An Analysis of Factors Causing Socio-Economic Impacts of The Urban Sprawl: A Case Study on Wattala-Mabole Urban Council Area and its Outskirts, Sri Lanka

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ABSTRACT

Urban expansion in adjacent areas has been addressed by different dimensions depending on the context. Sri Lanka is gradually developing, and urban areas have mostly expanded in an unplanned manner resulting in uncontrolled urban sprawl in their new territories. Similarly, the Wattala-Mabole urban council area also has a site of urban sprawling. The main objective of this research is to identify and analyze the different factors which generate the socio-economic impacts of the urban sprawl in the study area. Further, the paper examines the challenges and opportunities of urban sprawl in the urban council and its surrounding areas. The methodological steps for the study include a questionnaire survey and interviews, and secondary data for the spatial analysis. Moreover, the spatial data have been analyzed through geographic information system applications. This study identified major factors of the urban sprawl which generate socio-economic impacts such as 'monthly household income impacts the accommodation of the community, and unemployment causes robbery and illegal activities.' Moreover, the rapid growth of urban council outskirts causes an increase in land value unaffordability. It was stated by the urban council that the service industries, warehouses, and massive production factories have utilized most of the low-lying lands in the outskirt area at comparatively low prices. Hence, this rejuvenated urban growth. Further, the study found that some people who are living in urban fringes gain economic benefits due to the urban sprawl by providing accommodations to the migrants, and having more business opportunities and demand for goods. However, both the urban and outskirt dwellers face socio-economic and environment related problems due to the urban sprawl. Thus, national and local governments should step ahead and implement policies to overcome the issues of the community.

1. Introduction

Since the beginning of the industrial revolution, most countries have been facing a core problem due to rapid urbanization (Owoeye & Popoola, 2017). Intense urban growth ultimately leads the cities to grow further away from their boundaries resulting in urban sprawl. Even though urban territories are being expanded to mitigate the negative effects on the city population, rural communities face extreme consequences due to the unplanned urban sprawl. A similar concern was discussed by Valeria & Matthew (2005), who stated that one of the primary concerns of planners throughout much of the developed and developing world has been to manage the expansion of urban areas into the countryside in order to avoid negative consequences.

Urban expansion has considerable diversity in definition (Ewing 1997; Valeria & Matthew, 2005), and elaborations provided by various researchers. Sprawl is defined as a land use condition represented by low values on one or more land use pattern dimensions (Galster et al., 2000). Some scholars view the sprawl as an unintended consequence of a lifestyle in suburban houses and auto commute to work. Others believe it to be a waste of resources like air, energy, land, and water that is most importantly harmful to urban life, if not the economy and society (Kunstler 1993; Duany et al., 2000). Though there are diverse definitions given for urban sprawl, there is no concord on the definition of urban sprawl.

It is evident that the increase in built-up areas is due to urban expansion. Unguided expansions lead to undue encroachment into open areas at the fringes of urban (Owoeye & Popoola, 2017). There were inappropriate conversions in land uses (Habibi & Asadi, 2011; Barbara et al., 2014). Changes in the region's land use and land cover (LULC) are a direct result of sprawl (Sudhira & Ramachandra, 2007) as it hastens the growth of built-up and impervious areas (Antalyn & Weerasinghe, 2020).

Urban sprawl causes different types of problems in the socio economical aspect. By identifying the causing factors, there is a high potential to mitigate the impacts of urban sprawl. Therefore, this study tries to identify the factors affecting the socio-economic impacts of urban sprawl.

According to Antalyn & Weerasinghe (2020), urban sprawl is one of the most pressing issues confronting cities of Sri Lanka today. And, a good example of sprawl development can be found in the extensively urbanized western province, which is renowned as a prime South Asian urban hub (Western Region Megapolis Planning Project, 2017). Urbanization and urban growth mainly concentrate on the well-being of the human in the form of economy. Growing economic inequality among urban areas, where people are increasingly sorted into either powerful (sprawled) or wealthy (compact) regions, is based on their ability to meet the costs (Thomas, 2016). Urban planners consider urban expansion as a solution to the socio-economic and environment-related problems faced by urban dwellers. But, Valeria & Matthew (2005), pointed out that residents from the urban fringe and outskirt get affected more due to this uncontrolled urban expansion. Improper urban planning leads to multiple problems (Resnik, 2010; Bekele, 2005) for the community and the people who survive in it. As those affected by urban planning policies have competing interests and varying moral and political stances, smart growth has caused a great deal of controversy (Resnik, 2010). Both negative and positive consequences (Bhatta, 2010) can be encountered in urban sprawl. Positive phenomena lead to the well-being of the community and negative components would be threats to the socio-cultural and economic problems.

Habibi & Asadi (2011) stated that when expansion exceeds acceptable levels and puts pressure on municipal boundaries, serious new issues will arise in its outskirts. Hence,

the impacts of urban sprawl on the periphery cannot be avoided.

According to the preceding discussion, there is a wealth of research being conducted in various regions and nations by various authors, and by various institutions all over the world. However, there is a lack of research in Sri Lanka to investigate the factors causing the effects of urban sprawl. Lack of proper planning guidance has contributed to unexpected socio-economic and environmental problems in the *Wattala-Mabole* urban council (U.C.) area and the problems have been extended to its outskirt region as well. Land use changes and migration take place over time, resulting in a visually unpleasant environment and social issues. Furthermore, being unaware of the factors causing all of the socioeconomic problems aggravates the circumstances. Therefore, identifying and analyzing the root causes of the negative consequences could eliminate the cons of unfavorable situations.

