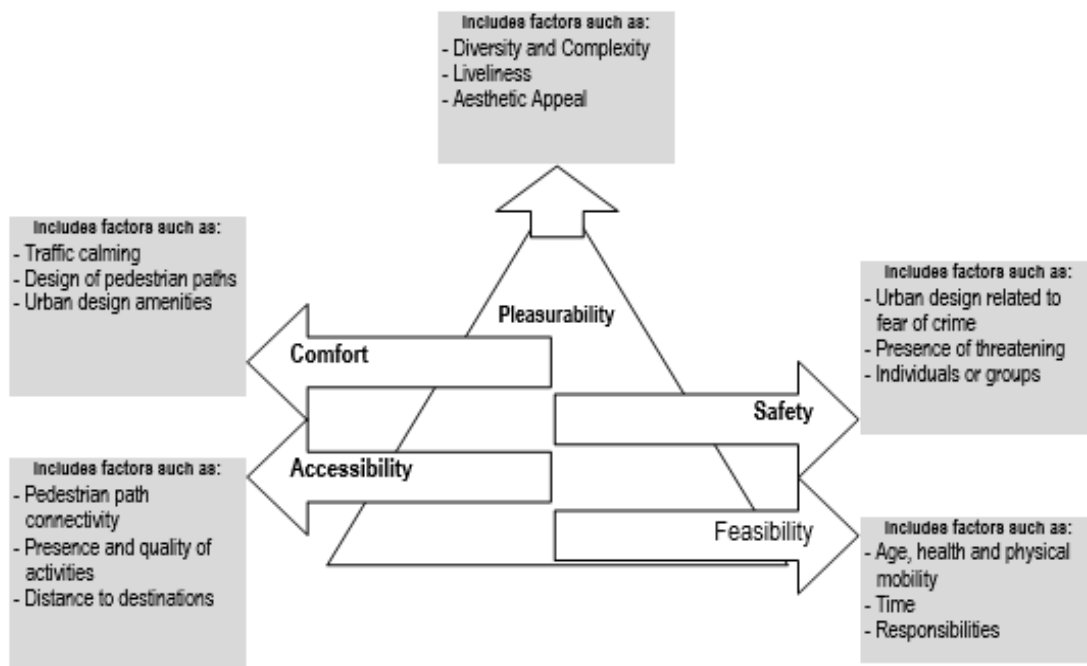


Fig.3: The Hierarchy of Walking needs. (Reference: The Author based on Alfonzo, 2005)

As an analogy to Maslow's pyramid of needs, Alfonzo (2005) developed a hierarchy of walking needs model to theorize the linkage between needs and mobility. The arrangement is set from the basic to the highest as feasibility; accessibility; safety; comfort; and pleasurability. Feasibility stands as the basic criteria to be met for choosing the mobility mode. This judgment encompasses many factors related to the built environment, proximity, time factor, and commitments. Accessibility comes at the second need to be thought about. It addresses the connectivity between destinations, their types, and the quality of urban corridors connecting them. At the third level comes safety. This contains both physical and psychological safety related to the physical and nonphysical built environment. Comfort comes at the next level as related to both the physical setting and the aesthetic aspects of the mobility environment. And finally, pleasurability stands as the most desirable need to be achieved. It incorporates all of diversity, liveliness, and aesthetic appeal. According to Alfonzo, this model is more than just a "descriptive theory of walking", it is a comprehensive framework that has to be interpreted according to walking surrounding conditions either physical or nonphysical.

Table 1: The domains for children's wellbeing (Reference: The Author based on Ryder et al. 2017)

