



Universiteit  
Utrecht

Faculty of Geosciences

Department of Human Geography

MSc. Thesis in Urban Geography

**"TIMES ARE NOT LIKE BEFORE"**

*An intergenerational study about experiences in  
Children's Travel Behavior in Quito, Ecuador.*

By Ana Carolina Mesías Caicedo (8136297)

Supervised by Francisco J. Bahamonde Birke

October 16<sup>th</sup>, 2022

## **Summary**

Children's mobility has been analyzed mainly in developed countries. The decrease of independence in children's mobility and its consequence is already taking attention research worldwide, however, in Latin America, this topic is still unknown.

To better bring insight into that, the present research analyzes travel experiences of 12-year-old from eight families in Quito, Ecuador, over three generations. The analysis explores mobility patterns, factors influencing, and the correlation with the development of independence in children's mobility. The results confirm different experiences in travel behaviors across generations, influenced by factors such as social-economic context, level of responsibilities within the home, family size, and parents' confidence in children. All these factors have a strong sociocultural condition that promotes only the development of children's independent mobility in previous generations G1, and G2.

## **Key words**

Travel experiences, children's independent mobility, sociocultural factor.

## Table of Contents

<b>Background</b> .....	<b>5</b>
<b>Introduction</b> .....	<b>6</b>
<b>1. Research questions</b> .....	<b>8</b>
<b>2. Literature review</b> .....	<b>9</b>
<b>2.1. Children, space, and sense of independence</b> .....	<b>9</b>
<b>2.2. Importance of children’s independent mobility</b> .....	<b>10</b>
<b>2.3. A decline in children’s independent mobility worldwide</b> .....	<b>11</b>
<b>2.4. Factors affecting independence in children’s mobility</b> .....	<b>12</b>
<b>2.5. Sociocultural factor</b> .....	<b>16</b>
<b>2.6. Mobility problem in Quito</b> .....	<b>17</b>
<b>3. Methodology</b> .....	<b>21</b>
<b>3.1. Research method</b> .....	<b>21</b>
<b>3.2. Research sample and participant recruitment</b> .....	<b>21</b>
<b>3.3. Data collection</b> .....	<b>23</b>
3.3.1. In-depth interviews .....	23
3.3.2. Instruments .....	23
3.3.3. Sample size .....	25
3.3.4. Ethical Considerations .....	26
3.3.5. Limitations .....	27
<b>3.4. Data processing</b> .....	<b>27</b>
3.4.1. Analysis and interpretation of data .....	27
<b>4. Presentation of Results</b> .....	<b>29</b>
<b>4.1. General insights</b> .....	<b>29</b>
<b>4.2. Travel behavior experiences across generations: differences and</b> .....	<b>29</b>
4.2.1. Travel motives .....	31
4.2.2. Travel modes .....	34
4.2.3. Companions .....	37
4.2.4. Distances .....	40
<b>4.3. Main factors influencing children’s travel behavior over generations</b> .....	<b>41</b>
4.3.1. Socio-economic factor .....	41
4.3.2. Responsibilities within home .....	42
4.3.4. Parents’ high confidence in children .....	44
<b>5. Discussion</b> .....	<b>47</b>
<b>6. Conclusions</b> .....	<b>51</b>
<b>7. Reflection</b> .....	<b>52</b>
<b>9. References</b> .....	<b>54</b>
<b>10. Annexes</b> .....	<b>58</b>
<b>10.1. Interview guide</b> .....	<b>58</b>
<b>10.2. Interview questionnaire</b> .....	<b>59</b>
<b>10.3. Participating Families</b> .....	<b>61</b>
<b>10.4. Code tree</b> .....	<b>61</b>

## Figures

Figure 1: Socioecological factors influencing Children's independent mobility. Own authorship, 2022.....	12
Figure 2: Quito's urban growth over time. SHTV, 2014. ....	18
Figure 3: Change in locations in families selected across three generations. Own authorship, 2022.....	29
Figure 4: Travel motives across three generations in 12-years-old children. Own authorship, 2022.....	31
Figure 5: Travel modes across three generations in 12-years-old children. Own authorship, 2022.....	34
Figure 6: Travel companions across three generations in 12-years-old children. Own authorship, 2022.....	37

## Tables

Table 1: Comparative table children´s travel behavior G1 G2 G3. Own authorship, 2022. ...	31
---	----

## Background

*“[...] a good city for children, is a good city for all”*

*“The city at eye level for kids”*

*Danenberg & STIPO, 2019.*

The inclusion of children's perceptions in the urban development agenda will lead to a vast body of knowledge on how to improve physical design, inclusion, and participation in use and comfort in cities (Danenberg et al., 2018). By solving children's needs as urban actors, immediately, the needs of all citizens are included. It is like a movie for kids; everyone can enjoy it!

However, it is not that simple. The urban model implanted in most cities worldwide continues to privilege a mobility paradigm based on the excessive use of private vehicles. Instead of expanding possibilities in mobility at early ages, cities have been constraining them over the years (Orellana, 2022), provoking adverse consequences not just for children but for people in general and the environment.

For that reason, it is urgent to open the discussion on this matter, even more in vulnerable urban contexts such as Latin America. *Times now are not like before: An intergenerational study about experiences in Children's Travel Behavior in Quito, Ecuador*, attempts to be a starting point for it, understanding *that* “a good city for children; is a good city for all.

## Introduction

*"Times now are not like before"*, is what older people usually mention when they tell stories of their childhood. And they are right! Differences between current and older generations are obvious to anyone who grew up before the '80s (Reyes, P., 2015). Activities such as going to the park, walking to school, taking public transport, buying in the local store, or playing in the street until dark, were an intrinsic part of children's daily life, today, they are barely part of the activities of the new generations. Such changes in mobility patterns have provoked a loss in independence in children's mobility.

Children's Independent Mobility (CIM) refers to a child's freedom to travel and play around their neighborhood or city by themselves without adult supervision (Hillman et al., 1990; Tranter & Whitelegg, 1994). Some studies suggest having high levels of CIM enhances social, cognitive, and personal development (Riazi & Faulkner, 2018a), and it is a good source of physical activity (Shaw et al., 2015). However, the freedom of contemporary children's outdoor mobility has declined since the early 1900s and seemed to be markedly reduced compared with previous generations (Hillman et al., 1990; O'Brien et al., 2000; Riazi & Faulkner, 2018a).

In recent decades, growing attention has been given to this matter due to its adverse effects on children's well-being (Shaw et al., 2015). Loss of autonomy in solving problems, the decline in physical condition leading to obesity, and insufficient practical and social skills are the shortcomings of current children. Moreover, physical context also plays an important role, a report from Policy Studies Institute (2015) pointed out that parents have significant concerns about letting their children go out alone because of traffic, which seems to be the strongest factor affecting the granting of independent mobility. This concern is directly connected to how urban areas have been planned, designed, and built throughout the years.

Currently, there is evidence of the range of policies and actions that have been undertaken by public authorities, international organizations, and non-governmental organizations to improve children's independent mobility around the world (Riazi & Faulkner, 2018). Nevertheless; in Latin America, there has not been an important change over time, and governments still resist to include children perspectives in the mobility agenda of cities. Specifically in Quito, Ecuador which was developed under an urban car-based model, and its transformation towards a new paradigm of mobility has been little or none the last decades *What have been the children's travel experiences over time? What factors have influenced such travel experiences? In what way have travel experiences incised in the development of independence in children's mobility?* To provide insights into these questions, this research analyzes travel behavior in 12-year-old children across three generations. Using a qualitative approach, it is intended to collect the travel experiences of eight families living in urban areas of Quito.

The document is structured as follows. Section 1 poses the research questions. The second section includes a literature review of children's mobility patterns worldwide, a social-ecological approach to factors influencing Children's Independent Mobility, and brief summary of the mobility context in Quito, Ecuador. Section 3 describes the methodology designed to collect, analyze and report travel experiences across three generations. In Section 4 the results are presented. Section 5 is a discussion of the results obtained, and recommendations for further research. Conclusions are found in section 6. Finally, section 7 includes a retrospective on the development of the investigation after its ending.

## 1. Research questions

This research aims to analyze travel behavior experiences across three generations in 12-year-old children residing in Quito, Ecuador. The following research questions are posed:

- What the differences and similarities in travel experiences of 12-year-old children across three generations in Quito, Ecuador?
- What factors have influenced the travel experiences of 12-year-old children across three generations in Quito, Ecuador?
- How have travel experiences incised in the development of independence in mobility in 12-years-old children across three generations in Quito, Ecuador?



## 2. Literature review

### *2.1. Children, space, and sense of independence*

During the first stages of development, children are utterly dependent upon their caregivers when it comes to organizing their daily life activities, their nourishment, and their travel (Orenstein & Lewis, 2022; Zwerts et al., 2010). Specifically, in mobility practice, younger kids need the support and companionship of a responsible adult to commute to the places they need/want to go. At a certain age, they are considered able and old enough to travel independently by foot, bicycle, or public transport (Zwerts et al., 2010) gaining freedom in their decision of movement, and their travel behavior.

According to experts in youth development, fomenting independence to explore their environments at an early age is important for healthy development in children (Ferreira, 2020). Others assure, that if children are to flourish, they must have the physical freedom to explore a world outside the family (Dunn & Layard, 2009). In that line, Hillman et al., (1990) in the '90s, introduced the concept of Children's Independent Mobility concept (CIM) to provide a key to the understanding of children's mobility (Mikkelsen & Christensen, 2009). Children's Independent Mobility refers to child's freedom to travel and play around their neighborhood or city by themselves without adult supervision (Hillman et al., 1990; Tranter & Whitelegg, 1994). Moreover, it can refer to children traveling on their own, or with friends, to a variety of destinations within their neighborhoods such as schools, shops, parks, and playgrounds evolving active (e.g., walking, cycling) and passive (e.g., public transport) modes of transportation (Riazi & Faulkner, 2018a).

There are different spheres to examine independence in children's mobility practices. Some examples are territorial range, mobility licenses, and outdoor playing. Territorial Range

determines the degree of independency by showing how far children can travel from their homes without adult supervision (Rissotto & Tonucci, 2002). Secondly, mobility licenses are gained by parents and encompass six questions whether a child can cross main roads alone, go to places besides school alone, travel home from school alone, go out after dark alone, travel on local buses alone, and cycle on main roads alone. Finally, children's independent mobility can also be viewed regarding their play participation in after-school periods such as outdoor activities or autonomous play (Riazi & Faulkner, 2018).

## ***2.2. Importance of children's independent mobility***

According to the World Health Organization (WHO), obesity is one of the most serious public health problems of the 21st century, and estimates there are more than 42 million overweight children on the planet (BBC Mundo, 2017). In Ecuador, it is estimated that 1 in 10 children under the age of five already suffers from this condition. The percentage increases with age, 1 in 3 school-age children and 1 in 4 adolescents is already overweight (UNICEF, 2014). One of the main reasons promoting obesity is the lack of physical exercise in children's daily activities. A great percentage of children are not reaching adequate levels of physical activity on a regular basis. (Janssen et al., 2005; Hallal et al., 2012). In this line, fomenting independence in mobility at an early age may be an important source for creating possibilities for walking or biking while children go to school, to the park, or spend time with friends. The literature demonstrates children with a higher degree of independence in their movement are typically more physically active than kids with a lower degree of independence (Pearce et al., 2014; Schoeppe et al., 2013). In addition, having good physical conditions means children can increase muscular and cardiorespiratory fitness, maintain healthy body composition, improve bone health, reduce the

risk of hypertension and several types of cancer, and enhance mental health and academic performance (Biddle et al., 2004; Riazi & Faulkner, 2018; Strong et al., 2005).

On the other hand, children's independent mobility may also be important for social, cognitive, and personal development (Riazi & Faulkner, 2018) due to the infinite possibilities of interaction and cohesion that traveling freely includes. The opportunity to relate to the near environment helps children to develop better spatial awareness and problem-solve skills. (Tranter & Whitelegg, 1994; Rissotto & Tonucci, 2002; Cohen, 1982). Moreover, the fact children are constantly interacting with adults, peers, and places in their neighborhoods improves their acquisition of social skills and social competence (Prezza et al., 2001) and it may be beneficial for building friendships as well as a sense of community. (Prezza & Pacilli, 2007). Finally, children how are in contact with their physical context can develop better decision-making skills, traffic safety, self-confidence, and competence to safely navigate their neighborhood environment (Carver et al., 2008; Mackett, 2013; Oliver et al., 2011; Rissotto & Tonucci, 2002; Tranter & Whitelegg, 1994).