According to Solecka et al., (2017), urban sprawl is a costly process of spreading urban phenomena into the hinterland, which is one of the most common spatial issues. Therefore, it is a pressure for the physical environment to behold the continuous dynamic process on the land and atmosphere. The social environment is unable to the rapid change of the development progress (Weilenmann, 2014), which causes the biggest socioeconomic issues for both urban and rural residents. According to (Laidley, 2016), millions of people left urbanized areas due to economic and social unrest in central cities, which was facilitated by a web of explicitly discriminatory, exclusive housing regulations. Antalyn & Weerasinghe (2020) stated that one of the main causes of urban sprawl is that people who leave the city center always find a suitable location nearby. Therefore, the peaceful residents of the marginal zones are experiencing both direct and indirect effects as a result of various factors, including increase in value of

properties (Jarah et al., 2019), urban explosion (Bai & Imura, 2000), unequal distribution of public amenities (Jarah et al., 2019; Fuseini & Kemp, 2016), etc.

This research was primarily performed to accomplish the following objectives since there is a gap in the literature in Sri Lanka related to the study aspect. Accordingly, the main objective of this study was to identify and analyze the different factors which generate the socio-economic impacts of the urban sprawl in *Wattala-Mabole* U.C. area and its adjacent areas. Other specific objectives were to examine the challenges and opportunities of urban sprawl in the U.C. and its surrounding areas.

2. Materials and Methods

2.1 Description of the Study Area

Wattala is the closely located commercial suburb of Colombo city. Due to the rapid growth of Colombo city, the surrounding cities are also getting impacted by overpopulation (Seevarethnam et al., 2021), commercialization, and rapid development (Antalyn & Weerasinghe, 2020). The *Wattala-Mabole* U.C. area was formed as a result of the intense urbanization of six Grama Niladhari (GN) divisions of the *Wattala* Divisional Secretariat (DS) division. The *Wattala-Mabole* U.C. area is urbanized and attracts many immigrants constantly due to its commercial facilities. The total population of the U.C. area is 30,459 (2020), and the total land extension is 9.842 sq. km. Thus, the density of the population of the area is 3094 people per square kilometer (2020).

Due to the high density of the population (Figure 1 depicts the population density of the U.C.), the U.C. area has an impact on the rapid urban sprawl to its outskirts. Not only the population density but also various other factors such as expensive land and accommodation, crowded settlements, rural to urban migration, urban to rural migration have caused it. Numerous socio-economic

effects such as mushrooming of shanty areas, congested road networks, solid waste problems, an increase in land value, competition in the job market, and more have been identified in the outskirt urban (Rural-Urban) areas because of the unplanned and uncontrolled encroachment of urban territory expansion.

Therefore, the *Wattala-Mabole* U.C. area and its surrounding outskirt areas were selected to expose the factors which cause the socio-economic impacts of urban sprawl. The chosen twenty GN divisions lie in 4 different DS divisions which are located in the western province, Gampaha, and Colombo districts. Only six GN divisions (Mabole,

Welikadamulla, *Wattala*, Ewariwatta, Galwetiya, and Thelangapatha) are included in *Wattala-Mabole* U.C. The adjacent areas of the U.C. area have mixed rural and urban characteristics and gradually developing their economy and infrastructure facilities. These areas are growing moderately with residential, commercial firms, and industrial functions. At the same time, there are A, AB, and B grade road networks in the study area. Hence, the transportation infrastructure is in good shape. The outskirt DS divisions are more populated than the U.C. area (Divisional Secretariat, 2018 & 2019). Figure 2 depicts the study area's locational details and its demographic features.
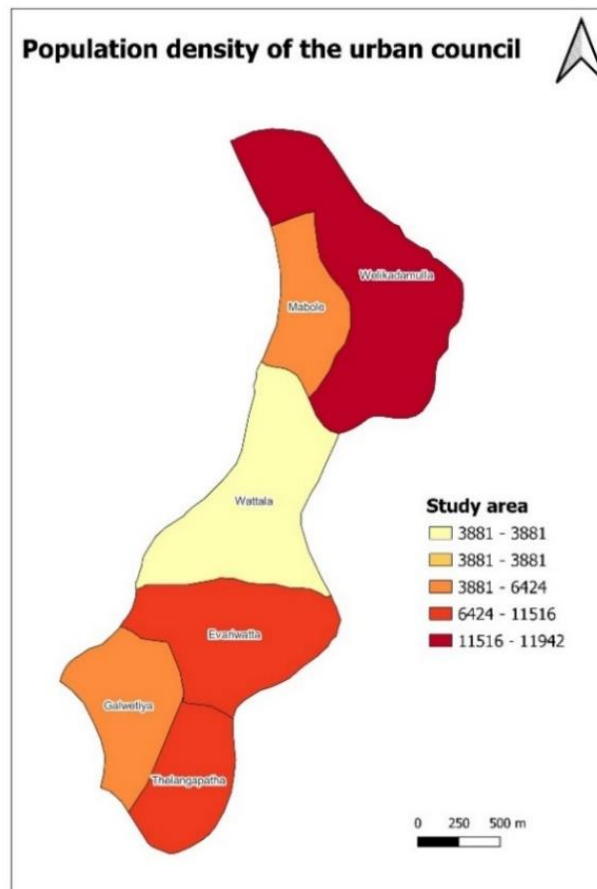
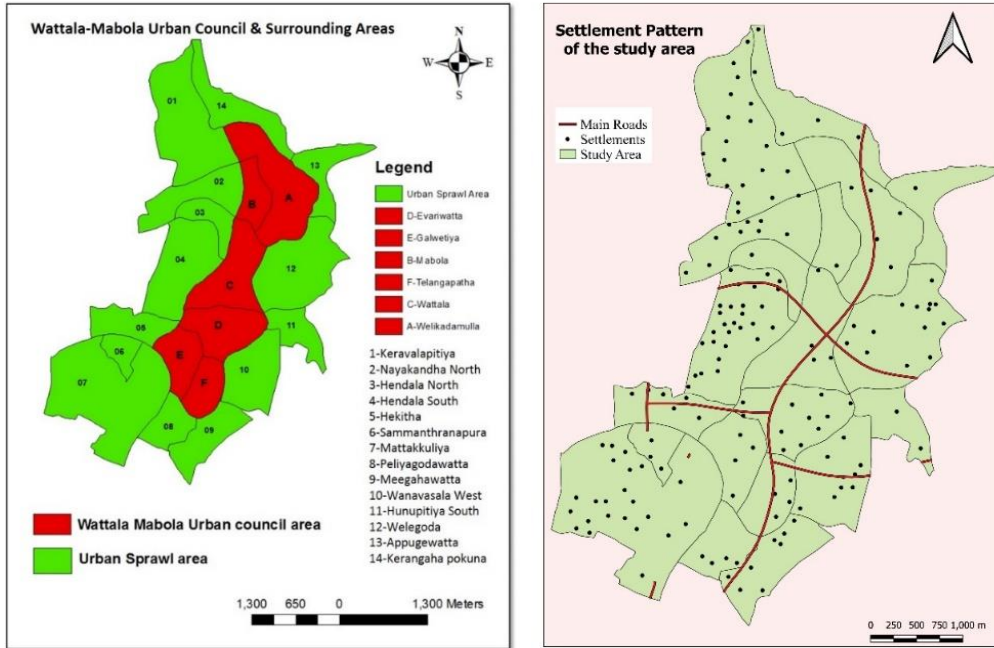**Figure 1.** Study location and Socio-demographic features