| Project/ Organization and Aims | Domains of wellbeing identified |
|---|---|
| The Childhood Wellbeing Research Centre (see Holder et al., 2011)<br><br>----<br><br>Develop a self-report wellbeing outcome measure for use in economic evaluations of children's services | **8 Domains**<br>- Provision for **physical needs**, including food and drink, warmth and shelter, clean and adequate clothing<br>- Feeling **safe and secure**<br>- Whether children and young people can **go to school** and do the best that they can<br>- Receipt of **help and encouragement** to be confident, to make friends, to do well at school and to deal with problems and pressures<br>- **Being able to express yourself**, being given the opportunity to have your say (by adults, such as a parent) and being able to challenge decisions<br>- **Being listened to**, able to make choices and have your views taken into account<br>- Having **enough time** to do the things you want to do after school and at the weekend<br>- **Relationships** with family and relationships with friends |
| New Philanthropy Capital, in collaboration with The Children's Society (see Heady and Oliveira, 2008)<br><br>----<br><br>Develop a measure of children's subjective wellbeing for charities to prove their impact and improve the development of their services | **10 Domains**<br>- **Physical** well-being including physical health and fitness<br>- **Psychological** well-being including mood and level of worry<br>- **Behavior** including feelings towards others and any risky behaviors or conflict<br>- **School** including happiness and safety at school and any trouble with school work<br>- **Family** including happiness at home, the amount of quality time with parents and feelings about whether parents care about them or not<br>- **Friends** including feelings towards friends, fun with friends and level of loneliness<br>- **Resilience** including outlook and capability to overcome problems<br>- **Living** environment including safety and feelings towards their house and neighborhood<br>- **Subjective** well-being including self-esteem and satisfaction with life<br>- **Material** including economic background compared with national baseline and perception of living comfortably having enough |

The capability approach reflects its understanding of the correlation between wellbeing and mobility. It includes, on one hand, all the physical features that distinguish the built environment, and the intrinsic factors that motivate people to interact positively with the contextual features (Lewis, 2012). The concept of "Wellbeing Domains" developed by Ryder et al. (2017) is used to make an aim judgment about a batch of factors and aspects that are seen to influence the comprehensive sense of wellbeing according to the capability approach. Research published by Rees et al. (2010) shows the results of four projects applied to measure wellbeing for children. Measuring wellbeing in these projects is based on determining specific issues as a 'domain of wellbeing. However, these domains vary according to each project and its scope of work. In a further step, a set of more detailed questions and query systems are needed to investigate more in-depth the detailed aspects of these domains (Table (1) Shows the results) (Ryder et al. 2017).

## 5. EVALUATION FRAMEWORK FOR CHILDREN'S WELLBEING

The way children's well-being is evaluated is closely linked to the way wellbeing is defined. However, two approaches are used to evaluate wellbeing: subjective or aim (Selwyn and Wood, 2015). The former is defined by individuals themselves, and it is measured by asking individuals to make self-assessments of the state of their wellbeing based on their feelings. The latter is defined based on a set of indicators prepared by specialists. These indicators are covering different life aspects such as environmental quality, social inclusion, quality of life, or economic vitality. However, this approach has to be tailored to evaluate different target groups in a proper way. This is clear in evaluating the wellbeing of children.
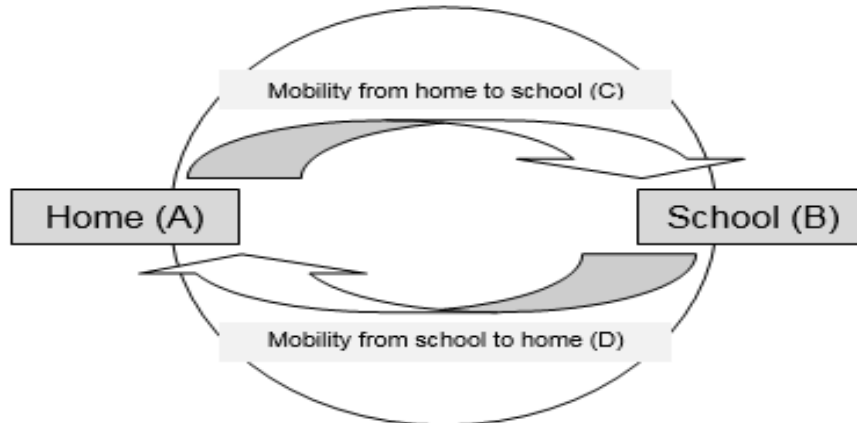


Fig.4: Children's active school traveling and its correlated domains.
(Reference: The Author)

