# SPATIAL MOBILITY OF CHILDREN GOING TO SCHOOL IN THE ARCHIPELAGO OF INDONESIA: A REVIEW

#### YUSRA AULIA SARI<sup>2\*</sup>, LEE YOKE LAI<sup>1</sup> AND ISMAIL SAID<sup>1</sup>

<sup>1</sup>Landscape Architecture, University of Technology Malaysia, 81310 Johor Bahru, Johor, Malaysia. <sup>2</sup>Civil Engineering, Batam International University, 29442 Gajah Mada Baloi, Batam, Indonesia.

 $*Corresponding\ author: yusra@graduate.utm.my$ 

Submitted final draft: 30 August 2022 Accepted: 30 September 2022 http://doi.org/10.46754/jssm.2023.01.012

Abstract: The mobility of children going to school plays an important role in their quality of life. Hence, spatial planning and the development of city infrastructure should meet the needs of children. Home, school, and the surrounding city influence children's character and growth. Children's spatial mobility in the Archipelago of Indonesia is still not fulfilling the framework of a child-friendly environment. This study aims to review the parameters of children's spatial mobility in Indonesia's archipelago, suggesting the degree of fulfilment of a child-friendly environment. A review of seven local and national electronic media coverages to elicit the parameters of Indonesia's children's environment. The coverages include Liputan6, Radar Sriwijaya, Medan Headlines, Detiknews, Hipwee, CNN Indonesia, and Merdeka.com from 2015 to 2021. Three themes were identified from the coverage, including (1) basic services (education and transport), (2) safety and security, (3) family, kin, peers, and community. It is found that education and transport are the essential services that are not equipped for the children's mobility, especially those living on the islands. Thus, the lack of transportation infrastructure is a strong influence and appears in the dynamics of the development of the spatial mobility of children in the Indonesian Archipelago.

Keywords: Spatial mobility, electronic media, content analysis, child-friendly environment.

#### Introduction

Spatial mobility is an essential component of how society organizes space, and it has been defined in various ways by different observations. In its most frequent sense, mobility is movement or travel from one place to another. This movement can involve people and goods and material and non-material information. The measurement units naturally depend on what is travelling, such as the number of passengers, vehicles, the tonnage of commodities, the volume of transactions (in dollars, for example, the number of migrants, or the baud rate per second on the Internet) (Nadine, 2006). This research will discuss the spatial mobility patterns of school children. Since the construction of "childfriendly cities" was placed into view on the rights of the convention, many countries, including Indonesia, have proposed child-friendly cities and included children in designing and planning children's spaces (which have turned out to be the focus of urban planning). The activity space

provides a home, school, and a "third place" for children.

Children make up one-third of Indonesia's population, around 80 million, the world's fourth-largest child population. Indonesia is a vast archipelago with more than 17,000 islands, covers more than 735,000 square miles, and contains more than 1,300 ethnic groups. Some children live in large cities such as Jakarta and Surabaya, where urban poverty and pollution problems are the main challenges. The others still live in remote areas where access to essential services can be a daily struggle (UNICEF, 2020). Indonesia's Child-Friendly City (CFC) Program was started in 2006 in Surakarta City as part of essential economic Governance and policy reforms in 1998 (UNICEF, 2019). A child's environment influences their character, such as home, school, and the surrounding city, thus the growth process of children (Permata, 2015). A school is a crucial space for children especially access to the school from their homes.

Several factors can cause inequality in access to education in Indonesia. The imbalance occurs not only because the government's efforts as one of the education providers are not optimal (Risnawati, 2015). Nevertheless, also other factors are causing the government's efforts to fail, such as school geography, economics, and motivation for education (RENSTRA DEPDIKNAS 2005-2009, 2007). School geography is essential because it relates to the optimal location based on economic considerations by minimizing transportation costs (Harun, 2011). Location theory studies the influence of space based on economic factors about different activity locations to achieve the desired spatial interaction. Grounded on the spatial price theory, transportation cost is rationing economic resources and activities (Chan & Chair, 2011). The weak financial condition often causes children not to continue their education to the next level. Tao et al. (2020) have found that the activity space of people with low income has not increased during this decade, even though public transport infrastructure and urban development have experienced marked expansion. Besides, the continuing disparity in the activity space is still striking between lowincome and other income groups in urban areas and new cities. This issue obstructs the smooth mobility of people and goods and a lack of local economic activity. Policy recommendations are set advancing with the increase in the mobility of low-income groups.

Access to education for all children is one of the challenges in the Indonesian archipelago (Syafii, 2018), mainly for communities living on small islands. In addition, small island areas experience economic backwardness due to the physical condition of the area, which does not allow social, political, demographic, and spatial elements to work synergistically in development. Therefore, regional physical factors are the biggest obstacle in reducing development problems in small island areas (Rijanta, 2005).

Geographical conditions in several regions in Indonesia are an obstacle to child-friendly cities. Brown *et al.* (2019) child-friendly cities respect children's rights, such as having a space

to play, enabling a strong connection with nature. These factors encourage nurturing child interaction and independent mobility, including urban decision-making and policy towards children (Derr & Tarantini, 2016) child-friendly cities are understood to combine children's rights into city administration and authority, but the government is not strengthening transport planning. Hands-on research on child-friendly cities steadily unearths all-embracing themes across ages and areas. Children want access to services, nature, play, freedom from physical harm, and chances for attachment within the city.

#### Spatial Mobility

Spatial behaviour is described as a sequence of processes conveyed consciously and unconsciously in human life, and the consequences are related to variations or adjustments to locations. Mobility cannot be separated from the concept of accessibility and means of transportation and the infrastructure used (Golledge & Stimson, 1997). Education and income play a fundamental role inability of individuals to benefit the environment when they move (Clark *et al.*, 2014).