### ***2.3. A decline in children's independent mobility worldwide***

However, *times are not like before!* The child's age at this turning point (travel independently) has been increasing in recent years, which in turn has led to a dramatic decrease in children's independent travel compared with previous generations (Hillman, 1997; Hillman et al., 1990; Mattsson, 2002; O'Brien et al., 2000; Pooley et al., 2005). A previous investigation reported a decline in the number and variety of places where children could independently visit and an increased adult-led outdoor play over three generations (Gaster, 1991; Riazi & Faulkner, 2018). In England, the proportion of children traveling to school alone decrease from 80% in 1971 to 9% in 1990 (Hillman et al., 1990). In The Netherlands, 75% of children's trips are made under

the companionship of a parent or another close adult, which confirms that the present generation moves around less independently than their predecessors (Karsten, 2005; Karsten & Ferder, 2016). In the same line, the Policy Studies Institute mentions that the decrease in children's independent mobility is globally generalized, the countries with the lowest level of CIM are France, Israel, Sri Lanka, Brazil, Ireland, Australia, Portugal, Italy, and South Africa (Shaw et al., 2015).

No more detailed information about children's independent mobility in Latin America or Quito, Ecuador was found.

#### ***2.4. Factors affecting independence in children's mobility***

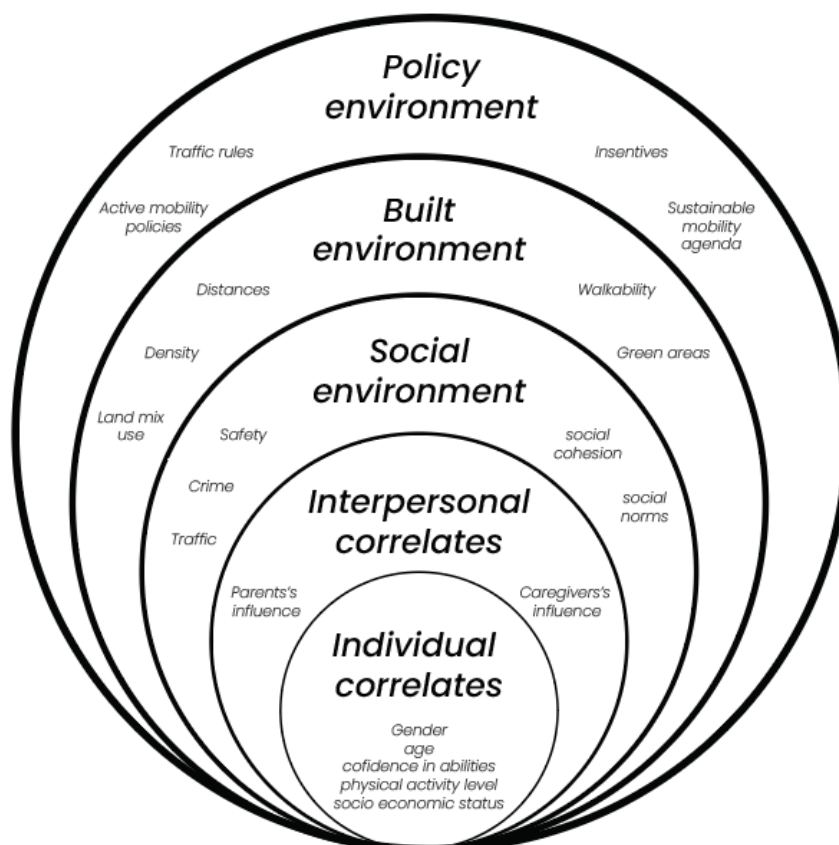


Figure 1: Socioecological factors influencing Children's independent mobility. Own authorship, 2022.

Addressing mobility patterns over different generations has identified a context of changes in the built environment, demography, and technology (Woolley & Griffin, 2015). To fully consider the factors influencing children's independent mobility, a socio-ecological framework encompassing multiple levels of influence should be adopted (Riazi & Faulkner, 2018). According to the book *Children's Active Transportation*, chapter 5, there are five factors influencing children's independent mobility: individual correlates, interpersonal correlates, social environment, built environment, and policy environment. All definitions, data and examples described below belong to *Children's Active Transportation, Chapter 5: Children's independent mobility*.

Firstly, individual correlates refer to the factors immersed by nature such as a child's gender, age, confidence in their abilities, or physical activity levels (Riazi & Faulkner, 2018). One of the most common differences refers to the level of independence between boys and girls due to the social construction of genders. A majority of studies examining children's independent mobility have found that boys tend to have higher levels of independent mobility in comparison to girls (Riazi & Faulkner, 2018). By identifying girls as the *wreakers* parents might grant more freedom for traveling to boys while female children receive more restrictions and limits. In terms of age, as children get older, they gain more experience, develop social, and physical competencies, improve their ability to deal with traffic and gain more independence (Ampofo-Boateng & Thomson, 1991; Fyhri & Hjorthol, 2009). Moreover, children's confidence in their own abilities, as well as their parents' confidence in their child's abilities are positively associated with children having independent mobility (Riazi & Faulkner, 2018).

Secondly, interpersonal correlates include external factors children are in contact with in daily life. The most important is the influence of the parents or caregivers considered *the*

*gatekeepers* because as adults they can either restrict or promote children's independent mobility as they see fit (Riazi & Faulkner, 2018). This is closely linked to the way parents understand life, concern about safety, and their preferences. According to the National Household Travel Survey data from 2001 in the USA, mothers are five times more likely to transport children in comparison to fathers (McDonald et al., 2011). Another report mentioned mothers also tend to limit children's travel range more than fathers (Schoeppe et al., 2016), and they are often more concerned about safety and vocalize this concern to their children, especially daughters (Brussoni et al., 2013; Morrongiello et al., 2010). Moreover, social-economic status plays a fundamental role in promoting or preventing children's independent mobility. Few studies have found that a higher proportion of children from lower socioeconomic areas have higher levels of independent mobility (Mitra et al., 2014) and travel to more destinations independently (Veitch et al., 2008). This mobility practice is connected to the fact children from lower socioeconomic backgrounds may not have less access to motorized modes of transport (Riazi & Faulkner, 2018). The Policy Studies Institute (2015) found when a household owned a car, the child was less likely to travel independently to school. This is supported by other research which confirms that the number of cars in a household increased, and the likelihood of independent mobility for the child decreased (Riazi & Faulkner, 2018)

In terms of Social environment, it is composed of perceptions of the neighborhood, safety, crime, traffic, as well as social cohesion, social norms, and car use (Riazi & Faulkner, 2018). Scholars confirm when children and parents perceived a *friendly neighborhood* with lots of children playing, people walking, talking, and doing outdoor activities, they tended to have higher levels of independent mobility (Mitra et al., 2014; Villanueva et al., 2012, 2014). Additionally, social cohesion describes the links between residents of a neighborhood

including shared values, and beliefs, Such emotional connection helps to increase the likelihood of children's independent mobility (Wolfe & McDonald, 2016).

The fourth layer of the socioecological model focuses on the built and physical environment, which encompasses several factors including distance to destination, density (e.g., population, residential), diversity (e.g., land use mix), the walkability of the neighborhood, and urbanization (e.g., rural, suburban, and urban). (Riazi & Faulkner, 2018). Some studies confirm, as the distance to a destination (e.g., school, parks) increases, the likelihood of children's independent mobility decreases (Riazi & Faulkner, 2018). Scholars confirm, the distances under 1km are considered perfect for children can travel indecently, but if the distances to school, leisure activities, and parks increase above 1 km, independent mobility becomes less likely (Cordovil et al., 2015; Fyhri & Hjorthol, 2009; Mammen et al., 2012). Moreover, families that live closer to their child's school, ideally under 1km away as was explain before, are more likely to grant independence to travel to school. In the same line, living in urban areas close to shops and recreation centers (<800 m) also favors children's independent mobility, as well as street density and walkability (Villanueva et al., 2012, 2014). Finally, Children's independent mobility can be influenced by natural environment features including seasonality, weather, air quality, and temperature (Riazi & Faulkner, 2018b). For example, extreme weather and temperatures can affect travel plans and may promote parents to take children to their destinations (Fyhri & Hjorthol, 2009). In the case of poor air quality, whether from potential forest fires in the summer, smog, vehicular exhaust, or factory pollution, children may be forced to curb their active outdoor activities (Riazi & Faulkner, 2018).

Finally, the policy environment can play a crucial role in either promoting or restricting children's independent mobility. (Riazi & Faulkner, 2018). In a report about CIM in 16 countries, it was found differences in legislation and road traffic rules to promote walking and

cycling between countries (Shaw et al., 2015). Most countries with the highest levels of children's independent mobility had legislation focused in promoting walking and cycling (Riazi & Faulkner, 2018). Good examples in this matter are Vancouver, Canada and Rotterdam, the Netherlands. These cities have implemented high-quality public spaces including a variety of transport modes and child-friendly streets, housing, and spaces over the years (Price & Reis, 2009; Shaw et al., 2015; The Academy of Urbanism, 2015). This approach can go further, "*A good city for children; is a good city for all*" (Danenberg & STIPO, 2019). Including the perceptions in the urban development agenda lead to a vast body of knowledge on how to improve physical design, inclusion, and participation in use and comfort in cities (Danenberg et al., 2018). In other words, solving children's needs as urban actors, immediately, the needs of all citizens are included. It is like a movie for kids; everyone can enjoy it!

## ***2.5. Sociocultural factor***

Due to the socio-ecological approach described above are mainly based in western contexts, it is important for this research to consider a cultural component as a sixth layer influencing children's independent mobility. The sociocultural factor refers to the determining conditions that report essentialities of human behavior within the same geographical space such as religion, traditions, cosmovision, or idiosyncrasy (Reyes, 2010). Specifically, in Latin America, culture is composed of two influences, the indigenous cosmovision as a heritage from the aboriginal communities, and the Catholic religion because of colonization. The dichotomy of such influences is visible in different spheres of life, one of them is in the conception of the family as a highly efficient "economic team" (Tepicht, 1984) characterized by big family groups (Martínez, 1996). Having many children was considered an investment for the future. Despite the great challenge of maintaining a large family in poor contexts, as children grew up,



they had to work as soon as possible, commonly at the age of 12 years old or even earlier, so their salaries contributed to the family economy (Sáez, 2011). Such sociocultural practice reaffirms the idea that children in previous generations had important responsibilities within the home, forcing them to develop certain abilities and skills from an early age, which might contribute to the development of independence. Currently, this vision of family does not have the same relevance as before, however, it might be an important component to understanding the changes in children's travel behavior over generations in the Ecuadorian context.

## 2.6. *Mobility problem in Quito*



Figure : Location of Quito, Ecuador. Own authorship, 2022.

Quito Metropolitan District (DMQ) is the capital of Ecuador. It is located to the southeast of the American continent at 2,500 m.a.s.l. in the Cordillera de Los Andes on parallel 0. It has a population of 2,781,641 inhabitants (INEC, 2020), and its territory extends over 422,802 hectares.

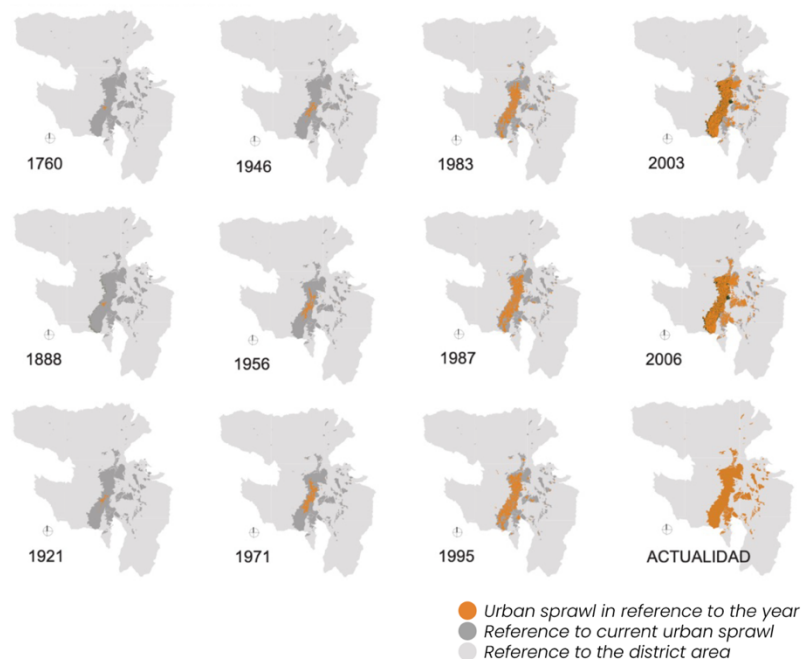


Figure 2: *Quito's urban growth over time. SHTV, 2014.*

The particularity of its geographical location provides a wide diversity of natural resources, climatic floors, and ecosystems (Ávila et al., 2014), however, the disperse urban growth model characterized by low-densities that Quito has experienced since the 1970s has brought evidence functional and territorial inequities and environmental inefficiency.