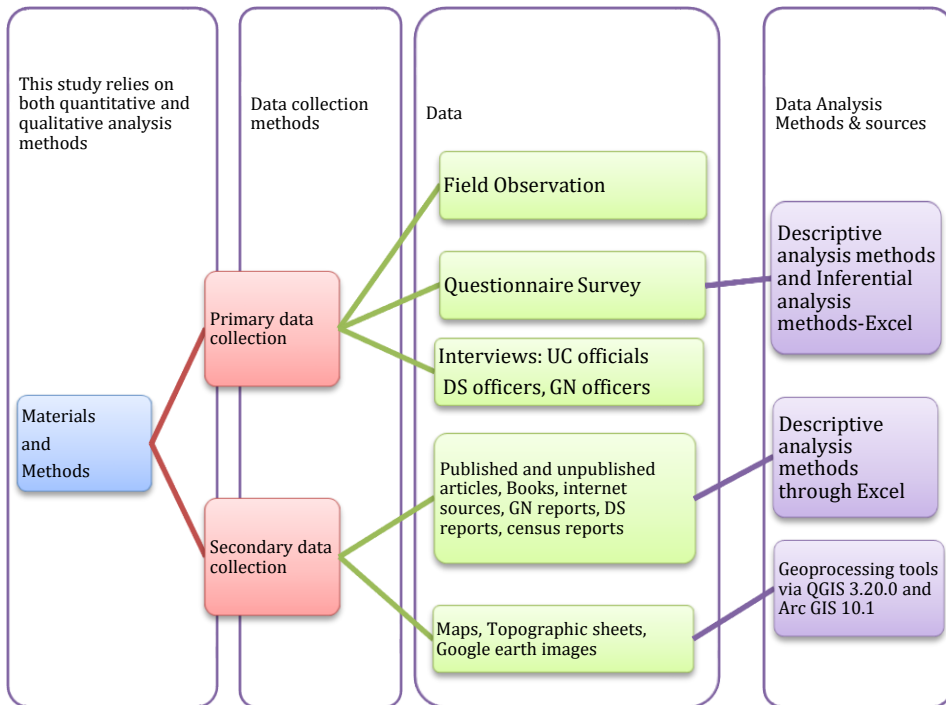**Figure 2.** Study location and Socio-demographic features


Figure 3. Methodology flow chart

2.2 Data Collection and the Source of Data

The study was based on both empirical primary data and secondary data. A structured questionnaire, focus group discussions and, observations methods were used to obtain primary data. The secondary data was collected in accordance with the theme of the study. For the spatial data analysis, topographic sheets were purchased from the Survey Department, Colombo. Further, digital maps and shape files related to the study area were obtained from trusted internet sources. Attribute data and statistics reports were gathered from trusted government websites. Both qualitative and quantitative analysis methods were used for the study to obtain the required results. Figure 3 explains the methodology used for the study in a compact mode.

With regard to the data collection methods, photos from field observation, statements from the officials and informal interviews with residents were used for qualitative analysis. Statistical data from field survey, and secondary sources such as government reports, census reports and, *sampath pethikada* (Divisional Secretariat annual report) were utilized to produce charts, graphs, and tables through the descriptive statistics method. Spatial information such as boundary maps, population density maps of the U.C., and, the distribution pattern of the settlement map of the study area have been produced from the QGIS and Arc GIS applications through geoprocessing tools.

