Research Paper

Exploring tourism patterns across tourism typology for assessing the health of destinations

A case study of India

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Abstract

This paper aims to investigate tourism patterns in various tourist destinations at different regional scales across India, for determining a measure of the destination's health. The study analyses tourism trends in various tourist destinations in India using quantitative measures of tourist flow, tourism intensity, tourist density, and categorical measures of seasonality, tourism typology, and geography. Destination clusters are formed as per similarity in tourism patterns and are matched with visitor and local perception indicators such as overcrowding, and degree of satisfaction for identifying symptoms of 'overtourism' that might affect the destination's socio-economic and environmental health adversely. According to the study, overtourism is not only about excess visitors or overcrowding in a location; it is a long-term issue that alters the destination's economic and spatial shape compromising the resident's quality of life and altering the authentic identity of the place. Finally, the study emphasizes that measures for sustainable tourism growth should encompass resource efficiency, resident quality of life, and quality of experience, rather than merely revenue generated or the number of visitors. It is vital to identify the true challenges posed by the huge tourist influx leading to disturbances in the social and environmental quality of life of residents.

Keywords

Overtourism, Risk, Patterns, Destinations, Clusters

1 Introduction

Tourism is a fast-growing market that has significant economic impact for developing nations. India offers unique tourism experiences across its diverse geographic and cultural contexts which has always enticed tourists both within and beyond its national boundary. Tourism has become increasingly affordable for middle income group households in India with the rise of disposable income, lowering of air ticket prices, and the availability of low-cost accommodation. The desire to travel for leisure for short duration became a stable demand for domestic tourists which was further bolstered with 'work-from-home' opportunities. This resulted in continual large influx of tourists in various destinations across India, increasing the challenges of overcrowding and overloaded infrastructure. Furthermore, the uncontrolled expansion of built spaces to cater to tourism has shown irreversible impacts on landscapes. Destinations is India are grappling with extreme pressure on infrastructure during peak seasons of tourism, coupled with proliferation of accommodation options, that threatens the identity and attractiveness of the destinations, themselves. Drastic changes in landuse and landcover and increased dependency on

tourism as primary employment option has made the destinations incapable of coping with socio-economic and environmental risks. Endless traffic jams, vehicular pollution, waste generation, and littering, unchecked construction activities, water scarcity have been reported as unintended consequences of increased tourist activity (The New Indian Express, 16th June 2019). As a result, the 'health' of destinations is declining and tourism trends are veering away from the path of sustainability. Any shock – natural or socio-economic expose the vulnerability of the residents and people linked with tourism sector, and shatter future scope of development. Changing land use and landscapes with unregulated construction of tourism infrastructure in ecologically sensitive areas, due to increased tourist influx has been one of the underlying causes for increasing vulnerability to disasters (NIDM, 2013). The uncontrolled growth of tourism, therefore, causes considerable damage to landscapes, natural resources, air quality, water quality, and also resident livelihood. The issues and impacts resulting from such uncontrolled growth of tourism has been addressed using the term 'overtourism' on social media since 2017 (Capocchi et al., 2019; Dodds & Butler, 2019b; Goodwin 2017; Milano, 2017; Muler Gonzalez et al., 2018; Namberger et al., 2019; Pechlaner et al., 2020b). Though the usage of the term is relatively new, the issues are being debated since 1980s in terms of Limits to acceptable change, carrying capacity, Impact assessment, etc. Overtourism has been widely spread as a threat and risk to the destinations over social media and led to a stronger focus on the term by tourism researchers. It is vital to identify the true challenges posed by tourist flow in a range of places based on tourism resources and geographical features such as uncontrolled growth in and around areas leading to disturbances in the quality of life of residents and their indicators for ascertaining sustainable solutions. Therefore, this paper attempts to explore the patterns of tourism in various types of destinations with respect to geographical and tourism characteristics through the use of quantitative and categorical measures, and cluster them based on the similarity of the patterns. Further, a risk indicator of overtourism is developed to measure the health of the destinations

The paper is structured into four sections. The first section illustrates the risk of overtourism and the parameters that could define the risk of overtourism through a systematic review of literatures. The second section demonstrates the data collection and analysis methods used in the research while third section discusses the results and validation of the study with the perception of tourists. The final section of the paper is about the findings and conclusion of the research work.

