

# Understanding Encroachments and their Effects on Quality of Life: Perspectives of Residents in the Western Coastal Zone

A Kugan<sup>a\*</sup> and N C Wickramaarachchi<sup>b</sup>

<sup>a,b</sup>Department of Estate Management and Valuation, University of Sri Jayewardenepura, Sri Lanka

---

## Abstract

Many encroachments, representing different activities have been notified along the western coastal belt of Sri Lanka. Residents along the encroachments have complained about several issues that disrupt their daily lives. While extensive research has been done on community attitudes towards encroachments there remains a critical gap regarding the influence of coastal encroachments on the quality of life of residents in Sri Lanka. This research examines the impact of coastal encroachments on residents' quality of life in Dehiwela, Sri Lanka, focusing on infrastructural, social, and ecological factors. A quantitative approach was utilized, with a structured questionnaire directed to 75 residents, and data was analyzed through mean value and correlation analyses. Results of correlation present a moderate positive correlation between infrastructural factors and quality of life, while social and ecological factors show strong positive correlations and confirm that encroachments affect the quality of life of people. This study highlights the need for targeted policy interventions to control encroachments and foster sustainable living conditions.

© 2024 The Authors. Published by the Department of Estate Management and Valuation, University of Sri Jayewardenepura

*Keywords:* Post-disaster; Relocation; Social and Economic Factors

---

## Introduction

Encroachments, particularly in coastal areas, have emerged as a significant global concern due to their detrimental impact on communities' social, environmental, and economic facets. Encroachment refers to the unauthorized or illegal occupation of land, often infringing on the rights of others or harming the environment. Coastal encroachments, due to their proximity to sensitive ecosystems, present specific challenges that are often difficult to reverse. Along the Western coastline of Sri Lanka, such encroachments disrupt the region's ecological, social, and infrastructural balance, adversely affecting the quality of life for legal residents (DMMC, 2024).

Despite previous research highlighting the negative effects of encroachments on both infrastructure and ecosystems (Bolay, 2006; Jayasooriya et al., 2018), particularly in coastal areas (Davenport, 2006), there is a noticeable lack of empirical evidence linking these impacts directly to the quality of life of residents in Sri Lanka's coastal zones. This gap in the literature is critical, as it limits our understanding of how encroachments influence the overall well-being of affected communities.

The study is particularly relevant to Sustainable Development Goals (SDG) 3: Good Health and Well-being, and SDG 11: Sustainable Cities and Communities. By addressing how encroachments affect the infrastructural, social, and ecological well-being of coastal residents, this research contributes valuable insights into the challenges faced by these communities.

---

\*Corresponding author: [asho.kugan2000@gmail.com](mailto:asho.kugan2000@gmail.com)

## **The objective of the study**

To analyse the influence of encroachments on the quality of life of residents in the Dehiwela coastal belt through infrastructural, social, and ecological factors.

## **Literature Review**

Quality of Life (QoL) is a complex concept that includes physical, mental, and social well-being, as well as an individual's overall satisfaction with life (Diener et al., 1999). According to the University of Toronto's Quality-of-Life Research Unit, QoL is divided into three domains: Being, Belonging, and Becoming, each encompassing aspects like physical health, social relationships, and personal growth (University of Toronto, 2018). In the context of Sri Lanka, the State Lands Encroachments Ordinance No. 12 of 1840 defines encroachments as unauthorized occupations of state land, which affect public access to recreational areas and disrupt community well-being (State Land Ordinance, 1840).

Countries such as Pakistan and China have also experienced the negative impacts of land encroachments, which limit public access to natural resources and degrade environmental quality (Li & Tang, 2023). Internationally, various strategies have been employed to combat encroachments, including stricter regulations in Germany and long-term planning in Spain (Irazábal, 2018; Gormsen & Erdmann, 2017). These efforts focus on improving enforcement and technical coordination to address encroachments' social and ecological impacts.

