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Responsible Destination Management under Over-tourism Pressure: Evidence from PLS-SEM and NCA–fsQCA

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Abstract

Popular destinations have experienced over-tourism, which has led to environmental degradation, congestion of infrastructure and socio-cultural conflicts that endanger long-term sustainability. Responsible Destination Management (RDM) has been offered as a strategic tool to enable a balance between tourism development, environmental conservation and community welfare. Empirical studies describing its efficiency in the face of the over-tourism pressure are still scarce. This paper evaluates structural relationships and conditions that are needed by considering the use of Partial Least Squares Structural Equation Modelling (PLS-SEM) alongside Necessary Condition Analysis and fuzzy-set Qualitative Comparative Analysis (NCA-fsQCA). The survey information was obtained among the major tourism stakeholders in destinations with high traffic. Results of the PLS-SEM indicate that RDM outcome is elevated by a factor of governance quality, stakeholder collaboration, community participation, and smart management practices. The results demonstrate the significance of the combined governance and data-driven approaches towards over-tourism reduction and maintaining sustainable destination management.

1. Introduction

Over-tourism is emerging as one of the most acute governance issues facing modern tourism destinations, especially in urban and heritage environments where overcrowding of tourists surpasses ecological, infrastructural and social carrying capacities (Koens et al., 2021; Milano et al., 2021; Seraphin et al., 2022). Being described as a scenario where tourism development leaves adverse externalities to the locals and worsens visitor quality experience, over-tourism poses a threat to long-term sustainability and validity of tourism development paradigms (Perkumiene and Pranskuniene, 2021; Zerva et al., 2022). After the COVID-19 pandemic, the tourist demand returned to its peak, which made the situation even more congested, environmentally strained, and community resentment in crowded destinations (UNWTO, 2023; OECD, 2024; WTTC, 2025). There is empirical evidence that spatial concentration and seasonality are enhanced through post-pandemic recovery, and thus, increase structural vulnerabilities in destination systems (Bausch et al., 2021; Higgins-Desbiolles, 2021; Gossling and Schweiggart, 2022).

Responsible Destination Management (RDM) has responded by becoming an operational framework and a normative framework to balance tourism growth and unmet sustainability imperatives. RDM focuses on collective management, responsible tourism, the involvement of locals, and dynamic management techniques that focus on long-term socio-ecological sustainability instead of short-term financial benefits (Bramwell et al., 2022; Dredge et al., 2023; Hall and Williams, 2022). In contrast to the traditional methods of destination management, where competitiveness and marketing are the main priorities, RDM combines the concepts of stewardship, accountability, and inclusivity when developing policies and acting upon them (Goodwin, 2022; Seraphin and Dosquet, 2023). According to the scholars, responsible management is exceptionally important, especially in the over-tourism conditions, when regulatory mechanisms, visitor dispersion strategies, and demand management tools should be organised systematically according to sustainability aims (Koens and Postma, 2021; Zerva et al., 2022; Celik and Cevrigen, 2024).

The recent studies indicate that the governance capacity is a key factor in destination resilience in tourism pressure conditions. The effectiveness of the institutions, the enforcement of policies, and the inter-organisational collaboration have a strong impact on the success of over-tourism mitigation strategies (Bramwell and Lane, 2022; Nunkoo et al., 2023; Zhang et al., 2024). As an example, a study of the European heritage cities indicates that fragmented governance systems destabilise regulatory adherence and deterioration of visitor management results (Koens et al., 2021; Milano et al., 2021). Equally, it has been observed that community involvement is a vital process of enhancing legitimacy and adherence to tourism policies, particularly in politically sensitive tourism destinations (Higgins-Desbiolles et al., 2021; Perkumiene and Pranskuniene, 2021; Rasoolimanesh et al., 2023). These results support the idea that RDM cannot be obtained via a single intervention but must be obtained in a combination of socio-institutional set-ups.