2 Literature review

2.1 Risk of Overtourism

To emphasize the risks of overcrowding and overdevelopment, the term 'overtourism' has been introduced as a threat to destinations (Dodds & Butler, 2019a). There is no commonly accepted definition for overtourism because it is a multi-perspective phenomenon observed differently in different places (Zemla. M, 2020). Most of the definitions relate the concept of overtourism with respect to overcrowding, tourist saturation, increasing number of tourists travelling to popular destinations and its impact on local infrastructure, threat to resident's quality of life and also holding capacities of tourist infrastructure (Butler. R, 2018; Goodwin & Harold, 2017; Desbiolles. H et al., 2019; Milano, 2017; Peeters et al., 2018; Perkumiene & Pranskuniene, 2019; UNWTO, 2018) (Phi, 2019). Overtourism phenomenon is discussed in most literature, as the issue observed predominantly in urban destinations. Cities like Venice, Barcelona, Amsterdam, etc. are frequently cited examples in the literature of Overtourism (Alexis et al., 2017; Bertocchi et al., 2020). The very common phenomenon observed in these destinations is the changing attitude of residents to tourism, from a welcoming attitude to antagonism. Hence this phenomenon is also termed as "tourismphobia" especially in the case of cities. This phenomenon is observed in all kinds of tourist destinations, whether located in urban or rural areas, having different

levels of impacts on socio-economic environment. Overcrowding, congestion and high concentration of tourist flow are the commonly observed indicators in very popular case studies such as Amsterdam, Barcelona, Venice as cited from literatures (Berger, 2018; Bertocchi et al., 2020; Koens et al., 2018; Zemla. M , 2020; Seraphin et al., 2018). Gentrification, touristification, increasing short term rentals, rise in land prices, reducing housing affordability, loss of quality of life of residents and degrading tourist satisfaction levels are some of the other indicators observed in the phenomenon of overtourism (Dodds & Butler, 2019a; Koens et al., 2018; Milano, 2017; Weber et al., 2017).

Table 1. Symptoms of overtourism. Source: Author

Symptoms of overtourism	HOTREC (2018)	Jordan et al. (2018, p. 5)	Koens et al. (2018, p. 5)	Dodds and Butler, 2018	Weber et al. (2017, p. 3)	Milano (2017, p. 5, 2018, p. 554)
High Tourist influx	Y	Y	Y	Y	Y	Y
Overcrowding/Congestion	Y	Y	Y	Y	Y	Y
Stress on Infrastructure/overloaded infrastructure/Inadequate Infrastructure	Y	Y		Y	Y	
Degraded tourist experience/Low visitor satisfaction					Y	
Commercialisation/ Touristfication/Loss of identity and authenticity/Gentrification		Y	Y		Y	
Rising cost of living/Inflation/Income inequalities among residents	Y	Y			Y	Y
Environmental degradation/pollution	Y	Y	Y		Y	Y
Reduced quality of life among residents	Y	Y			Y	Y
Damage to tourist attractions/ Reduced attractiveness		Y				
Overconsumption and increased demand of resources		Y				Y
Irresponsible/Inappropriate behaviour of tourists		Y	Y		Y	
Exceeding the capacity thresholds				Y	Y	
Increased sharing economy through Airbnb and other similar platforms					Y	

From the analysis of the literature, it is evident that the destinations that are exposed to high tourist influx and accelerated growth rates face the issues of high concentration of tourists which lead to degraded experiences of tourists (i-e negative reviews about the destination). Hence, the destinations with either high tourist influx or higher tourism growth rates facing the challenges of overcrowding or congestion at high exposure to risk of overtourism. Also, Butler's life cycle explains how destinations are

shaped through different stages of development with the changing number of tourist arrivals. This led to the assumption that the pressure or stress generated by the demand of tourists is the root cause of transforming an unexplored destination to a developed destination, and then to a consolidated or saturated or overdeveloped destination if the growth trend is continued without any limiting factor.

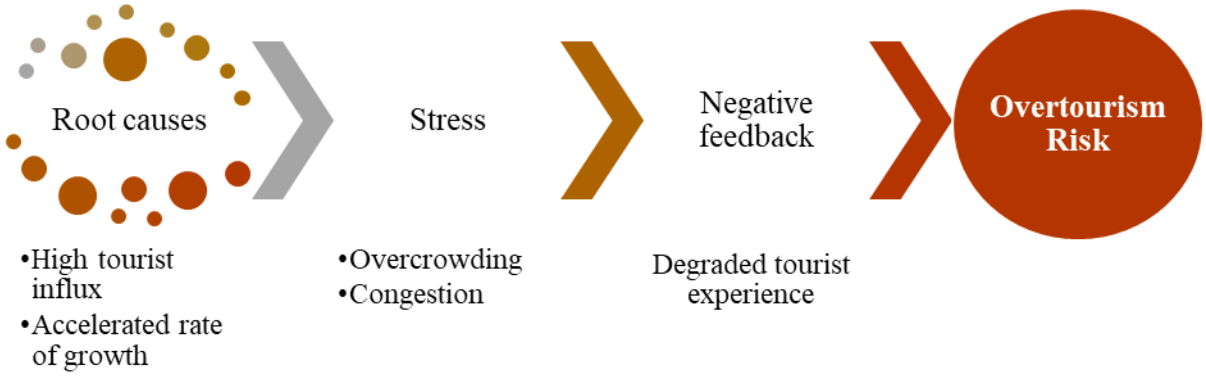

Figure 1. Assessing the risk of overtourism at the destination level. Source: Author