The systematic stratified random sampling method was chosen under the probability sampling method to select the respective respondents for the questionnaire survey. For the interview, critical case sampling was chosen as the pivotal demonstration of the specific phenomenon. Based on this method, eleven selected official members were chosen for the interview. Questionnaires were delivered to selected respondents in the specified adjacent areas of the *Wattala-Mabole* U.C. and in the areas demarcated by the U.C. based on population size. The basic scale is one questionnaire to thousand people (1:1000). One person per household is strictly considered and the houses were chosen randomly. Therefore, 120 questionnaires were distributed to 122,645 total population. Figure 4 delineates the sample distribution.
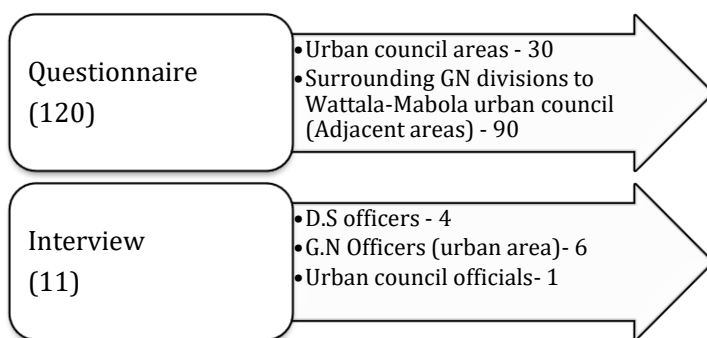
Figure 4. Distribution of the sample

Accordingly, the selected sample for the questionnaire was distributed among the thirty participants from the U.C. area and ninety samples were distributed among the participants from the adjacent area. With the critical case sampling eleven officers were chosen. Among them, four of them were divisional secretaries, six Grama Niladhari officers, and an U.C. officer.

2.3 Data processing and Analysis

Spatial data were analyzed through Arc GIS 10.1 and QGIS 3.20 to produce maps. Topographic sheets were used to visualize the study area's settlement patterns, and Google Earth images were used to ensure spatial changes. Non-spatial data were analyzed to obtain statistical information via Excel spreadsheet software. Quantitatively analyzed data were used to generate statistical information through graphs, charts, models and, diagrams. Simple statistical techniques used such as correlation. Non-Parametric data were assessed by using chi-Square independence testing.

3. Results and Discussion

The expected results were discussed through a few sub sections; socio demographic and economic profile of the respondents, identified factors causing the socio-economic impacts, issues generated through urban sprawl, impact of urban sprawl in the living standard of the respondents.

This study used a variety of data sources to identify the factors that contribute to the socioeconomic effects of urban sprawl in the study area. These factors have an impact on land use and landscape change on the rural – urban nexus and affect its formation (Dadras et al., 2014). One of the initial steps in this research was to expose the factors which lead to the socio-economic effects. Therefore, survey participants' demographic data were gathered.

3.1 Socio-Economic and Demographic Profile of the Survey Respondents

According to the plot observation, there are numerous companies and factories on their process of work. But the study area combines mixed urban and rural features from one corner to the other. At the same time, some of the residents of the study area are engaged in agricultural activities such as paddy cultivation, home gardening, and fishery while the rest are doing administrative jobs, business and working in private companies. The following Table 1 represents the demographic and socio-economic state of the people from the study area.

Table 1. Demographic and Socio-Economic information of the survey respondents

Variables	Urban council Region (%)	Adjacent Region (%)
Income		
Low **(>50000)**	57	51
Middle **(50000 -200000)**	20	39
High **(>200000)**	23	10
Education		
Primary	10	26
Secondary	60	52
Graduate	27	21
Post Graduate	3	1
Employment		
Government	10	8
Semi government	0	1
Private	57	59
Entrepreneur/business	17	19
Home maker	10	9

Jobless	**7**	**4**
Residential status		
Own House	**40**	**30**
Rental House	**40**	**58**
Board in	**20**	**12**
Mode of Transport		
Car	**19**	**14**
Bike/Scooter	**25**	**17**
Three wheel	**06**	**03**
Other (Van, Lorry, bus)	**16**	**08**
No Vehicle	**34**	**58**
Migration		
Migrated	**57**	**62**
Not Migrated	**43**	**38**

According to the data depicted in Table 1, 57 percent of the total respondents earn a low income. At the same time, respondents from the U.C. area have higher incomes than respondents from the surrounding area. Since the population amount is high in the fringe, majority of the population engaged in mere wages jobs. But 23 percent of the residents from the U.C. area earn a high income, which demonstrates the modern urbanism supported by the socio-economic status of residents (Jarah et al., 2019; Song et al., 2017).

The respondents in both areas appear to have the same level of education. For example, both areas have more people who have completed their secondary education. Surprisingly, there is no significant difference in employment in both areas. According to Valeria & Matthew (2005), this is because the neighboring regions have similar characteristics and job opportunities. 58 percent of respondents in the adjacent area and 40 percent of respondents in the U.C. area reported living in rental houses, respectively. Therefore, as Solecka et al., (2017) found in their research, this is due to the costly land value that rural people couldn't afford a land area. People who own houses and who live in rental places are equal. It might be because of the high land values in the U.C. area. According to Seevarethnam et al. (2021), the lack of space in the city center for new house construction has been limited to people who earn a low income. As they pointed out, a comparable backdrop has been discovered in the research area as well. Residents in this research area are essentially unable to purchase houses or plots of land due to the quick and continual growth in land value. They stay on a rental basis as an alternative act.

Another major factor of the urban sprawl impact is the migration. Bai & Imura (2000) pointed that migration of the village population into the city areas could be resulted in the growth of shanty areas with small houses with limited access to water or sanitation. The study area has a higher proportion of migrants than natives. Overall, 61 percent are migrants from various locations around Sri Lanka.

Especially, the urban outskirt area has more migrants than the urban center. Several researches on the causes of urban sprawl have shown that the availability of affordable housing (Jarah et al., 2019), population and economic growth (Habibi & Asadi, 2011), and low land prices (Valeria & Matthew, 2005; Habibi & Asadi, 2011) are the most crucial elements. People from rural villages are being pulled towards the urban for their opportunities, but they cannot afford to live in the expensive environment.

Therefore, they move towards urban fringe and adjacent areas in favor of their affordability. An excessive amount of population movement towards urban outskirts causes overpopulation and slum development. Table 3 depicts the settlement structure of the study area, and there are no slums in the developed U.C. area; however, 8 percent of the shanty houses were reported in the adjacent area.

