

# **A Framework for Improvement of Informal Settlements in Kampala City, Uganda: A Literature Gap**

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## **Abstract**

This paper reviews the literature and knowledge gap of a framework for the improvement of informal settlements that continue to house a substantial proportion of the poor urban population in Kampala City, Uganda. Scoping review of accessible literature was the research approach used to collect data for the paper. Results of the study identified: demographic, institutional, cultural, political and socio-economic factors as the main factors causing the development of informal settlements in urban areas including Kampala City in Uganda. The study noted that: poor basic services, poor housing and sanitation, floods and social isolation were some of the main problems that exist in informal settlements in Kampala City as well as in other cities. Provision of employment opportunities, subsidisation of key construction materials, provision of capital or aid to households in the informal settlements, effective policy formulation and implementation, provision of essential infrastructure services, community sanitation awareness campaigns, efficient solid waste management strategies, and enhancement of social support were noted in the study as key interventions that can be incorporated in a comprehensive framework for the improvement of informal settlements. Findings of the study will contribute towards the development of a locally acceptable framework for improving informal settlements in Kampala City and in other cities globally in order to uplift human settlements. However, the study discovered that there are no specific studies available outlining a comprehensive framework to specifically support the improvement of informal settlements in Kampala City. This gap in the literature has necessitated the need to undertake a detailed study, as a follow up to this one, which is aimed at developing a locally acceptable comprehensive framework for the improvement of informal settlements in Kampala City, Uganda.

**Keywords:** Causes, challenges, framework for improvement, informal settlements, Kampala City

## **1 Introduction**

Kampala City, as is the case with other cities in the world, is viewed by those particularly living in the rural areas of Uganda, as a place of hope to get employment and uplift the life quality (Ssali, 2020). UN-Habitat (2022), Magigi (2021) and UN-Habitat (2015) highlighted that most of these rural-urban migrants that have relocated to Kampala

City have ended up living in the informal settlements, which are illegal residential areas because most of them are poor and cannot afford decent housing in the city. To make matters worse, Robinah (et al., 2010) and SSali (2020) reported that at the moment 60% of Kampala City's population is residing in informal settlements that have the lowest basic services including: access roads, water supply, solid waste collection, sanitation, storm and greywater disposal. This evidence was supported by Richmond et al. (2018) who indicated that informal settlements are widely spread and took at least a quarter of the total area of Kampala City, Uganda's capital city. Additionally, Ssali (2020) noted that Kampala City is experiencing an increase in population and rapid development due to high rate of urbanisation and identified Bwaise, Nsambya and Katanga as some of the leading and largest informal settlements in Kampala City, Uganda. However, until today no scientifically developed framework exists to support the improvement of informal settlements in Kampala City in order to minimise the challenges the informal settlement dwellers are facing on a daily basis. Therefore, the intention of this literature survey is to support the development of a framework which will efficiently and effectively offer solutions and guide the relevant authorities in Kampala City in the processes aimed at tackling challenges faced by the informal settlement dwellers.