Furthermore, Hannam *et al.* (2006) mobility is the movement of people, information, transport, and freight from one place to another. This movement has traits and limitations interrelated with time, activity, goals, quality of experience, affordances, and community. However, Pooley *et al.* (2005), the concept of mobility can best be understood as part of the mobility continuum Figure 1.

Daily mobility was defined as all trips from home that were made temporarily. This comprises recurrent and unvarying trips such as journeys to school or work, less common but recurrent trips to visit friends or relatives, shopping, sports, and other recreational activities, as well as children's play and one-time trips or twice a year, such as holidays and visits to distant relatives. The four internal variables of daily mobility are age, gender, socioeconomic group (income), and family structure (and, for children, parity

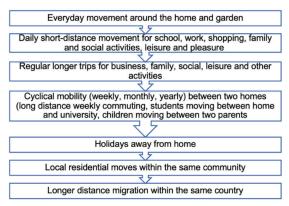


Figure 1: The mobility continuum

in the family), and the three factors mainly (although not entirely) external traveller and reflect structural constraints. For example, the prevailing transportation technology, urban structures, and transportation networks exist in a given place.

#### Children Mobility

In Indonesia, child-friendly cities are implemented under the Ministry of Women Empowerment and Child Protection in the Republic of Indonesia. One of the indicators involved in the child's independent mobility safety (Tranter & Whitelegg, 1994; Shaw et al., 2013). The independence of children's mobility can be described as the movement around their neighbourhood or city without adult supervision, intending to play or travel inside or outside their place to a particular place such as school or anywhere outside their home. However, several studies in Indonesia show that the understanding of children, parents, and teachers about school safety zones is still low (Widiyanto & Rijanta, 2012; Susanto & Jon, 2013; Kuswati, 2017). categorised the Child-Friendly City Concept in Yogyakarta, Indonesia as policy, traffic, play, and friends, schools, consideration of discrimination, parental supervision, and child rights, neighbourhood, housing, and sensitive planning for children's needs. Research on childfriendly environments began as early as 2007 with ten dimensions by Haikkola et al. (2007) are: (i) Housing and dwelling, (ii) Basic services (education and transport), (iii) Participation, (iv) Safety and security, (v) Family, kin, peers, and community, (vi) Urban and environmental qualities, (vii) Provision and distribution of resources; poverty reduction, (viii) Ecology, (ix) Sense of belonging and continuity, and (x) Good governance of environmental child-friendliness.

Previous research shows many parameters for a child-friendly environment. In this research, the child-friendly environment referred to ten dimensions by Horrelli in 2007, and spatial mobility patterns in the Archipelago of Indonesia fit three dimensions. The coverage identified three parameters: (1) Basic services (education and transport). Every Indonesian citizen has the right to receive an education based on their interests and talents regardless of social status, economic status, ethnicity, religion, and gender (Rifa'i, 2019). They travel to work in Indonesia generally range 40-50% while travelling to school at 20-35% (Tamin, 2010). Growth in the number of private vehicles that have increased more dominant than public transport shows that the provision of urban public transport to meet the mobility needs of the population is still far from the expected both in terms of capacity and quality. Failure to provide public transport services leads to a high preference for private vehicle use, including for students (Pahlupiningtyas & Pakpahan, 2016). (2) Safety and security, the Ministry of Education and Culture is leading the safe schools in the country. The nationwide safe school program applies the

three pillars of the Comprehensive Safe School (CSS) framework, which include: (1) school facilities; (2) school disaster management and (3) disaster risk reduction in education. Safe school implementation addresses two significant components: Firstly, a structural component such as safe location, safe building structure, safe classroom design, and set-up, supporting facilities/infrastructure, and secondly, the nonstructural component including knowledge, attitude, and practice, safe school/safe madrasah policies, planning for disaster preparedness and resource mobilization. Thirdly, family, kin, peers, and community. It suggests that the impact of and interplays between human, social, economic, political, and infrastructural capital at the individual, household, school, community, and government level is critical on inequality in access to and quality of education in Indonesia. Examples of child-friendly environments of the selected parameters, bolded, have been collected in Table 1

#### Children's Safety and Environmental Hazards

Environmental Hazards have different meanings based on the research done. However, today's children face many vulnerabilities to potentially toxic environmental hazards. Hazardous substances such as lead, polychlorinated biphenyls (PCBs), solvents, asbestos, radon, pesticides, and air pollution have been found in our homes, schools, and children's playgrounds. These exposures can significantly impact children's health and well-being (Carlson & Sokoloff, 1995).

Similarly, Lunenburg (2010) has classified environmental hazards that threaten the health and safety of students and staff. These ecological hazards including asbestos, radon gas, school lead, indoor air quality, and electromagnetic fields can threaten schools and workplaces. Likewise, Vazir (2009) other environmental risks such as rapid industrialization, rampant use of inhaled and ingested pesticides in food and