Such a model favors the development of a macro centrality but development of additional centralities. This phenomenon is associated with the loss of residential density in the consolidated urban areas, low densities in the new peripheral residential areas of the city, and inequitable distribution of urban services and urban infrastructure, which is concentrated in the hyper-center. This growth has also generated a process of conurbation with neighboring districts, as well as a process of urbanization of the rural parishes that surround the city and that are currently in the process of consolidation. (MDMQ, 2011). Additionally, there is evidence of a lack of efficiency in the road system due to the network capacity, data shows a 32% of saturation (MDMQ, 2009), and a vulnerability state in some of the most critical sections

of the city. This problem is made worse by the discontinuity of the road system, and the poor connectivity between different sectors, and low-quality of the public transport system.

From the point of view of mobility, the urban model described previously generates an excessive demand for trips that cover long distances, especially for students and the economically active population. A mobility survey carried out by the group Metro Madrid (2011) reported the destination of most daily trips is the hyper center of the city and most of the trips start in vulnerable neighborhoods. In addition, the number of vehicles is growing by the year. The Secretary of Mobility of Quito points out that 17 539 new vehicles circulate per year (El Comercio, 2021), increasing the emission of polluting gases, including carbon dioxide CO<sub>2</sub>, causing the growing use of public spaces as parking in the most crowded areas of the city and traffic. However, just 23% of the population owns a private vehicle and 73% uses alternative options mainly public transport. In this sense, the municipality developed a master mobility plan including the construction of the first metro line named *Metro de Quito*. This project has been under construction since 2012 and it is estimated that it will be running at the end of this year. Although the metro contemplates 15 stops from north to south and vice versa, it does not connect the vulnerable sectors where exist the highest demand for public transport.

Parallely, projects to promote active mobility were implemented mainly during pandemic. The Secretary of Mobility of the Municipality implemented “Cicloviías Emergentes” (Emerging Bike paths) as an alternative solution for the mobility constraints that the citizens were experiencing during pandemic times. The plan included 67,5 km of new bike lanes along the hipper center of the city designed to implement in 3 stages. The impact of this project was substantial, according to recordings, bike daily commuters represented the 0,25% of the total commuters in 2018. In June of 2020, after finalizing the first stage, daily commuters by bicycle increased 600% in comparison of January of the same year and the statistics continued rising

the coming months, evidencing the wide acceptance of the citizens for this way of transportation in that time. However, bike infrastructure was implemented, as well as metro line, was implemented around the hipper center zone, incurring again in the problem of mobility for vulnerable sectors.

Currently, mobility in Quito still faces structural problems, affecting the travel behavior of adults, youth, and children. Taking into account Quito's mobility conjecture brings context to the present investigation.

### **3. Methodology**

#### ***3.1. Research method***

Having been born and raised in a Latin American country and following my interest in understanding the social problem of mobility in vulnerable contexts (in this case focused on children), I decided to conduct the research in my home city, Quito, Ecuador. Quito, like many cities in the world, is still facing structural urban problems preventing the implementation of a new mobility paradigm taking into account children's needs. Moreover, as seen in the literature review, children's mobility has been a topic mostly researched in first-world countries, in this line, it was intrigued by the idea to land those theories and concepts in a different socio-cultural context.

To do so, the present research opted for a qualitative method. Qualitative approaches aim at developing a deeper understanding of the research topic from a social dimension within its natural setting (Fossey et al., 2002). In addition, it is suitable for addressing 'why' questions to explain and understand issues or 'how' questions that describe processes or behavior (Hennik et al., 2020). The present study case focuses on the second point. Specifically, the research analyses 12-years-old children's travel experiences across three generations, the process of change, identification of factors, and correlations with the development of independence in children's mobility. For that reason, I believed the qualitative approach was the most adequate methodology for the present research.

#### ***3.2. Research sample and participant recruitment***

Qualitative research uses purposive sampling, which involves purposefully selecting participants with certain characteristics important to the study (Hennik et al., 2020). Families who have been residing in urban areas of Quito at the age of 12 years for three consecutive generations were determined as the research sample. It was necessary to define that the analysis

focused on the participant's experiences that have or had at the age of 12 years for two reasons. First of all, taking into account Jean Piaget's theory of Cognitive Development: Formal Operations phase, where he mentions children become capable of seeing multiple potential solutions to problems and think more scientifically about the world around them (Piaget, 1981), so it is assumed children at that age are mentally mature enough to deal with their physical and social context more independently. Secondly, children at 12 years old in the Ecuadorian context experience a breaking point in their lives by changing from primary to high school, so it is assumed their social and physical context is subject to changes to a greater or lesser extent.

The place factor also played an important role in the analysis because experiences in social and physical contexts outside of cities influence children's development differently. In addition, the third generation must be in the first year of high school, so the assumptions described above are possible. In addition, it was established that the three generations must belong to the same gender (grandmother-mother-daughter or grandfather-father-son) to analyze possible differences in factors influencing between genders. Consequently, the generations were considered as follows: grandparents as the first generation (G1), parents as the second generation (G2), and children as the third generation (G3).

In terms of participant recruitment, social media was used as means of contacting families. Although the first way to search for participants was by references from acquaintances, it was decided to create an online call to recruit families. The campaign was sponsored by *Arma tu postre*, entrepreneurship based in Quito that specialized in artisan desserts, and it consisted of receiving a free cake for agreeing to participate in the interview. The campaign was well received, however, not all interested families could meet the sample profile established for the investigation, for that reason, contact by referral was more effective

and. Finally, participants also received a cake as a present for their participation from *Arma tu postre*.

### **3.3. Data collection**

#### **3.3.1. In-depth interviews**

The method for data collection selected for this research was in-depth interviews using a semi-structured format. The in-depth aspect of the method is important as it reinforces the purpose of gaining a detailed insight into the research issues from the perspective of the study participants themselves (Hennik et al., 2020). Moreover, a semi-structured format would enable the participants to elaborate and express their ideas freely, without limiting them to answering only the questions previously prepared (Bernard & Gravlee, 2014). These two aspects were fundamental at the data-gathering moment, keeping some flexibility in conversations helped to create appropriate spaces for the participants to feel free and comfortable sharing their experiences. This characteristic was very helpful in cases when travel experiences were related to hard situations from their childhood. At the same time, having a questionnaire as a guideline facilitated to address the conversations ensuring the obtention of the answers needed for the research. This was very helpful, especially with participants from generation G1 (elderly people) because they were likely to add and connect other experiences of their lives losing the focus of the interview.

#### **3.3.2. Instruments**

In terms of instruments required to collect data using the in-depth interviews method, this study required a questionnaire design, a visual resource, and an online meeting platform.

### 3.3.2.1. Questionnaire design

The questionnaire was designed regarding to the topic *The travel experiences at 12 years of age*, including opening questions about personal, family, socioeconomic context, and participants' skills to picture the participant's background in each generation. Some examples are Where did/do you live? Where do/did you study? Who did/do you live with? What did/do your parents do? Did/do you have access to a private car? Did/do you know how to take public transport? Are you/were you going to shop at the store alone? The key questions were related to children's travel experiences. In this section, the interviewees described a common weekday, emphasizing activities, destinations travel modes, companions, and routes. Questions such as What activities do/did you do during the day? What travel modes did/do you use? Who did/did you travel with? How often did/do you travel? were included. Finally, the closing questions were related to reasons and motivations for such travel behaviors and their opinion about that experiences such as Why did/do you travel in this way? What is/was your parents' influence? What is/was the reason for returning at that hour? How do/did you feel? (see annex 2).

### 3.3.2.2. Visual resource

The interviews were supported by Google Earth as a tool to better understand the physical context of the travel experiences in each generation by the interviewer. Moreover, this platform has a timelapse option to display historical maps, so it was very easy to show urban maps from previous years during the interview. Especially, in participants from generations G1 and G2 (grandparents and parents), this visual resource helped them to remember places and routes in more detail.

On the other hand, it was intended to conduct the interviews together with an interactive mapping of the routes, and places using the same software, however, due to problems regarding the usage of the platform in participants from generations G1 and G2 (grandparents and



parents), it was decided to use it just as a visual recourse and the development of maps was moved to data processing stage.

### *3.3.2.3. Meeting platform*

The meetings with the participants took place online through the Zoom platform. It was planned in this format mainly regarding differences in the current residence country of the interviewer (The Netherlands) and the participants (Ecuador). In addition, this decision was in the line with Covid precautions for elderly people which was one of the concerns for the families during the recruitment period, after knowing the meetings will not require personal contact, the candidates were more interested listen more about the research and participate in the interviews. Moreover, the online format brought other facilities for the candidates to participate in. One participant highlighted the benefit of online interviews for him, he explicitly said 'in this way, it is easier to plan the interview, we can do it on Sunday when all my family is together for lunch. In another family, the grandfather was on holiday out of the city on the interview day however, it was not an obstacle for him to attend the meeting because he only needed an internet connection.

### *3.3.3. Sample size*

The sample size was based on the principle of saturation. Saturation means that no additional data are being found whereby the sociologist can develop properties of the category. As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated (Glaser & Strauss, 1967). Moreover, several methodical experiments demonstrated that saturation can be reached at a small sample size (Hennik et al., 2020), between 7 and 12 interviews according to Guest et al. (2017). In the present study case, saturation was reached after having interviewed eight family groups, four female generations,

and four male generations, 24 participants in total (see annex 3). At this point, travel experiences across three generations were following a certain pattern of change. For instance, it was very common that families will increase their socioeconomic status across generations. At some point, they could afford a private vehicle so children in the last generation did not have the need to travel by public transport anymore as previous generations did, resulting in an increased dependency on their parents to commute. After perceiving the repetition of such a trend, it was decided to limit the size of the sample.

#### 3.3.4. *Ethical Considerations*

As far as ethical considerations are concerned, we seek to establish rapport (a trust relationship) with the participants. The subsequent closeness in the relationship between researcher and participant demands that we carefully consider the ethical principle of ‘doing no harm’, by keeping the information we acquire secure, and by making the data anonymous (Hennik et al., 2020). Specifically, for this research, once the families accepted to participate a document was sent explaining information about the research intention, interview parameters, and rights as participants (see annex 1) including the anonymity of their identities, permission to record their voice or be filmed (for minors, consent was requested from their parents), denial answering questions in case they feel uncomfortable, and stopping the interview at any time. Moreover, the interviewees were notified about how the information was going to be processed by using quotes from the interviews anonymously. Although it was intended to protect the identities during the presentation of the results, they always had the option to ask for the removal of parts of the recording if they feel necessary after finalizing the session. Finally, it was provided the contact information in case they have further questions or to provide a copy of the research final document if they requested.

### *3.3.5. Limitations*

In general, the principal limitation in data collection lies in the fact that just families with access to the internet were able to participate in the interviews which might represent an important bias for this research. Moreover, during the families' calling period it was identified some constraints made it difficult for families to align to the characteristics of the sample research established. These were single parenthood which implied not having generations of the same gender, low time availability due to the second generation's work, death, or disease of the first generation, and the residence place in the first and second generations due to immigration cases from rural areas in their youth. In this line, this research did not consider travel experiences in the context of single motherhood or migration, situations that are very common in Ecuador.