There is also technological innovation that transforms destination management in the pressure of over-tourism. The use of smart tourism systems, real-time monitoring, and systems based on data-driven decision making allows authorities to control the flow of visitors and forecast the trends of congestion (Gretzel et al., 2022; Buhalis et al., 2023; Mariani and Borghi, 2023). Nevertheless, technology itself will not be enough unless it is incorporated in the context of logically designed governance systems and ethical standards (Gossling, 2023; Buhalis and Sinarta, 2019; Neuhofer et al., 2024). The literature is becoming more cautious of techno-oriented solutions that do not consider social equity and the well-being of the residents (Seraphin et al., 2022; Dredge et al., 2023; Zhang et al., 2024). Therefore, participatory governance and institutional accountability should be combined with smart destination management to facilitate transition in tourism to be responsible.

Traditionally, tourism management studies have been based on symmetric, net-effect models like regression analysis and structural equation modelling to describe the effect of sustainability results (Hair et al., 2022; Sarstedt et al., 2022). PLS-SEM is particularly

appropriate when the specific focus is placed on complex causal relationships among the variables of the governance quality, stakeholder engagement, and destination performance (Hair et al., 2022; Ringle et al., 2023). Recent PLS-SEM-based tourism research indicates that the quality of governance and institutional trust are key predictors of sustainable performance of the destination (Rasoolimanesh et al., 2023; Zhang et al., 2024; Li et al., 2025). However, opponents state that symmetric methods suppose the linearity and fail to consider causal asymmetry, thus underestimating destination systems complexity (Woodside, 2021; Greckhamer et al., 2022).

To overcome this weakness, configurational approaches, including fuzzy-set Qualitative Comparative Analysis (fsQCA), Necessary Condition Analysis (NCA), have recently become increasingly popular in the realm of tourism studies (Pappas and Woodside, 2021; Dul et al., 2023; Greckhamer et al., 2022). FsQCA allows finding various equifinal ways to achieve high performance results, which represents the logic of combinations of socio-ecological systems (Woodside, 2021; Pappas et al., 2023). NCA supplements this method with minimum threshold levels of important conditions necessary to have an outcome (Dul, 2022; Richter et al., 2023). Recent tourism uses of fsQCA and NCA indicate that there is no single determinant that is enough to guarantee sustainability, but rather success is based on the configurations of governance, technological capability and stakeholder engagement (Pappas et al., 2023; Li et al., 2025; Geremew and Kleynhans, 2026).

Although the conceptual action on the significance of RDM is agreed upon, there is a lack of empirical studies that combine symmetric and asymmetric modeling in the context of over-tourism pressure. The majority of other current studies discuss single drivers like quality of governance or technological uptakes without considering the requirements and configurational causality (Bramwell et al., 2022; Nunkoo et al., 2023; Rasoolimanesh et al., 2023). In addition, less focus has been directed on the impact of minimum institutional requirements that limit the effectiveness of RDM in high-pressure destinations (Dul, 2022; Richter et al., 2023). This is one of the big gaps in destination management studies, especially with the increasing over-tourism caused by climate change, international mobility, and online travel (Gossling and Schweiggart, 2022; OECD, 2024; WTTC, 2025).

Based on this, the present research explores Responsible Destination Management through over-tourism pressure by combining PLS-SEM and NCA-fsQCA. The analysis of the relationship between governance capacity, stakeholder collaboration, smart management practices, and community participation as four constituents, together with a net-effect modeling and configurational, necessity-based analysis, allows the study to derive a more holistic picture of the interactions between these components to influence the outcome of RDM. This methodological triangulation contributes to tourism theory by enabling the capture of linear and nonlinear causality as well as provides a direct response to the demand to use pluralistic methods of analysis in research about sustainability (Woodside, 2021; Greckhamer et al., 2022; Dul et al., 2023). Practically, the results can provide evidence-based information to policymakers and destination managers aiming to create effective governance frameworks that can reduce the effects of over-tourism and ensure that they continue to create economic and social values.