Table 2: Children's wellbeing domains in their active school travelling
(Reference: The Author)

| Combined list of children's wellbeing Domains | | - Resources (+ve) | - Challenges (- ve) |
|---|---|---|---|
| General Domains | - **Physical** well-being including physical health and fitness | - Feeling more energetic when going to school using active school travelling. | - walking distance compared to child endures. |
| | - **Subjective** well-being including self-esteem and satisfaction with life | - Felling proud of themselves as they can make their own decisions about travelling experience. | - Feeling depressed as you think this i the only affordable way to go to school (regarding economic constraints). |
| | - **Psychological** well-being including mood and level of worry | - Feeling cheerful as they go to school on their own. | - Feeling anxious as they have to manage their active travel. |
| At home (A) | - **Being able to express yourself**, being given the opportunity to have your say (by adults, such as a parent) and being able to challenge decisions | - Children have the right to select their route to school among the available routs (based on permissions from their parents) | - Being depressed as you have to obe your parents regarding school trave whether you agree or not with their opinions. |
| | - **Being listened to**, able to make choices and have your views taken into account | - Children have the right to discuss and negotiate their parents about the alternatives of their active school travel. | - Children's opinions towards the alternatives of their active school travel is neither appreciated nor discussed with their parents. |
| | - **Having enough time** to do the things you want to do after school and at the weekend. | - Active travel makes students more active during all the day. | - Effort done while active travel make children need more time needed fo relaxation. |
| Mobility from: - home to school (C) - school to home (D) | - **Feeling safe and secured** | - The physical environment supports children safety and security. – traffic lights – zebra lines | - The physical setting is not adequatel prepared to have a safe active school travel. |
| | - **Resilience** including outlook and capability to overcome problems | - Travelling circumstances faced are manageable that make children feel powerful and creative. | - Challenges faced are more than children's capabilities so they feel confused and depressed. |
| | - **Behavior** including feelings towards others and any risky behaviors or conflict | - Meeting helpful people while they are needed along the active school travel. | - Feeling worried about the behavior c some people along the active scho travel. |
| At School (B) | - **School** including happiness and safety at school and any trouble with school work. | - The positive impacts children feel as they arrive to school after their active travel. | - The negative impacts children feel a they arrive to school after their active travel. |
| | - **Relationships** with friends. | - Children reinforce their friendship with their colleagues as they go together to school. | - Different transportation modes colleges have affects negatively their friendship. |

Regarding subjective measurements for children's wellbeing, several limitations have to be taken into consideration (Matza et al., 2004, Taylor et al. 2010, Nakamura et al. 2009). This includes children's tendency to respond using repetitive or extreme answers; giving answers without totally understanding questions; giving answers they think researchers are willing to find, and finally, their limited ability to understand terminologies. Meeting these limitations, two integrated techniques have to be followed. The first is the need for age-tailored questions matching children's perception capabilities; and the second is to have a supplementary source of information (parents, teachers, neighbors ….etc.) to support data gathered from children (Nakamura et al., 2009).

This paper develops an evaluation framework based on the capabilities approach and equilibrium theory. It uses 'Delphi' technique to conclude a list of children's wellbeing domains related to their active traveling to school. The list is developed based on in-depth interviews with 12 representatives of stakeholders' categories (parents, teachers, psychologists, and school's psychological consultants), and thirty-seven general interviews. Based on their expertise, they were asked to make a combined list out of many related lists (a sample of these lists is presented in table (2). Each of the selected domains is investigated to identify both challenges and resources they have to overcome these challenges while children are actively traveling from their home to school and vice versa. The children's active school traveling framework developed by Mitra (2012) is used to give insights into both resources and challenges. The final concluded list is divided into four sections. Three of them are corresponding to interactions that students face while traveling from home to school. And the fourth is general domains (as shown in table 3).