## **3.4. Data processing**

The plan for data processing follows these steps:

- Transcription of the interviews
- Data classification (see annex 4)
- Analysis and interpretation of data
- Presentation of results

### *3.4.1. Analysis and interpretation of data*

The analysis and interpretation of data were in line to answer the research questions established at the beginning of the study. First, raw data on mobility patterns obtained in each generation was analyzed. To do so, it was required the elaboration of a comparative table and mobility maps under the categories of travel motives, travel modes, companions, and distances. In this way, it was possible to identify similarities and differences in children's travel behavior between generations G1, G2, and G3, and determine how travel experiences have changed over

time (first research question). Secondly, reasons motivating children's travel behavior in each generation were analyzed. To do so, it was required to relate such similarities and differences to the information about the personal, family, and socioeconomic context. In this way, it was possible to determine what factors have influenced children's travel experiences across generations (second research question). Finally, the results obtained from the two previous analyses were related to the theory of Socio-ecological factors influencing CIM (Riazi & Faulkner, 2018) (see section 2). In this way, it was possible to determine how the travel experiences have influenced the development of independence in children's mobility across generations (third research question). The results are presented below.

## 4. Presentation of Results

### 4.1. General insights

The results will report the findings in travel experiences of eight families residing in Quito. The families will refer with a letter, A, B, C, and D belong to female generations and E, F, H, and I to male generations (see annex 3). All the three generations have lived in Quito at the age of 12 years, most of them have changed locations from one generation to another. Changes in locations were mapped (see figure 3); three cases were identified: movements from the center to the periphery (families A, C, D, and H.), movements inside the same district (families E and F), and conserving the home location (family B). This analysis was not part of the data processing, however, it was included to provide a geographical reference of the families in the territory before going deep into the analysis of travel experiences.

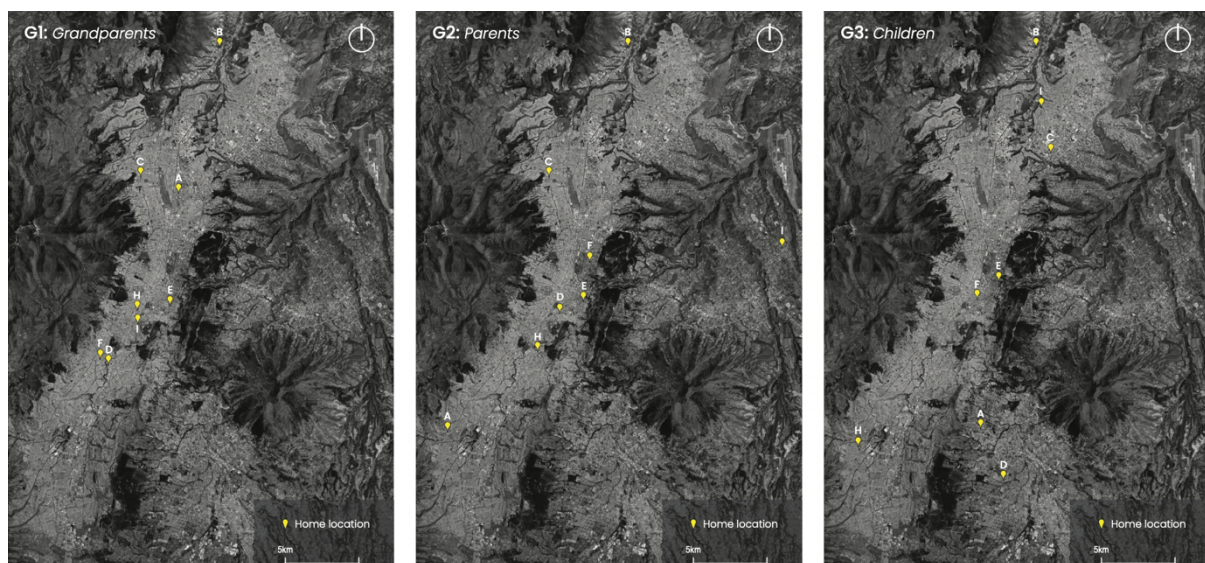


Figure 3: Change in locations in families selected across three generations. Own authorship, 2022.

### 4.2. Travel behavior experiences across generations: differences and

In general, data obtained from the interviews suggested more differences rather than similarities in children's travel behavior experiences over time. The differences are present in the generation third (G3) mostly, while in the first (G1) and second generation (G2), the

characteristics of children’s movement patterns seem to remain similar. The following comparative table synthesizes the variations in terms of travel motives, travel modes, companions, and distances reported by the participants (see table 1).

Domian	Family	Generations		
		G1	G2	G3
<i>Travel motives</i>	A	Go to school, running practice, play in the park	Go to school, visit grandmother, play in the park	Go to school, buy in the local store
	B	Go to school, buy supplies for the house, go to the library, play in the street	Go to school, cheerleader practice, play basketball, play in the street	Go to school, play at the street
	C	Go to school, buy supplies for the mother's shop, bring lunch to the mom	Go to school, play in the park, ride a bike, guitar class	Go to school, visit the aunt, play in the park
	D	Go to school, play basketball	Go to school, volleyball practice, buy in the local store	Go to school, dancing class
	E	Go to school, play in the park, play at the street	Go to school, play in the park, visit a friend, ride a bike, tennis class	Go to school, visit a friend, play in the park
	F	Go to school, play at the street, mountain hike, go to the Panecillo	Go to school, play in the park, running practice, ride a bike, go to the cinema	Go to school, tennis class, visit grandmother, visit a friend
	H	Go to school, play guitar outside, play in the park, visit a friend	Go to school, go to sisters running and basketball practice, catechism class	Go to school, singing class
	I	Go to school, play soccer, go to the market	Go to school, play in the park, basketball practice	Go to school, play volleyball, go to the gym
<i>Travel modes</i>	A	Public transport, walking	Public transport, walking	Mom's car, walking inside of the residential complex
	B	Walking, public transport	Walking	My parent's car, school bus, walking
	C	Public transport, walking	School bus, public transport, walking, biking	Dad's car, walking inside of the residential complex, biking, Mom's car
	D	Public transport, walking	Walking	Mom's car
	E	Public transport, walking	School bus, public transport, walking, biking	School bus, walking, biking
	F	Public transport, walking	School bus, biking, dad's car, walking	School bus, father's car, walking
	H	Public transport, walking	School, bus public transport	School bus, private car
	I	Public transport, walking	Public transport, auto stop, walking, biking	School bus, walking
<i>Companions</i>	A	Alone, younger siblings	Siblings, mother, cousins	Mother, cousins
	B	Alone, mother, friends, neighbors	Sisters, friends, cousins	Parents, friends
	C	Alone	Alone, brothers and friends	Father, sisters, alone LT
	D	Alone, parents, siblings	Younger sisters, alone	Parents
	E	Alone, friends	Alone, friends, parents	Alone LT, parents
	F	Alone, friends	Alone, friends, parents	Parents, brother
	H	Alone, friends	Sisters, friends	Alone LT, parents
	I	Alone, friends, brother	Friends	Alone LT, friends

<i>Distancias (km)</i>	A	14.2	7.1	3.2
	B	20	1	2.3
	C	11 (she used to travel more in younger ages)	8.3	5.5
	D	26	less than 1	3.2
	E	2	7.3	6
	F	3.8	3.6	7.9
	H	3.6	3.6	27.4
	I	3	16,6	2,9

Table 1: Comparative table children's travel behavior G1 G2 G3. Own authorship, 2022.

#### 4.2.1. Travel motives

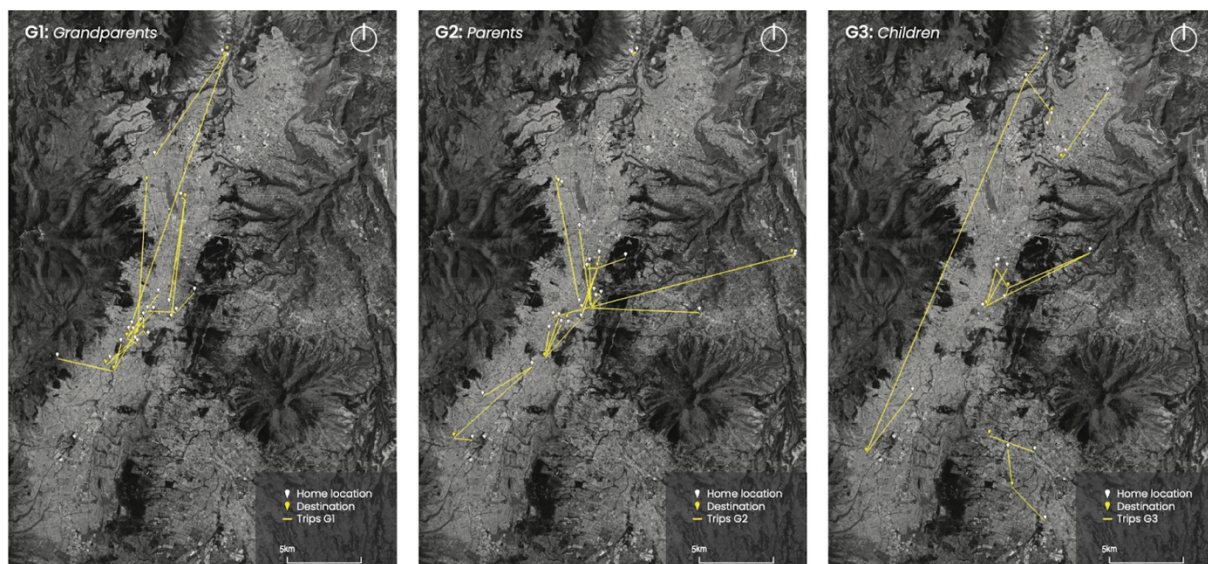


Figure 4: Travel motives across three generations in 12-years-old children. Own authorship, 2022.

According to the data processing, travel motives changed across the three generations from the sample selected. The map illustrates children in the third generation have fewer reasons for commuting than generations G1 and G2 (see figure 4). Overall, *going to school* is the principal travel motive reported by all the interviewees in each generation. In addition, *playing on the street*, *going to the park* and *visiting a friend* was also constantly mentioned during interviews with participants from G1 and G2, however, fewer children in G3 included them in their reasons for commuting (see table 1).

Conversely, the main differences lie in the following cases. First, in G1 was identified travel motives related to responsibilities within their home. Two participants specifically commented:

*'[...] here in Pomasqui was not so commercial, I had to go to the center to buy shoes, clothes or also supplies for school like books for me and my sisters'*

*(Family B, first generation)*

*'A normal day for me [...] I had to cook and bring lunch to my mother; she was working at Sucre theater. After that, I used to go to the school'*

*(Family C, first generation)*

A similar case was also found in G2, however, this case was related to taking care to brothers and sisters. One participant pointed out:

*'[...] my sister was an athlete, so I always had to accompany her when she had basketball or running practice' (Family H, second generation)*

These examples suggested parents from the research generations already relegated responsibilities to children at that time, so their daily travel behavior was influenced by those activities. No such travel experience was found in G3.

A second case was identified in travel motives in children's free time. Participants in G1 mentioned outdoor activities prevailed after coming back from their studies. For example, the participant from family F (first generation) expressed:

*'Everything happened in the street, we hardly played inside the houses. "[...] we met in the street, there were almost no cars so we could play freely in the street, we used to play with the ball, canicas, tillos, botones, and the famous billuzos'*

Same pattern was found in generation G2, a participant mentioned:



*“Generally, I used to go out with my group of friends to ride a bike in the neighborhood [...] basically we would go to La Carolina park [...] there we used to stay until about 7 or 7:30 at night” (Family F, second generation).*

On the other hand, the map illustrates a drastic decrease in trips in the third generation (see figure 3). Some interviewees agree by saying they do not spend too much time outdoors, a child in generation G3 mentioned this when she answered about playing outside:

*“No, I usually paint digitally or with watercolors or pencils, that's my main hobby after dancing and I don't usually go out” (Family D, third generation)*

These examples suggest a lack of interest in outdoor activities in children in the last generation.

A third case is about changes in travel motives including outdoor destination. According to data from the participants destinations relating to outdoor activities had decreased across three generations. In G1, children reported mainly activities related with their near physical environment such as *playing in the street, going to the park, playing guitar outside or going to the mountain*. The second generation report extracurricular activities such practicing sports among their reasons to commute after school.

*[...] basically I left the house to the running practice and the days that I didn't have training I used to go with my friends from the neighborhood to ride a bicycle in La Carolina park (Family F, second generation).*

However, G3 report traveling to activities such as *dancing class, singing class and going to the gym*. These examples suggest a loss of spontaneously in travel motives across generations.