2. Theoretical Framework

The current paper is based on the Stakeholder Theory, according to which organizational and policy success is predetermined by the extent to which the interests of different groups of stakeholders are identified, balanced, and managed (Freeman, 1984; Donaldson and Preston, 1995). In tourism destinations, the stakeholders are generally the residents, tourism, tourism business, government authorities and non-governmental organizations, which are all affected and influence the results of tourism development (Byrd, 2007; Jamal and Getz, 1995).

Over-tourism is a sign of imbalance between stakeholders, when the economic interests of tourism operators and destination marketers do not correspond to the quality of life and environmental protection goals of residents (Milano et al., 2021; Koens and Postma, 2021; Zerva et al., 2022). In terms of Stakeholder Theory, this kind of conflict is manifested in situations whereby the governance systems fail to arbitrate conflicting claims and distribute tourism benefits and costs in a fair manner (Bramwell and Lane, 2011; Hall, 2011). To manage the Responsible Destination Management (RDM), governance arrangements must also be in place to promote participation, coordination and accountability among the stakeholder groups (Jamal and Stronza, 2009; Bramwell et al., 2022).

In this context, the quality of governance is the institutional ability to coordinate the interests of stakeholders by regulating and developing plans jointly (Nunkoo et al., 2023; Zhang et al., 2024). The use of stakeholder collaboration and local involvement increases the legitimacy and compliance through the involvement of local values in the decision-making processes (Aas et al., 2005; Perkumiene and Pranskuniene, 2021; Rasoolimanesh et al., 2023). Smart management, including visitor monitoring systems with data generated, assist in coordinating the stakeholders by enhancing the transparency and evidence-based adoption of policies (Buhalis et al., 2023; Gretzel et al., 2022; Buhalis and Sinarta, 2019).

This paper thus conceptualizes Responsible Destination Management as a stakeholder-based outcome conditioned by the quality of governance, stakeholder cooperation, community engagement, and intelligent practices of management in the face of over-tourism. The Stakeholder Theory serves as the only theoretical lens and helps the framework to focus on the fact that the management of over-tourism is more of a relational and governance problem than a technical or market-based one (Freeman, 1984; Bramwell and Lane, 2011; Dredge et al., 2023).

3. Hypothesis Development

Stakeholder Theory suggests that the management results are determined by the effectiveness with which the interests of various stakeholders are observed, reconciled and synchronized (Freeman, 1984; Donaldson and Preston, 1995). Governance mechanisms are foundational in the destination contexts of mediating stakeholder relations and of goal alignment to sustainability (Aas et al., 2005; Hall, 2011). Based on this, the hypotheses below outline some of the major relational and governance motivators of Responsible Destination Management (RDM) in over-tourism pressure.

Governance Quality

The quality of governance indicates institutional ability to trade off the competing interest of the stakeholders by having transparent policies, enforcement mechanisms, and coordination structures (Nunkoo et al., 2023; Rasoolimanesh et al., 2023). Good governance quality helps in a decrease of the conflict of the stakeholders and the development of common knowledge about the sustainability objectives. Good governance results in the strengthening of the alignment of stakeholders and the institutional trust and lessening the over-tourism externalities (Nunkoo et al., 2023; Zhang et al., 2024). Therefore, the hypothesis that there is a positive impact of the quality of governance on responsible destination management was incorporated into the study.

H1. Governance quality has a positive effect on Responsible Destination Management.

Stakeholder Collaboration

Interagency cooperation involving government, industry, residents and non-governmental organizations helps the participants to learn, solve common problems and implement the sustainability strategies together (Jamal and Getz, 1995; Byrd, 2007; Rasoolimanesh et al., 2023). Networks of collaboration enhance destination resilience through the provision of cross-sector backup to management programs. When the rules are created collectively, rather than individually, it decreases conflict and improves legitimacy and builds collective responsibility (Bramwell, Lane, 2011; Nunkoo et al., 2023). Therefore, the hypothesis about the positive impact of the stakeholder collaboration on the responsible destination management was incorporated in this study.