A set of commonly used parameters are identified from the literature review based on the suitability and availability of data at the city scale. It has been observed that overtourism is a state of tourism that exceed the thresholds and this is a frequently observed during peak season. There is no evidence in literature stating that overtourism is a phenomenon that may happen throughout the year. Therefore, it is assumed that overtourism can be a temporal phenomenon, mostly observed during peak season. Especially in India with a huge diversity in tourism activities, overtourism is considered as temporal phenomenon and hence the parameters tourist inflow, Tourism intensity and tourism density are modified to peak season tourist flow, peak season tourism intensity and peak season tourism density respectively. Also, growth rate of tourism, negative feedback are also considered as relevant parameters in the context of India. While Tourist inflow and Growth rate of tourism is related to absolute number of tourists and the rate of increase of tourists, Density of tourism and Tourism intensity are related to overcrowding and pressure on destination's infrastructure. Negative Feedback is related to Tourist reviews on the destinations. Table 3 defines the parameters as utilized in this paper and presents the nature of data requirements.

Table 2. Selected Parameters to assess the risk of overtourism in tourist destinations of India. Source: Author

	Parameters	Description	Data collection sources
High Tourist Influx	**Peak Season Tourist flow**	Average Tourist arrivals per day in peak season (peak season tourists/year)	The average number of tourists arrived in the destination in a day of peak season
Accelerated growth of tourism	**Growth rate of tourism**	Average annual growth rate (%)	Rate of change in tourist arrivals per year (considering the data of 2005 to 2017)
Overcrowding	**Peak season Tourism intensity**	Number of visitors in a per resident in a day of peak season (#)	Calculated as average number of tourists arrived in the destination in a day of peak season divided by the no.of residents in the host destination (village/town /city) as

			per census 2011
Concentration of group of tourists/ Congestion	**Peak season Tourism density**	No. of tourists per sq.km in a day of peak season	Calculated as average number of tourists arrived in the destination in a day of peak season divided by the area(sq.km) of the host destination (village/town /city) as per census 2011
Degrading tourist experience	**Negative Feedback**	% share of poor and terrible reviews	Measuring the magnitude of negative reviews in tourist experiences for all the attractions advertised in TripAdvisor (Data captured from Trip Advisor)

3 Methodology

3.1 Data collection and processing

Data is collected based on the selected parameters, for most popular tourist destinations in India, as per Ministry of Tourism, India. Secondary data on area of selected destinations, resident population has been obtained from Census of India, 2011. User-generated data like tourist reviews on selected destinations have been obtained from Tripadvisor (https://www.tripadvisor.in)), an online travel review platform that is being commonly used by most of the researchers. The obtained data is then used to establish cut-off points for different levels of risk corresponding to each parameter through classification of data into quintiles as shown in Table 3. Therefore, the parameters with lowest values are classified into lowest risk quantiles and highest values to highest risk quintiles.

Table 3. Relative cut-off points for different levels (quintiles) . Source: Author

Parameters	Level of risk				
	Lowest (bottom 20% risk quintile)	Low	Moderate	High	Highest (top 20% risk quintile)
Peak Season Tourist flow	<1260	1260 - 2500	2500 - 6000	6000 - 11000	>11000
Peak season Tourism intensity	< 1	1 - 2	2 - 6	6 - 19	> 19
Peak season Tourism density	< 17	17 - 73	73 - 160	160 - 432	> 432
Growth rate of tourism (%)	< 4	4 - 6	6 - 10	10 - 14	> 14
Negative Feedback	< 2	2 - 3	3 - 4	4 - 5	> 5

Then, each quintile has been assigned a score of 1, 2, 3 4 and 5 for the lowest to highest quintiles respectively. The risk is quantified in terms of risk proportion measured as the number of parameters that are assigned a score of greater than 3 (i-e which shows moderate to highest risk scores) out of total number of parameters which is expressed as a percentage value termed as risk proportion. The destinations are then categorized into different proportions of risk as shown in table 3-5.