#### 4.2.2. Travel modes

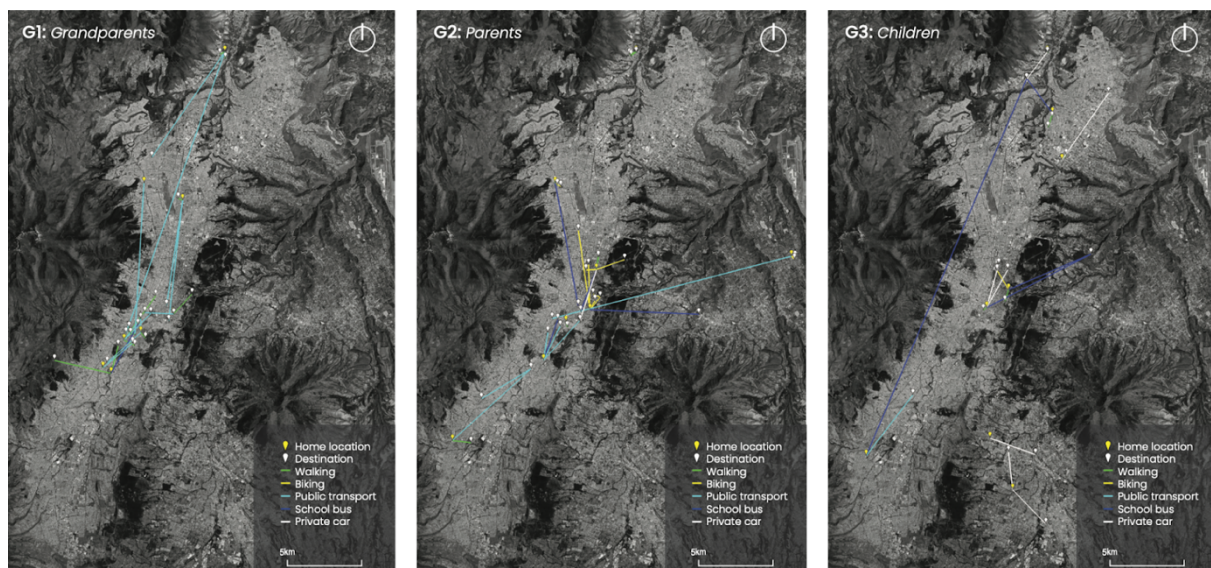


Figure 5: Travel modes across three generations in 12-years-old children. Own authorship, 2022.

According to data collected, the trend in children's travel modes across generations changed towards private transport (see figure 5). The first generation reported they used to take mainly *public transport* or *walk* to commute to their destinations, no car trips were reported. In the second generation, it was found children go to school by *school bus*; however, they continued traveling by *public transport* for others travel motives. In addition, G2 reports the usage of *bicycles* not just for recreation but means of transport. Finally, in the last generation (G3), participants mentioned they travel mostly in their parent's vehicle to the places they need to go. The cases found in each generation are explained below.

In terms of G1, participants reported various trips by public transport per day. This was mentioned in an interview:

*'I had to be at school at 7:30 in the morning so I left my house at 6:30 in the morning, more or less it took me 45 minutes to get to school taking 2 buses [...] we had two school schedules in the day, the first day ended at 12 noon and we started*

*back at 2:00 pm until 4:00 pm. So, I used to go back to the house, have lunch and go out again' (Family F, first generation)*

Such travel patterns were not reported in other generations. In generation G2, *the school bus* was the common transport to go to school, however, interviewees reported in some cases they had to take the public bus.

*'Most of the time, I used to return by bus from school, but when I had something to do after school, I had to walk from "6 de Diciembre" to Amazonas and take the public bus or when I missed the recorrido (school bus) in the mornings'*  
*(Family C, second generation)*

This information suggests children in the second generation were not taking public transport to go to school but in cases of need, they had the skills to do it. Such skills seemed to disappear in G3, a child commented this when the interviewer asked about if he knows how to take a bus:

*'Well, not really, it scares me, because of all the danger outside, it scares me, so not yet' (Family H, third generation)*

In the same line, another participant from G3 said:

*[...] my mom takes me to school, then I have my classes, then the break, and when school is finished, my mom pays for a special bus so I have a private bus to bring me straight home (Familia B, third generation)*

which suggest if children in the current generation do not commute by private car, their parents provide them an option of transport under the same category of exclusivity.

A particular case of *jalar dedo*<sup>1</sup>, was reported in G2 as a mobility practice.

---

<sup>1</sup> *Jalar dedo*: colloquial way to refer to auto stopping.

*'There were times that on the way back we would come by jalar dedo (auto stopping), obviously if we had the money for the bus, but we liked to come by jalar dedo [...] vans or trucks used to pass by, they had a grill where we could sit and that's how we came here to the house to get to lunch and be with the family'*  
*(Family I, second generation)*

This dynamic was not reported in G1 or G3.

In terms of active modes, walking was convened with the public transport journey in G1.

*'From the Kennedy neighborhood, I used to go to Manuela Cañizares high school by I took the bus public, I knew where it was going, and how far I had to go. When I used to reach my stop, I had to walk because the bus didn't leave me close to the school, I had to get off the bus and walk at least 5 blocks until arrived at school'*  
*(Family A, first generation)*

In the same line:

*'I used to take the bus in the morning when I was bringing the food for my mom, the bus left me about 5 blocks from where my mom was, I got off the bus, crossed those blocks, left the food for her, and kept walking up about 5 blocks more to get to school'* *(Family C, first generation)*

In the second generation, biking was more common according to data extracted from the interviews (see figure 4). Th participant from family E (second generation) commented:

*'I used to come back from school, I would have lunch, I used to do my homework super fast, then ride a bike basically every day, I rode my bike a lot! Usually what I did was take my bike, went to see a couple of my friends who were in the same*

*neighborhood and we would ride bikes in nearby places. That was like a normal  
weekday'*

He also added:

*'[...] it was not so recreational all time, sometimes was to show the bike as  
transportation'*

This dynamic can be understood as a breaking point towards exploring new ways of transport inside this generation. On the other hand, in G3, children reported they walk mostly in context-controlled conditions such as inside of their housing complex or going to the house of familiars supervised by the parents or another adult.

*'I live in a private residential complex, so I usually walk with my dog just inside of  
the complex, to go outside of it, I always go with my dad'*

*(Family C, third generation)*

This example, children have reduced contact and limited the area to relate with their context.

#### 4.2.3. Companions

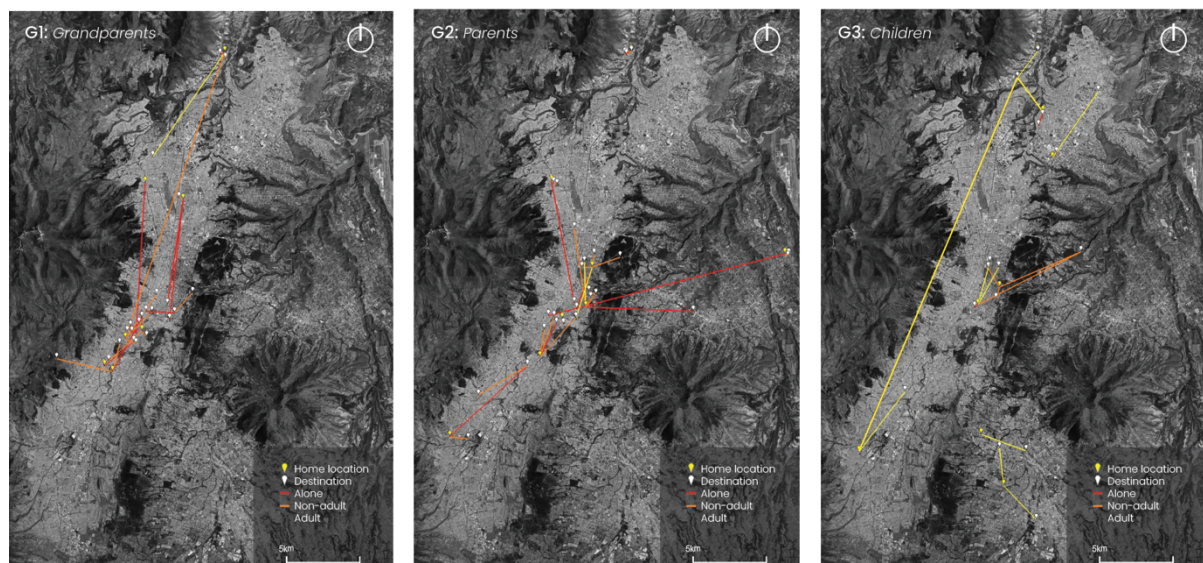


Figure 6: Travel companions across three generations in 12-years-old children. Own authorship, 2022.

Data suggests children travel more with the accompaniment of an adult than before (see table 2). The map illustrates similarities between the first (G1) and second generation (G2), where they commuted mainly without adult supervision but other children; however, a different scenario is happening in the third generation where children reported they travel with their parents or another adult mostly (see figure 6).

In terms of non-adult trips, interviewees in G1 and G2 highlighted their skills to travel alone since early ages.

*'[...] I knew how to travel alone very well, I did it since I was 8 years old. I lived with my grandmother, she did not have enough money to send me to school by bus so she made me know the streets, where I had to get to school, so I went to and from school on foot and I also knew the routes of the buses and everything'*  
(Family C, first generation)

In the same line, another participant mentioned:

*'[...] I clearly knew that down there was a park called the English park, that was my limit, and also I knew that upwards it was Occidental Avenue, and there, above the avenue, was my house'* (Family C, second generation)

In generation G3 alone trips are conditioned, children reported to travel alone just short distances towards relatives' houses.

*'[...] I walk alone from my house to my grandparents' house, it's not that far, that's why I go very fast, it doesn't take me that long [...] around 5 or 7 minutes'*  
(Family H, third generation)

Secondly, trips with companions. In G1 was found children used to travel under companions due to they were responsible for their younger siblings. One interviewee from family A (first generation) mentioned:

*'I remember, on the first day of school, my mom used to go with me but then always alone. After my sisters grew up and entered school, I took care of them and traveled with them'*

This dynamic was seen in activities after school as well, the same participant said:

*'[...] because I had quite a few siblings, in the afternoon after eating [...] my mom said, well, just go to the park, but you have to take your little siblings with you'*

A similar case was founded in G2:

*[...] my sister was an athlete, so I always accompanied her when she had basketball or running practice, so I always used to travel with her*

(Family H, second generation).

These examples suggest a level of responsibility children had to take care of their younger brothers or sisters at that age. Such a case is not reported in the last generation.

On the other hand, non case of trips with an adult were reported in generation G1. On the other hand, in generation G2, a participant reported her mother used to travel with her and her sister just because the same line passed by the mother's work, it was mentioned:

*'I used to travel with my mom in the morning, she used to take the same bus but 3 stops before she had to get off and I continued with my brothers and sister to the Villaflora where was our school' (Familia A, second generation).*

Showing similar degree of responsibility reported in G1. However, two interviewees reported the company to their parents when they had to travel to their extracurricular activities, such as *tennis class* or *running practicing*. Finally, participants in G3 reported mostly the presence of an adult in their school trips; however, in case to travel by school bus, it was because the bus stop is located just in front of the residence. One children reported:

*'Before COVID I used to go by school bus, the bus used to pick me up right in my house but right now I'm going with my dad'* (Family D, third generation).

These examples suggest children in G3 become more dependent on their parents to commute.

#### 4.2.4. Distances

In general, the distances in activities such as *going to school* have increased by generation, just two families reported the distances to their educational establishments decrease, however, the trips are made by private transport or private school bus. According to data collected, the longest distance traveled to school in G1 was 10,7 km, this trip was by public transport without the accompaniment of an adult. In the second generation, it was reported 16,6km as the longest distance, in this case, the trip was made by public transport with the accompaniment of friends from the same age. On the other hand, in the third generation, the longest distance reported increase to 27,9km, conversely, this trip was made by private transport with the accompaniment of his teacher.

Moreover, during the interview, the participants talk about some anecdotes about the longest distance they travel apart from daily activities. In the first generation, it was found children were willing to travel outside of city, with their friends using public transport or walking.

*'I used to go to Tingo<sup>2</sup>, for example, to swim in the pools. [...] of course with friends, quietly we just left at that time, that's how it was. [...] it took us one and a half hour, more or less, by bus or sometimes on foot [...] We went through the mountains, chaquiñanes<sup>3</sup>, all that, walking and walking'* (Familia H, first generation).

