

Population Dynamics and Its Implication on Development in Iringa Municipality, Tanzania

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Abstract

This study investigates the implications of population dynamics on development in Iringa Municipality Tanzania. A total of 209 respondents were involved in this study. The study used both quantitative and qualitative techniques in collecting and analyzing data where household surveys, in-depth interviews, field observations, Focus Group Discussions and documentary review were used as data gathering techniques. Descriptive statistics and content analysis have been used in analyzing and presenting the collected data. The study findings reveal that Iringa Municipality is experiencing an increase in population as per study time frame (1990 to 2019) has been triggered by in-migration though increased birth rates and reduced mortality rates cannot be neglected. The study further revealed that population growth in the Municipality has positively resulted to increased income levels, market expansion, improvement of social services, increased savings and investments, increased skilled workforce as well as increased urbanization. However, negatively, population growth has triggered high commodity prices, increased rental bills, the spread of diseases, a high number of street children and increase of delinquency behaviours. The study concludes that there is an increase in population associated with in-migration in Iringa Municipality which has brought both positive and negative effects on economic development. It is recommended to use the existing opportunity of population growth for economic development meanwhile, finding out measures which are associated with negative effects of population growth to achieve sustainable development.

Keywords: in-migration, population dynamics, culture, environment, development

1. Introduction

Despite falling in fertility levels observed in most countries of the world, the globe has continued recording an unprecedented increase of human population at an alarming rate. According to the United Nations (2019) report, today, the world inhabits 7.7 billion people with the highest increase in developing regions. Asia is the leading region in terms of population with China being the leading populace country having 1.4 billion people followed by India with 1.3 billion people. In Africa, Nigeria is home to 206 million people and ranked the most populated country followed by Ethiopia with 114 million people while Tanzania is ranked 6 in most populated countries in Africa with 59 million people. The increasing population in these parts of the world is spurred by three major facets which are increased birth rates, reduced mortality and migration (UN, 2019).

Migration is one among the basic determinant of population change and redistribution at both local and international levels (Dashefsky and Woodrow-Lafield, 2020; Lao *et al.*, 2018; Lissoni, 2018; Dodman *et al.*, 2017; Dungumaro, 2013). Movement of people within or outside the region and cities is not homogeneous. Some regions and cities tend to receive more people from other places while others lose more of their people. Studies (Dashefsky and Woodrow-Lafield, 2020; Faggian *et al.*, 2017; Singh, 2016) show that, while some people are fleeing their usual places of residences there is also a counter stream of migrants from different places who are entering in. This scenario brings in the concept of in-migration and out-migration which are associated with push and pull factors that encourage or discourage people to live in the given place (Yanai *et al.*, 2020; Hoffmann *et al.*, 2019; Gezie, Yalaw & Gete, 2019). Among these factors includes increased poverty levels in rural areas, variations in social services, climatic factors, political chaos, family conflicts, variation in natural resources available as well as variations in business and employment opportunities (Castells-Quintana, and Wenban-Smith, 2020; Lagakos *et al.*, 2019; Yanai *et al.*, 2020; Hoffmann *et al.*, 2019; Duda, Fasse and Grote, 2018; Mlambo, 2018; Mulungu and Myeya 2018; Salemo 2017; Dungumaro, 2013).

Both emigration and immigration are experienced in Tanzania where the country has been receiving and sending people to different nations. Within

the country, people have also been migrating from one region to another and sometimes within the region and district. The dominant forms of migration in Tanzania are rural-rural, rural-urban, urban-urban and urban-rural (Dungumaro, 2013). However, rural-urban migration is the most prevailing form.

Historically, Iringa, Kigoma, Dodoma, Singida, Tabora, Rukwa, Ruvuma and Mbeya regions have been acting as sources of out-migrants while, Dar es Salaam, Arusha, Mwanza and Morogoro have been acting as areas for in-migration (Mulungu and Myeya, 2018; Todd *et al.*, 2017; Dungumaro 2013; Mbonile 2002). Owing to growth in urbanization which has led to the growth and expansion of towns, regions which formerly served as out-migrants are now receiving people from different places (Castells-Quintana, and Wenban-Smith, 2020) of which have both positive and negative implication on development at a local and national level.