Another important factor is the transportation facilities. In comparison to the U.C. area, mobility appears to be very poor in the surrounding area. 58 percent of the people in the surrounding area do not own any vehicle and they use public transport. Even Habibi & Asadi, (2011) have shown in their study that transportation amenities like private automobile ownership, low commute costs, improved transit systems, and the availability of roads are beneficial factors for urban sprawl and the majority of people in outer suburbs do not have their own personal vehicles. But the transport system is improvised, and it is an advantage for the people who live in the outskirt to reach their destinations in a short period of time. A similar aspect has been identified by Habibi & Asadi, (2011) and Barbara et al., (2014).

3.2 Identified Factors Causing Socio-Economic Impacts

The Chi-Square Independence Test through contingency table was used to identify if the income and residential status are related for all people in the study area. Therefore, the collected data from n=120 respondents are shown in Table 2.

Table 2. Status of accommodation by income of the population

Variables	<25,000	25,000-50,000	50,000-100,000	100,000-200,000	>200,000	Total
Rental	4	37	20	2	1	**64**
Own	1	7	10	6	15	**39**
Board In	2	12	3	0	0	**17**
Total	**7**	**56**	**33**	**8**	**16**	**120**

Generally, there are three main types of accommodations which were identified in the study area through the field survey. Moreover, people with low, middle and high monthly income were also identified. Therefore, H_0 (Null hypothesis) and H_1 (Alternative hypothesis) were made to find out the relatability of the family income and their status of residence.

H_0: Both income and the residential status of the respondents are independent

H_1: Both income and the residential status of the respondents are dependent

Based on the data shown in table 2 to relate to the status of accommodation by income of the population, the following equation was used. Accordingly, the calculation is shown in Table 3.

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

In accordance to the "Goodnes-of-fit test" (As indicated in Table 3), Chi square value is 46.57. According to the level of significance (α: 0.05), critical value was found as 15.507. By that, ultimately the hypothesis testing skew was drawn as shown in Figure 5 to conclude the result.

As denoted by the Figure 5, an association between status of accommodation and

income of the population was observed as χ^2 = 46.57, p = 15.507. According to the 95 percent confidence, the null hypothesis is rejected. Therefore, the status of accommodation and income of the population are dependent.

Table 3. Chi square value after the calculation (χ^2 = 46.57) (α: 0.05)

(O-E)²/E table	Less than 25,000	25,000 To 50,000	50,000 To 100,000	100,000 To 200,000	Above 200,000	Total
Rental	0.0	1.7	0.3	1.2	5.6	**8.9**
Own	0.7	6.9	0.0	4.4	18.5	**30.6**
Board In	1.0	2.1	0.6	1.1	2.3	**7.1**
	1.8	**10.7**	**1.0**	**6.8**	**26.4**	**46.57**
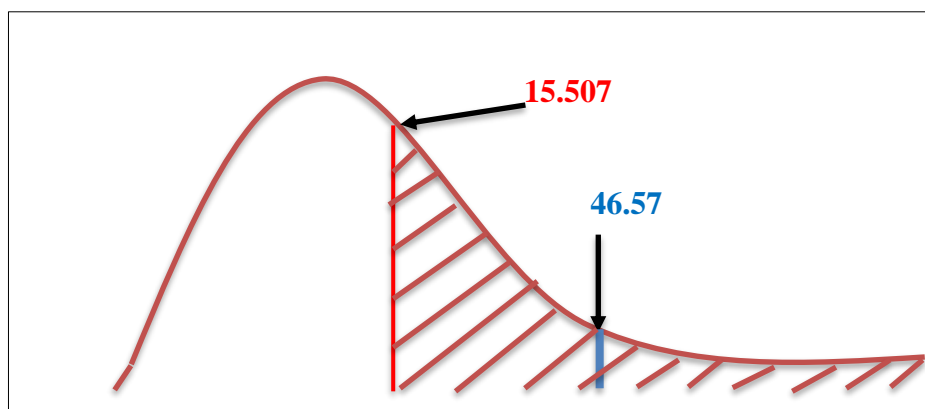
Figure 5. Hypothesis testing skew

According to the Chi-Square Independence test results, it is proven that the population's housing status and income are related for all people in the study area. People with high incomes can afford to buy their own residence, whereas people with low incomes live in rental and shanty houses. Most importantly, respondents in the surrounding area live in a high number of rental homes. This is due to a large number of migrants. A similar aspect was discussed by Downs (1999). According to their opinion, low-income immigrant households will begin to overcrowd and create more slum areas in the older suburban region because of the high housing costs and unaffordability.

The high price rates of houses and lands in the study area impact the settlement structure (Wilson, 2013) as well. According to the questionnaire survey, residents who live in developed U.C. areas have more difficulty in purchasing separated houses due to their high price rates. But 21 percent of the U.C. respondents live in separated houses. That is because most of the residents who live in the U.C. area have high incomes (Table 1). Residents, who could not afford such comfortable housing, move to the outskirts (Downs, 1999). Therefore, the settlement structure in the surrounding areas is more dispersed with 34 percent of separated houses (Table 3).

Obviously, there are advantageous of urban sprawl (Anthony, 1999; Katz, 2002; Bekele, 2005). The benefits can be in economic (Ghaffar, 2007; Bhalli et al., 2012), social or

any other forms such as; more private open space, less expensive housing on outlying land, shorter commute times for people working and living in outskirt areas and etc. (Anthony, 1999).

The respondents were asked whether they receive any economic benefits from the development process. For example, a salesman could benefit from increased sales due to the large public interest in that area. As well as, landlords could have received more renters and individuals for boarding due to the high number of immigrants and expensive land prices. Figure 6 depicts the responses given by the questionnaire respondents.