---

<sup>2</sup> El Tingo: Traditional public swimming pools located in the rural area of Quito.

<sup>3</sup> Chaquiñanes: colloquial way to refer to ravines.



Other interviewee from second generation mentioned used to travel to another town to her grandmother during school vacations.

*'For example, when on school vacations I used to go to visit my grandmother in Puellaro because she had a property there, so I used to go there just with my older sister and my younger sister [...] we traveled by bus, it was a two-and a half-hour trip' (Family B, second generation).*

No similar cases were reported in G3.

### ***4.3. Main factors influencing children's travel behavior over generations***

After the analysis of differences and similarities in 12-year-old children's travel behavior, the analysis identified four main factors that have influenced travel behavior across the three generations: socio-economic situation, responsibilities within the home, family size, and parents' confidence on children.

#### *4.3.1. Socio-economic factor*

The social-economic status of the families has changed across generations which has affected how children traveled/travel in each generation. In the first generation, the analysis showed children mostly took public transport or walked to their destinations. During the interviews, most participants reported their parents did not have cars, so public transport was the most common way to travel. In addition, one interviewee mentioned that their family did not even have money to pay for the bus ticket, so her grandmother had to teach her how to get to the places on foot, consequently, she learned about bus routes as well. In the second generation, the analysis evidenced a trend that the children mostly commuted by school bus to their educational centers rather than public transport as in the previous generation. Most

interviewees agreed that their parents had the economic resources to access for the school's transport service. Specifically, one participant commented that traveling by school bus at that time was considered a "privilege". On the other hand, children from G3 reported a totally different context, they mentioned that their parents have at least one car, and for that reason, it is very common, and easy for them to travel by private vehicle everywhere. Moreover, in cases when children reported traveling by school bus, several participants referred to it as *a private service*, not belonging to the school directly.

These correlations shows the great influence of the families' social-economic status over children's travel behavior which is in line with the theory of Socio-ecological Factors influencing Children's Independent Mobility: Interpersonal Correlates, explained in the literature review (see section 2) which mentions that economic status plays a fundamental role in promoting or preventing children's independent mobility (Riazi & Faulkner, 2018). In this case, the context of the children in the first generation obligates them to develop high spatial skills at early ages to travel. By recognizing streets, choosing routes, and identifying bus stops, they enhanced their independence in mobility. Such situation happened in less extent in generation G2 and barely appeared in generation G3, evidencing a decrease of CIM across generations.

#### 4.3.2. *Responsibilities within home*

After the analysis of travel motives, it was identified that children in G1 and G2 traveled due to activities related to tasks within their homes. In generation G1, one participant mentioned when she was 12 years old, she was in charge to prepare food for her family and bring lunch to her mother because she worked all day selling candies outside of theaters, moreover, she mentioned, she also was in charge to buy supplies in case her mother needed for her business. For that reason, she could know how to get to different places around the city on her own. In

the second generation, participants mentioned they were in charge to take their younger siblings to school, or extracurricular activities after school period. Specifically, one interviewee reported she was in charge to take her young sister to her running or volleyball practice after lunch, depending on the practice she used to travel to a different location in the city. She expressly said she was already an expert taking public transport by the age of 12. On the other hand, not such case was found in generation G3.

These cases are evidence that parents in previous generations (G1 and G2) used to give children responsibilities within the home to a great or lesser extent, situations that obligated them to interact directly with their social and physical contexts, and to make decisions by themselves, having the (forced) space to develop social skills, problem-solving abilities and higher spatial awareness which are a typical important characteristic for Children's Independent Mobility (Tranter & Whitelegg, 1994; Rissotto & Tonucci, 2002; Cohen, 1982), however, such a responsibility component is not included in the Socio-ecological framework by Riazi & Faulkner (2018) but it can be related to the cultural factor (see section 2), specifically, with the fact that in the past Latin American families used to give responsibilities to children since early ages. In this context, it is assumed that children from generations G1 and G2 had higher levels of independence in mobility in comparison with the third generation contributing to the decreasing trend of CIM over time.

#### 4.3.3. *Family size*

After the analysis of travel companions, it was found the number of members in the participating families has decreased across generations. According to data collected in the interviews, families in the first generation included up to 13 members. In G2, it was reported families of up to 5 members. Conversely, in generation G3, interviewees reported families of

up to 3 members. During the interview with the first generation of family A, she mentioned she had 13 siblings, and she was the fifth one, and every time she wanted to go to the park, she was allowed to go if she took her younger siblings with her. Furthermore, she reported her friends from the neighborhood had the same familiar situation, so she and her friends were commonly in charge of a big group of children. In generation G2 occurred similar situations, one participant reported she used to travel with her siblings to school, make sure they enter the class, and wait for them at the finish of the school period to come back home together. These cases are evidence, children at 12 years old from previous generations (G1, and G2) were able to take care of others implying the development of a certain level of maturity to relate to their social and physical context which can be related to the level of responsibility factor explained before but also to the fact to be able to create links between neighborhoods and making friendships. According to Wolfe & McDonald (2016) such emotional connection helps to increase the likelihood of children's independent mobility. Conversely, in generation G3, such social dynamic was not reported, assuming the level of independence decrease in the last generation.

#### *4.3.4. Parents' high confidence in children*

Testimonials from G1 and G2 were characterized by spending time outdoors with friends, traveling long distances, and having the ability to travel alone. Participants in G1 agreed they felt always secure in their neighborhood and with the people who used to live close to them. One interviewee mentioned his parents let him play outdoors until it was dark, and he had to come back home just because of dinner time or to prepare everything for the next day's school. Moreover, another participant highlighted the level of freedom his parents gave him to go to every place he wanted. He mentioned, his parents never restricted this mobility, he just had to tell his parents about the location and at what time to come back. This example suggests that

the parents had a high level of confidence in their children to relate to their near physical and social environment. This is in line to the research from Mitra et al., (2014) and Villanueva et al., (2014) who suggest children and parents perceived a friendly neighborhood with lots of children playing, people walking, talking, and doing outdoor activities, they tended to have higher levels of independent mobility. In this case study, the factor of parents having high confidence in their children reinforces that idea, by letting children play outdoors, they are contributing to the perception of the neighborhood as a friendly space so the development of dependence in mobility is enhanced in the same way.

Contrariwise, in the third generation, a different dynamic with their parents was found. One participant commented one of the reasons to travel during a common day is to go to the gym, however, he is allowed to go there just because the owner of the fitness center is his uncle so he can tell his father when the child starts and finishes the training session or when he plays outside because the park is located in front of the grandmother's house so she can watch him otherwise he cannot go out. Another interviewee reported she is allowed to walk or play outdoors alone because she lives in a private housing complex where there are cameras and security guards, if she wants to go outside for buying something at the local store, for example, she cannot go alone, she must go with an adult. These examples are evidence to suggest parents have less confidence in children to relate to their contexts. By limiting areas or circulation or having an excess of control over children's trips, it can be assumed children develop dependent on their parents to move instead to learn how to do it by themselves. According to the theory of Socio-ecological Factors influencing Children's Independent Mobility: interpersonal correlates, this limitation is related to parents' safety perception about the social and built environment that surrounds which can affect the development of dependence in children mobility. Contrariwise, in the third generation, a different dynamic with their parents was

found. One participant commented one of the reasons to travel during a common day is to go to the gym, however, he is allowed to go there just because the owner of the fitness center is his uncle so he can tell his father when the child starts and finishes the training session or when he plays outside because the park is located in front of the grandmother's house so she can watch him otherwise he cannot go out. Another interviewee reported she is allowed to walk or play outdoors alone because she lives in a private housing complex where there are cameras and security guards, if she wants to go outside for buying something at the local store, for example, she cannot go alone, she must go with an adult. These examples are evidence to suggest parents have less confidence in children to relate to their contexts. By limiting areas or circulation or having an excess of control over children's trips, it can be assumed children develop dependent on their parents to move instead to learn how to do it by themselves. According to the theory of Socio-ecological Factors influencing Children's Independent Mobility: interpersonal correlates, this limitation is related to parents' safety perception about the social and built environment that surrounds them.

## 5. Discussion

Overall, the results demonstrate different travel behaviors and experiences in 12-years-old children residing in Quito Ecuador. In terms of *what have been the travel experiences of 12-year-old children across three generations?* The results remained the same trend seen in previous research which suggested radical changes in mobility patterns in children worldwide during the past 50 years (Mikkelsen & Christensen, 2009) reporting a decline in the number and variety of places where children could independently visit over generations (Gaster, 1991; Riazi & Faulkner, 2018). Specifically in this study, children's travel experiences tended to have similar characteristics in the first and second generations, however, in the third-generation significant changes occurred. The principal differences were found in terms of travel motive, travel modes, companions, and distances. These are the highlights:

- Children have fewer motives to travel across the three generations.
- Children in G3 tend to travel mainly by private transport rather than take public transport, bike, or walk like G1 and G2.
- Children in G3 travel mostly with an adult, rarely alone. In the previous generations (G1, and G2), children used to travel alone, in cases of traveling under a companion, it was because they had to take care of their siblings.
- Children in G3 are not willing to long travel distances by their selves or with a friend, however, the distances to school have increased over generations promoting the use of passive travel modes.

These changes in mobility patterns across generations suggested reducing the possibilities to interact with their physical and social contexts over time. This might be in line with the findings of previous research in other contexts (see section 2) which suggest radical changes in mobility

patterns in children worldwide during the past 50 years (Mikkelsen & Christensen, 2009) reporting a decline in the number and variety of places where children could independently visit over generations (Gaster, 1991; Riazi & Faulkner, 2018). However, such tendencies of change in travel experiences cannot be generalized for the Ecuadorian context, they just reflect the context of the research sample selected for this study case. Analyzing trends in children's mobility on a macro scale would require Qualitative research including a more significant sample.

Secondly, in terms of *what factors have influenced the travel experiences of 12-year-old children across three generations?* This analysis found four main factors influencing travel behavior experiences across generations: *social-economic context, responsibilities within the home, family size, and parents' high level of confidence in children*. Each factor influenced different travel experiences differently in each generation:

- The socio-economic status of the families has been increasing by generation, making possible car affordance in the second and third generations. Conversely, in generation G1, families did not have access to private cars, so children were obligated to walk or take public transport.
- The participation of children in home activities has been changing across generations. It was found that children in G1 and G2 had responsibilities within their homes by the age of 12. These responsibilities were related to family chores, helping their parents, or taking care of their younger siblings. Such a situation did not happen in the third generation.
- Family size has decreased across generations. Especially in the first and second generations where it was found families of more than 10 members, it was common that



the oldest child to oversee their siblings, and were in charge of taking them to school, extracurricular activities, or to the park.

- Parents in previous generations (G1 and G2) had a higher level of confidence in their children. This factor enabled children to explore freely their neighborhood, meet other kids and develop social and physical skills. Conversely, in G3, parents' perceptions changed due to safety concerns, so they started to control and limit children's movement, making them more dependent.

All these factors are related to the family context and parents' influence. According to Riazi & Faulkner, (2018), the most important influence on children's (independent) mobility is the parents because as adults they can either restrict or promote children's movement as they see. In this way, it can be understood that parents' perceptions can change depending on traditions, costumes, or cosmovision of the territory, so the cultural component might play a fundamental role to understand children's mobility. Especially, in Ecuador, the indigenous cosmovision conceived the family as an *economic group* (Tepicht, 1984). As it was explained in section 2, parents used to have big families so they can divide the responsibility among sons and daughters, each child received responsibilities from an early age related to economic or domestic spheres depending on gender. That was how the indigenous families used to survive till each member got married and started the cycle from the beginning (see section 2).

For that reason, it can be understood that children's travel experiences in the previous generations (G1, and G2) were influenced mainly by cultural component which is reflected in the four factors described above.

Finally, in terms of *how have travel experiences incised in the development of independence in mobility in 12-years-old children across three generations?* As the influence

of the cultural factor presented to a lesser extent through the generations, the responsibility component in children's activities has been decreasing changing the role of the children within the familiar. In the last generation (G3) the analysis suggested children did not have responsibilities within their homes and the parents tended to control and limit their movement mainly due to safety concerns. This is in line with the concept of *bubble-wrapping children* which explains in the effort to keep children safe, are we, as a society, 'bubble-wrapping' children to prevent any exposure to risk (Riazi & Faulkner, 2018) affecting negatively the development of independence in the current generation, however, the paradox is:

*'[...] having a "risk reduction paradigm" means instead of maximizing children's protection, by restricting free movement in their neighborhoods and the use of common outdoor spaces for social and functional activities, such paradigm is affecting children's cognitive, physical, and social healthy development'*

(Hillman et al., 1990; Sabbag et al., 2015)

It would be interesting for further research to analyze in depth the consequences of losing independence and how the concept of bubble-wrapping affects children's mental and physical health in an Ecuadorian context.

