

HOUSEHOLDS PERCEPTION ON SOCIAL IMPACTS OF URBAN SPRAWL IN ADIGRAT CITY, TIGRAY, ETHIOPIA

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Received: February 02, 2019

Accepted: March 23, 2019

ABSTRACT: *The aim of this paper is to study the Adigrat city household's perception about the impact of urban sprawl on social life according to the age, gender, educational status and monthly income of the respondents. The result indicates that the respondents were concerned about urban sprawl effect on the social life of the study area. However, there were differences among gender composition, male respondents have more awareness on the social impacts of urban sprawl in the study area in comparison to their female counterparts, while irrespective of age differences all the respondents have an agreement on social impacts of urban sprawl. Respondents who earn more, diploma and degree and above holder have more awareness concerning the social impact of urban sprawl.*

Key Words: *urban sprawl, social life, households.*

1. INTRODUCTION

Urban sprawl has a different nature and character; therefore there is no general agreement about the exact or universally accepted definition about of urban sprawl (Wilson et al., 2003). Sprawl is the process of development land use pattern of change over time at the periphery (Galster et al., 2001). Urban sprawl, also called sprawl or suburban sprawl, the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation (Rafferty, 2009). According EEA, (2006) urban sprawl is the physical pattern of low-density expansion of large urban areas, under market conditions, mainly into the surrounding agricultural areas. Sprawl is the leading edge of urban growth and implies little planning control of land subdivision. The concept and cause of urban sprawl vary according to the development level of countries or according to the structure of society. Urban sprawls are transition zones with indefinite borders between rural and urban areas caused by population increase, socio-economic factors, technological development and development policies (Karakayaci, 2016). EEA, (2006) indicates that socio-economic, demographic, political, geophysical technological and regulatory frameworks are among the driving factors of urban sprawl. The expansion of sprawl area to periphery caused by lifestyle changes, cultural views, increase of mobility, house price in city centers, poor air quality, noise, small apartments, unsafe environments, lack of green areas, competition among municipalities, development of transport network and social problems (Pereira, 2016).

Among the social effects of urban sprawl is an increase in the time spent travelling between homes, places of work and places, loss of agricultural land leads to reduction of crop and sprawled area depends on imported food, social segregation among the groups of populations of sprawl regions, potential increase of crime, displacement of less affluent people away from the core city due to high residential price (EEA, 2006). This uncontrolled and unplanned growth is defined as urban sprawl that is the result of urban growth. This uncontrolled and unplanned growth has a negative impact on infrastructure services, basic facilities such as health and education (Sudhira and Ramachandra, 2007).

Urban sprawl results socio-cultural change along the west suburb-Malang such as the new residents contributed to social and cultural heterogeneity (Wagistina, 2016). Urban sprawl has both positive and negative effects on the areas of expansion and their peoples. The positive effects are that it contributes to improvements in the economy of farmers in the invaded areas, changes their way of life to an urban style, and the negative effects lead the indigenous peoples to displace from their origin village and expose to socio-economic problem (Kassa, 2014).

Recently Adigrat is expanding fast to its surrounding rural wereda. This fast uncontrolled expansion results sprawl area along the periphery area. From 2006 and 2018 the administrative boundary of Adigrat city grew by 13.57 per cent annually. However the residents have little knowledge on the social impacts of urban

sprawl in Adigrat city. The aim of this paper is to understand households' views about social impacts, urban sprawl of Adigrat city.

2. METHODOLOGY

2.1. BACKGROUND OF STUDY AREA

Adigrat city is located in northern Ethiopia, in the Tigray National, Regional State, Eastern Tigray Zone at a Distance 894 Kms from Addis Ababa and 114 Kms from Mekelle, the regional capital. It is bounded with Tibia's of Woreda Gantafeshum Tabia Beati-Maymesanu in the North, Tabia Bukot in the west, Tabia Sasun in the south, Tabia Gola-Genahiti in the East. Adigrat is located geographically 14^o 20' North Latitude and 39^o 29' East Longitude (MUDC, 2016). The total area of Adigrat city is 1877.24 hectares (Adigrat Municipal Office, 2018). The current total population of Adigrat city is 90,658 (Adigrat Plan and Finance Office, 2018). The city is an administrative capital of the Eastern Tigray Zone and also the capital of Gantafeshum wereda. The city of Adigrat located at the crossroads of Mekelle-Adigrat-Zalambessa and Mekelle-Adigrat Adwa-Axum highway. Physiographical it is situated at the eastern foot of the Adigrat Ridge that forms a triple watershed dividing among the Tekeze to the South, Mereb- Gash to the North and the Danakil to the East (FUPI, 2006).