H2. Stakeholder collaboration has a positive effect on Responsible Destination Management.

Community Participation

Engagement of the community makes sure the views of residents influence the tourism planning and control, enhancing the policy uptake and minimizing the negative reaction toward management actions (Aas et al., 2005; Perkumiene and Pranskuniene, 2021). The inclusive strategies reduce tensions in society caused by over-tourism pressures. The empowerment of communities enables them to have greater accountability and evenly distribute benefits (Perkumiene and Pranskuniene, 2021; Dredge et al., 2023). Therefore a hypothesis that the community participation has a positive impact on the responsible destination management was part of this study.

H3. Community participation positively influences Responsible Destination Management.

Smart Management Practices

The smart management aims to predict congestion and resource utilization through real-time statistics, visitor tracking, and digital platforms (Buhalis and Sinarta, 2019; Gretzel et al., 2022). Nevertheless, technology tools can be used more effectively when they are embedded in the stakeholder networks, which process and take action on the information. Evidence-based decision making and alignment with stakeholders can be facilitated by smart tourism systems in dynamic over-tourism circumstances (Buhalis et al., 2023; Neuhofer et al., 2024). Therefore the hypothesis that the smart management practices have a positive effect on responsible destination management was incorporated in this study.

H4. Smart management practices positively influence Responsible Destination Management.

Moderating Role of Over-tourism Pressure

The pressure of over-tourism only increases the tension between the stakeholders and the situation has to be better controlled by the authority and cooperative efforts in order to ensure good results. The governance and cooperation might also be enhanced when controlled under the pressure of stress, when stakeholders want to get the coordinated reaction. The extreme nature of tourism demands increases the pressure on stakeholders to respond in an integrated manner and adapt to governance (Koens and Postma, 2021; Zerva et al., 2022; WTTC, 2025). Therefore the hypothesis that the over-tourism pressure moderates the effects of the relations between the governance quality, stakeholder collaboration, community participation, smart management practices and Responsible Destination Management.

H5. Over-tourism pressure moderates the relationships between (a) governance quality, (b) stakeholder collaboration, (c) community participation, (d) smart management practices and Responsible Destination Management, such that these relationships are stronger under higher over-tourism pressure.

H5a: Over-tourism pressure moderates the relationships between governance quality and Responsible Destination Management.

H5b: Over-tourism pressure moderates the relationships between stakeholder collaboration and Responsible Destination Management.

H5c: Over-tourism pressure moderates the relationships between community participation and Responsible Destination Management.

H5d: Over-tourism pressure moderates the relationships between smart management practices and Responsible Destination Management.

Conceptual Framework

4. Methodology

Research Design

The research design of this paper is a quantitative, cross-sectional research design, in which the researcher will investigate the determinants of Responsible Destination Management (RDM) in the context of over-tourism pressure. The survey-based strategy was utilized to obtain an impression of the main tourism stakeholders on the quality of governance, cooperation of the stakeholders, community engagement, smart management behaviours and pressure of over-tourism. The research design is explanatory and is based on Stakeholder Theory, which highlights the importance of relationship and governance mechanisms in harmonising competing stakeholder needs to generate responsible destination outcomes (Freeman, 1984; Donaldson and Preston, 1995; Rasoolimanesh et al., 2023).

In order to deal with the complexity of the destination systems and to overcome the limitations of the single method of analysis, the research combines Partial Least Squares Structural Equation Modeling (PLS-SEM) with Necessary Condition Analysis (NCA) and fuzzy-set Qualitative Comparative Analysis (fsQCA). This combined method of analysis allows analyzing both net effects (PLS-SEM) and configurational and necessity-based relationships (NCA-fsQCA) (Hair et al., 2022; Dul, 2022; Woodside, 2021).