## 6. Conclusions

The analysis of the travel experiences of eight family groups provides a first perspective of how children's travel behavior has changed across generations in the Ecuadorian context. The results suggested the pattern of change in children's mobility over time was in line with the previous studies worldwide. A decrease in travel motives and less outdoor' expending time, an increase in automobile-base mobility and less active mobility, an increase in parents-controlled trips, and less motivation to travel long distances were the most important changes between generations found. The main differences occurred in generation G3, however, G1 and G2 remained similar characteristics. Moreover, the travel experiences in this study case were influenced by i) social-economic context, ii) responsibilities within the home, iii) family size, and iv) parents' high level of confidence in children. These factors have a strong sociocultural component that has inside in the development of independence in mobility in the previous generations. By having the responsibility of helping their parents or taking care of the younger siblings, children from generations G1, and G2 gained independence in their mobility. Nevertheless, such a social dynamic was not found in the children's travel experiences from the third generation (G3). For that reason, it can be assumed that travel experiences enhanced the development of independence in the first and second generations, on the other hand, in generation G3, they did not have any incidence, making children more dependent on their parents to commute.

Finally, a reflection made by a participant from generation G2 is worthy to remark on. After finishing the interview with the three generations of her family, she mentioned that she was not aware of the abysmal differences in travel behavior in comparison to her daughter, and, she is worried about the fact her daughter has no skills to fend for herself outside, so now, she understands the importance in fomenting independence in her kid. As it was explained, the

consequences of losing independence in mobility at an early age bring serious problems in social, cognitive, and physical health development in children. For that reason, it is important to continue the discussion about the problem of children's mobility in vulnerable contexts like Ecuador. In this way, we can create a conscience about the urgency to consider children's perceptions to promote real change in societies.

## **7. Reflection**

After finalizing the present research, I am more interested in the topic of mobility in children. I consider there are more edges in around analyzing travel experiences at an early age that this study could not encompass such as the influence of single motherhood or cases of migration on children's mobility. Moreover, the social component that includes going into depth into the stories of the families requires a great level of sensibility and vulnerability. During the interview, some participants touched on sensible memories about their childhood, in other cases, they shared old anecdotes that the family never heard before. In this way, choosing a qualitative approach to unslung the technique of in-depth interview as the methodology was the most appropriate, however, conducting the meeting in an online format presented some limitations such as bad internet connection or inexperience of the participants to use the meeting platform. I consider these kinds of obstacles could have been avoided in in-person format sessions.

In addition, I recognize a lack of rigor in following the qualitative methodology since the beginning, which sometimes led me to use perceptions, techniques, or vocabulary related to the quantitative approach losing the focus of the research. In that line, having a better understanding of the qualitative approach would have helped me to define faster the research questions, develop a more concrete methodology and explain them in an easier way the results,

items that were central in the last corrections of the document. Although I tried to correct them, I am aware there are still other details that could be improved, especially, in data preparation and development of codes, as well as academic writing to make the document more appealing and comprehensible for the readers.

Personally, this research was an enriching experience for me, I learned from the successes and mistakes that I made, and I am sure those lessons will help me in future research. Thank you for reading!

## **8. Acknowledgements**

Thanks to the families who were keen to share their childhood travel experiences, to "Arma tu Postre" for donating the presents for the participants, to Francisco and Rik for guiding me throughout this process, and to everyone else who contributed positively to the completion of this research. To my family, friends, and my mate!

## 9. References

- Ampofo-Boateng, K., & Thomson, J. A. (1991). Children's perception of safety and danger on the road. *British Journal of Psychology (London, England: 1953)*, 82 ( Pt 4), 487–505. <https://doi.org/10.1111/j.2044-8295.1991.tb02415.x>
- Ávila, A., Larco, M. A., & Scholtz, B. (2014). *Hacia un Modelo de Ciudad Sustentable: Red Verde Urbana y Ecobarrios*. Secretaria de Territorio, Hábitat y Vivivenda.
- BBC Mundo. (2017). Cuánto ejercicio deberían hacer los niños al día (y lo que recomienda uno de los países donde están más en forma). *BBC News Mundo*. <https://www.bbc.com/mundo/deportes-39289897>
- Bernard, H. R., & Gravlee, C. C. (2014). *Handbook of Methods in Cultural Anthropology*.
- Biddle, S. J. H., Gorely, T., & Stensel, D. J. (2004). Health-enhancing physical activity and sedentary behaviour in children and adolescents. *Journal of Sports Sciences*, 22(8), 679–701. <https://doi.org/10.1080/02640410410001712412>
- Brussoni, M., Olsen, L. L., Creighton, G., & Oliffe, J. L. (2013). Heterosexual gender relations in and around childhood risk and safety. *Qualitative Health Research*, 23(10), 1388–1398. <https://doi.org/10.1177/1049732313505916>
- Carver, A., Timperio, A., & Crawford, D. (2008). Playing it safe: The influence of neighbourhood safety on children's physical activity. A review. *Health & Place*, 14(2), 217–227. <https://doi.org/10.1016/j.healthplace.2007.06.004>
- Cohen, R. (1982). The role of activity in the construction of spatial representations. *New Directions for Child and Adolescent Development*, 1982(15), 41–50. <https://doi.org/10.1002/cd.23219821506>
- Cordovil, R., Lopes, F., & Neto, C. (2015). Children's (in)dependent mobility in Portugal. *Journal of Science and Medicine in Sport*, 18(3), 299–303. <https://doi.org/10.1016/j.jsams.2014.04.013>
- Danenberg, R., Doumpa, V., & Karssenbergh, H. (2018). *The city at eye level for kids*. STIPO Publishing.
- Danenberg, R. & STIPO (Rotterdam). (2019). *For kids*. STIPO, Team for urban strategy and city development.
- Dunn, J., & Layard, R. (2009). *A Good Childhood: Searching for Values in a Competitive Age*.
- Ferreira, M. (2020). *How Children's Mobility Behavior Influences in their Perceptions of Cities*. 2nd Annual Cycling Research Board Conference, Delf, The Netherlands.
- Fossey, E., Harvey, C., Mcdermott, F., & Davidson, L. (2002). Understanding and Evaluating Qualitative Research. *Australian & New Zealand Journal of Psychiatry*, 36(6), 717–732. <https://doi.org/10.1046/j.1440-1614.2002.01100.x>
- Fyhri, A., & Hjorthol, R. (2009). Children's independent mobility to school, friends and leisure activities. *Journal of Transport Geography*, 17(5), 377–384.
- Gaster, S. (1991). Urban Children's Access to Their Neighborhood: Changes Over Three Generations. *Environment and Behavior*, 23(1), 70–85.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Routledge. <https://doi.org/10.4324/9780203793206>
- Guest, G., Namey, E., & McKenna, K. (2017). How Many Focus Groups Are Enough? Building an Evidence Base for Nonprobability Sample Sizes. *Field Methods*, 29(1), 3–22. <https://doi.org/10.1177/1525822X16639015>
- Hallal, P. C., Andersen, L. B., Bull, F. C., Guthold, R., Haskell, W., Ekelund, U., & Lancet Physical Activity Series Working Group. (2012). Global physical activity levels:

- Surveillance progress, pitfalls, and prospects. *Lancet (London, England)*, 380(9838), 247–257. [https://doi.org/10.1016/S0140-6736\(12\)60646-1](https://doi.org/10.1016/S0140-6736(12)60646-1)
- Hennik, M., Hutter, I., & Bailey, A. (2020). *Qualitative Research Methods* (Second Edition). SAGE Publications Inc.
- Hillman, M. (1997). *Children, transport and the quality of urban life*. In: Camstra, R. (Ed.), *Growing up in a Changing Urban Landscape*. Van Gorcum.
- Hillman, M., Adams, J., & Whitelegg, J. (1990). *One False Move ... A Study of Children's Independent Mobility*.
- INEC. (2020). *INEC presenta sus proyecciones poblacionales cantonales*. <https://www.ecuadorencifras.gob.ec/inec-presenta-sus-proyecciones-poblacionales-cantonales/>
- Janssen, I., Katzmarzyk, P. T., Boyce, W. F., Vereecken, C., Mulvihill, C., Roberts, C., Currie, C., Pickett, W., & Health Behaviour in School-Aged Children Obesity Working Group. (2005). Comparison of overweight and obesity prevalence in school-aged youth from 34 countries and their relationships with physical activity and dietary patterns. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity*, 6(2), 123–132. <https://doi.org/10.1111/j.1467-789X.2005.00176.x>
- Karsten, L. (2005). It all used to be better? Different generations on continuity and change in urban children's daily use of space. *Children's Geographies*, 3(3), 275–290. <https://doi.org/10.1080/14733280500352912>
- Karsten, L., & Ferder, N. (2016). *De nieuwe generatie stadskinderen: Ruimte maken voor opgroeien*.
- Mackett, R. L. (2013). Children's travel behaviour and its health implications. *Transport Policy*, 26, 66–72. <https://doi.org/10.1016/j.tranpol.2012.01.002>
- Mammen, G., Faulkner, G., Buliung, R., & Lay, J. (2012). Understanding the drive to escort: A cross-sectional analysis examining parental attitudes towards children's school travel and independent mobility. *BMC Public Health*, 12(1), 862. <https://doi.org/10.1186/1471-2458-12-862>
- Martínez, L. (1996). *La familia campesina: Cambios demográficos y económicos*. Fondo de Población de las Naciones Unidas.
- Mattsson, K. (2002). Children's (in)dependent mobility and parents' chauffeuring in the town and countryside. *Tijdschrift Voor Economische En Sociale Geografie*, 93, 443–453. <https://doi.org/10.1111/1467-9663.00215>
- McDonald, N. C., Brown, A. L., Marchetti, L. M., & Pedroso, M. S. (2011). U.S. school travel, 2009 an assessment of trends. *American Journal of Preventive Medicine*, 41(2), 146–151. <https://doi.org/10.1016/j.amepre.2011.04.006>
- Mikkelsen, M. R., & Christensen, P. (2009). Is Children's Independent Mobility Really Independent? A Study of Children's Mobility Combining Ethnography and GPS/Mobile Phone Technologies. *Mobilities*, 4(1), 37–58. <https://doi.org/10.1080/17450100802657954>
- Mitra, R., Faulkner, G., Buliung, R., & Stone, M. (2014). Do parental perceptions of the neighbourhood environment influence children's independent mobility? Evidence from Toronto, Canada. *Urban Studies*, 51. <https://doi.org/10.1177/0042098013519140>
- Morrongiello, B. A., Zdzieborski, D., & Normand, J. (2010). Understanding gender differences in children's risk taking and injury: A comparison of mothers' and fathers' reactions to sons and daughters misbehaving in ways that lead to injury. *Journal of*