## **2 Research Problem**

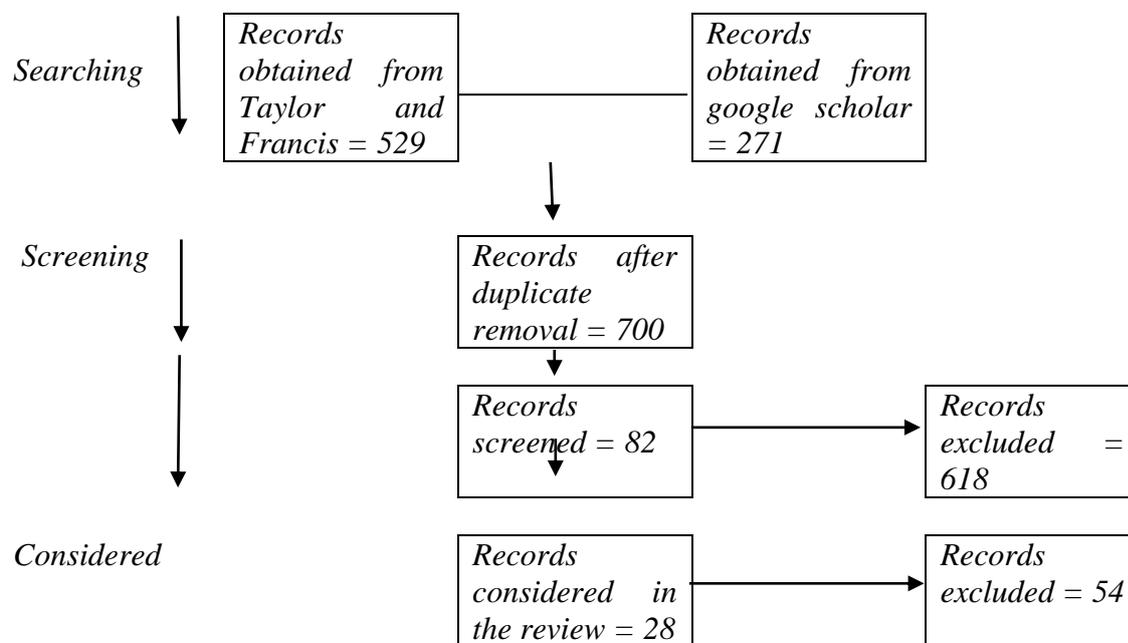
Efforts that are related to the implementation of achieving Uganda's vision 2040 are driving rapid urbanisation in Uganda including Kampala City (Uganda Bureau of Statistics, 2021). Consequently, several people will continue to flock to the city due to the multiple benefits related to urbanisation that include employment opportunities (Ssali, 2020; Kwiringira et al., 2021; Tlhabo, 2019) Additionally, Buye (2021) argued that due to the existing housing challenges in Uganda, there is no doubt that informal settlements will develop at a faster rate but disastrously in order to meet the housing demands exacerbated by high rates of urbanisation.

Importantly, the reviewed literature also highlights that there is a literature gap since most of the published studies that were conducted in Kampala City never focused on a comprehensive understanding of the drivers for informal settlements, challenges in the informal settlements, and how to improve the living conditions in the informal settlements. This information was essential in the development of a framework for improving informal settlements in Kampala City. In addition, in the recent past, policy makers have also tried to eradicate informal settlements and disperse the informal settlement dwellers using forceful measures (Ssali, 2020). However, Ssali (2020) noted that these efforts have yielded nothing in Kampala City since the informal settlement dwellers eventually re-group and continue to occupy the vacant pieces of land they find and have access to. Therefore, instead of opting to push the informal settlement dwellers out of Kampala City, which will not materialize, authorities need to consider other fruitful interventions in order to solve the problem of informal settlements. The only way to address this challenge is to consider the adoption of an appropriate approach that aims at improving informal settlements, by striking a balance between the informal settlement dwellers' rights and sustainable urban development (Monalisa, 2010:4). Based on this, there is still a need for more studies to provide a comprehensive understanding of the drivers for informal settlements, challenges in the informal settlements, and how to improve the living conditions in the informal settlements in Kampala City. The study intends to address this gap in the literature.

### 3 Literature Review Method

The study adopted a scoping review method which involves the review of literature for fast comparison of variables and critical terms of the review and the key literature sources (Peterson et al., 2017). Munn et.al. (2018) noted that “scoping reviews are useful for examining emerging evidence when it is still unclear what other more specific questions can be posed and valuably be addressed by a more precise systematic review.

This study focused on review of informal settlements studies in general and specifically for Kampala City in Uganda. In addition, the search was restricted to only electronically available literature and only English language journals were searched and selected from Google Scholar and Taylor and Francis collections. Furthermore, the first keyword used was ‘informal settlements,’ and then the result was refined with another keyword ‘slums.’ Finally, only the findings from the selected 28 journal articles were utilised and the findings were reported. The review was conducted using the steps of the scoping review approach as shown in Figure 1 below.