To investigate the applicability of its theoretical findings, this paper develops two questionnaires for both children and their parents. Regarding the students' questionnaire, the sample comprises high school students. It contains 192 responses (147 males (76.6%), and 45 females (23.4%)). Two schools are selected for investigations (College Saint Marc for males and Sainte Jeanne Antide for females). Both schools are in near proximity and at the heart of the institutional square of the old city of Alexandria. A large portion of the sample (42.2%) are residents in locations that are connected to school locations with public transportation (mainly tramway). About (23.4%) of the sample are residents in Smouha (a new neighborhood) about 5km of school location and lacks consistent public transportation connectivity to school locations. About (10.9%) of the sample are residents in places that are well connected to the school location by public transportation but they are at a distance that over 10 Km. Both schools are selected based on the reputation of their students' maturity in addition to their location as accessible to different modes of transportations.
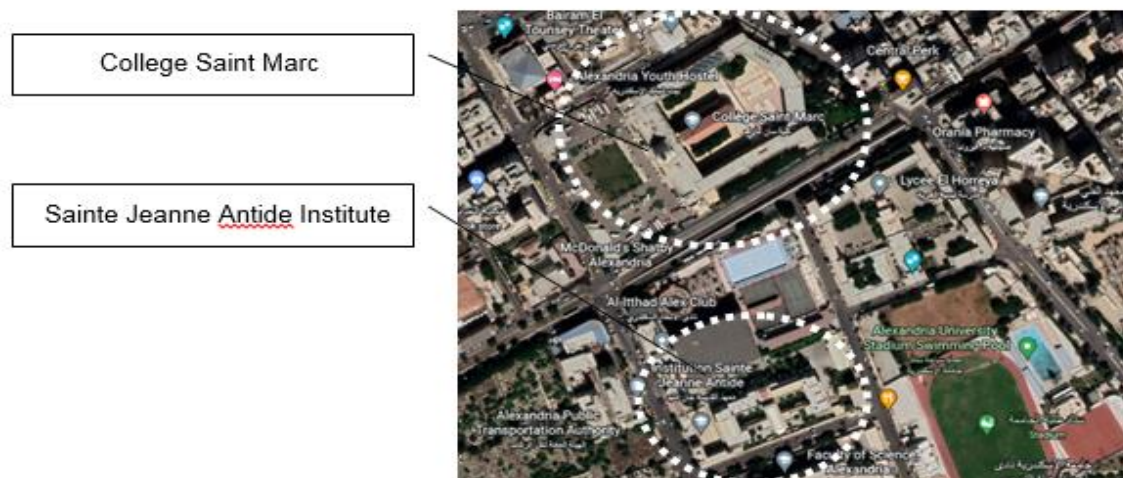


Fig.5: Location of both College Saint Marc, and Sainte Jeanne Antide Institute. (Reference: www.googleearth.com)

The means by which students go to school on more than 50% of their daily travel to school are as follows:(18%) of the sample goes to school on foot, (05%) of the sample goes to school by motorcycle, (05%) of the sample goes to school by bikes, (15%) of the sample goes to school by tramway, (07%) of the sample goes to school by public bus, (16%) of the sample goes to school by microbus, (10%) of the sample goes to school by school bus, (35%) of the sample goes to school by private cars, (03%) of the sample goes to school by private taxi, This means (71%) of the sample are active school driving and about (29%) uses private cars, taxis or the school bus.

The students' questionnaire is divided into four sections covering the children's wellbeing domains in their active school traveling as mentioned in table 2. These sections are general domains (physical, subjective, and psychological wellbeing), home-related domains (being able to express yourself, being listened to, and having time), mobility from home to school and vice versa (feeling safe and secured resilience, and behavior), and finally school-related domains (at school, and relationship with friends). Meanwhile, the parents' questionnaire goes in parallel to their children's questionnaire and is covering the three first sections only.

## 6. QUESTIONNAIRE RESULTS AND DISCUSSION

The results for the students' questionnaire are categorized under the main four categories of the questionnaire itself. They are:

### 6.1 General Domain

This domain is investigated by asking students a couple of questions representing resources and challenges concerning physical, subjective, and psychological wellbeing. In addition, parents are asked three questions covering these sub-domains. The results presented in table (3) show that the car-oriented scores are higher than pedestrian-oriented in both physical and subjective wellbeing, while the results show the positive impacts of active school traveling on the psychological wellbeing of students. The results show the positive impacts of active school traveling on all general wellbeing domains from the parents' point of view. In addition, the results show the dominance of resources over the challenges in all wellbeing aspects for car-oriented students. This is the case for the active school traveling students in just subjective and psychological wellbeing while the challenges exceed slightly the resources in case of physical wellbeing for those students.