- Applied Developmental Psychology*, 31, 322–329.  
<https://doi.org/10.1016/j.appdev.2010.05.004>
- O'Brien, M., Jones, D., Sloan, D., & Rustin, M. (2000). Children's Independent Spatial Mobility in the Urban Public Realm. *Childhood*, 7(3), 257–277.  
<https://doi.org/10.1177/0907568200007003002>
- Oliver, M., Witten, K., Kearns, R. A., Mavoa, S., Badland, H. M., Carroll, P., Drumheller, C., Tavae, N., Asiasiga, L., Jelley, S., Kaiwai, H., Opit, S., Lin, E.-Y. J., Sweetsur, P., Barnes, H. M., Mason, N., & Ergler, C. (2011). Kids in the city study: Research design and methodology. *BMC Public Health*, 11, 587. <https://doi.org/10.1186/1471-2458-11-587>
- Orenstein, G. A., & Lewis, L. (2022). Eriksons Stages of Psychosocial Development. In *StatPearls*. StatPearls Publishing. <http://www.ncbi.nlm.nih.gov/books/NBK556096/>
- Pearce, M., Page, A. S., Griffin, T. P., & Cooper, A. R. (2014). Who children spend time with after school: Associations with objectively recorded indoor and outdoor physical activity. *International Journal of Behavioral Nutrition and Physical Activity*, 11(1), 45. <https://doi.org/10.1186/1479-5868-11-45>
- Piaget, J. (1981). La teoría de Piaget. *Journal for the Study of Education and Development*, 4(sup2), 13–54. <https://doi.org/10.1080/02103702.1981.10821902>
- Pooley, C. G., Turnbull, J., & Adams, M. (2005). The journey to school in Britain since the 1940s: Continuity and change. *Area*, 37(1), 43–53. <https://doi.org/10.1111/j.1475-4762.2005.00605.x>
- Prezza, M., & Pacilli, M. G. (2007). Current fear of crime, sense of community, and loneliness in Italian adolescents: The role of autonomous mobility and play during childhood. *Journal of Community Psychology*, 35(2), 151–170.  
<https://doi.org/10.1002/jcop.20140>
- Prezza, M., Piloni, S., Morabito, C., Sersante, C., Alparone, F. R., & Giuliani, M. V. (2001). The influence of psychosocial and environmental factors on children's independent mobility and relationship to peer frequentation. *Journal of Community & Applied Social Psychology*, 11(6), 435–450. <https://doi.org/10.1002/casp.643>
- Price, G., & Reis, R. (2009). Making kid-friendly cities: Lessons from two cities. *Preventive Medicine*, 50 Suppl 1, S95-6. <https://doi.org/10.1016/j.ypmed.2009.10.013>
- Reyes, P. (2015, Diciembre). *Infancia de ayer y de hoy. Diferencias y claves para una buena educación | Caligrafix*. Caligrafix. <http://localhost/entry/974-2>
- Reyes, R. (2010). *Factores culturales y desarrollo cultural comunitario: Reflexiones desde la práctica*. Universidad de Las Tunas.
- Riazi, N. A., & Faulkner, G. (2018a). 5—Children's Independent Mobility. In R. Larouche (Ed.), *Children's Active Transportation* (pp. 77–91). Elsevier.  
<https://doi.org/10.1016/B978-0-12-811931-0.00005-3>
- Rissotto, A., & Tonucci, F. (2002). FREEDOM OF MOVEMENT AND ENVIRONMENTAL KNOWLEDGE IN ELEMENTARY SCHOOL CHILDREN. *Journal of Environmental Psychology*, 22(1–2), 65.
- Sabbag, G. M., Kuhne, A., & Vieira, M. L. (2015). A mobilidade independente da criança em centros urbanos. *Interações (Campo Grande)*.  
<https://doi.org/10.20435/interacoes.v16i2.80>
- Sáez, L. (2011). *Familia numerosa: ¿héroes o inconscientes?* La Vanguardia.  
<https://www.lavanguardia.com/opinion/temas-de-debate/20110717/54187020053/familia-numerosa-heroes-o-inconscientes.html>



- Schoeppe, S., Duncan, M. J., Badland, H. M., Rebar, A. L., & Vandelanotte, C. (2016). Too far from home? Adult attitudes on children's independent mobility range. *Children's Geographies*, 14(4), 482–489. <https://doi.org/10.1080/14733285.2015.1116685>
- Schoeppe, S., Duncan, M. J., Badland, H., Oliver, M., & Curtis, C. (2013). Associations of children's independent mobility and active travel with physical activity, sedentary behaviour and weight status: A systematic review. *Journal of Science and Medicine in Sport*, 16(4), 312–319. <https://doi.org/10.1016/j.jsams.2012.11.001>
- Shaw, B., Bicket, M., Bridget, E., Fagan-Watson, B., & Mocca, E. (2015). *Children's Independent Mobility: An international comparison and recommendations for action* Children's Independent Mobility: 92.
- Strong, W. B., Malina, R. M., Blimkie, C. J. R., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., Must, A., Nixon, P. A., Pivarnik, J. M., Rowland, T., Trost, S., & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, 146(6), 732–737. <https://doi.org/10.1016/j.jpeds.2005.01.055>
- Tepicht, J. (1984). Las Complejidades De La Economía Campesina. *Investigación Económica*, 43(167), 183–198.
- The Academy of Urbanism. (2015). *Urbanism Awards: Rotterdam takes top prize* | *The Academy of Urbanism*. <https://www.academyofurbanism.org.uk/urbanism-awards-rotterdam-takes-top-prize/>
- Tranter, P., & Whitelegg, J. (1994). Children's travel behaviours in Canberra: Car-dependent lifestyles in a low-density city. *Journal of Transport Geography*, 2(4), 265–273. [https://doi.org/10.1016/0966-6923\(94\)90050-7](https://doi.org/10.1016/0966-6923(94)90050-7)
- UNICEF. (2014). *Obesidad infantil en Ecuador*. <https://www.unicef.org/ecuador/obesidad-infantil>
- Veitch, J., Salmon, J., & Ball, K. (2008). Children's active free play in local neighborhoods: A behavioral mapping study. *Health Education Research*, 23(5), 870–879. <https://doi.org/10.1093/her/cym074>
- Villanueva, K., Giles-Corti, B., Bulsara, M., McCormack, G. R., Timperio, A., Middleton, N., Beesley, B., & Trapp, G. (2012). How far do children travel from their homes? Exploring children's activity spaces in their neighborhood. *Health & Place*, 18(2), 263–273. <https://doi.org/10.1016/j.healthplace.2011.09.019>
- Villanueva, K., Giles-Corti, B., Bulsara, M., Trapp, G., Timperio, A., McCormack, G., & Van Niel, K. (2014). Does the walkability of neighbourhoods affect children's independent mobility, independent of parental, socio-cultural and individual factors? *Children's Geographies*, 12(4), 393–411. <https://doi.org/10.1080/14733285.2013.812311>
- Wolfe, M. K., & McDonald, N. C. (2016). Association Between Neighborhood Social Environment and Children's Independent Mobility. *Journal of Physical Activity & Health*, 13(9), 970–979. <https://doi.org/10.1123/jpah.2015-0662>
- Woolley, H. E., & Griffin, E. (2015). Decreasing experiences of home range, outdoor spaces, activities and companions: Changes across three generations in Sheffield in north England. *Children's Geographies*, 13(6), 677–691. <https://doi.org/10.1080/14733285.2014.952186>
- Zwerts, E., Allaert, G., Janssens, D., Wets, G., & Witlox, F. (2010). How children view their travel behaviour: A case study from Flanders (Belgium). *Journal of Transport Geography*, 18(6), 702–710. <https://doi.org/10.1016/j.jtrangeo.2009.10.002>

## 10. Annexes

### 10.1. Interview guide

#### **Guía para la entrevista**

¡Hola, bienvenid@s! gracias por participar en este espacio. Esta entrevista es parte de la investigación propuesta como tesis dentro del programa de maestría Geografía Urbana de la Universidad de Utrecht en los Países Bajos. Mi nombre es Ana Carolina Mesías y yo seré su entrevistadora.

El tema de la entrevista es *“Los comportamientos de movilidad a la edad de 12 años”*, es decir, hablaremos sobre actividades, lugares visitados y medios de transporte utilizados. La entrevista se enfoca en las experiencias vividas a la edad de 12 años, por ello pido a la madre/padre y abuela/abuelo que recuerden sus experiencias más cercanas a ese entonces.

#### **Información importante**

- La entrevista se realizará el día y hora acordado por los entrevistados.
- Se requiere la presencia de las 3 personas, es decir, hija-madre-abuela o a su vez hijo-padre-abuelo.
- El día de la sesión, la entrevista se llevará a cabo individualmente por turnos. Empezaremos por el infante, luego la abuela/abuelo y finalizaremos con la madre/padre.
- La entrevista se realizará por medio de la plataforma Zoom.
- El tiempo de la entrevista por persona es aproximadamente 20min.
- La entrevista será grabada para el posterior procesamiento de resultados.
- Los entrevistados tienen la libertad de finalizar la entrevista en cualquier momento si así lo desean.

Si tienen alguna pregunta adicional me pueden contactar al +31 6 43250072 o escribir un correo a [ana.carolina.mesias@gmail.com](mailto:ana.carolina.mesias@gmail.com)

**¡Gracias de nuevo por participar, nos vemos pronto!**

## 10.2. Interview questionnaire

### Preguntas generales General questions

#### 1. Sobre de ti *About you*

- a. *¿Cuál es tu nombre y tu edad? What is your name and how old are you?*
- b. *¿Dónde vives/vivías? Where did/do you live?*
- c. *¿Dónde estudias, en que curso estás/estabas? Where did/do you study?*

#### 2. Sobre tu familia *About your family*

- a. *¿Con quién vives/vivías? Who did/do you live with?*
- b. *¿Cuántos hermanas o hermanos tienes? How many siblings do you have?*
- c. *¿Qué edad tienen/tenían tus padres y tus hermanos? How old was/are your parents and siblings?*

#### 3. Sobre la situación económica familiar *About family economic situation*

- a. *¿En qué trabajan/trabajaban tus padres? What did/do your parents do?*
- b. *¿Vives/vivías en casa rentada o propia? Did/do you live in a rented house?*
- c. *¿Tus padres tiene/tenían carro? ¿Cuántos? Did/do your parents have a car?*

#### 4. Sobre las habilidades *About your abilities*

- a. *¿A qué edad aprendiste a:*
  - i. *a cruzar la calle solo? to street alone?*
  - ii. *a tomar el bus solo? to take public transport alone?*
  - iii. *a montar bicicleta? to ride a bike?*
- b. *¿Desde qué edad vas a comprar a la tienda solo? From what age are you going to buy at the local store alone?*
- c. *¿Si por alguna razón te pierdes/perdías de tus padres, sabes/sabías como llegar a casa? If for some reason you lost/lost your parents, do you/did you know how to get home?*

### Preguntas sobre comportamiento de viajes Travel behavior questions

#### 1. Actividades y motivos de viaje *Activities and travel motives*

- a. *¿A dónde vas/ibas durante el día? Where did/do you go during the day?*
- b. *¿Haces/hacías alguna actividad extracurricular? Do/did you do any extracurricular activities?*
- c. *¿Qué haces/hacías en tu tiempo libre? What do you/do you do in your spare time?*

**1. Medios de transporte *Travel modes***

- a. *Mencionaste estas actividades.... ¿En tipo de transporte vas/ibas a estos lugares? What transport did/do you travel to those places*
- b. *¿Viajas/viajabas solo o acompañado? Did/do you go with someone?*

**2. Distancias recorridas *Traveled distances***

- a. *¿Cuál es el lugar que más lejano que fuiste/vas solo o con tus amigos? What is the farthest place you have gone alone or with your friends?*
  - i. *¿Qué medio de transporte utilizas? Did you travel by...?*
  - ii. *¿Cuánto te demorabas? How long did it take?*

**3. Horarios de viajes *Travel schedules***

- a. *¿Hasta qué hora tienes/tenías permitido salir de casa? Until what time are/were you allowed to leave the house?*
- b. *¿Cuáles son/fueron las razones de tus padres para ese horario? What are/were your parents' reasons for that schedule?*
- c. *¿Qué opinas/opinabas sobre las razones de tus padres? ¿Sientes/sentías lo mismo? What did/do you think about your parents' reasons? Do/did you feel the same way?*

**4. Opinión *Opinion***

- a. *¿Te gusta/gustaba viajar solo o con amigos? Do/ did you like to travel alone or with friends?*
- b. *¿Qué es lo que te gusta/gustaba o disgusta/disgustaba? What do you like/liked or disliked/disliked?*

### 10.3. Participating Families

Family	G1	G2	G3	Date
Family A	M.C. (63 years)	D.C. (39 years)	Y.T. (13 years)	10/07/2022
Family B	M.C. (67 years)	M.C. (48 years)	P.C. (13 years)	19/07/2022
Family C	G.C. (59 years)	M.R. (42 years)	S.R. (12 years)	18/07/2022
Family D	S.R. (57 years)	K.S. (32 years)	L.S. (12 years)	22/07/2022
Family E	D.T. (71 years)	F.T. (41 years)	S.V. (13 years)	11/07/2022
Family F	H.R.(72 years)	F.B. (50 years)	A.B. (12 years)	09/07/2022
Family H	R.R. (78 years)	J.D. (50 years)	J.C. (12 years)	29/07/2022
Family I	W.V. (82 years)	O.O. (49 years)	A.V. (12 years)	01/08/2022

### 10.4. Code tree