**Figure 1.** *The scoping review process*

### 4 Results And Discussion

*This section presents the literature findings and the themes relating to improving informal settlements.*

#### 4.1 Factors contributing to the development of informal settlements

Baye et al. (2020) emphasised that formation and proliferation of informal settlements is one of the most visible and enduring manifestations of urban poverty in developing countries. Additionally, Baye et al. (2020) noted that the main factors contributing to the development of informal settlements are demographic, institutional, cultural, political, and socio-economic factors.

**Demographically**, young age has been reported to be a contributing factor to the development of the informal settlements as young people often migrate into urban areas to look for employment opportunities (Friesen et al., 2018 ; Zweig, 2016 ; Ochocho et al., 2018; Baye et al, 2020). Other demographic factors contributing to the development of the informal settlement are marriage (Baye et al, 2020) and family size (Heshmati & Zarabadi, 2016).

**Institutionally**, long and delayed bureaucracy in obtaining legal land and building documents has been established as a factor contributing to the development of informal settlements (Akirso, 2021; and Wondimu (2021). Matamanda (2022) and Marutlulle (2017) identified procedural problem of legal land provision as a leading factor to the development of informal settlements. Additionally, ineffectiveness in planning and enforcement of human settlements regulation has been shown to contribute to the development of informal settlements (Salala, 2016). Mensah et al., (2013) and Minetos & Polyzos (2013) emphasised too that the lack of sanctions against offenders of illegal land occupation in the cities contributed to the expansion of informal settlements. In the same regard, corruption in the legal procedure of legislators of human settlements was also noted by Marutlulle (2017) as another factor that contributed to informal settlements.

**Culturally**, studies investigating the causes for the development of informal settlements have also discovered marriage and family ties as some of the factors that cannot be under-looked (Jones, 2012). Interestingly, Salala (2016) also found that religious reasons accounted for the development of informal settlements due to proximity to their gathering and worship places.

**Politically**, political instabilities and inadequate housing policy by the government have been linked to the development of informal settlements (Mensah et al., 2013). Matamanda (2022) argued that the lack of political will to prevent informal settlements was an added factor that contributed to the development of informal settlements.

Significantly, reviewed literature also revealed that the **socio-economic factors** that contributed to development of the informal settlements include population growth (Heshmati and Zarabadi, 2016), high land prices (Diab et al., 2020), high rent charges (Akirso, 2021), low-income levels (Mensah et al., 2013), rural to urban migration (Ochocho et al, 2018), and unemployment (Meshkini et al., 2015).

#### **4.2 Problems existing in the informal settlements**

**Poor basic services:** Parikh et al., (2015) noted that one of the major problems in India's informal settlements is limited access to basic needs and services which is accompanied by mismanagement of the available infrastructure. Similarly, Uwizeye et al., (2022) reported that residents of informal settlements in Rwanda had challenges with adequate access to education and always experienced sub-standard healthcare services. In Kampala City, Uganda, informal settlement dwellers are exposed to physical risk since they are mostly located in environmentally dangerous and degraded areas (Ssali, 2020). Simiyu et al., (2017), Ono & Kidokoro (2020) also found out that the lack of essential basic infrastructure services characterised the living conditions of households in the informal settlements in general.

**Poor housing and sanitation:** Assessment results of the urban poor in Harare's selected informal settlements revealed that informal settlement dwellers are seriously challenged with insecure housing (Bandauko et al, 2022). Sadly, Simiyu et al., (2019) also discovered the lack of sanitation facilities and poorly constructed houses that leaked during

the rainy season as some of the main challenges informal settlement dwellers faced in general.

**Floods:** Simiyu et al. (2019) added that flooding during rainy seasons was also generally a common challenge in informal settlements.

**Social isolation and lack of social support:** More seriously, Daneshmand et al., (2015) identified social isolation and lack of social support to get rid of poverty as some of the major challenges in the informal settlements in urban areas.