Iringa region has been known for decades as one among the regions in Tanzania with high out-migrants (Todd *et al.* (2017; Dungumaro, 2013). But, with the current growth and expansion of its Municipality, today it attracts more in-migrants particularly from its rural areas and beyond its jurisdiction. Other factors spurring in-migrants in the Municipality include expansion of tourism industry and the existence of five higher learning institutions to mention, University of Iringa, Mkwawa University College of Education, Ruaha Catholic University, the Open University of Tanzania and Moshi University College of Cooperative and Business Studies (Kamangu, 2016; Iringa Municipal Development Report, 2012). Existence of these institutions in the Municipality has attracted students, workers and business persons from within and outside the region seeking for education, employment and business opportunities.

In-migration is associated with both positive and negative effects on individual migrants and the local community in the receiving ends. Several studies (Mueller, *et al.*, 2019; Mulungu and Myeya, 2018; Banyikwa, 2017; Kamangu, 2016; Mulungu, 2012) indicates that in-migration has changed the life of migrants and the local community in the place of destination through improved livelihoods. Nevertheless, in-migration is associated with negative

environmental and social effects (Kuralbayeva, 2018; Hongoa, 2014; Estes, 2012).

Studies by Todd *et al.* (2017) and Dungumaro (2013) have been conducted in the Municipality focusing on migration but centred on out-migration and the associated effects on socio-economic development in the area of origin. In that regards, therefore, a dearth of literature exists on the effects of in-migration to the development and environment in the Municipality. Therefore, the current study strives to examine the trends of population dynamics and assess the implications of population growth spurred by in-migration on both socio-economic development and the environment in Iringa Municipality, Tanzania.

2. Methodology

2.1 The study area

The study was conducted in Iringa Municipal, specifically in Kihesa, Mkwawa and Gangilonga wards. Iringa Municipality is one among the four districts of Iringa region. Other districts are Kilolo, Iringa Rural and Mufindi. The Municipality geographical coordinates extend between 7° 46'57" South and 35° 41' 59" East. The Municipality covers an area of 162 square kilometres with 16 wards and 162 streets that vary in size significantly (URT, 2013).

2.2 Research design and sampling techniques

This study employed a cross-sectional design that allowed the collection of data from different groups of people at once. Both purposive and simple random sampling techniques were employed in the selection of the study area and respondents. Iringa Municipality was purposively selected because the area experiences a high influx of in-migrants from the hinterland and in various places of Tanzania. The study wards were also purposively selected based on their location as they are near the Municipality centre and being close to the mentioned higher learning institutions thus, being suitable to examine the effects of such influx on development. Simple random sampling technique was employed in the selection of respondents aged 30 years and above. Selection of that particular age meant that respondents under that age group had experience on population changes in the study area and its

associated effects. A total of 209 respondents from Kihesa, Mkwawa and Gangilonga wards were randomly selected for this particular study.

Both quantitative and qualitative techniques were used in data collection and analysis. Questionnaire survey with both closed and open-ended questions was administered to 209 respondents. In-depth interviews were conducted by involving key informants (4 from each ward) who deemed to have crucial information for this particular study. Moreover, three Focus Group Discussions (1 from each ward) were employed to validate the information gathered through other methods. Field observations were also used to capture specific information particularly on the effects of population dynamics on socio-economic development and to the environment. Documentary reviews from government reports and scholarly works were also used to collect both quantitative and qualitative data that relates to the study topic. Both quantitative and qualitative techniques were employed in data analysis and presentation.

3 Results and discussion

3.1 Demographic characteristics of the respondents

Results in Table 1 indicate that 51.3 % of respondents were in the age group of 30 - 39 and the last category (4%) composed adults aged above 70 years. The implication on age groups shows that most of the respondents fall between 30 and 39 years, of which are youths from different areas who are looking for a better life in urban centres followed by the age group between 40 - 49 years which was mostly dominated by indigenous people.