Table 1: Characteristics that are important for a child-friendly environment

Authors	Basic Services (education and transport)	Safety and Security	Family, Kin, Peers and Community
(Haikkola et al., 2007)	Availability of schools, daycares and youth centres in the vicinity. Both public transportation, recreational services, and play/sports facilities	There is an opportunity to move independently in the environment without the risk of car accidents for children and dangerous people for women and parents	Friends around
(Nordström, 2010)	Basic services (public and private) near the transport) facilitate children's daily life	<ul> <li>Guarantees of physical and psychological security by the state and municipal governments</li> <li>Child welfare and violence prevention</li> <li>A tolerant and pluralistic environment</li> <li>Safe transportation systems and public places in general</li> </ul>	Opportunities for close social relationships with family, kin and friends
(Hermino, 2017)	Good transportation infrastructure in coastal, mountainous and suburban areas	Sense of security and comfort when children are in school	Parents are required provide to motivation and a good environment in the house causing the child will bring a sense of comfort to children

water, emissions of industrial effluents to the sea, air, and land combustion wastes, increased use of non-biodegradable materials (e.g., plastic bags), lack of sanitation and hygiene facilities, high lead and the use of asbestos in building materials can threaten the safety of children. Meanwhile, Liz (2002) states that environmental risks to children's health are indoor air pollution, asthma, excessive air pollution, unsafe drinking water, poor sanitation, vectors of infectious diseases, and exposure to hazardous chemicals, lead, and pesticides.

On the contrary, (Bearer, 2013) has stated that the entire population is exposed to and reacts similarly to environmental pollutants in making environmental health policies. Nevertheless, this statement is misleading, especially when it comes to children. Children at different developmental stages have unique physical risk factors for certain types of exposure due to changes in location, level of mobility, oxygen consumption, diet, and behaviour. Furthermore, the WHO (2010) selected five determinants of health: Physical activity, social impact, air quality, noise exposure, and accidental injury. The spatial environment that influences these behaviours is described in four components: Land use patterns, transport infrastructure, green spaces, and local urban design.

## The Trend of Child-friendly Environment in Indonesian

Previous studies on child-friendly environments in rural and urban areas in Indonesia have been carried out based on various concerns/issues. The child's environment is in two scopes: A small and an enormous area. Thus, the house can have a small scope of children and the whole city is enormous (Permata, 2015). The design and provision of an activity environment must consider these elements, such as lines, shapes, and colour elements. The selection of environmental factors that are not appropriate (monotonous) makes children less developed and can lead to aggressive behaviour. However, Arti and Said (2016) children display various social transactions, physical play, and decisionmaking. Street environmental opportunities are associated with street buildings, vehicles, and furniture, where the child's direct involvement leads to indirect learning. However, public awareness is still low to participate in participatory activities. The community can still be more optimal in participating, supported by many groups, communities, and existing community institutions (Perdana, 2019). Culturally, the community responds with the principle of togetherness, and commitment, integrating child-friendly meanings in various activities involving parents, adolescents, and community leaders (Suharta & Septiarti, 2018).

The community can identify problems faced by children and how to use their resources to solve them. Corporate Social Responsibility (CSR) also supports the child-friendly village program. Partnerships between the community and companies produce a child-friendly environment (Agustinawati, 2018). For instance, the participation of parents and the community is significant in implementing policies and programs at the level of child-friendly school education units. The availability of a reading room and a play area allows children to learn relaxed and fun, such as when children are asked to paint, tell stories, and discuss. These activities develop children's thinking for good creativity (Ansori, 2017).

School-based management is required to mobilize the community through active participation in children's education. Parents and the community must work synergistically to create child-friendly schools (Hajaroh et al., 2020). Previous studies on child-friendly schools, such as organizational culture at the school level to create quality education, require a broad-minded educational leadership role and can internalize leadership values to school members for progressive education (Hermino, 2017). Likewise, instilling leadership that is integrated into the values of Al Islam and Muhammadiyah teaches values, rules, and norms in every life in society (Fahyuni et al., 2020). Another example, like child-friendly schools in early childhood education is necessary to optimize growth and physical and mental development to accept and respond to environmental stimulation (Tusriyanto, 2011). Completeness of facilities and infrastructure used in early childhood education units in South Semarang Regency includes learning methods, attitudes towards students, and environmental health (Paudia, 2011). In comparison, the formal teaching of Arabic at Pondok Pesantren Darunnajah is in line with the framework of child-friendly values, from the point of view of educators in managing students and in textbooks and teaching materials in content, oral exercises (Hudzaifah et al., 2021). Likewise, SD Muhammadiyah Yogyakarta is seen from the characteristics of child-friendly schools included in the excellent and satisfactory category, namely 68.7% and 31.39% (Hajaroh & Purwastuti, 2013).

However, the environmental management obstacles to creating a Child-Friendly School at elementary school level 20 Tungkop Aceh Besar still have limited child-friendly facilities and infrastructure, including the lack of student toilet facilities. Second, the limited class space causes students in each class to exceed the maximum capacity standards set (Aris, 2019). Another concern for child-friendly schools including child protection. Child-friendly schools protect to prevent children from becoming victims or perpetrators of violence. It will create children of quality and character (Erdianti & Al-fatih, 2020). However, several obstacles such as limited school budgets, the number of teachers and the busyness of teachers have caused the implementation of child-friendly school policies to be not optimal. A collaboration between the central government and local governments, schools, and communities is required to facilitate child-friendly school policies (Hidayatullah, 2018). Each region must regulate and implement child-friendly cities with regional characteristics into regional regulations preceded by provincial regional regulations (Tanuwijaya & Nugroho, 2020). In addition, understanding information technology needs to be applied in schools because it can minimize cyberbullying and violence in education, especially technology in general (Arifin et al., 2019).

Child-friendly environments, including child-friendly cities, have also been widely discussed in Indonesia from various issues. A child-friendly city is a good approach to realizing children's rights. However, several main areas need to become the primary plan for the implementation (Sutama, 2015). Some cases include finding the right environment to live and raising children and the quality of togetherness between parents and children. The families surveyed in this study do not consider Jakarta a child-friendly city (Drianda & Kesuma, 2020). Implementing a child-friendly city in the Tamansari Puri Bali Housing Complex is only at the knowledge stage. Not yet at the stage of implementing a child-friendly city, parents need a deep understanding of a child-friendly city to realise a child-friendly city.