#### ***4.3 A framework for improving informal settlements***

##### ***Provision of employment opportunities***

Uwizeye et al., (2022) reported that unemployment and low incomes are some of the main challenges in the informal settlements. In response to this challenge, several authors have recommended the provision of employment alternatives as a possible intervention to improve lives of the informal settlements dwellers. Uwizeye et al., (2022) insisted that provision of employment opportunities is one of the key factors in a framework for ensuring access to basic needs in informal settlements in Kigali, Rwanda. This implies that government and other development agencies should develop interventions such as skilling to increase the employability of the people living in the informal settlements (Uwizeye et al., 2022). This was critical since employment is a key source of income that supported informal settlement dwellers to obtain their basic needs such as food and medicines, among others.

##### ***Subsidising key housing construction materials and services***

In a study on informal settlements, Satterthwaite et al. (2020) highly recommended more availability of critical components in the development of human settlements including: land and building permits, building materials and connection to infrastructure services (water, sanitation, drainage, and electricity) as a strong response by governments to minimise more development of informal settlements by the urban poor. In addition, Tsinda et al. (2018) recommended cost reduction of building materials for human settlements as an important strategy for improving housing and other facilities for the poor in informal settlements. This indicates that there is need for all parties involved with informal settlements to discover ways of developing appropriate construction products that are cheaply priced and made easily accessible at right places to the informal settlement dwellers (Tsinda et al., 2018). More significantly, Tsinda et al. (2018) noted that these construction products must be made familiar to potential buyers through promotion. This exercise requires well-coordinated effort by all relevant stakeholders that have critical roles to play in order to informal settlements. These stakeholders include the representatives / leaders of informal settlements, governments, private sector, civil society and all relevant development partners (Tsinda et al., 2018). To conclude, Tsinda et al. (2018) noted that, in this exercise, governments should decisively establish well stipulated policies and programs that are aimed at reducing costs associated with construction of human settlements.

##### ***Provision of capital, funds or aid to households in the informal settlements***

A number of researchers have stated offering financial assistance as a possible intervention for improving informal settlements. For instance, Walter & Beal (2020) contended that the development and adoption of a long-term strategy to mobilize financial resources is a practice model for addressing water and wastewater services challenges in informal urban settlements in Tanzania. Similarly, Satterthwaite et al. (2020) discusses that provides funding and financial services such as livelihood loans, support to saving associations as a measure to improve the informal settlements. This can be explained by the

fact that increased access to financial assistance can help finance informal individual projects or businesses which can enhance income generation to cover expenses in accessing basic needs in the informal settlements. Lastly, Tsinda et al. (2018) found availability of microfinance initiatives or savings and loans clubs, for households and community groups to purchase sanitation and for formal and informal sector business investment as a strategy for improving informal settlements.

### ***Effective policy formulation and implementation***

The study noted that development of effective policies is an essential component of sustainable framework for the improvement of informal settlements in the urban areas. This was supported by the results of an investigation by Bandaiko et al., (2022) into the lived experiences of the urban poor in Harare City's selected informal settlements in Zimbabwe undertaken, which revealed that the development of effective Harare City's urban informal settlements policy would enormously improve the livelihoods of people living in informal settlements. Bandaiko et al., (2022) further noted that the policies can act as a benchmark for the enforcement of measures targeted at the improvement of the informal settlements. Of significance, the policies can stimulate homeowners and landlords to invest and bring their existing and new buildings up to the officially acceptable standards and also persuade them to contribute towards payments costs for connecting informal settlement buildings to infrastructure and services (Bandaiko et al., 2022) .

### ***Provision of essential infrastructure services***

Measures to improve informal settlements should include government efforts of providing essential infrastructure services for informal settlements development. This was observed by Tsinda et al. (2018) who reported that government should improve the road network and dumping sites to improve sanitation in the informal settlements of Kampala City in Uganda. Besides roads, government can also provide other infrastructure services that are essential in improving the welfare of the population living in the informal settlements including: piped water, schools, and health facilities (Tsinda et al., 2018). In addition, Tsinda et al. (2018) further noted that the provision of infrastructure also enhances the economic viability and vitality of informal settlements by establishing and providing easy access to a variety of employment centres, markets, educational opportunities, financial services, entrepreneurial and artisanal training centres, cultural facilities and other basic needs by the informal settlements dwellers.

