# CHAPTER 1 INTRODUCTION

## I. INTRODUCTION

Overtourism has become a significant global issue, particularly in destinations where visitor numbers exceed the sustainable capacity of local environments and infrastructure [1]. Bali, a leading tourism destination in Indonesia, exemplifies this trend with issues such as overcrowded beaches, traffic congestion, and the degradation of natural and cultural landmarks [2]. Similarly, in Barcelona, Spain, local residents have protested against the overwhelming influx of tourists, expressing frustration through public demonstrations [3]. These challenges emphasize the need for sustainable, data-driven strategies to balance tourism growth with the preservation of environmental and cultural resources [4].

Understanding overtourism requires localized and data-driven insights that reflect the specific pressures faced by destinations [5]. Previous studies have explored overtourism using subjective approaches, such as analyzing tourist reviews to capture visitor dissatisfaction or employing questionnaires to gather perceptions of overcrowding and infrastructure quality [6]. While these methods provide valuable insights into tourist experiences and opinions, they often lack the spatial dimension necessary to identify precise hotspots of overtourism [7]. This study addresses this gap by combining Subjective data from tourist reviews with objective geospatial analysis, providing a comprehensive framework to analyze overcrowding hotspots effectively [7].

Bali, with its unevenly distributed tourism infrastructure and concentrated tourist activity in southern regions, serves as an ideal case study for analyzing overtourism dynamics [8]. For instance, Kuta Beach frequently receives complaints in tourist reviews about overcrowded spaces and limited facilities [2]. Similarly, Ubud’s central market is often highlighted for congestion during peak

hours, creating dissatisfaction among visitors [2]. These real-world scenarios emphasize the need for spatial and experiential data to identify and address overcrowding hotspots effectively [9].

This study contributes to the field of overtourism by integrating advanced machine learning (via fine-tuned BERT for text classification) with geospatial tools such as Kernel Density Estimation (KDE) to identify and analyze areas in Bali where tourism pressures are most pronounced [10]. This innovative methodology enables a nuanced understanding of the relationship between infrastructure density and perceived overcrowding, setting this research apart from existing studies [6]. By evaluating visitor perceptions and linking them to tourism infrastructure, it offers insights into how overtourism affects both the local environment and the tourist experience [5]. These findings are intended to guide policymakers in addressing overcrowding and infrastructure challenges while ensuring sustainable tourism growth that benefits both visitors and local communities [11].

This study addresses overtourism challenges in Bali by focusing on the intersections between tourism infrastructure and visitor experiences [11]. By analyzing tourist feedback and spatial patterns, the study aims to identify hotspots where overcrowding and infrastructure strain are most severe [12]. These insights provide a deeper understanding of overtourism dynamics, offering actionable recommendations for balancing tourism growth with the preservation of Bali's cultural heritage and environmental sustainability [6]. The study's findings are intended to guide policymakers and stakeholders in implementing strategies that ensure long-term viability for both the destination and its communities [11].