Similarly, the implementation of the Child-Friendly Village program is exemplary but must be evaluated to be perfect in the future (Imawati, 2018). However, a child-friendly city needs to implement local culture to create a social environment based on Javanese culture and support applying a child-friendly city model (Siti, 2020). Hence, many child-friendly environments in Indonesia have been conducted based on previous research on communities, schools, and cities. However, the spatial mobility of child-friendly environments in the archipelago has not been widely applied. In urban planning, the government still separates the child-friendly climate from the city.

#### Discussion

#### Content Analysis

Referring to Table 2, ten main topics related to a child-friendly environment with the keyword of parameters are essential services (education and transport), safety and security, family, kin, peers, and community have emerged.

#### Basic Services (Education and Transport)

Topic 1 concerns students riding a truck in Bogor's Cikoneng area to go to Cikoneng elementary school. Some students have to ride

a truck, walk and bring private vehicles due to difficult road access in the hilly areas of the tea plantations. Due to the COVID-19 pandemic, Cikoneng Elementary School has conducted offline teaching and learning activities since last July 2020 because learning using the online system is considered less effective.

Basic service transportation makes daily life easier for children with good public transportation. However, Cikoneng basic service transportation for children is inadequate, as seen in Figure 2. Transportation infrastructure consists of installing canals, waterways, airways, railroads, roads, terminals, and pipelines such

Table 2: Title and pictures from electronic media for each ten identified topics

Topic No.	Topic Title	Year	Parameter	Pictures
Topic 1	Trucks for Cikoneng Elementary School Bogor Students Going to School	2021	Essential services (education and transport)	
Topic 2	Ceper River Children have to Cross the River to Go to School in Lampung	2018	Safety and security, peers and community	
Topic 3	Teachers Struggle in Menoreh Mountains during a Pandemic	2020	Community	
Topic 4	Students in Sigi are Willing to Cross the River with an Excavator to Go to School	2020	Safety and security	
Topic 5	Residents Help Children Cross the River to School so their Clothes and Books do not Get Wet	2017	Safety and security, family	Separation of the separation o
Topic 6	Elementary School Students across the Cable in the River to Go to School	2015	Safety and security, and peers	

Topic No.	Topic Title	Year	Parameter	Pictures
Topic 7	Without Electricity and the Internet, the Teacher Crosses the River to Teach	2020	Safety and security, and community	
Topic 8	The Children's Struggle to Go to School has to Pass through an Old Water Channel that was Built during the Dutch Era	2016	Safety and security, and peers	
Topic 9	Child's Struggle in Kampung Kaki Rinjani Mountain through the Forest to School	2019	Safety and security, and peers	
Topic 10	The Struggle of Elementary School Students Climbing the Hill Towards Online Learning	2020	Peers and community	



Figure 2: The students in the truck pass by the tea plantations

Source: https://www.liputan6.com/news/read/4519241/foto-truk-untuk-siswa-sdn-cikoneng-bogor-pergi-ke-sekolah?page=1

as seaports, fueling depots, truck terminals, warehouses, bus stations, railway stations, and airports (Hossain, 2019). Transportation infrastructure is an essential factor that impacts

modal change and its implications for urban congestion and pollution in daily mobility (Pooley *et al.*, 2005). Children in Cikoneng must get proper transportation for vehicles to school

because trucks are usually used to transport goods between regions.

Furthermore, Panjaitan (2012) states that Transportation infrastructure in its function as public facilities that provide public services for the community, among others: (1) Encouraging equitable development; (2) Serving the needs of the movement of the community at an affordable price; (3) Facilitating mobility in the distribution of goods and services; and (4) Encouraging the growth of other economic sectors. Generally, school transportation is the same as other special services, namely providing facilities for achievement educational purposes. The achievement of these goals can improve the quality of education and the welfare of society and the nation. School transportation for students is a basic service. School transportation is necessary because students can travel from home to school due to the limitations of distance, time, and mode of transportation. (Dian et al., 2017). However, the mobility of the urban population of school goals is 20-35%. The City Government implements a policy of providing school transportation via free school buses. However, the response and enthusiasm of students, in particular, were felt to be lacking, marked by the lack of school bus passengers (Pahlupiningtyas & Pakpahan, 2016) meanwhile, children in the Cikoneng area still live in hilly areas and struggle to access essential services, which is becoming a daily struggle for them.

### Safety and Security

Topic 2 in Figure 3 in Sungai Ceper Village, Sungai Menang District is located in a remote area and borders Lampung Province. They have to study in a neighbouring province to enter Junior High School because there is no Junior High School in that area. Likewise, Senior High School education must also be pursued in neighbouring regions. There is no road access to the school. To reach the school in Mesuji, they must use water transportation at five thousand per child.

Several programs have been carried out, such as an Indonesian National Military Manunggal. Indonesian National Military soldiers from Kodim 0402 performed physical and non-physical developments in Sungai Ceper. They assisted students who wanted to attend school by preparing Ketek boats as a pick-up tool. The number of junior high school students who were escorted to pick up as many as 50 people from Kampung Sungai Ceper went to Kampung Wiralaga, Mesuji Regency, Lampung. Kampung Wiralaga is geographically located between rivers separated by a large river. The distance from Kampung Sungai Ceper to Wiralaga Pier is about 20 minutes, and when they arrive at the pier, they go to the school in about 10 minutes. During the rainy season, the river water rises, and the current is relatively swift. This condition often endangers the lives of children who cross the river to attend school.