The city has moderate temperature the with annual average between 15^o C and 20^o C that makes human settlement comfortable and its mean annual rainfall is about 659.4 mm (FUPI, 2006).

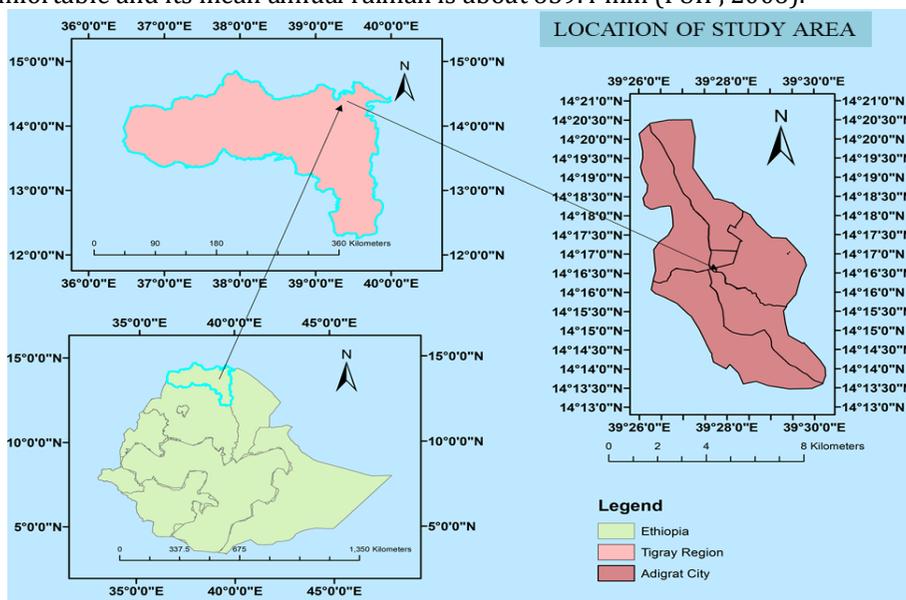


Figure 1. Location of the Study Area

Source: GIS Lab, (2018)

This survey was conducted among the Adigrat city population from different social and economic conditions. A total of 367 households was selected using simple random sampling techniques from different kebeles and asked to rate from 1 to 5 according to the importance of the question (1=very low; 2=low; 3=medium; 4=high and 5=very high).

A one-way ANOVA and Independent Sample t-Test were carried out to assess the perception of households towards the social impact of urban sprawl based on gender composition, age difference, educational status and monthly income. Significant differences were considered at p<0.05. If significant differences were identified, a Tukey HSD posthoc test was applied in order to observe differences within groups.

3. RESULTS AND DISCUSSIONS

Table 1. Social impacts of Urban Sprawl in Adigrat City

Item	Response	Frequency	Percent	Mean	Item	Frequency	Percent	Mean
Exacerbation of Social and Economic Division	Very low	29	7.9	3.45	Weakened Sense of Community	42	11.4	3.05
	Low	44	12			64	17.4	
	Average	112	30.5			129	35.1	