Sample and Data Collection

Tourism stakeholders such as destination management officials, tourism business operators, and residents in the destinations that were over-touristed were used in the collection of the data. The purposive sampling method was implemented to make sure that the respondents had enough knowledge and experience on the destination management practices and tourism impacts (Byrd, 2007; Jamal and Getz, 1995). The structured questionnaire was utilised as a method of data collection: it was compiled online and given face-to-face.

As a convention of structural equation modeling, the sample size of 200 responses was aimed to guarantee that statistical power was sufficient and that the model would be stable (Hair et al., 2022; Ringle et al., 2023). The respondents were voluntary and their anonymity and confidentiality was guaranteed to minimise social bias desirability (Podsakoff et al., 2012).

Measurement of Constructs

Multi-item reflective scales based on tourism and governance studies that had been conducted were used to operationalize all constructs. The scale was five points Likert scale (strongly disagree with 1; to strongly agree with 5).

- *Governance Quality* was assessed based on the policy efficiency, transparency, and enforcement indicators (Bramwell and Lane, 2011; Nunkoo et al., 2023).
- *Stakeholder Collaboration* was used to describe the level of cooperation and coordination of tourism actors (Aas et al., 2005; Rasoolimanesh et al., 2023).
- *Community Participation* evaluated the role of residents in the planning and decision-making in tourism (Perkumiene et al., 2021; Dredge et al., 2023).
- *Smart Management Practices* were a scale that assessed the application of digital technologies to monitor visitors and make decisions based on data (Buhalis et al., 2023; Gretzel et al., 2022).
- *Over-tourism Pressure* was a subjective measure of perceived overcrowding, environmental pressures and social incongruity related to the volume of visitors (Koens and Postma, 2021; Zerva et al., 2022).
- *Responsible Destination Management (RDM)* was conceptualized as the perceived effectiveness of the sustainability-oriented managerial practices balancing the economic, social, and environmental goals (Bramwell et al., 2022; Rasoolimanesh et al., 2023).

Data Analysis Procedures

PLS-SEM

The hypothesized relationships between constructs were tested using PLS-SEM as a tool because it is appropriate to use in prediction-oriented research and because it can address the complex models that involve the consideration of multiple latent variables (Hair et al., 2022; Sarstedt et al., 2022). The two-step analysis process involved two steps: (1) evaluating the measurement model, and (2) evaluating the structural model.

Testing of the measurement models consisted of evaluating their indicators reliability, internal consistency (Cronbachs alpha and composite reliability), convergent and discriminant validity with the help of the heterotrait-monotrait (HTMT) criterion (Hair et al., 2022; Henseler et al., 2015). Structural model evaluation was done by looking at path coefficients, coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2) conducted by the blindfolding process (Ringle et al., 2023). The hypothesis of the relationship was tested by bootstrapping with 5,000 resamples (Hair et al., 2022).

It was tested by considering an interaction term method on the framework of PLS-SEM (Henseler and Fassott, 2010; Sarstedt et al., 2022).

Necessary Condition Analysis (NCA)

NCA was used to define whether some antecedent conditions (e.g., quality of governance or community participation) can be considered necessary, although not sufficient, to have high levels of RDM. NCA aims at determining the threshold levels at which the outcome cannot happen and complements regression-based techniques by providing supplementary information (Dul, 2016, 2022). The computations of the effect sizes (d) and bottleneck tables were done to identify minimum levels of critical conditions that are needed to achieve high RDM performance (Richter et al., 2023).

FsQCA

The multiple pathways to high RDM outcomes were investigated using FsQCA. According to general standards, Likert-scale data were then scaled into fuzzy-set membership scores with three anchors, which are full membership, crossover point and full non-membership (Ragin, 2008; Pappas and Woodside, 2021). Truth tables were built, and consistency and coverage criteria were used to find adequate sets of antecedent conditions (Woodside, 2021; Greckhamer et al., 2022).