Additionally, recent research by Munasinghe (2014) highlights that rapid urbanization in Sri Lanka has exacerbated the scarcity of land, pushing marginalized communities into informal settlements that further affect infrastructure and community well-being. Similarly, studies by Krawchenko & Tomaney (2023) emphasize that land use governance challenges, such as weak land tenure systems, contribute to unauthorized land occupations in rapidly growing regions, which affects social cohesion and service accessibility. These findings are relevant to SDG 3, which promotes health and well-being, and SDG 11, which aims to build sustainable and inclusive cities by mitigating the adverse effects of encroachments.

## **Methods**

The study focused on three densely populated coastal Grama Niladari Divisions (GND) from the Dehiwela Mount Lavinia Municipal Council (DMMC) which includes Dehiwela West, Jayathilaka, and Mount Lavinia. These areas have a diverse population with significant urban and tourism-related activities, further intensifying the impact of encroachments.

This study used a quantitative research design involving a structured questionnaire administered to randomly selected 75 residents across the three GNDs. The sample was selected using a proportionate sampling technique, ensuring that each GND was represented according to its population size. The questionnaire comprised 5-point Likert scale questions where 1 represented "strongly disagree," 5 represented "strongly agree," and 3 was neutral and measured residents' perceptions of three primary factors affecting QoL as mentioned above. The variables were measured as follows.

The impact of Encroachments has been tested under three components infrastructural, social and ecological factors (Daskin et al., 2020)

- Infrastructural factors focused on transport disruptions, road damage, and encroachments on public spaces.
- Social factors covered issues like cultural displacement, housing affordability, and neighbourhood conflicts.
- Ecological factors assessed habitat destruction, pollution, and vulnerability to natural disasters.

Quality of Life (University of Toronto, 2018)

- Quality of life (QoL) was assessed through the "being, belonging, and becoming" criteria, examining how residents' well-being, sense of community, and future opportunities were affected by infrastructural, social, and ecological factors in coastal areas.

Mean value analysis and correlation analysis were used to analyze the collected data.

## Results and Discussion

The characteristics of the respondents show out of 75 respondents, 39 were female and 36 were male. In terms of the GNDs, 36% were from Dehiwela West, 21.3% from Jayathilaka, and 42.7% from Mount Lavinia. Regarding housing, 64% owned their homes, 26.7% lived in rented houses, and the remainder resided in co-living spaces.

Cronbach's Alpha test was used to assess the reliability and validity of the study, and the results were satisfactory. (refer to Table 01).

**Table 01:** Reliability Test

Variables	Cronbach's Alpha
Infrastructural Factors	0.754
Social Factors	0.755
Ecological Factors	0.734
Quality of Life	0.845

*Source: Survey Data, 2024*

To identify the average values of each variable, the mean values were calculated. Out of three variables used to test encroachment, two variables except social values show higher mean values. Thus, it indicated that residents confirmed that these factors negatively impacted their quality of life. The seriousness of the issue is underlined by the fact that many values approached 4, signalling broad agreement on the unfavourable effects of these factors on QoL. The results are presented in Table 2 below.

**Table 02:** Mean Value Analysis

Variables	Mean	Standard Deviation
Infrastructural Factors	4.0667	0.61805
Social Factors	3.9547	0.62521
Ecological Factors	4.0800	0.55215
Overall Mean of Factors	4.0338	0.49724
Quality of Life	3.5433	0.74022

*Source: Survey Data, 2024*

To further identify the influence of encroachments on QoL, three hypotheses were developed. They are as follows,

H1: There is a relationship between the invaded infrastructural factors and the quality of life of legal residents.

H2: There is a relationship between the social factors and the quality of life of legal residents.

H3: There is a relationship between the ecological factors and the quality of life of legal residents.

Table 03 presents the Spearman correlation results between quality of life and its influencing factors, all significant at the  $p < 0.05$  level ( $H_0$  is rejected). This proves that these factors adversely affect the quality of life.

Infrastructural Factors show a moderate positive correlation with the QoL, with a coefficient of 0.398 and significance at a 5% level hence the  $H_1$  is rejected. Social Factors display a strong positive correlation at 0.562, and significant thus,  $H_2$  is rejected. Ecological Factors present a correlation coefficient of 0.558 and is significant. Therefore, the  $H_3$  is rejected. Accordingly, all three alternative hypotheses were accepted indicating the disruptive nature of the encroachments on QoL. When all factors are combined, the correlation coefficient increases to 0.607, indicating a strong relationship overall.