### ***Community sensitisation and awareness campaigns on sanitation***

According to Tsinda et al. (2018), there should be deliberate mass sensitization by relevant stakeholders operating at the informal settlements in order to raise awareness of the benefits and need for good sanitation and hygiene practices to address the existing poor sanitation practices in the informal settlements. Tsinda et al., (2018) emphasised that raising the level of knowledge of informal settlement dwellers is one of the key drivers and solutions for improving sanitation in the informal settlements of Kampala City in Uganda. This strategy can contribute towards the improvement of informal settlements due to the fact that most people who live in the informal settlements lacked basic knowledge of the different types of sanitation facilities and hence resorted to unsuitable sanitation options (Tsinda et al.,

2018). As such, raising awareness on sanitation could encourage the adoption of suitable sanitation practices in the informal settlements.

### ***Enhancement of social support***

Uwizeye et al. (2022) identified promotion of social protection as another strong intervention that can be used for the improvement informal settlements. This was observed by Uwizeye et al. (2022) in a study on the access basic household needs in Kigali City's informal settlements in Rwanda whereby informal settlement dwellers suggested social cohesion and mutual social support within the community as initiatives that should be adopted in order to fast track the provision of essential services in the informal settlements. These initiatives include: supporting existing informal settlements communities through strategies such as mixed-use development, land recycling and in-situ improvement works aimed at increasing community revitalization, improving the efficiency of public works investments, protecting existing social networks and businesses, and safeguarding cultural landscapes.

### ***Efficient solid waste management***

Corburn et al. (2021) observed that due to poor waste management and sanitation, there is need to develop solid waste collection strategies in order to improve wellbeing in the informal settlements. Solid waste management strategies were required in the informal settlements because of the general accumulation of waste in the informal settlements due to inappropriate waste disposal methods (Corburn et al., 2021). To make matters worse, Corburn et al. (2021) argued that the generated waste acted as a suitable breeding ground for diseases, mosquitos and rats that made urban slum dwellers exposed to malaria, dengue, leptospirosis, and other communicable diseases. To address poor solid waste disposal, Corburn et al. (2021) recommended the establishment of roads to facilitate collection of waste from the informal settlements using different transport methods and encouragement of residents of the informal settlements to adopt solid waste green-economy practices such as recycling that can be a source of additional income to the families. In response to poor disposal of faeces, Singh et al. (2022) identified the need for integration of multiple desludging models to ensure inclusiveness, affordability and profitability; and ultimately, sustainable service delivery of faecal sludge emptying and transport in informal settlements of Kampala City.

## **5 Conclusion And Further Research**

This paper has described in detail the literature and knowledge gap which currently exists in relation to the need for the development of a framework for the improvement of informal settlements in Kampala City, Uganda. Scoping review was the research approach that was applied to collect data for the study. Results revealed: demographic, institutional, cultural, political and socio-economic factors as the main factors causing the development of informal settlements in urban areas including Kampala City in Uganda. The study also observed that: poor basic services, poor housing and sanitation, floods and social isolation were main problems highly prevalent in the informal settlements. In response, the study identified the: provision of employment opportunities, subsidisation of key construction materials, provision of capital or aid to households in the informal settlements, effective policy formulation and implementation, provision of essential infrastructure services, community sanitation awareness campaigns, efficient solid waste management strategies, and

enhancement of social support as key interventions that can be fitted in a locally acceptable framework that can be adopted in order to improve informal settlements. The study has also noted that an institutional framework is needed to coordinate all relevant stakeholders at different levels in order to implement an effective and efficient system and framework which will adequately improve informal settlements in Kampala City, Uganda and in other cities globally. Policy recognition of sanitation as a socially embedded infrastructure is also required to support ongoing policy interventions, together with scientific research and university education. Significantly, the study also identified the need for the improvement of informal settlements in the cities throughout the world since informal settlements will never be entirely eradicated by governments and other stakeholders due to ever increasing costs of living, unemployment and poverty ordinary people are facing in urban areas.