Table 1: Age and education of respondents in the study area

Age	Percentage (%) (N = 209)
30-39	51.3
40-49	27.5
50-59	13.1
60-69	5.1
> 70	4.0
Total	100
Education	Percentage (%) (N = 209)

Non formal	3.4
Primary education	53.2
Secondary education	37.3
Post secondary	7.1
Total	100

The education level is a vital aspect in determining the occupation of a person. The study findings in Table 1 indicate that majority of the surveyed population (53.2%) had primary education, 37.3% had secondary education, 7.1% had post-secondary education and 3.4% had no formal education. Based on these results, one can reasonably argue that the study population was dominated by primary school leavers which imply the occupation. Low education level forces people to engage in casual labour, petty business and agricultural activities. The above results are in line with that of Hagan *et al.* (2015) in Mexico who found the level of education to influence the type of occupations.

The study further classified respondents occupation basing on their areas of specialization (Figure 1), where business constituted 56.5% followed by smallholder farmers who constituted 32.2% of the respondents, 8.2% of respondents reported to be employed in both public and private institutions and the remaining 3.1% reported not to have a specific occupation. Based on these results, one can reasonably argue that majority of respondents were engaged in a business which is an indication of urbanization and self-employment too.

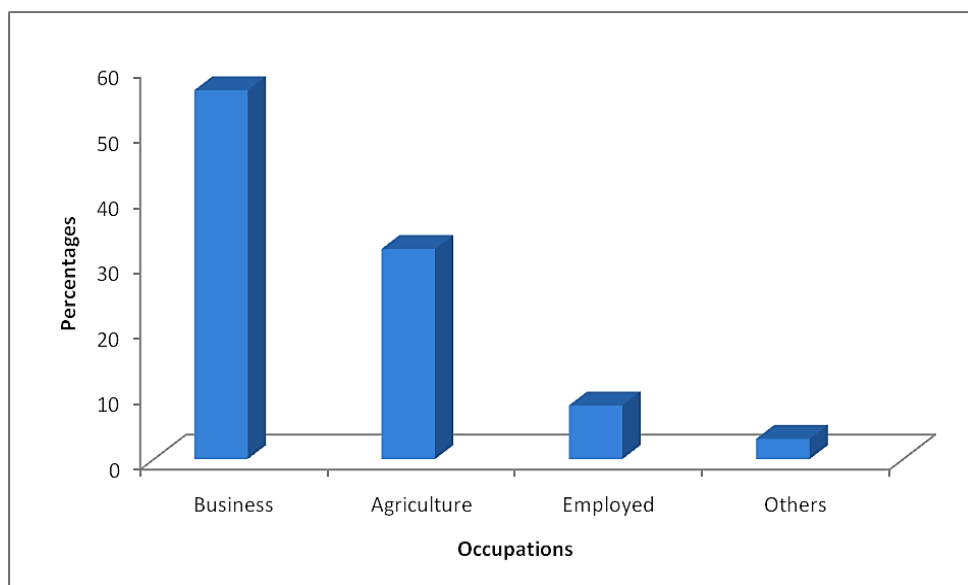


Figure 1: Occupation of respondents in the study area

As it has been reported earlier, education levels determine the occupation status, therefore, because the majority were primary school leavers, they had limited chance of being employed in the formal sector thus, ended up being self-employed in the business opportunity. The current study results on occupation are similar to that of Mulungu and Myeya (2018) in Ileje Tanzania, Hagan *et al.* (2015) in Mexico and Xu *et al.* (2015) in China who reported education to influence the type of occupation one can perform.

3.2 Trends of population growth

3.2.1 Perceived trends of population dynamics

The study findings (Figure 2) indicate that 97% of the respondents said the population in their study wards was increasing and 2% reported the population to decrease and 1% said they were not aware on the trend. Based on the reported trends, the majority of respondents admitted that the population in the study area was changing linked with in-migration.