	High	97	26.4			97	26.4	
	Very high	85	23.2			35	9.5	
	Total	367	100			367	100	
Segregation of Residential Areas	Very low	23	6.3	3.55	Urbanization of the Countryside with Increasing Non Agrarian Activity	47	12.8	3.03
	Low	50	13.6			76	20.7	
	Average	77	21			104	28.3	
	High	136	37.1			99	27	
	Very high	81	22.1			41	11.2	
	Total	367	100			367	100	
Concentration of Poor Neighbourhood in the Inner City	Very low	51	13.9	3.09	Changing Social Value in Peri-Urban Areas	22	6	3.34
	Low	56	15.3			53	14.4	
	Average	124	33.8			127	34.6	
	High	82	22.3			109	29.7	
	Very high	54	14.7			56	15.3	
	Total	367	100			367	100	
Social or Cultural Conflict between the New and the Old Residents	Very low	74	20.2	2.88	Displacement of farmers from peripheral area	35	9.5	3.65
	Low	73	19.9			36	9.8	
	Average	93	25.3			73	19.9	
	High	76	20.7			102	27.8	
	Very high	51	13.9			121	33.0	
	Total	367	100			367	100.0	

Source: Field Survey, (2018)

The households response concerning the social impact of urban sprawl on the social and economic division of people shows that only 19.90 percent (one-fourth) of the respondents observed very low to low impact of urban sprawl on the social and economic division of people while 81.10 percent respondents said that there is an average to very high impact of urban sprawl on the Adigrat city. In relation to segregation of residential areas are the major impacts of urban sprawl as almost 59 per cent of the residents believe that there is a high to very high impact while only 19.80 percent have the opinion that urban sprawl has low to very low.

The results indicate that around one-third (29.20 percent) of the respondents believe low to very low impact of urban sprawl on the concentration of poor's in the inner city while slightly more than one-third of the respondent considered a neutrality about this impact and another one third of the respondents observed high to very high impact of urban sprawl on the social life of the Adigrat city.

Table 1 shows that in the city Adigrat social or cultural tension between new and old residents are not impacted very much by urban sprawl as 40.10 per cent of the respondents considered low to very low impact of urban sprawl on social relations between residents. One-fourth of the respondents said that it has an average impact and 34.60 per cent respondents are of opinion that there is high or very high impact of urban sprawl on social and cultural relation of the residents.

In relation to the sense of community the response of the households indicates that less than one-third of the people perceived that there is low to very low impact of the urban sprawl of the weakening of the sense of community while more than seventy per cent of the respondents observed that the increasing incidence of urban sprawl results in average to very high impact on the development of a sense of community among the resident.

The survey result indicates that concerning the impact of urban sprawl on the livelihoods, 33.50 per cent of the respondents observed that there is low to very low impact of urban sprawl on the economic status of the population residing in urban sprawl area while 66.4 per cent of the respondents said that there is average to very high impact of urban sprawl on the countryside as the residents are shifting from agrarian to non-agrarian activities.

The survey result shows that only one-fifth of the respondents consider low to very low impact of urban sprawl on changing social values of peri-urban areas, however, about 80 per cent of the respondents have

realized about negative impacts of urban sprawl on the social value system of peri-urban areas. In relation to the displacement of farmers the response of the households indicates that less than one-fifth of the people perceived that there is low to very low impact of the urban sprawl on the displacement of farmers from a peripheral area while eighty percent of the respondents observed that average to very high impact on the displacement of farmers from the peripheral area.

Urban sprawl has social impacts on the livelihood of peoples that are confined in the peripheral area. Currently, due to less concern is given to the impact of urban sprawl. Sprawled area characterized by serious problems like a lack of infrastructure and basic facilities like treated water supply, electricity and sanitation services (Yar, 2017).

It can be observed from table 1 the major social impact of urban sprawl on the study area includes the displacement of farmers from the peripheral area (M=3.65 S.D= 1.289), segregation of residential areas(M=3.55,S.D=1.158), exacerbation of social and economic division(M=3.45, S.D= 1.195), changing social values (M=3.34, S.D=1.087).