Table 3. Percentage distribution of settlement structure of the study area

	Separated House (%)	Conjoined House (%)	Shanty Houses (%)	Total (%)
Urban council area	21	4	0	**25**
Adjacent areas	34	33	8	**75**
Total (%)	**55**	**37**	**8**	**100**

Source: Field Survey, 2022
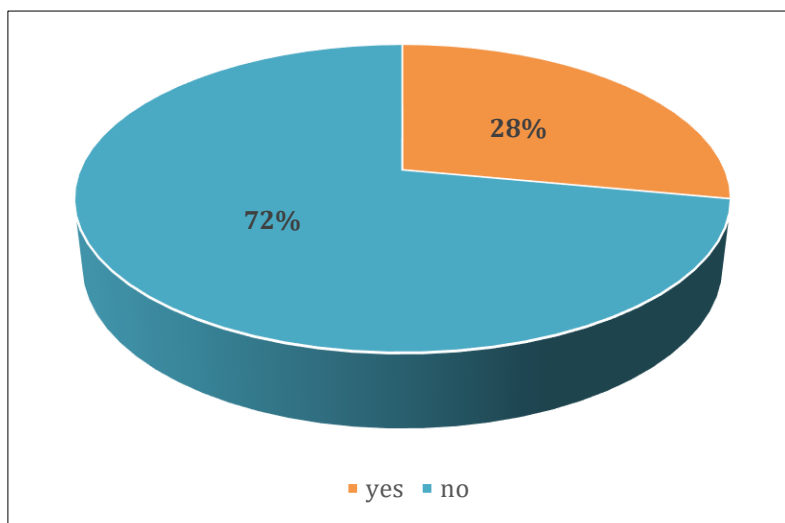
Figure 6. Economic benefits received by respondents in the study area

Only a few of the respondents (28%) said that they received economic benefits from development activities, and the majority said they did not receive any economic benefits. They also stated that migrant youth from the rural areas received more economic benefits since they are engaged in the majority of construction works and get job opportunities in the study area. People who answered 'yes' were doing business, working on construction projects, working as room boys at hotels, shop securities, laborers, sales managers and raps, and landlords.

As the key informant-one highlighted:

Because of increased urbanization, development activity, and population density, I could sell more items and earn more profits. Running a business in this area is really beneficial to me.

Similarly, the key informant-two revealed how she benefited from urban expansion.

Having a lot of borders is a wonderful thing for me. I manage a boarding house and also provide food for them. I have a two-story building solely dedicated to boarding females. Initially, just a few females were boarded, but as time passed, the number of girls increased, and I was able to claim a higher boarding fees.

She further said that there were garment manufacturers near her house, which is one of the main reasons for the boarders to stay there. She even said that in the previous two years, she had lost a few borders because of the Covid-19 outbreak and Sri Lanka's economic crisis. Due to high living costs in urban and adjacent areas, migrant workers who engage in mere wages jobs could not live in the city.

Constant migration is another factor (Dadras et al., 2014) that causes the social impacts of urban sprawl. The study area has many migrated people (Table 1) from different parts of the country. The extent of urbanization may be revealed by the respondents' duration of residency in the research area.

Table 4. Percentage distribution of respondent's duration of residency at the study area

Duration of residency	Urban (%)	Adjacent (%)	Total (%)
Less than 5	7	21	**18**
5 to 15	40	32	**34**
More than 15	53	47	**48**

Source: Field Survey, 2022

According to the respondents' year of stay, the majority have been in the area for more than 15 years. Simultaneously, there are more immigrants in the study area (Migrated:

61% and Native 39%) from the other part of Sri Lanka, especially from the rural areas. People frequently migrate to urbanizing areas and its surrounding areas such as *Wattala*, because of the career prospects, educational options, health services, and the comfortable lifestyle (Seevarethnam et al., 2021).

At the same time, Deal & Schunk (2004) stated that the primary driver of suburban growth was the emigration of the middle class from high-density metropolitan regions with clogging and contamination (such as Colombo) to low-density outskirt areas with a better environment and living standard (such as *Wattala* and Surrounding areas). More than 15 years ago, people were drawn to the *Wattala* area (DS report, *Wattala*). Now the area has become one of the famous residential places with increased population density (Nishanthi & Kaleel, 2021).

In addition to the factors mentioned above, age has also been known to simulate a role in determining the spatial pattern of the development (Barbara et al., 2014). Younger families, in particular, encourage sprawl and patterns by seeking out affordable housing options on the urban fringe (Zhang, 2001). Above Figure 7 depicts the age differences of the people from the study area.

According to the graph shown above, the working population has a greater desire to settle in urban and outskirt areas than the elderly population. A similar statement which was made by Barbara et al., (2014) states that changing social patterns (single households, age) have equally caused urban sprawl.