Figure 3: School transportation for Ceper River students Source: https://www.newshanter.com/50-orang-siswa-smp-dan-sma-sungai-ceper-sekolah-antar-propinsi/

Topic 5 in Figure 4 shows that students of Sigi, Central Sulawesi are willing to cross the river with an excavator. Unfortunately, the internet network in that village is not available for online exams. After the natural disaster, the area about two years ago has not yet recovered. They still live in the forest, many of which were built by NGO volunteers.

Topic 6 in Figure 5 shows that students of Kampung Ulu Mau, North Sumatra, children must cross the Mahuam River to get to school faster. These children are forced to cross the river because the land route that has been traversed is

very steep. The distance travelled also became further due to the detour. These children are crossing the river; the distance from the house to the school is about 4 km, while the land route is uphill and steep, about 7 km.

The conditions for children are difficult because of the poor infrastructure and the lack of public transportation in the plantation areas where they live. However, if the flow of the Mahuam River increases and the current becomes heavy, some families will help dozens of these children cross.



Figure 4: School transportation without safety Source: https://radarlampung.co.id/bertaruh-nyawa-anak-anak-ini-seberangi-sungai-dengan-perahuseadanya-demi-bersekolah/2/



Figure 5: The child who is crossing the river Source: https://sriwijayaaktual.com/adek-adek-sd-ini-setiap-hari-melangkahi/

Topic 6, in Bone, about 80 km from the capital of Watampone, South Sulawesi, some elementary school students cross a 30 meterlong wire over the river to reach the school. If these children travel overland using motorbikes, they must cover a distance of about 30 km. Meanwhile, crossing the Hulo river by wire, students only walk about 200 m to their school, with a capacity of five students through the wire path.

Topic 7 in Figure 6 shows students of Kampung Langge, Gorontalo Province. The teacher has to cross a river without a bridge to teach at students' homes. Several students also crossed the river to get to the learning place held at the student's house. Their school does not have electricity and Internet access. This makes teaching and learning online during the pandemic difficult.

This condition will be even more complicated when the river flow is heavy. First, the teachers had to ask for help from the residents and parents to cross the river safely. This happens because not every student has a smartphone. Even if there is, then the next problem faced is the network.

Topic 8 represented by Figure 7, shows students in Kampung Karanganyar and Boyolali, Central Java. Children must pass through old waterways built in the Dutch era to

reach the school. The aqueduct was built around 1920 and is the primary facility for Karanganyar and Boyolali. Even though the 50-meter-long pedestrian bridge condition is not feasible, the children still use it daily.

The Dutch heritage bridge, which also functions as a water channel, is used by residents to shorten the distance to 8 km. Topic 9, In Kampung Sajang, East Lombok Regency, West Nusa Tenggara, lives in the middle of a forest at the foot of Mount Rinjani. The distance between school and home is about three kilometres. However, this distance must be reached by passing a path with the road's contours going uphill following the ridge of the hill. They must pass through forests and rivers with a width of about 50 m via a self-supporting bridge. Children's safety is especially worrying during heavy rains. Inequality in Indonesian Archipelago between urban children can attend school comfortably. Many children in rural areas struggle to go to school every day. Urban life is accustomed to various facilities, although traffic and pollution are their main problems. Physical and psychological security guarantees by the government and cities in the archipelago have not been fulfilled. No safe transportation system is available, and children move independently in environments that risk their safety. Participatory research child-friendly environments consistently finds overarching themes across



Figure 6: These children who are crossing the river Source: https://today.line.me/id/v2/article/Tak+Ada+Listrik+dan+Internet+Guru+Menyeberang+Sungai+De mi+Mengajar-3ejR2r



Figure 7: Main facility for residents in Karanganyar and Boyolali Source: https://www.merdeka.com/foto/peristiwa/521953/20150403070408-menantang-maut-melintasi-jembatan-yang-bikin-merinding-di-boyolali-002-drudebby-restu-utomo.html

ages and regions: Children want access to services, nature, and play; freedom from physical harm; and opportunities for inclusion within the city. The parameters of public space for a child-friendly environment in education are educational facilities in Indonesia that still require infrastructure development.

#### Family, Kin, Peers and Community

Topic 10 and 3 are about family, kin, peers, and community, Kanisius Elementary School teacher. The teacher's name is Kenalan Henricus Suroto (59 years). He rode a motorbike down the rocky road in the Menoreh mountains to teach his students to live in Magelang Yogyakarta during the COVID-19 pandemic. He did this because students who live in mountainous areas have difficulty accessing the Internet. Moreover, some students' parents do not have the skills for online learning. Seeing this condition, Suroto and many of his colleagues had the idea to teach their students directly one week after the children decided to study at home due to the COVID-19 pandemic in mid-March 2020. Suroto conducts learning in groups for efficiency, such as two to six children per hamlet in certain places. Even so, he went to the student's house, which was far apart. Moreover, he did not forget to apply the COVID-19 Preventive Health protocol when teaching students. Such as wearing a mask, washing hands, and maintaining distance. Suroto admitted that his hard work was done because he felt responsible as an accompanying teacher.

Meanwhile, online learning is considered less than optimal and cannot directly replace a teacher's presence. Therefore, the Ministry of Education and Culture has begun to allow the green and yellow COVID-19 zone to conduct distance learning. However, several schools in the zone continue to implement learning from home because of the readiness of their infrastructure.