***Risk Proportion = (No. of parameters showing high and very high risk scores*100)/ Total no.of parameters**

Table 4. Risk proportion and Degree of risk. Source: Author

Risk proportion	0%	20%	40%	60%	80%	100%
Degree of risk	No Risk	Very low	Low	Moderate	High	Very High

Table 5. Destinations categorized into different risk proportions. Source: Author

Very low	Low	Moderate	High	Very High
Athirapalli Ayodhya Bharathpur, Bikaner Gwalior Hamirpur Jaipur, Jodhpur Kanpur, Khajuraho Pune Udaipur Wagamon	Almora, Alwar Badami, Badrianth Chamba, Coonoor Hampi Jhansi Kalimpong, Kedarnath, Kumarakom Lucknow Nalanda Ranikhet, Rishikesh Varkaala, Varanasi Wayanad	Ajmer Darjeeling Gangotri, Goverdhan, Guruvayoor Jaisalmer Kollam Manali, Mathura, Munnar, Mussoorie, Mysuru Nainital Orcha Patna Sanchi , Shimla Thekkadi Vishakapatnam, Vrindavan	Allahabad, Aurangabad Gaya Haridwar Kochi, Kovalam Mount Abu Puri, Pushkar Srisailam Tirupathi	Agra Dharamshala Kodaikanal Rajgir Ooty

Also, a hierarchical cluster analysis is carried out among all the destinations through heatmap ordered with Dendrogram. Distance matrix of the selected five parameters among all the destinations is generated using Euclidean distance metric method and then destinations are clustered through ward's linkage method. A clustered dendrogram is obtained grouping the destinations into five clusters parameters as shown in figure 2. A clustered heatmap ordered with dendrogram is generated representing the risk levels of overtourism for parameters corresponding to each destination. A colour gradient of white to red is used to represent low to high values. The obtained heatmap shows the distance between the destinations based on five parameters as shown in figure 3.