Table 3: The results for 'general domain' section in both student's' and parents' questionnaire (Reference: The Author)

| | | Physical wellbeing | | Subjective wellbeing | | Psychological wellbeing | | General Domain (Av) |
|---|---|---|---|---|---|---|---|---|
| | | Resources | Challenges | Resources | Challenges | Resources | Challenges | |
| Students | Pedestrians oriented | 2.67 | 2.72 | 3.50 | 1.44 | 3.61 | 1.72 | 2.61 |
| Students | Car oriented | 3.38 | 2.31 | 4.06 | 2.00 | 3.31 | 1.31 | 2.73 |
| Parents | Pedestrians oriented | 3.92 | | 4.62 | | 3.38 | | 3.97 |
| Parents | Car oriented | 3.74 | | 3.85 | | 3.38 | | 3.66 |

### 6.2 Home-Related Domain

This domain is investigated by asking students a couple of questions representing resources and challenges concerning their ability to express themselves, to be listened to, and have time. In addition, parents are asked three questions covering these sub-domains. The results presented in table (4) show that the active school traveling scores are higher than the car-oriented traveling in all aspects of the 'home related domains' for both students and parents. In addition, the results show also the dominance of resources over the challenges in all 'home-related domains' for both the active school traveling students and those who are traveling using vehicles.

Table 4: The results for 'home-related domain' section in both student's' and parents' questionnaire (Reference: The Author)

| | | Being able to express yourself | | Being listened to | | Having time | | Home-related Domains (Av) |
|---|---|---|---|---|---|---|---|---|
| | | Resources | Challenges | Resources | Challenges | Resources | Challenges | |
| Students | Pedestrians oriented | 3.94 | 1.83 | 4.22 | 1.89 | 3.44 | 2.67 | 3.00 |
| Students | Car oriented | 3.75 | 2.19 | 3.88 | 1.63 | 3.19 | 2.06 | 2.78 |
| Parents | Pedestrians oriented | 2.38 | | 4.46 | | 3.54 | | 3.46 |
| Parents | Car oriented | 2.29 | | 3.88 | | 3.50 | | 3.22 |

## 6.3 Mobility from Home to School and Vice Versa Domain

This domain is investigated by asking students a couple of questions representing resources and challenges concerning their feeling about safety and security, resilience, and their behavior. In addition, parents are asked three questions covering these sub-domains. The results presented in table (5) show that the car-oriented scores are higher than pedestrian-oriented in both feeling safe and secured and resilience, while the results show the positive effects of active school traveling on the students' behavior. The results show the positive effects of active school traveling on all general wellbeing domains from the parents' point of view. In addition, the results show the dominance of resources over the challenges in all wellbeing aspects for car-oriented students. This is the case for the active school traveling students in both feeling safe and secured and resilient, while the challenges exceed the resources in case of the behavior.

Table 5: The results for 'Mobility from home to school and vice versa Domain' section in both student's' and parents' questionnaire (Reference: The Author)

| | | Feeling Safe and Secured | | Resilience | | Behavior | | Mobility Domain (Av) |
|---|---|---|---|---|---|---|---|---|
| | | Resources | Challenges | Resources | Challenges | Resources | Challenges | |
| Students | Pedestrians oriented | 3.67 | 2.61 | 3.06 | 2.00 | **3.33** | **3.72** | 3.07 |
| Students | Car oriented | 4.00 | 2.38 | 3.88 | 1.81 | 3.25 | 3.25 | 3.10 |
| Parents | Pedestrians oriented | 3.77 | | 4.31 | | 4.31 | | 4.13 |
| Parents | Car oriented | 3.35 | | 3.85 | | 3.68 | | 3.63 |

## 6.4 School-Related Domains

This domain is investigated by asking students a couple of questions representing resources and challenges concerning their performance at school, and their relationship with their friends. The results presented in table (6) show that the car-oriented scores are higher than pedestrian-oriented in all aspects. They also show the dominance of resources over the challenges in all wellbeing aspects for both active schools traveling and car-oriented cases.