**Table 03: Correlation Analysis between Quality of Life and Factors Affecting it**

Infrastructural Factors	Correlation Coefficient	0.398
	Sig. (2-tailed)	0.001
Social Factors	Correlation Coefficient	0.562
	Sig. (2-tailed)	0.001
Ecological Factors	Correlation Coefficient	0.558
	Sig. (2-tailed)	0.001
All factors (Infrastructural, Social, and Ecological)	Correlation Coefficient	0.607
	Sig. (2-tailed)	0.001
***significant @ 1%		

Source: Survey Data, 2024

## Conclusion

This research highlights the significant impact of coastal encroachments on residents' quality of life in Dehiwela, Sri Lanka. The findings demonstrate that encroachments disrupt the wellbeing of residents through infrastructural, social, and ecological systems. Infrastructural disruptions moderately affect the QoL, while social and ecological factors have a stronger influence. The combined analysis emphasizes the importance of addressing these issues holistically. To mitigate the negative effects of encroachments and improve QoL, implementation of targeted policy interventions, promotion of sustainable urban development, and prioritization of ecological conservation are essential. This research also aligns with global goals, such as SDG 3 and SDG 11, which emphasize the importance of fostering healthy and sustainable communities.

## Acknowledgements

The authors wish to thank the residents who supported in collection of data and acknowledge the assistance given by the Centre for Real Estate Studies, Department of Estate Management and Valuation, University of Sri Jayewardenepura, Sri Lanka.

## References

- Bolay, J.-C. (2006). From encroachment to sustainable development: The environmental management of urban coasts. *Environment, Development and Sustainability*, 8(4), 519–534.
- Daskin, M., Tiril, A., & Bozkurt, A. (2020). Coastal tourism development in Sinop as an emerging rural destination: A preliminary study from the residents' perspective. *Tourism and Management Studies*, 16(2), 16–25. <https://doi.org/10.18089/tms.2020.160202>

- Davenport, J., & Davenport, J. L. (2006). The impact of tourism and personal leisure transport on coastal environments: A review. *Estuarine, Coastal and Shelf Science*, 67(1–2), 280–292. <https://doi.org/10.1016/j.ecss.2005.11.026>
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*. *Psychological Bulletin*, 125(2), 276–302.
- DMMC. (2024). *Encroachments in Dehiwela Mount Lavinia Muncipal Council Area*.
- Gormsen, & Erdmann. (2017). P4 - The impact of tourism on coastal areas - GOOD. *Geo Journal*, 42(1), 39–54.
- Irazábal, C. (2018). Coastal Urban Planning in The ‘Green Republic’: Tourism Development and the Nature–Infrastructure Paradox in Costa Rica. *International Journal of Urban and Regional Research*, 42(5), 882–887.
- Jayasooriya, S., Wewalwala, S., & Goonetilleke, A. (2018). Social and environmental impacts of informal settlements in the coastal zone of Sri Lanka. *Journal of Environmental Planning and Management*, 61(3), 522–539.
- Krawchenko, T., & Tomaney, J. (2023). The Governance of Land Use: A Conceptual Framework. *Land*, 12(3), 608. <https://doi.org/10.3390/land12030608>
- Li, L., & Tang, Y. (2023). Towards the Contemporary Conservation of Cultural Heritages: An Overview of Their Conservation History. *Heritage*, 7(1), 175–192. <https://doi.org/10.3390/heritage7010009>
- Munasinghe, J. (2014). Policies and issues in urban development in Sri Lanka: an examination of the inter-domain gaps. *Sri Lanka Journal of Social Sciences*, 35(1–2), 9. <https://doi.org/10.4038/sljss.v35i1-2.7298>
- State Land Ordinance. (1840). *STATE LANDS ENCROACHMENTS AN O RDINANCE TO MAKE PROVISION FOR THE PREVENTION OF ENCROACHMENTS*.
- University of Toronto. (2018). *Notes on Quality of Life*. <https://www.gdrc.org/uem/qol-define.html>