According to an informal interview with respondents, the majority of them said that they were forced to migrate to the study area for several reasons such as lack of job opportunities, marriages, seeking better living conditions, education, etc.
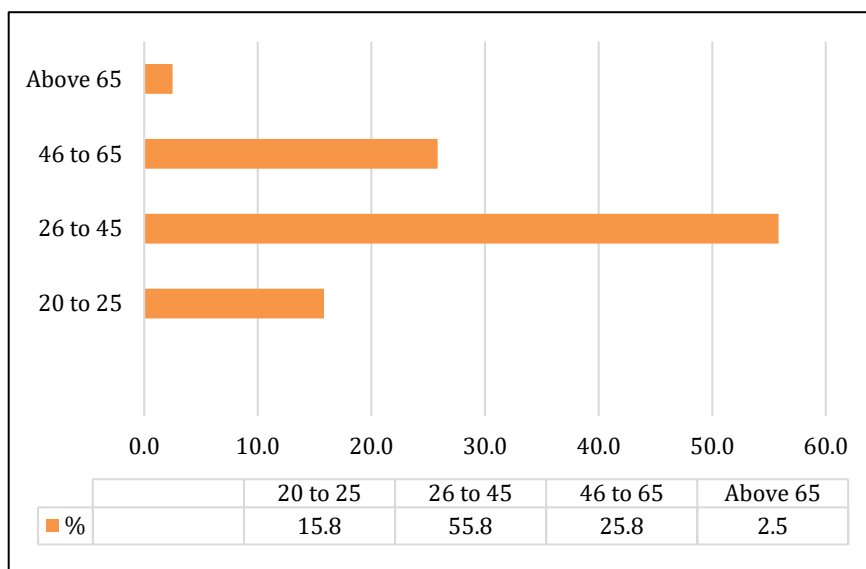
Figure 7. Respondents' age in the study area

3.3 The Issues generated through urban sprawl

Wattala is located close to Colombo, the nation's capital and most populous city. Therefore, development activities and rapid building construction are widespread throughout Colombo's neighboring suburbs such as *Wattala*. A similar aspect was discussed in the study of Jagoda (2010) and Antalyn & Weerasinghe (2020). They mentioned similar situations such as removing the shanty areas in the urban and building those housing complexes in the outskirt of the urban. As a result, rapid urbanization and urban sprawl take place in the near region of the urbanized city.

Non-living environment and the living organisms of the cities highly get affected by the urbanization (Dadras et al., 2014). Not only the environment but also social and economic issues are there with the urban sprawl. Anthony (1999) stated that the most important social problems presently being connected with the sprawl issue arise from the concentration of the poor. Low-income

earning people struggle to thrive in between economic and environmental problems in the sprawled region. Bekele (2005) also encountered ultimate issues of urban sprawl with population and land use. Several studies have been conducted to address the issues of urban sprawl.

3.4 Changes in the environment

Similarly, the study area also got affected with negative consequences on its environment due to the urban expansion. A few study participants described those issues and associated tensions as follows; changes in the environment, loss of the aesthetic beauty, flooding due to the wet land filling, land price evaluated, heavy traffic congestion, complexity of the life style of the people, loss of vegetation cover, inundation of road and settlement due to development, sound pollution and unclean air, and robbery and unsafe environment.

Most of these issues were exposed by the people who live in the adjacent area of the *Wattala-Mabole* U.C. The major problem is

that the aesthetic beauty of the adjacent areas is disrupted by visual pollution. Some primary sources of the visual pollution of the urban outskirt are; unorganized vehicle parking lots, street vendors, tangled utility lines, haze due to dust in the air, overcrowding and excessive advertising posters, garbage dumping, etc.

People with modest incomes typically find housing that is affordable. As a result, the so-called "Watta" and shanty settlements continue to grow on the outskirts of cities. The key informant-three said:

Near the water cannels, several temporary huts and tiny dwellings have been constructed. The cannel won't have running water during the dry weather. However, during the rainy season, there is enough water to flood the houses next to the cannel. These people are not originally in our area they have moved here from Colombo and other villages.

Figure 8. Unplanned settlements near a canal (Source: Field observation, 2022)

And other serious problems faced by the residents are traffic congestion, noise pollution and unclean air. The key informant-four from the outskirt of the U.C. explained how they struggled through the transportation issue since their house is next to the main road.

As our house is next to the main road, we face serious difficulties with the noise. The horn sounds, pedestrian's noises, street vendor's shootings, etc. At the same time, the road also not in a good condition. There are so many potholes, so the way is always congested. Every day we need to clean and vacuum our house due to the extra dust in the air. It is so stressing sometimes.

It was clear that most of the problems are with rapid urban sprawl and unlimited vehicle access on the road but, there are no proper urban planning or maintenance. Residents from adjacent areas confront substantial challenges because of unplanned urbanization and urban expansion. The same aspect was discussed by Rahman (2016) and Owoeye & Popoola (2017): they stated that the rapid unplanned urban sprawl exceeding its maximum threshold limit creates chaos and deteriorates the quality of city transportation and utility services.

Further, a few residents from the outskirt area disclosed that they feel unsafe around some neighbors who recently moved to their street. The key informant-five mentioned;

There are so many drug addicted people roaming in our community and we are being robbed once in a while. Previously, it was not

like this and there are were no such incidents happened. Nowadays, there are plenty of youngsters in our area seeking for jobs and doing drugs. Most of them are not from our community.

This statement from the study participant was quiet similar to the respondents from the U.C. area. They said that they also lost their properties more often due to the continuous robbery. The developed urban region had this unsafe environment from the beginning and now the sprawled area also facing similar circumstances.

The empirical evidences confirm that the urban expansion to adjacent areas caused significant circumstances in people's lives. Life is economically unstable, and living conditions are also very poor. People living in conjoined houses, such as flats, face a variety of social issues in their community, including robbery, conflicts, filth, noise pollution, and contagious diseases. Despite the fact that sprawl is an unsustainable form of growth, people prefer to live in larger lots in suburban communities.

3.5 Impact of Urban Sprawl on The Living Standard of Local Communities

The infrastructure of major urban areas, outskirts, and small towns eventually shapes the socio-economic and environmental conditions of their communities. People who live in the U.C. area have a well standard of living with a high income while the people from the outskirts often find it challenging to sustain due to the high values of commodities. Most of the studies indicate that sprawl tends to occur on the outskirts of urban centers where property values are lower (Brody, 2013). But actually, the sprawled area has the same high value for goods as the urban area. Indeed, that is what makes the urban sprawl even wider (Clawson, 2014).