Table 6: The results for 'school-related domain' section in student's' questionnaire. (Reference: The Author)

| | | Performance at school | | Relationship with friends | | General Domain (Av) |
|---|---|---|---|---|---|---|
| | | Resources | Challenges | Resources | Challenges | |
| Students | Pedestrians oriented | 3.17 | 2.67 | 3.83 | 1.50 | 2.79 |
| Students | Car oriented | 3.56 | 2.06 | 4.13 | 1.75 | 2.88 |

Figure (6) shows on the radar chart the results of the students' questionnaire. It presents these results as classified into either resources or challenges for both active schools traveling students and those who use vehicles. The chart shows active school traveling as allows for slightly more resources than while using vehicles in all the following items: psychological wellbeing, the students to express themselves, being listened to, having time, and with a considerable advantage in offering the chance for subjective wellbeing. On contrary, using vehicles allows for more resources in the following items: feeling safe and secured, resilience, performance at school, relationship with friends, and finally physical wellbeing. The resources offered by both ways of moving show the same opportunities for the students' behavior.
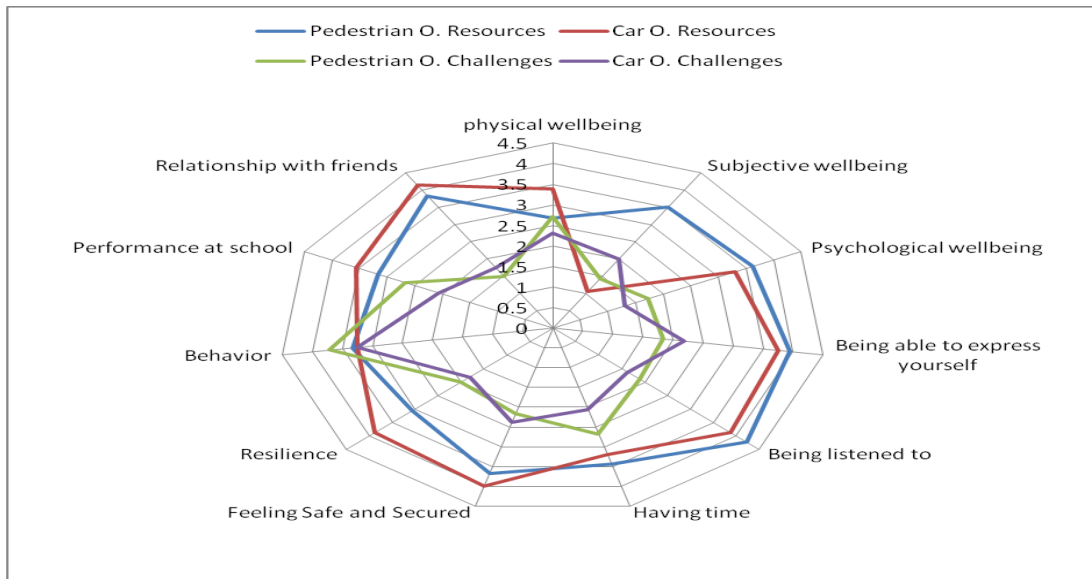


Figure 6: Resources/Challenges analysis for students' questionnaire results.
(Reference: The Author)

Regarding the challenges, the chart shows active school traveling as allows for slightly more challenges than while using vehicles in all the following items: physical wellbeing, psychological wellbeing, being listened to, having time, resilience, their performance, and behavior at school. On the contrary, using vehicles allows for more challenges in the following items: subjective wellbeing, the students to be able to express themselves, feeling safe and secure, and finally, relationship with their friends.

While a consistent performance for results is reflected on the graph, two exceptional cases could be noticed. The first is the intrusion of the challenges concerning the behavior over the resources for this item, which is interpreted because of fears associated with the student's age. The second is the gap between resources with 'Subjective wellbeing' between active school traveling and vehicle-oriented students. However, this gives a positive sign about the way students links between active school traveling and their physical health and fitness.