Children's environmental experiences are critical to the balanced development of their emotional, physical and intellectual understanding, as well as serving and supporting the child's potential for various activities and growth (Han & Kim, 2018). The family has a functional role in imparting emotional underpinning because children in the school environment will apply the experience (Knowles et al., 2005). Peer influence in the school environment also contributes to the possible causes of student behaviour (Bhave & Sunil, 2009). As an element of education, the teacher determines the success of education at the operational level, while an educator plays a role in coaching, instruction, and training (Hermino, 2017). However, the family and society are still lacking in creating a child-friendly environment due to human resources that have not contributed

to children's welfare and the low economic factors of Indonesian culture

Conclusion

### The lack of transportation infrastructure is a strong and visible influence on the development of children's spatial mobility in the archipelago. Infrastructure for education purposes has not been achieved due to inequality in development

between urban and rural communities. This inequality is getting worse because children living in remote areas do not receive support from the local government. Therefore, they must struggle to get an education, including reaching their schools. Participation from families and communities is still limited due to several factors such as low education levels and economic and sociocultural factors that place children's education more minor than the economy.

In addition, another infrastructure such as online learning is still inadequate because not all children have smartphones and parents understand technology. This study discusses the spatial mobility of Indonesian archipelago children who are rarely exposed. Most research on transportation focuses on the spatial mobility of children living in urban areas going to school by car, motorbike, and public transportation, but some children living on remote islands use sea transportation such as boats to go to school. The final and important question identified was: What are the impacts of social, physical, environmental, and individual factors on the school travelling behaviour of children in the Indonesian archipelago.

#### Acknowledgements

I am enormously grateful to Dr. Lee Yoke Lai for his continuous encouragement and kind advice throughout this research. Likewise, I am thankful to Professor Ismail Said for his kind advice and help in this research. This research has been funded 50% by the University of Technology Malaysia. This transdisciplinary research is part of a dissertation submitted as partial fulfilment to meet the requirements

for the degree of Doctor of Philosophy at the University of Technology Malaysia.

#### References

- Agustinawati, E. A. (2018). Bringing childfriendly village into reality through community empowerment in Indonesia. Advances in Social Sciences Research Journal. 5(9),128-134. https://doi. org/10.14738/assrj.59.5128.
- Ansori, A. R. (2017). Upaya penciptaan lingkungan ramah anak di Kelurahan Sukun Malang Perpektif Undang-undang no 35 tahun 2014 tentang perlindungan anak. [Undergraduate thesis, Universitas Islam Negeri Maulana Malik Ibrahim].
- Arifin, M., Sudarmo, S., & Sudibyo, D. (2019). The implementation of childfriendly schools: challenges and obstacles in the era of technological and information advancement. Proceedings of the First International Conference on Progressive Civil Society (ICONPROCS 2019). 34-37. https://doi.org/10.2991/ iconprocs-19.2019.7
- Arti, M., & Said, I. (2016). Affordances of street environment for child-friendly cities during home-school journey in old city zone of Makassar. Plano Madani, 5, 114-124.
- Bearer, C. F. (2013). Environmental health hazards: How children are different from adults. The Future of Children, 5(2), 11-26. https://doi.org/10.2307/1602354
- Bhave, S. Y., & Sunil, S. (2009). Anger Management. SAGE Publications. https:// www.google.co.id/books/edition/Anger Management/EtCGAwAAQBAJ?hl=id&g bpv=1&dq=.+Bhave,+S.Y.+%26+Saini,+S .+(2009).+Anger+Management.+New+De lhi:+Sage+Publication.&pg=PA68&printse c=frontcover
- Brown, C., Lannoy, A. De, Mccracken, D., Gill, T., Wright, H., Williams, S., Brown, C., Lannoy, A. De, Mccracken, D., Gill, T., Wright, H., & Williams, S. (2019). Special

- issue: Child-friendly cities. *Cities & Health*, 3(1-2), 1-7. https://doi.org/10.1080/237488 34.2019.1682836
- Carlson, J. E., & Sokoloff, K. (1995). Preventing child exposures to environmental hazards: Research and policy issues. *Environmental Health Perspectives*, 103(6), 3-5. https://doi.org/10.1289/ehp.95103s63
- Chan, Y., & Chair, F. (2011). Location theory and decision analysis: Analytics of spatial information technology second edition. Heidelberg, Berlin: Springer. https://doi.org/10.1007/978-3-642-15663-2
- Clark, W. A. V, Ham, M. Van, & Coulter, R. (2014). Spatial mobility and social outcomes. *Journal of Housing and the Built Environment*, 29, 699-727. https://doi.org/10.1007/s10901-013-9375-0
- Derr, V., & Tarantini, E. (2016). "Because we are all people": Outcomes and reflections from young people's participation in the planning and design of child-friendly public spaces. *The International Journal of Justice and Sustainability*, 21(12), 1534-1556. https://doi.org/10.1080/13549839.2016.1145643
- Dian, E., Mustiningsih, P., & Bafadal, H. I. (2017). Analisis kebutuhan alat transportasi sekolah bagi siswa sekolah lanjutan tingkat pertama (SLTP) Se-Kecamatan Kedungkandang Kota Malang [Diploma Thesis, Universitas Negeri Malang]. Repositori Universitas Negeri Malang. http://ap.fip.um.ac.id/wp-content/uploads/2017/08/Artikel-Skripsi-Edwin. pdf
- Drianda, R. P., & Kesuma, M. (2020). Is Jakarta a child-friendly city? *IOP Conference Series: Earth and Environmental Science*, 592(1). https://doi.org/10.1088/1755-1315/ 592/1/012026
- Erdianti, R. N., & Al-fatih, S. (2020). Children Friendly School as the Legal Protection for Children in Indonesia. *Varia Justicia*, *16*(2), 137-155. https://doi.org/10.31603/variajusticia.v16i2.3725