The study also noted that no scientific study exists which provides a locally acceptable and designed comprehensive framework fully packed with interventions that can be implemented in Kampala City, despite the availability of other literature on the factors that contributed to development of informal settlements in urban areas, the existing challenges in the informal settlements, and suggestions on the measures that can be implemented to improve informal settlements. In order to develop this locally acceptable framework all relevant stakeholders that are playing a role in providing services and improving informal settlements need to be involved in the designing of the framework for the city. Additionally, it requires good partnership among government, citizens, civil society organizations, international financial institutions, development partners, non-governmental organisations, faith-based organisations, private sector, and other relevant stakeholders. Based on the above, this paper through this literature survey has identified a knowledge gap and lack of existence of this locally acceptable framework for the improvement of informal settlements in Kampala City, Uganda that needs to be finalised in this ongoing research. Confirmation of the suitable interventions in the improvement of informal settlements in Kampala City will provide alternative and more specific locally acceptable solutions to the existing challenges, which will in the end benefit informal settlement dwellers but also government and other stakeholders in the future through the upliftment of people's lives and provision of acceptable housing and human settlements in Uganda and internationally.

## 6 References

- Akirso, N. (2021). Exploring causes and consequences of squatter settlement in jimma town, oromia regional state, Ethiopia. *International Journal of Sociology and Anthropology*, 13(2), 58–63. <https://doi.org/10.5897/ijsa2019.0831>.
- Andrea, H., Liggett, D., & Frame, B. (2020). Polarising Ushuaia: informal settlements and tourism in an Antarctic gateway city. *The International Journal of Justice and Sustainability*, 25(11–12), 849–871. <https://doi.org/10.1080/13549839.2020.1843420>.
- Bandauko, E., Kutor, S., & Arku, R. (2022). Trapped or not trapped? An empirical investigation into the lived experiences of the urban poor in Harare's selected informal settlements. *African Geographical Review*, 1–21. <https://doi.org/10.1080/19376812.2022.2077781>.
- Baye, F., Wegayehu, F., & Mulugeta, S. (2020). Drivers of informal settlements at the peri-urban areas of Woldia: Assessment on the demographic and socio-economic trigger factors. *Land Use Policy*, 95(104573), 1–14. <https://doi.org/10.1016/J>.
- Buye, R. (2021). Housing management and development in Uganda, 1–5. <https://doi.org/10.13140/RG.2.2.21981.33766>.
- Corburn, J., Vlahov, D., Mberu, B., Riley, L., Caiaffa, W. T., Rashid, S. F., Ko, A., Patel, S.,