Figure (7) shows the results of the parents' questionnaire. It presents these results as related to either their children are active school traveling students or they go to school by car. The results show a consistent dominancy of active school traveling scores for all items. However, the gap between scores is very limited in the following items: physical wellbeing, psychological wellbeing, for children to express themselves, and finally having time. An interpretation of these results could be made clear when comparing the results for these four items to those shown in figure (6). The low scores for both 'physical wellbeing' and 'having time' could be reflected in the high score for 'challenges' that active school travelers have mentioned in their evaluation. However, the discrepancies in scores for both 'psychological wellbeing' and 'being able to express yourself' between parents and students show a more parents' understanding of their children's non-physical aspects of wellbeing is required.
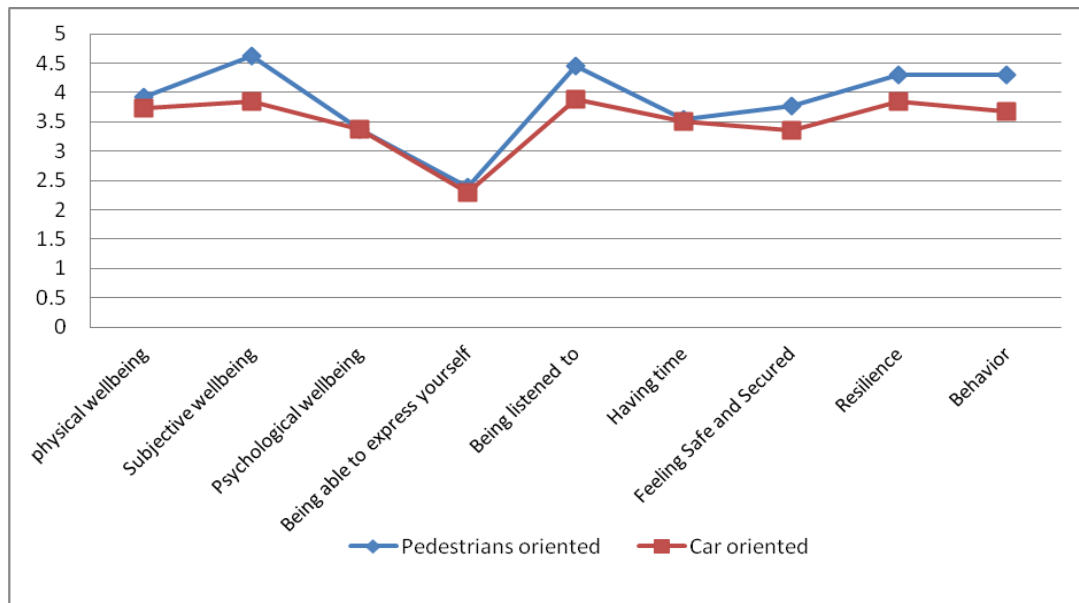
Fig.7: Analysis for parents' questionnaire results.
(Reference: The Author)

## 7. CONCLUSIONS

This paper studies the correlations between active school traveling and children's wellbeing. To achieve its aim, it develops a comprehensive framework for understanding children's well-being domains based on an interpretation of capabilities approach. This is derived from a study of both resources and challenges children face while going through the active school traveling process. As the conclusion for the literature review, four domains are investigated as children's wellbeing domains in their active school traveling. These domains are a general one, at home, mobility from home to school and vice versa, and finally at school. Two questionnaires were performed to both students and parents from a sample comprising high school students from two schools, College Saint Marc for males and Sainte Jeanne Antide for females.

The results show apparent effects of active school travel on the students' wellbeing regarding their parents' point of view. Most of the abovementioned domains' subcategories have marked high scores for students using active school traveling techniques compared to their colleagues going to school using other means. In a little number of these domains' subcategories, the gab in score was not considered due to severe challenges students face while going to school or as a result of unnoticed grown-up requirements in this life stage (mainly related to non-physical aspects of wellbeing). As the differentiation between challenges and resources is used to investigate the students' wellbeing in its dynamic understanding, the paper shows the validity of this approach and its potential to interpret the questionnaire results. In a common case resources are always more than challenges that have positive impacts on students' wellbeing while going to school using active school traveling means. However, some of the abovementioned domains' subcategories have shown higher degrees of challenges that affected negatively students' wellbeing scores such as the 'Behavior' (including feelings towards others and any risky behaviors or conflict) while moving from home to school and vice versa. This could be interpreted within a wider understanding of students' grown-up circumstances.

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