- Fahyuni, E. F., Fauji, I., & Addaa'i, M. N. (2020). Application of child friendly schools through the Hizbul Wathan scouting movement to form elementary student leadership character. *Halaqa: Islamic Education Journal*, 4(1), 1-9. https://doi.org/10.21070/halaqa.v4i1.171
- Golledge, R. G., & Stimson, R. J. (1997). Spatial behavior: A geographic perspective. The Guilford Press. https://www.google.co.id/books/edition/Spatial\_
- Haikkola, L., Pacilli, M., Horelli, L., & Prezza, M. (2007). Interpretations of urban child-friendliness: A comparative study of two neighborhoods in Helsinki and Rome. *Children, Youth and Environments, 17*(4), 319–351. papers://b384f54c-36dc-4b6d-90 b9-f041a965aefc/Paper/p29
- Hajaroh, M., & Purwastuti, L. A. (2013). Identification of child friendly school on the whole of Muhammadiyah elementary school in Yogyakarta City Indonesia. *Business Management*, 1-10. https://study lib.net/doc/12708384/identification-of-child-friendly-school-in-yogyakarta-cit...
- Hajaroh, Rukiyati, Puswastuti, L. A., & Saptono, B. (2020). The implementation of indonesia's child friendly school policy based on environment in the coastal tourist area of Gunung Kidul, Indonesia. *Geojournal of Tourism and Geosites*, 31(3), 1010-1018. https://doi.org/10.30892/gtg.31312-535
- Han, M. J. N., & Kim, M. J. (2018). A critical review of child-friendly environments, focusing on children's experiential perspectives on the physical world for sustainability. Sustainability (Switzerland), 10(10). https://doi.org/10.3390/su10103725
- Hannam, K., Sheller, M., & Urry, J. (2006). Editorial: Mobilities, immobilities and moorings. *Mobilities*, *I*(1), 1-22. https://doi.org/10.1080/17450100500489189
- Harun, U. (2011). Kritik teori lokasi untuk analisis keruangan. *Jurnal Perencanaan Wilayah dan Kota*, *11*(2), 125383.

- Hermino, A. (2017). Child-friendly school in educational settings for elementary school in the Papua Island of Indonesia. *Global Journal of Human-Social Science: G Linguistics & Education*, 17(1), 48-60.
- Hidayatullah, A. F. (2018). Desain kota ramah anak perspektif pendidikan lingkungan (Studi kasus Kota Semarang). *Al-Hayat: Journal of Biology and Applied Biology*, *1*(1), 34. https://doi.org/10.21580/ah.v1i1. 2685
- Hossain, M. F. (2019). Best management practices. In *Sustainable Design and Build* (pp. 419-431). Elsevier. https://doi.org/10.1016/b978-0-12-816722-9.00007-0
- Hudzaifah, Y., Ulfah, N., & Pamungkas, M. I. (2021). Child-Friendly Teaching Approach for Arabic Language in nn Indonesian Islamic Boarding School. *International Journal of Language Education*, 5(1), 501-514. https://doi.org/10.26858/ijole.v5 i1.15297
- Imawati, S. (2018). Evaluasi pemberlakuan kampung ramah anak di Rw 02 Kelurahan Manggarai Kecamatan Tebet Jakarta Selatan. *Jurnal Holistika*, 24-29. https://jurnal.umj.ac.id/index.php/holistika/article/view/2236
- Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2005). *Adult Learner* (6th ed.). London: Routledge.
- Kuswati, A. (2017). Connectivity of antarmoda transportation in tulungagung district. *Jurnal Transportasi Multimoda*, 15(1), 53-62.
- Liz, C. (2002). Making the link. *Population References*. http://www.prb.org/pdf/Child rensEnvironHlth\_Eng.pdf
- Lunenburg, F. C. (2010). Environmental hazards in America's Schools. *Focus on Colleges, Universities and Schools*, 4(1), 1-9.
- Nadine, C. (2006). Spatial mobility. *Hypergeo*. https://www.hypergeo.eu/spip.php?article 526#

Nordström, M. (2010). Children's views on child-friendly environments in different geographical, cultural and social neighbourhoods. *Urban Studies*, 47(3), 514528. https://doi.org/10.1177/0042098009349771

- Pahlupiningtyas, S. E., & Pakpahan, D. (2016). Analisis kebijakan penyelenggaraan angkutan sekolah di Kota Bandung. *Warta Penelitian Perhubungan*, 28(2), 104. https://doi.org/10.25104/warlit.v28i2.693
- Panjaitan, P. (2012). Analisis pengaruh infrastruktur jalan terhadap investasi, ekspor dan PDRB Provinsi Sumatera Utara [Tesis Magister, Universitas Sumatera Utara]. Repositori Institusi Universitas Sumatera Utara.
- Paudia, J. P. (2011). Identifikasi model Sekolah Ramah Anak (SRA) jenjang satuan pendidikan anak usia dini Se-Kecamatan Semarang Selatan. *Jurnal Penelitian PAUDIA*, 1(1), 59-74.
- Perdana, F. R. (2019). Pemberdayaan berbasis partisipasi masyarakat melalui program kampung ramah anak di badran Kota Yogyakarta. *Jurnal Pemberdayaan Masyarakat: Media Pemikiran dan Dakwah Pembangunan*, 3(1), 161-188. https://doi.org/10.14421/jpm.2019.031-08
- Permata, A. (2015). Child-friendly school and city for a better future. *The 1st International Conference on Child-Friendly Education*. 315-322. https://publikasiilmiah.ums.ac.id/bitstream/handle/11617/7231/3%20-%20Andarini%20Permata%20C.pdf?sequence=1
- Pooley, C. G., Turnbull, J., & Adams, M. (2005).