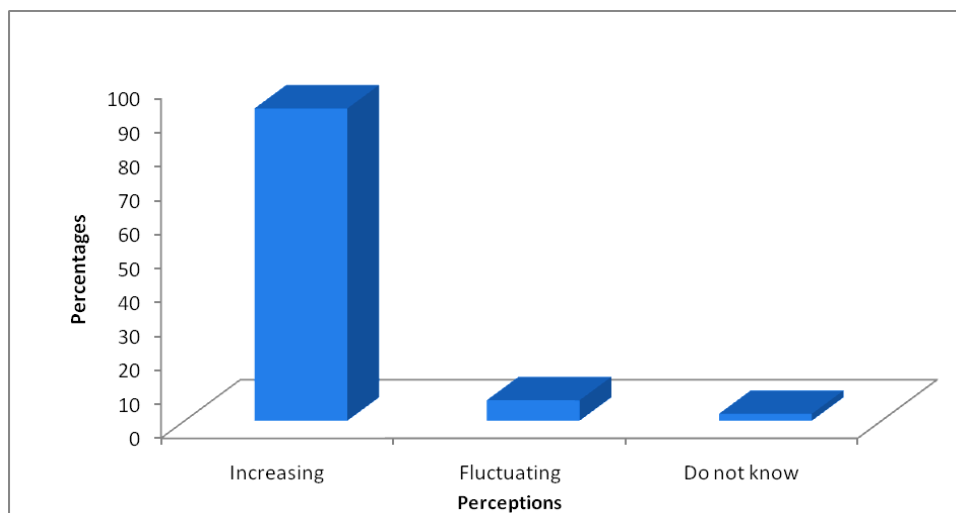


Figure 2: Perception of population dynamics in Iringa Municipality

Respondents further reported that the existence of higher learning institutions and colleges in the Municipality has culminated to a high influx of people from different parts of Tanzania seeking education and employment opportunities. Through FGD, it has revealed that social network has contributed to a high influx of people to immigrate in the study area searching for education services and better life as it is seen in the quotation here below;

“...Iringa Municipality is not my home place, I am from Mbeya region. I come here because my sister is working in one of the higher learning institutions in the region. After staying with her for three years, I was trained on beauty (women salon) and now I have managed to open my saloon that acts as a source of income for my existence. Through this saloon, I have managed to employ two assistants to help me in providing services to my customers”.....
(Female respondent aged 42 years at Mkwawa ward).

3.2.2 Population growth as per census reports and projections

The results in Table 3 indicate that the population in the study area has increased over time at the ward, Municipality and regional level. According to census reports of 2002 and 2012 (URT, 2013), the population of Iringa region was 840,404 people and 941,238 respectively, and it is projected to increase to 1,030,349 people by 2020. The Municipality population in 2002 was 106,371 and in 2012 it rose to 151,348 and projected to increase by 200,770

people in 2020. Not only the population has grown at regional and Municipality levels, but also population growth has been observed at ward level particularly at Kihesa and Mkwawa wards. Based on the population census reports, in 2012 Kihesa ward recorded a total of 18,196 people as compared to 12,417 people in 2002. The population of this ward is expected to augment up to 24,704 people in 2020. Moreover, in 2002 the population of Mkwawa ward was 7,996, increased to 9,673 in 2012 and projected to reach 11,662 in 2020.

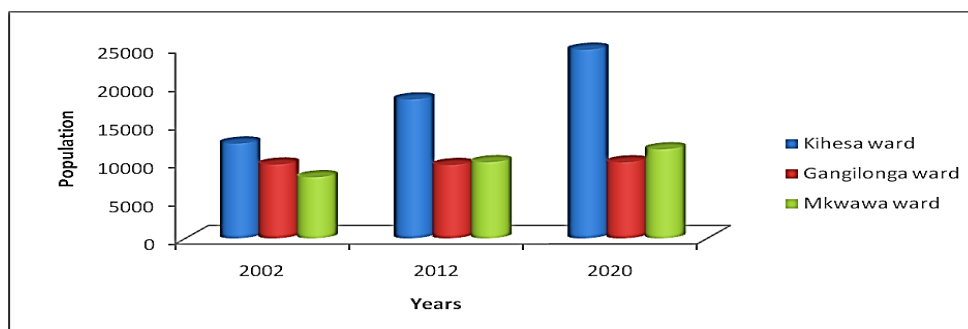


Figure 3: Population growth as per census reports and projections

While the population has indicated increased rates for Kihesa and Mkwawa wards, the population for Gangilonga ward has shown slightly decreasing trend with the population 9,599 recorded in 2012 as compared to 9668 people noted in 2002 (URT, 2003; URT, 2013). It should be noted that, though this area is located near the Municipality and higher learning institutions, it has residential houses which are very expensive so only those who are economically well-off can incur living costs in this area. Therefore, low-income earners prefer to hire rents in areas that are cheap, Kihesa ward being a good example.