According to the field survey with the government officials, multiple socio-economic impacts of urban sprawled were exposed regarding the local community of the U.C. One of the Grama Niladhari officers from the U.C. area explained that:

There are a lot of people coming from countryside and other cities. Some are visiting temporarily, while others are staying permanently. Such people frequently come to me for registrations. At the same time, those who have lived here for a long period are constantly leaving for the outskirts and rural regions. They provide numerous explanations, but the major one is a low salary and an expensive lifestyle.

In accordance with the officer's statement, it is apparent that people who earn a low income in the urbanized area face more economic challenges despite their modest living conditions. And he further stated that, the people who own houses and have white collar or highly payable jobs sustain with high standards of living.

People who have been living on the outskirts of cities for long periods face financial difficulties because of urban sprawl. Increased prices for goods and land, increased demand for area locations, and competition for job opportunities place the residents of urban outskirts at risk. The key informant-five said:

It is indeed so good to see the development of our area due to the migrants. But, nowadays the land prices and shop rentals are too high that we cannot afford them. There are so many migrant people who own a lot of places here and even doing business. They are rich and they can afford but we are helpless and getting pulled down by that.

The locals view the economic growth of the migrant population as a negative effect for their development. At the same time, a few of the locals get benefit economically. For an example, they earn money by providing lodging to immigrant workers. Therefore, currently the land use of the study area has more proportion of residential.

Due to the rapid movement of population, the sprawled areas could receive infrastructure development and much consideration from the authorities. At the same time, the natural beauty of the area is steadily fading due to increased human invasion and construction operations. The urban expansion has more negative effects than positive due to its unplanned and uncoordinated growth. As Bhatta (2010) stated that the outcomes or impact of urban expansion, whether negative or positive, must be understood and analyzed in order to achieve sustainable urban growth.

Sprawl is commonly defined as low-density, haphazard development radiating from urban centers (Burchell et al., 1998). Many scholars and experts predicted that urban sprawl has many negative effects such as habitat fragmentation, water and air pollution, increased infrastructure costs, inequality, and social homogeneity (Ewing 1997; Squires 2002). Exploring the emergence, effects, and policy ramifications of sprawl can help us develop long-term strategies for creating more sustainable communities.

4. Conclusion and Recommendation

Although the characteristics and patterns of urban sprawl are similar in both the developed and developing countries, the factors which cause the impacts are different in developing countries, particularly in terms of the socio-economic environment of cities. This study identified the existing factors which cause the socio-economic impacts, and the challenges that urban and sub-urban dwellers face, along with the opportunities that they perceive through urban sprawl. Through the field visits and informal discussions with the residents, the possible as well as the noticeable socio-economic impacts have been identified. The ongoing development activities have been noticed in and around the *Wattala*–Mabole Urban Council (UC). Moreover, it was comprehended that the development activities caused multiple environmental

related problems. Prior to the field visits and informal discussions, solid waste, drainage and dengue health issues were encountered due to the dynamic development process. Public settlements and commercial constructions are in the process beyond the border of U.C. Therefore, greenery and aesthetic beauty of this area are also getting disrupted.

The income of the people in the study area determines their standards of living and the status of their households. People who have high incomes live in their own houses, whereas those with low incomes live in rental homes. Since the majority of the people are immigrants and from different areas, they are facing economic instability. People who work in the private sectors are higher in number than the people in government sectors. People who provide accommodations to the migrant workers and family gain economic benefits in both the urban and outskirt areas. Furthermore, the majority of the community has been in the area for more than 15 years. Simultaneously, there are more immigrants in the study area. Working young community is higher in the area which makes the region an active place for commercial activity.

Places near to the water bodies often face the flood disaster during rainy seasons. Improper housing designs and people's encroachments towards the abandoned areas resulted in flooding and other social issues. People from the U.C. area frequently relocate to the outskirts for better living environment and calm lifestyle. Furthermore, immigrants from various locations find affordable and livable housing in the adjacent areas of the *Wattala-Mabole* U.C. area, resulting in the outward expansion of the urban area. There are positive and negative results of urban expansion. Negative effects of sprawl must be balanced against the widely held belief that this type of development pattern provides relatively affordable housing opportunities and a supposedly higher quality of life.

The majority of the problems occur in low-income communities. People who live in shanty towns and are often referred to as *"Watta"* need to be educated about economic stability. The central government and local governments should address their concerns and offer long-term solutions. Some urban outskirt areas are less secure with crimes and infractions. Therefore, the national security of these areas should be taken into consideration, as all people have the right to live in a safe environment. Primarily, unemployment leads to robbery and illegal activities. As a result, providing jobs and introducing them to rehabilitation centers could help alleviate the problem.

Age has also been considered an important factor in determining rapid movements towards the urban outskirts. Young people who can afford high-paid jobs and have personal transport sources prefer to live in dispersed areas. Therefore, providing livable environment in the urbanized areas could mitigate the movement of young people towards the urban outskirts.

 The rapid urban fringe population growth has resulted in traffic congestion, pollution, a noisy environment, and a distressing situation. Sustainable urban growth and urbanization may be the best solution to all urban sprawl problems. Mainly, the government authorities can take the charge to implement planning policies (Mortoja et al., 2022; Barbara et al., 2014; Wissen 2010; Jaeger et al., 2010b). By limiting building permits, subdivision regulation, zoning provisions, and limiting the urban growth boundary could reduce the direct growth of unplanned urbanization and urban sprawl in undesirable areas.

Since this study considered only the *Wattala-Mabole* U.C. area, it is recommended to consider other areas in Sri Lanka where urban sprawl is being a considerable factor for the socio-economic challenges. If the direct and indirect socio-economic impacts are carefully evaluated and examined, positive benefits may be maximized, and a healthy and sustainable urban expansion can be built.

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