- Jukur, S., Martínez-Herrera, E., Jayasinghe, S., Agarwal, S., Nguendo-Yongsi, B., Weru, J., Ouma, S., Edmundo, K., Oni, T., & Ayad, H. (2021). Slum Health: Arresting COVID-19 and Improving Well-Being in Urban Informal Settlements. *Journal of Urban Health*, 97, 348–357. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7182092>.
- Daneshmand, F., Mohammadi, M., Planning, U., Branch, A., & Branch, A. (2015). *A Study of the Challenges of Informal Settlements and Strategies to Empower Them ( Case Study : Eslamshahr )*. 5, 226–232.
- Diab, Y., Baher, E., & Yousry, S. (2020). *Informal Settlements in the Arab Region Arab Region: Towards Arab Cities without Informal Areas*.
- Friesen, J., Rausch, L., Pelz, P., & Fürnkranz, J. (2018). Determining factors for slum growth with predictive data mining methods. *Urban Science*, 2(81), 1–19. <https://doi.org/10.3390/urbansci2030081>.
- Heshmati, S., & Zarabadi, Z. (2016). Evaluation of effective indicators on formation of informal settlements of shahr ghods. *Journal of Fundamental and Applied Sciences*, 8(35), 1137–1163.
- Jones, P. (2012). Searching for a little bit of utopia – understanding the growth of squatter and informal settlements in Pacific towns and cities. *Austral Ian Planner*, 49(4), 327–338. <https://doi.org/10.1080/07293682.1983.9657094>
- Kwiringira, J. N., Kabumbuli, R., Zakumumpa, H., Mugisha, J., Akugizibwe, M., Ariho, P., & Rujumba, J. (2021). Re-conceptualizing sustainable urban sanitation in Uganda : why the roots of ‘ Slumification ’ must be dealt with. *BMC Public Health*, 21(992), 1–12.
- Magigi, M. (2021). The role of the informal economy in promoting urban sustainability: Evidence from a small Zimbabwean town. *Development Southern Africa*, 39(9), 1–15. <https://doi.org/10.1080/0376835X.2021.1925088>.
- Marutlulle, N. (2017). Causes of informal settlements in ekurhuleni metropolitan municipality : An exploration. *Africa’s Public Service Delivery and Performance Review*, 5(1), 1–11. <https://doi.org/10.4102/apsdpr.v5i1.131>.
- Matamanda, A. (2022). Genesis of Hopley Farm informal settlement in independent Harare, Zimbabwe. *African Geographical Review*, 1–10. <https://doi.org/10.1080/19376812.2022.2117216>.
- Mensah, C., Antwi, B., & Acheampong, K. (2013). Behavioural dimension of the growth of informal settlements in Kumasi city , Ghana. *Research on Humanities and Social Sciences*, 3(12), 1–11.
- Meshkini, A., Mansoor, E., & Esfaram, Y. (2015). Analyzing effective factors in establishing informal settlements in babol city using pathway analysis (PA) model. *Cumhuriyet University Faculty of Science, Science Journal (CSJ)*, 36(3). <https://doi.org/10.17776/CSJ.40885>
- Minetos, D., & Polyzos, S. (2013). Informal housing in Greece : A multinomial logistic regression analysis at the regional level. *European Sicy,Patial Research and Pol*, 20(2), 57–84. <https://doi.org/10.2478/esrp-2013-0011>.
- Mukiibi, S. (2016). *The Effect of Urbanisation on the Housing Conditions of the Urban Poor in Kampala, Uganda*.
- Munn, A. et. al. (2018) “Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach” *BMC Medical Research Methodology*.
- Ochocho, A., Worku, K., & Yitna, E. (2018). Determinants of expansion of squatter settlements: The case of hosanna town, hadiya zone, southern Ethiopia. *Ethiopian Journal of Environmental Studies & Management*, 11(6), 677–696.