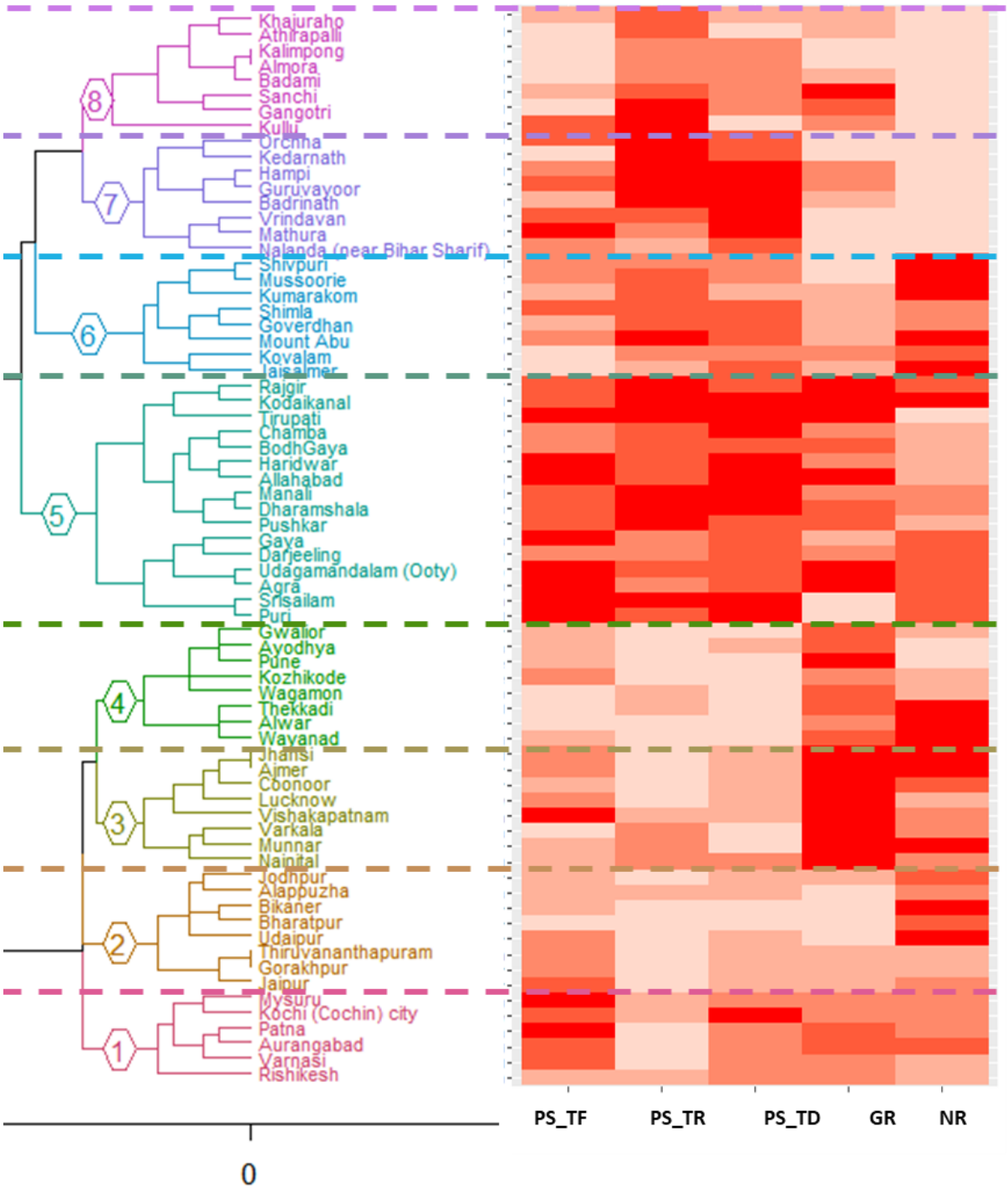

Figure 2. Dendrogram and Clustered Heatmap

4 Results and Discussion

4.1 Exploring the patterns of tourism parameters and typology of destinations in various clusters

The destinations with more than 50% of risk proportion occupies cluster 5 and some parts in clusters 1,3, 6, 7, 8. As evident in heat map high to very high-risk patterns of parameters are observed in cluster 5 with lowest to moderate exposure to negative reviews. Hence, cluster 5 can be confirmed as a cluster of overtourism cases with excess growth of tourism leading to overcrowding and congestion. The case of clusters with respect to risk of overtourism is defined as shown in in table 7. Cluster_1 shows high tourist inflow with high tourism intensity and density but not high growth rate and negative reviews that represents that the destinations are developed and under consolidated stage as per Butler's life cycle. Cluster_3 shows higher annual growth rates with more negative reviews representing that destinations are in demand but are not managed properly. Cluster_5 include the destinations that are facing overcrowding and congestion which are the true cases of overtourism. Cluster_6 and Cluster_7 may also be included as cases of overtourism which has significant tourism intensity and density with increasing negative feedback. It is evident that overtourism scenario is different to different destinations. However, in general all the cases of overtourism show high tourism intensity and density irrespective of tourist arrivals, tourist arrival growth rate and negative reviews. Including the tourist arrivals exposed a fact that overtourism is not just a phenomenon in the destinations which receive large number of tourist arrivals but also phenomenon in the places with low tourist arrivals higher than its carrying capacity. It is necessary to include other parameters along with tourism intensity and density to understand different scenarios of overtourism.

Table 6. Clusters based on tourism patterns, and its exposure to the risk of overtourism. Source: Author

Cluster_ID	Tourist Inflow	Tourist-Resident ratio	Tourist Density	Growth rate	Negative feedback	Exposure to risk of overtours
Cluster_1	Moderate to High	Very low	Moderate	Moderate	Moderate	Mass tourism but might experience slight crowding
Cluster_2	Low	Very low	Low	Very low	High	not in demand
Cluster_3	Moderate	Very low	Low	Very high	High	Well-marketed but poor managed
Cluster_4	Very low	Very low	Very low	High	Either very Low or Very high	Fast Emerging but Poor management is leading to a negative response
Cluster_5	Moderate to very High	Moderate to very High	Moderate to very High	Moderate to very High	Low to Moderate	Excess tourism leads to Overcrowding and Congestion and moving towards degrading experiences but still in demand due to its popularity and branding

Cluster_6	No pattern	Moderate to High	High	Low	High	Less capacity to withhold and highly stressed with any number of tourists and are not in demand with high negative feedback (could have a case of overtourism)
Cluster_7	Moderate to High	High	High	Low	Very low	No over-tourism at present. Could become a case of Overtourism if the growth rate increases suddenly with poor management.
Cluster_8	Very low	Moderate to High	Low to moderate	Low to moderate	Very low	Slowly emerging and No overtourism at present

4.2 Tourist's perception of crowding and their level of satisfaction with the destinations

To validate the obtained clusters, a perception survey has been conducted to understand the ground reality of crowding and the level of satisfaction in popular destinations in India. A random sample of more than 1000 responses has been considered for the study. The respondents are asked to point out the destinations visited before the COVID-19 pandemic and are asked to rate the destination in terms of crowding and their satisfaction with the experience in the destination on a Likert scale of 1 to 5, which stands for least crowded to most crowded and least satisfied to most satisfied. The collected responses are plotted as shown in the figure.