3.3 Effects of population dynamics in the study area

3.3.1 Positive effects of population dynamics in Iringa Municipality

Population dynamics have both positive and negative effects to individuals, their families, the local community and the nation as well. The study results in Table 2 reveal that the increased population in the study area is associated with various positive effects including increased income level as reported by 74.5 per cent of the surveyed population. Respondents admitted that increased population has culminated to the increase of income levels of both

indigenous and newcomers particularly those involved in business activities. They further argued that population growth in the study area has created a high demand for land for new settlements. This has increased the value of land as noted through the proliferation of costs for buying land which has increased dramatically thus, benefiting both the government and indigenous people who own land. Studies by Mlambo, (2018) in South Africa, Lao *et al.* (2018) in China and that of Singh, (2016) in India noted similar results.

Table 2: Economic Effects of Population dynamics in Iringa Municipality

Effects	Percentage (%)* (N=209)
Increased income levels	74.5
Market expansion	67.6
Improvement of social services	64.3
Increased saving and investments	52.4
Increased skilled workforce	51.5
Increased urbanization	45.4

NB: *Multiple responses

Moreover, the increasing population in the study area has led to higher rental costs particularly in the centre of the Municipality. This has assured those who have invested in rental houses around the centre to earn more money thus, increase their income levels. People with low income have sought to find houses with low costs away from the centre leading to an expansion of the Municipality. These results are in line with what is reported by Fatoki (2017) in Nigeria who observed overt economic changes to the host community resulting from population growth spurred by the existence of tertiary institutions in the area.

Not only that but also an expansion of the market was reported to be among the positive impact of population growth in the study area as reported by 67.6 per cent of the surveyed population. Respondents reported that the existence of many people in the study area has created a high demand for services in the market places to meet their basic needs. Respondents further reported that the existence of higher learning institutions is one among the

contributing factor on market expansion because these institutions are enrolling many students who use their stipend to get various services available in the Municipality. This has triggered a business opportunity to expand more because of market assurance as compared to the past 15 years before the existence of these institutions. Results from this particular study concur with what is reported by Kanayo *et al.*, (2016) who reveals that population dynamics in Nigeria have significant effects on the economy particularly on expenditure profiles of households.

Improvement of social services to cater to the demand of the growing population was reported by 64.3 per cent of respondents. Respondents argued that there is an improvement in services particular on education and health sector as compared to the past 15 years. They further reported that currently there is a high expansion of health centres in both government and private sector to cater to the growing population demand. It was further reported that expansion of health centres has culminated to improvement in varieties and quality of services provided that vary based on the financial capability of customers. Not only that but also population increase is associated with the proliferation of educational institutions both private and government. The new educational institutions are of different levels from pre-primary unit to tertiary which have been established to cater to the growing education demand of the increased population. The above results harmonize to the findings by Zhitin and Shendrik, (2018) in Russia and Mlambo, (2018) in South Africa.

Moreover, increased saving and investment was reported by 52.4 per cent of the surveyed population as among the positive effects of the growing population. Respondents reported that the increased population has triggered expansion of business opportunity to meet the growing population demand which has enabled businessmen/women to earn more income and thus being in a position to save the earned profit. Not only that but also assurance on the market has resulted in the emergence of high investment spirit in business and social services because people are assured of the market on the invested services. Respondents further reported that investment in services and business has created employment opportunities particularly in the transport sector where many youths are currently self-

employed in transport services particularly in motor vehicles (*Bajaj* and *Bodaboda*) which have improved their livelihood through income earning. These results are supported by Zhitin & Shendrik (2018) who reports that changes in population trends in Russia due to in-migration culminated to amid rapid changes in the rate of economic increase.

The increased skilled workforce was also reported by 51.5 per cent of the surveyed population. This was much linked with the expansion of the education sector to meet the demand of the growing population. Expansion of education institutions in the Municipality has resulted in an increase of graduates who are employed within or outside the study area, in the private or public sector. Increased number of graduates each year has resulted to high competition of available opportunities of which triggers employers to demand extra knowledge and skills from graduates thus being in a position to get competent people on the announced few posts which are linked with improved quality of services provided due to high assurances of employing qualified workers. Dashefsky and Woodrow-Lafield, (2020) in America and Hagan *et al.* (2015) in Mexico observed similar findings.