Table 2. Independent Sample t-Test social impact of urban sprawl

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	
Exacerbation of social and economic division	Equal variances assumed	.883	.348	2.840	365	.005	.354	.125	.109	.599	
	Equal variances not assumed			2.858	349.900	.005	.354	.124	.110	.597	
Segregation of residential areas	Equal variances assumed	1.073	.301	1.280	365	.201	.156	.122	-.084	.395	
	Equal variances not assumed			1.296	355.744	.196	.156	.120	-.081	.392	
Concentration of poor neighbored in inner city	Equal variances assumed	2.741	.099	-.090	365	.929	-.012	.130	-.267	.244	
	Equal variances not assumed			-.091	354.889	.928	-.012	.128	-.264	.241	
Social or cultural conflict between the new and the old residents.	Equal variances assumed	.430	.512	.972	365	.332	.136	.140	-.139	.410	
	Equal variances not assumed			.977	348.388	.329	.136	.139	-.137	.409	
Displacement of farmers from the peripheral area	Equal variances assumed	2.775	.097	2.198	365	.029	.297	.135	.031	.562	
	Equal variances not assumed			2.174	327.118	.030	.297	.136	.028	.565	
Weakened sense of community	Equal variances assumed	.853	.356	1.706	365	.089	.203	.119	-.031	.436	
	Equal variances not assumed			1.717	349.428	.087	.203	.118	-.029	.435	
Urbanization of the countryside with increasing economic activity	Equal variances assumed	1.015	.314	.333	365	.740	.042	.126	-.207	.291	
	Equal variances not assumed			.335	351.594	.738	.042	.125	-.205	.289	
Changing social values,	Equal variances assumed	.301	.583	2.643	365	.009	.300	.113	.077	.523	
	Equal variances not assumed			2.640	340.663	.009	.300	.114	.076	.523	

Table 2 indicates an Independent Samples t-Test was applied to investigate the influence of gender composition of the respondents in understanding the impacts of urban sprawl on the social life of the study area. The obtained result indicates, there was statistically significant difference on exacerbation of social and economic division (t(365)=2.840, p=0.005), indicating that male respondents (M= 3.6, SD=1.210) showed more agreement with social and economic division its social impacts of urban sprawl than females (M=3.25, SD= 1.149), displacement of farmers from peripheral area (t (365)=2.174, p=0.030), male respondents (M=3.78, SD= 1.234) have more understanding than females (M=3.48, SD= 1.341), change the social value of the (t (365) =2.643, p= 0.009) male respondents (M=3.47, SD=1.047) have more awareness than female counterparts,urbanization of the countryside with increasing economic activity(t (365) =0.335, p= 0.042) male respondents (M=3.05 SD=1.234) more agree than female(M=3.01, SD=1.157). However, there is no statistical difference between males and females on the social impact of urban sprawl on the segregation of residential areas, social or cultural conflict between the new and the old residents, concentrations of poor neighbored in inner city and weakened the sense of community.

One-Way ANOVA was applied to investigate the influence of age difference and educational status of the respondents' understanding of impacts, urban sprawl on the social life of the study area. The obtained results indicate that the different age groups and educational have no statistically significant influence on the respondents' understanding of the social impacts of urban sprawl. However the monthly income of the respondents indicates, there were statistically significant differences of social impacts of urban sprawl in the concentration of poor neighbored in the inner city at the $p < 0.05$ level for the four conditions ($f(3, 366) = 3.071, p = 0.028$) and in the change of social value at the $p < 0.05$ level for the four conditions ($f(3, 366) = 4.407, p = 0.005$).

The result implies male respondents have more awareness on the social impacts of urban sprawl in comparison to their female counterparts. Thus the results depict that irrespective of age differences, all the respondents have an agreement on social impacts of urban sprawl. However, respondent diploma and degree and above holder have more understanding on the social impact of urban sprawl.

In relation to income level, those who earn more and rich enjoy all amenities of life have high perception that urban sprawl is resulting into degradation of the social fabric in Adigrat city.

CONCLUSION AND RECOMMENDATIONS

The survey results indicate the major social impacts of urban sprawl in the study area includes such as the displacement of farmers from the peripheral area, exacerbation of social and economic and changing social values. The perception of households on the social impacts of urban sprawl male respondents more agrees on the social impacts of urban sprawl than female counterparts. A respondent who earn more monthly income and diploma and degree and above graduates have more awareness on the social impacts of urban sprawl. The outcome of urban sprawl affects socio-economic development of the city therefore city administration and concerned bodies should maximize the awareness of all peoples, particularly female, lower income and lower grade of their educational status member of the society it's the negative impacts urban sprawl.

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