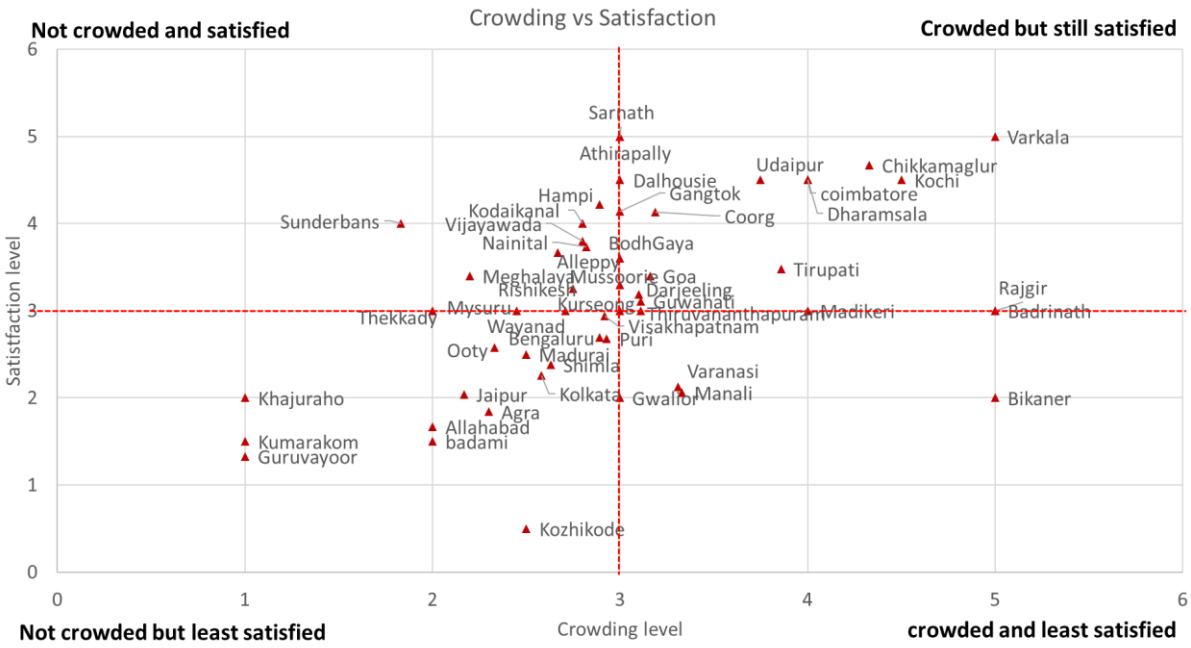

Figure 3. Perceptions of Crowding and Satisfaction in the destinations in India

The destinations which are at higher risk of overtourism such as Agra, Ooty, Kodaikanal, and Allahabad are rated as slightly crowded, however, tourists are least satisfied with their experience. This is evidence

of the declining demand for travelling to popular destinations, especially during peak season. From the responses, it is also evident that the popular destinations which have opened for the entire year have seen a reduction in daily tourist inflow with equal distribution of tourists for the entire year. And, also popular destinations such as Agra, Ooty, Jaipur, and Shimla are no more healthy destinations as the rate of satisfaction is very low. As an exception, Tirupathi is rated most crowded but still, the tourist has shown a higher satisfaction level, with ever demanded by the tourists and also the control measures taken for the crowd management in the vicinity of the temple town. It is also observed that the tourist intensity and density are relatively low for heritage and leisure cities when compared with hill regions, small towns and rural towns. This could be one of the reasons for lower crowding perceived by tourists in such popular urban destinations that include metropolitan and Tier-1 cities. Most of the nature-based leisure destinations such as Darjeeling, Coorg, and Gangtok and religious hill destinations are crowded but yet they are at a higher level of satisfaction for tourists, which implies that they are relatively in higher demand in the choice of tourists. It is also validated that the ground reality of popular heritage destinations such as Agra, Mysuru, Jaipur etc. are at the neutral stage of satisfaction with moderate crowding experienced by tourists, which will be at higher risk with no control measures on tourist flow.

5 Conclusion and way forward

Through the analysis, the destinations that are exposed to the risk of overtourism are identified through the combined use of statistical data available from secondary sources and user generated data available from online travel review platform such as Tripadvisor. Lack of tourism statistics at destination scale constrained the sample to 70 destinations for the study based on availability of data. Root causes such as volume of tourist flow per day during peak season and rate of growth of tourism are considered as the drivers of overtourism risk in the destination. Tourism intensity and tourism density are considered as the main indicators to define the state of overtourism. Negative feedback given by tourists on travel review sites is considered as the measure of tourist experience in the destination. It is observed that some of the destinations without the risk of overtourism also showed negative feedback. And also, overtourism is a phenomenon not only in urban areas but also in rural areas (Dodds & Butler, 2019a; Koens et al., 2018; Martín Martín et al., 2018; Peeters et al., 2018), specifically in India with the diverse nature of tourism attractions. Different scenarios of overtourism are observed among the destinations. Among the four categories, large number of overtourism cases are observed in the category of religious destinations having lower rate of growth and negative feedback. There exists a strong similarity among tourist influx, tourism intensity and tourism density for the case of religious destinations and require other parameters to understand the risk due to overtourism. In contrast, most of the nature-based destinations do not experience large tourist influx but the still the stress is high and may receive negative feedback. It is validated in the perception analysis, that nature based destinations such as Manali, Ooty are at lesser satisfaction with moderate tourist influx relative to types of destinations. Multi-themed destinations such as Patna, Kochi and Vishakhapatnam, Heritage & cultural destinations such as Agra, Rajgir, Ajmer, Mysuru, and Jaipur have been considered to be at a high exposure to overtourism as they receive higher stress due to high tourist influx and also have high negative feedback. As observed the phenomenon is not strictly about the number of visitors but also about the stress and impacts (Erschbamer et al., 2018). To understand the phenomenon of overtourism and its relation to the destination's health, a combined study on evolution of tourism development and its impact on physical, social and economic dimensions of the destination is required at destination scale.