Increased urbanization was reported by 45.4 per cent of the respondents as among the effects of population growth in the study area. The surveyed population reported that increased population growth has resulted in the expansion of settlements in areas far from the Municipality centre. Due to this interaction, new technology and skills have emerged thus contributing to urbanization and economic development as well. Similar results were noted by Lissoni, (2018) in developing countries.

3.3.2 Negative social and economic effects of population dynamics

Apart from positive effects, population growth is associated with negative effects on the person, local community and the nation. The study results in Table 3 indicate that population growth in the study area triggered by in-migration has led to the high spread of diseases especially HIV/AIDS as was mentioned by 68.2 per cent of respondents. This is associated with increased interactions of people from different parts of Tanzania and the main attributes here being the existence of higher learning institutions which has contributed to high social interaction between students themselves, higher

learning staff and the local community. Similar results were noted by Fatoki *et al.* (2017) in Nigeria, Shumba *et al.* (2011) in Zimbabwe and Wyl *et al.* (2011) in Switzerland.

Table 3: Economic Effects of Population dynamics in Iringa Municipality

Effects	Percentage (%)* (N=209)
The spread of diseases	68.2
Rise of commodity prices	66.4
The proliferation of rental bills	65.5
Increase of immoral behaviours	45.2
Increased street children	35.6

*NB: *Multiple responses*

Not only that, but also rise in commodity prices was reported by 66.4 per cent of the respondents. An increased price was linked with the high demand for services to meet the demand of the growing population. Respondents argued that food prices have gone up as compared to the past 15 years. Each service available in the Municipality, its prices have increased dramatically because of high demand. This creates life difficulties particularly to community members with low-income earnings. Low income earning makes them unable to afford soaring prices for valuable foods (Rice, Meat and Fish) thus, ending up consuming low valuable foods such as maize flour, beans and vegetables. A similar observation was noted by Nyoni *et al.* (2017) in Zimbabwe, Kanayo *et al.* (2016) in Nigeria and Zang and Warren, (2015) in China.

The proliferation of rental bills for both business and settlement buildings was reported by 65.5 per cent of the respondents. It was reported that the increased population has created a high demand for settlement and business investment. This has resulted in the high competition thus; house renters increase prices for their buildings because they are assured of the market. It was further reported that rise on rental bills has forced low-income earners to move from the Municipality centre going to the interior parts where rental prices for residential houses are affordable of which has negative effects on

their survival strategies and livelihood as well. Similar results were noted by Fatoki *et al.* (2017) in Nigeria and Zang and Warren, (2015) in China.

Moreover, population growth in the study area has increased immoral behaviours as reported by 45.2 per cent of the respondents. It was reported that the existence of higher learning institutions was highly linked with the emergence of new behaviour which was not prevailing in the past 15 years. These new behaviour include improper dressing styles, drug abuse, robbery and prostitution thus having negative effects on the indigenous culture. The study results concur with what is reported by Kamangu (2016) in Tanzania.

Furthermore, an increase in population has led to an increase of fatherless and street children as reported by 35.6 per cent of respondents. During the discussions, respondents reported that the increased population has resulted in an increase of interaction between newcomers and the community around. Social interactions have resulted in the emergence of sexual relations which has culminated to unplanned pregnancies thus trigger the increase of children in the study areas in particular and Municipality in general. The above results resemble that of Ferraro (2016) in America.

3.3.3 Negative effects of population dynamics on the environment

Increased population has negative effects on the environment particularly on natural resource utilization culminating to land use/cover change. The study results from Focus Group Discussion indicate that increased population has created the increased demand for settlement expansion and food requirements respectively. This has resulted in the extension of settlement places in areas that were covered by forest thus triggering the removal of forest cover which negatively affects the environment as reported by one participant hereunder;

".....population increase is a challenge in our area. It has resulted in an increase in land shortage due to high demand. Increased land demand has contributed to increased land prices thus low-income earners cannot afford to buy good plots for house construction. Alternatively, they have started to buy plots in areas that are not conducive but are sold cheaply (around hills) thus culminating to environmental degradation" (Male aged 45 years at Mkwawa ward)

The study further indicates that increased population implies a source of energy used for cooking (Figure 4) where a majority of the surveyed population (85%) reported to use firewood and charcoal as their major source of energy while a minority (15%) reported using a combination of gas, kerosene and charcoal depending on the financial status of that person for a particular time.