- Ono, H., & Kidokoro, T. (2020). Understanding the development patterns of informal settlements in Nairobi. *Japan Architectural Review*, 3(3), 384–393. <https://doi.org/10.1002/2475-8876.12161>.
- Parikh, P., Fu, K., Parikh, H., McRobie, A., & George, G. (2015). Infrastructure provision, gender, and poverty in Indian slums. *World Development*, 66, 468–486. <https://doi.org/10.1016/j.worlddev.2014.09.014>.
- Peterson, J., Pearce, P. F., Ferguson, L. A., & Langford, C. A. (2017). Understanding scoping reviews: Definition, purpose, and process. *Journal of the American Association of Nurse Practitioners*, 29(1), 12–16. <https://doi.org/10.1002/2327-6924.12380>.
- Richmond, A., Myers, I., & Namuli, H. (2018a). Urban Informality and Vulnerability: A Case Study in Kampala, Uganda. *Urban Science*, 2(22), 1–13. <https://doi.org/10.3390/urbansci2010022>.
- Robinah, N., Maimuna, N., Eleanor, W., & Roger, T., 2010. Environmental health practices, constraints and possible interventions in peri-urban settlements in developing countries- a review of Kampala, Uganda. *International journal of Environmental Health Research* Vol 20, 2010.
- Richmond, A., Myers, I., & Namuli, H. (2018b). Urban Informality and Vulnerability: A Case Study in Kampala, Uganda. *Urban Science*, 2(1), 22. <https://doi.org/10.3390/urbansci2010022>.
- Salala, S. (2016). *Causes and Consequences of Informal Settlement Planning in Lusaka: A case study of Garden House*. 1–8.
- Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., Mitlin, D., & Patel, S. (2020). Building Resilience to Climate Change in Informal Settlements. *One Earth*, 2(2), 143–156. <https://doi.org/10.1016/j.oneear.2020.02.002>.
- Simiyu, S., Cairncross, S., & Swilling, M. (2019). Understanding Living Conditions and Deprivation in Informal Settlements of Kisumu, Kenya. *Urban Forum*, 30, 223–241. <https://doi.org/10.1007/s12132-018-9346-3%0AUnderstanding>.
- Simiyu, S., Swilling, M., Rheingans, R., & Cairncross, S. (2017). Estimating the cost and payment for sanitation in the informal settlements of Kisumu, Kenya: a cross sectional study. *International Journal of Environmental Research and Public Health*, 14(1), 49. <https://doi.org/10.3390/ijerph14010049>.
- Singh, S., Laker, F., Bateganya, N. L., Nkurunziza, A. G., Semiyaga, S., & Brdjanovic, D. (2022). Evaluation of Business Models for Fecal Sludge Emptying and Transport in Informal Settlements of Kampala, Uganda. *Water (Switzerland)*, 14(18), 1–15. <https://doi.org/10.3390/w14182914>.
- SSali, S. (2020). “ Informal Settlements ” a Great Threat to Uganda ’ s Realization of Sustainable Development : A Case Study of Slums in Kampala Capital City / Uganda. *International Journal of Humanities, Arts and Social Sciences*, 6(5), 195–201. <https://doi.org/https://dx.doi.org/10.20469/ijhss.6.20003-5>.
- Tlhabo, K. (2019). *The world is becoming increasingly urbanized – UN*. WeekendPost. <https://www.weekendpost.co.bw/17932/news/the-world-is-becoming-increasingly-urbanized-un>.
- Tsinda, A., Abbott, P., Chenoweth, J., Pedley, S., & Kwizera, M. (2018). Improving sanitation in informal settlements of East African cities: hybrid of market and state-led approaches. *International Journal of Water Resources Development*, 34(2), 229–244. <https://doi.org/10.1080/07900627.2017.1310090>.
- Uganda Bureau of Statistics UBOS and ICF. 2016. The National Population and Housing Census 2014.
- UN-Habitat (2015). *Informal Settlements*. [https://uploads.habitat3.org/hb3/Habitat-III-Issue-Paper-22\\_Informal-Settlements-2.0.pdf](https://uploads.habitat3.org/hb3/Habitat-III-Issue-Paper-22_Informal-Settlements-2.0.pdf).

- UN-Habitat (2022). *Urban Population Living in Slums by Country or Area, 1990-2018 (Thousands)*. Urban Indicators Database. <https://data.unhabitat.org/pages/housing-slums-and-informal-settlements>.
- Uwizeye, D., Irambeshys, A., Wiehler, S., & Niragire, F. (2022). Poverty profile and efforts to access basic household needs in an emerging city: a mixed-method study in Kigali's informal urban settlements, Rwanda. *Cities and Health*, 2(1), 98–112.
- Walter, C., & Beal, C. (2020). Developing a best-practice model for water and wastewater services in informal urban settlements in Tanzania. *International Journal of Water Resources Development*, 38(3), 403–425. <https://doi.org/10.1080/07900627.2021.1909541>.
- Wondimu, H. (2021). The subsequent challenges of the slum and squatter settlements : In the city of Addis ababa. *European Journal of Research Development and Sustainability (EJRDS)*, 2(1), 24–34. <https://doi.org/10.13140/RG.2.2.33523.96807>.
- Zweig, P. (2016). Lost in space? Considering young men as drivers of urban informal settlement risk. *Urban Forum*. <https://doi.org/10.1007/s12132-016-9292-x>.