6 References

Alexis, P. & others. (2017). Over-tourism and anti-tourist sentiment: An exploratory analysis and discussion. *Ovidius University Annals, Economic Sciences Series*, *17*(2), 288–293.

Becken, S., Mahon, R., Rennie, H. G., & Shakeela, A. (2014). The tourism disaster vulnerability framework: An application to tourism in small island destinations. *Natural Hazards*, *71*(1), 955–972. https://doi.org/10.1007/s11069-013-0946-x

Berger, R. (2018). Protecting Your City from Overtourism. European City Tourism Study 2018. *Roland Berger, Munich*.

Bertocchi, D., Camatti, N., Giove, S., & van der Borg, J. (2020). Venice and Overtourism: Simulating Sustainable Development Scenarios through a Tourism Carrying Capacity Model. *Sustainability*, *12*(2), 512.

Butler Richard. (2018). Challenges and opportunities. *Worldwide Hospitality and Tourism Themes*, *10*(6), 635–641. https://doi.org/10.1108/WHATT-07-2018-0042

Calgaro, E., Dominey-Howes, D., & Lloyd, K. (2014a). Application of the *Destination Sustainability Framework* to explore the drivers of vulnerability and resilience in Thailand following the 2004 Indian Ocean Tsunami. *Journal of Sustainable Tourism*, *22*(3), 361–383. https://doi.org/10.1080/09669582.2013.826231

Calgaro, E., Dominey-Howes, D., & Lloyd, K. (2014b). Application of the *Destination Sustainability Framework* to explore the drivers of vulnerability and resilience in Thailand following the 2004 Indian Ocean Tsunami. *Journal of Sustainable Tourism*, *22*(3), 361–383. https://doi.org/10.1080/09669582.2013.826231

Capocchi, A., Vallone, C., Amaduzzi, A., & Pierotti, M. (2019). Is 'overtourism' a new issue in tourism development or just a new term for an already-known phenomenon? *Current Issues in Tourism*, 1–5. https://doi.org/10.1080/13683500.2019.1638353

Cohen, E., & Cohen, S. A. (2012). Current sociological theories and issues in tourism. *Annals of Tourism Research*, *39*(4), 2177–2202. https://doi.org/10.1016/j.annals.2012.07.009

Cotterell, D., Hales, R., Arcodia, C., & Ferreira, J.-A. (2019). Overcommitted to tourism and under-committed to sustainability: The urgency of teaching "strong sustainability" in tourism courses. *Journal of Sustainable Tourism*, *27*(7), 882–902. https://doi.org/10.1080/09669582.2018.1545777

Dodds, R., & Butler, R. (Eds.). (2019a). *Overtourism: Issues, realities and solutions*. De Gruyter.

Dodds, R., & Butler, R. (2019b). The phenomena of overtourism: A review. *International Journal of Tourism Cities*, *5*(4), 519–528. https://doi.org/10.1108/IJTC-06-2019-0090

Dodds, R., & Butler, R. W. (2019c). 2 The enablers of overtourism. *World*, *2010*, 2030.

Espiner, S., & Becken, S. (2014). Tourist towns on the edge: Conceptualising vulnerability and resilience in a protected area tourism system. *Journal of Sustainable Tourism*, *22*(4), 646–665. https://doi.org/10.1080/09669582.2013.855222

Faulkner, B., & Tideswell, C. (1997). A Framework for Monitoring Community Impacts of Tourism. *Journal of Sustainable Tourism*, *5*(1), 3–28. https://doi.org/10.1080/09669589708667273

Goodwin, H. (2017). *The challenge of overtourism*.

Goodwin & Harold. (2017). *The challenge of overtourism* [Working Paper]. https://scholar.google.com/scholar_lookup?title=The+Challenge+of+Overtourism&author=Goodwin,+H.&publication_year=2017

Higgins-Desbiolles, F., Carnicelli, S., Krolikowski, C., Wijesinghe, G., & Boluk, K. (2019). Degrowing tourism: Rethinking tourism. *Journal of Sustainable Tourism*, *27*(12), 1926–1944. https://doi.org/10.1080/09669582.2019.1601732

Koens, K., Postma, A., & Papp, B. (2018). Is overtourism overused? Understanding the impact of tourism in a city context. *Sustainability*, *10*(12), 4384.