  A Mobile Century? Changes in Everyday
  Mobility in Britain in the Twentieth Century.
  Routledge. https://books.google.co.id/books?hl=id&lr=&id=II1BDgAAQBAJ&oi=fnd&pg=PT12&ots=ANdOwv4Iba&sig=TRErXsqlkBUWF7DRH7swdTjtTDM&redir esc=y#v=onepage&q&f=false
- Renstra Depdiknas. (2007). Rencana Strategis Departemen Pendidikan Nasional 2005-

- 2009. https://fdokumen.com/document/ren stra-depdiknas-2005-2009.html
- Rifa'i, A. A. (2019). Education policy for equalization: An analysis of higher education opportunities in Indonesia. *Edugama: Jurnal Kependidikan dan Sosial Keagamaan*, 5(2), 66-84. https://doi.org/10.32923/edugama.v5i2.970
- Rijanta, R. (2005). Insularitas dan Keterbelakangan Ekonomi Wilayah Menuju Model Konseptual Perkembangan Wilayah Pulau Kecil di Indonesia. *Majalah Geografi Indonesia*, 19(2), 103-120.
- Risnawati. (2015). Ketimpangan akses pendidikan jenjang menengah dan solusi kebijakan di kecamatan kemangkon kabupaten Purbalingga. [Thesis (S1), Universitas Negeri Yogyakarta]. Lumbung Pustaka Universitas Negeri Yogyakarta. http://eprints.uny.ac.id/id/eprint/19141
- Shaw, B., Redecker, A., & Watson, B. F. (2013). *Children's independent mobility: A comparative study in England and Germany (1971-2010)*. London Policy Studies Institute. https://westminsterresearch.westminster.ac.uk/download/033209d304f45e5029d9987458e67a06070a44ba5ef7bc5abb981e5a351efe82/5212407/PSI\_finalreport\_2012.pdf
- Siti, S. (2020). Implementation of children friendly school to realize Javanese cultural character based social environment. GeoEco Journal, 6(2), 209-216. https://jurnal.uns.ac.id/GeoEco/article/view/42675/pdf
- Suharta, R. B., & Septiarti, S. W. (2018). Pengembangan perlindungan sosial kampung ramah anak di Kota Yogyakarta. *Jurnal Pendidikan dan Pemberdayaan Masyarakat*, *5*(1), 9-18. https://doi.org/10.21831/jppm.v5i1.11313
- Susanto, B., & Jon, J. A. S. (2013). *Analisis* tingkat keselamatan pada zona selamat sekolah di Yogyakarta [Sarjana Disertasi, Universitas Atma Jaya Yogyakarta].

- Repositori Universitas Atma Jaya Yogyakarta.
- Sutama, I. M. (2015). Realizing child's right through child friendly city initiative in Indonesia. *Proceeding ICCE (International Conference on Child-Friendly Education)*, The 1st International Conference on Child-Friendly Education (ICCE) 2016, 26-33. http://hdl.handle.net/11617/7188
- Syafii, A. (2018). Perluasan dan Pemerataan Akses Kependidikan Daerah 3T (Terdepan, Terluar, Tertinggal). *Dirasat: Jurnal Manajemen dan Pendidikan Islam,* 4(2), 153-171. https://doi.org/10.12928/psikopedagogia.v1i2.4603.154
- Tanuwijaya, F., & Nugroho, F. M. (2020). Child-friendly cities and districts as human rights protection in Indonesia's decentralization context. *Indonesian Journal of Law and Society*, *1*(2), 163. https://doi.org/10.19184/ijls.v1i2.17496
- Tao, S., He, S. Y., Kwan, M., Luo, S., Cities, F., Chinese, T., Kong, H., & Kong, H. (2020). Does low income translate into lower mobility? An investigation of activity space in Hong Kong between 2002 and 2011. *Journal of Transport Geography*, 82, 102583. https://doi.org/10.1016/j.jtrangeo.2019.102583
- Tranter, P., & Whitelegg, J. (1994). Children's travel behaviours in Canberra: Cardependent lifestyles in a low-density city. *Journal of Transport Geography*, 2(4), 265-273. https://doi.org/10.1016/0966-6923(94) 90050-7
- Tusriyanto. (2011). Pengembangan sekolah ramah anak di tingkat pendidikan anak usia dini. *Ri 'ayah*, *5*(1), 12-25.
- UNICEF. (2019). *Indonesia* | *Child Friendly Cities Initiative*. https://childfriendlycities.org/indonesia/
- United Nations Children's Fund (2020). The State of Children in Indonesia-Trends, Opportunities and Challenges for Realizing

- Children's Rights. Jakarta: UNICEF Indonesia.
- Vazir, N. (2009). Environmental hazards in school structures & role of school communities. *Nurture*, 7, 14-18.
- WHO. (2010). Urban planning, environment and health from evidence to policy action. World Health Organization. https://www.euro.who.int/\_\_data/assets/pdf\_file/0004/114448/E93987.pdf
- Widiyanto, D., & Rijanta, R. (2012).

  Lingkungan kota layak anak (child-friendly city) berdasarkan persepsi orangtua di kota Yogyakarta. https://www.researchgate.net/publication/288208285\_LINGKUNGAN\_KOTA\_LAYAK\_ANAK\_CHILD-FRIENDLY\_CITY\_BERDASARKAN\_PERSEPSI\_ORANGTUA\_DI\_KOTA\_YOGYAKARTA