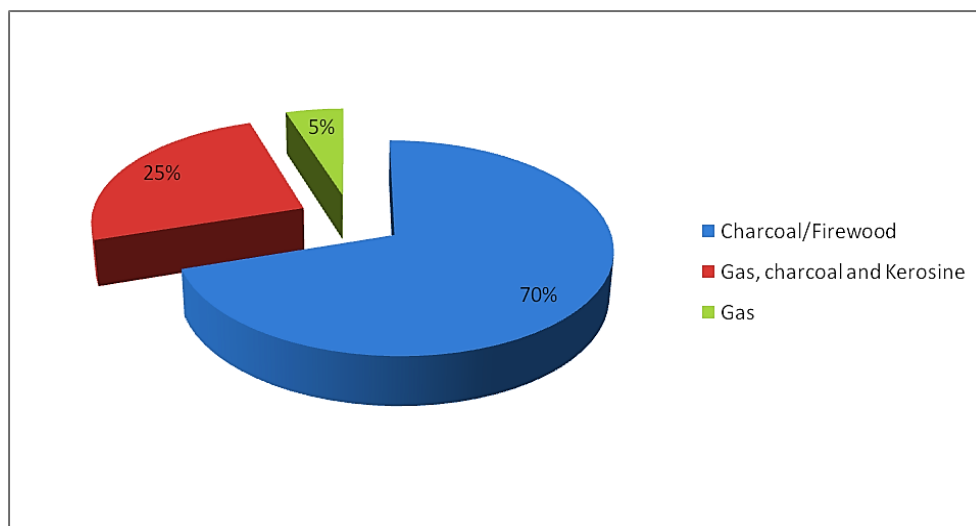


Figure 4: Source of energy used by respondents in the study area

Based on the study results in Figure 4, one can reasonably argue that the dominant energy use in the surveyed population harms forest conservation. The implication is that the population increase has increased the rate of forest exploitation as they need to have a constant supply of charcoal and firewood as their main source of energy in the study area. Respondents reported that most of the areas which were previously covered by forest in the study area are now cleared due to the increase in demand for firewood and charcoal in Iringa Municipality. The increased demand has forced business people to search for firewood and charcoal outside the Municipality to cater to the demand of the growing population of which it has also a negative effect on the environment. The current study results are in line with that of Kuralbayeva, (2018) in developing countries who reported the threats of population pressure on land use particular intensive home steady constructions to meet the demand of settlement which results to high deforestation. A similar observation was reported by Estes (2012) in

Serengeti Tanzania, who reported the effect of population growth on land cover change. Not only that but also the same observation was reported by Szabo *et al.* (2016) who noted that rapid population growth to put more pressure on provisioning ecosystem services in Bangladesh.

4. Conclusion and Recommendation

This article has investigated the implication of population dynamics on development in Iringa Municipality. Results indicate that the population has increased in the past 15 years and the growth is linked with increase in-migration rates though reduced mortality and increased fertility rates also count on population dynamics in the study area. The study further noted that increased population has both negative and positive effects on socio-economic development as it has resulted to increased income levels, market expansion, improvement of social services, increased savings and investments, increased skilled workforce as well as increased urbanization. However, negatively, population dynamics have triggered high commodity prices, increased rentals' bills, the spread of diseases, increase of street children and increase of immoral behaviours. Apart from socio-economic effects, population dynamics has negatively affected the environment through changes in land use which has culminated to forest clearance on expenses of settlement creation and high demand for energy to cater to the increased population. The study concludes that population dynamics in Iringa Municipality is beneficial regardless of its associated negative effects. The study recommends effective use of the growing population in the Municipality and other places in the country while taking into consideration of negative effects to achieve sustainable development.

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