Magnan, A., Hamilton, J., Rosselló, J., Billé, R., & Bujosa, A. (2013). Mediterranean Tourism and Climate Change: Identifying Future Demand and Assessing Destinations' Vulnerability. In A. Navarra & L. Tubiana (Eds.), *Regional Assessment of Climate Change in the Mediterranean: Volume 2: Agriculture, Forests and Ecosystem Services and People* (pp. 337–365). Springer Netherlands. https://doi.org/10.1007/978-94-007-5772-1_15

Martín Martín, J. M., Guaita Martínez, J. M., & Salinas Fernández, J. A. (2018). An analysis of the factors behind the citizen's attitude of rejection towards tourism in a context of overtourism and economic dependence on this activity. *Sustainability*, *10*(8), 2851.

Michal Żemla. (2020). Reasons and Consequences of Overtourism in Contemporary Cities—Knowledge Gaps and Future Research. *Sustainability*, *12*(5), 1729.

Milano, C. (2017). Overtourism and Tourismphobia: Global trends and local contexts. *Barcelona: Ostelea School of Tourism & Hospitality*.

Moreno, A., & Becken, S. (2009). A climate change vulnerability assessment methodology for coastal tourism. *Journal of Sustainable Tourism*, *17*(4), 473–488. https://doi.org/10.1080/09669580802651681

Muler Gonzalez, V., Coromina, L., & Galí, N. (2018). Overtourism: Residents' perceptions of tourism impact as an indicator of resident social carrying capacity - case study of a Spanish heritage town. *Tourism Review*, *73*(3), 277–296. https://doi.org/10.1108/TR-08-2017-0138

Namberger, P., Jackisch, S., Schmude, J., & Karl, M. (2019). Overcrowding, Overtourism and Local Level Disturbance: How Much Can Munich Handle? *Tourism Planning & Development*, *16*(4), 452–472. https://doi.org/10.1080/21568316.2019.1595706

Pechlaner, H., Innerhofer, E., & Erschbamer, G. (Eds.). (2020a). *Overtourism: Tourism management and solutions*. Routledge.

Pechlaner, H., Innerhofer, E., & Erschbamer, G. (Eds.). (2020b). *Overtourism: Tourism management and solutions*. Routledge.

Peeters, P., Gössling, S., Klijs, J., Milano, C., Novelli, M., Dijkmans, C., Eijgelaar, E., Hartman, S., Heslinga, J., Isaac, R., Mitas, O., Moretti, S., Nawijn, J., Papp, B., & Postma, A. (2018). *Research for TRAN Committee—Overtourism: Impact and possible policy responses*. 260.

Perkumienė, D., & Pranskūnienė, R. (2019). Overtourism: Between the Right to Travel and Residents' Rights. *Sustainability*, *11*(7), 2138. https://doi.org/10.3390/su11072138

Phi, G. T. (2019). Framing overtourism: A critical news media analysis. *Current Issues in Tourism*, 1–5. https://doi.org/10.1080/13683500.2019.1618249

Postma, A., & Schmuecker, D. (2017). Understanding and overcoming negative impacts of tourism in city destinations: Conceptual model and strategic framework. *Journal of Tourism Futures*, *3*(2), 144–156. https://doi.org/10.1108/JTF-04-2017-0022

Seraphin, H., Sheeran, P., & Pilato, M. (2018). Over-tourism and the fall of Venice as a destination. *Journal of Destination Marketing & Management*, *9*, 374–376. https://doi.org/10.1016/j.jdmm.2018.01.011

Strickland-Munro, J. K., Allison, H. E., & Moore, S. A. (2010). Using resilience concepts to investigate the impacts of protected area tourism on communities. *Annals of Tourism Research*, *37*(2), 499–519. https://doi.org/10.1016/j.annals.2009.11.001

Taiminen, S. (2018). *The negative impacts of overtourism on tourism destinations from environmental and socio-cultural perspectives*.

UNWTO. (2018). *Overtourism? Understanding and Managing Urban Tourism Growth beyond Perceptions: Executive Summary*. https://scholar.google.com/scholar_lookup?title=Overtourism?+Understanding+and+Managing+Urban+Tourism+Growth+beyond+Perceptions:+Executive+Summary&author=UNWTO&publication_year=2018

Weber, F. (2017). Overtourism. An analysis of contextual factors contributing to negative developments in overcrowded tourism destinations. *BEST EN Think Tank XVII: Innovation and Progress in Sustainable Tourism*, 315.