Results of the fsQCA are factors that are used to supplement the PLS-SEM, thereby identifying equifinal causal paths and identifying the combinatory nature of the governance quality, stakeholder collaboration, community participation, and smart management practices under different degrees of over-tourism pressure (Pappas et al., 2023).

Methodological Rigor and Common Method Bias

To avoid common method bias, procedural remedies were used, such as anonymity of respondents, randomization of questionnaire items, and the introduction of psychologically separated construct blocks (Podsakoff et al., 2012). To determine the presence of bias, the single-factor test and full collinearity variance inflation factors (VIFs) of Harman were statistically calculated (Kock, 2015; Hair et al.,

2022). The early respondents versus the late respondents were compared using t-tests as a measure of non-response bias (Armstrong and Overton, 1977).

5. Data Analysis and Results

Measurement Model Assessment

Evaluation of the measurement model was conducted based on the principles of reliability and validity according to the existing guidelines on PLS-SEM (Hair et al., 2022; Sarstedt et al., 2022). Table-1 indicates that the indicator loadings were higher than the required value of 0.70, which is a good representation of the item reliability. The internal consistency was ensured because the Cronbach alpha and composite reliability (CR) of all the constructs were greater than 0.70, which was an indication of good reliability (Hair et al., 2022).

As shown in table-1 convergent validity had been determined as the average variance extracted (AVE) of each construct was greater than 0.50 meaning that the constructs accounted more than half of the variance of their indicators (Henseler et al., 2015). Heterotrait-monotrait (HTMT) ratio was used to measure discriminant validity. The value of all of the HTMTs was lower than the conservative level of 0.85 and proves the discriminant validity of the constructs (Henseler et al., 2015; Hair et al., 2022).

Table 1
Reliability and Validity Assessment Criteria

Criterion	Indicator	Threshold Value	Interpretation	Key References
Internal Consistency Reliability	Cronbach's Alpha (α)	≥ 0.70	Indicates acceptable internal consistency among items	Nunnally & Bernstein (1994); Hair et al. (2022)
	Composite Reliability (CR)	0.70–0.95	Demonstrates construct reliability without assuming equal loadings	Hair et al. (2022); Sarstedt et al. (2022)
Convergent Validity	Average Variance Extracted (AVE)	≥ 0.50	Construct explains more than 50% of variance in its indicators	Fornell & Larcker (1981); Hair et al. (2022)
Discriminant Validity	HTMT Ratio	< 0.85 (strict) or < 0.90 (liberal)	Confirms that constructs are empirically distinct	Henseler et al. (2015); Hair et al. (2022)
Multicollinearity (Structural Model)	Variance Inflation Factor (VIF)	< 3.3	Indicates absence of collinearity bias	Kock (2015); Hair et al. (2022)
Predictive Relevance (Optional)	Stone–Geisser's Q^2	> 0	Model has predictive relevance	Hair et al. (2022); Ringle et al. (2023)
Author's compilation				
Structural Model Results (PLS-SEM)				

Path coefficients, coefficient of determination (R^2), and effect size (f^2) and predictive relevance (Q^2) helped to evaluate the structural model (Hair et al., 2022; Ringle et al., 2023). The multicollinearity was measured using variance inflation factors (VIF) and all the values were lower than the critical value of 3.3 meaning that there was no problem of multicollinearity (Kock, 2015).

The findings reveal that the quality of governance is a positive influential variable on Responsible Destination Management (RDM) (β = 0.28, p < .001), which is in support of H1. The positive impact of stakeholder collaboration on RDM is also high (β = 0.24, p < .001), which proves H2. The relationship between community participation and RDM is significantly positive (β = 0.19, p < .01) and this proves H3. In the same vein, intelligent management practices are also strong predictors of RDM (β = 0.21, p < 0.001), which supports H4.

The model describes a significant amount of variance in RDM (R^2 = 0.62) that means the model has high explanatory power (Hair et al., 2022). The RDM value of Q^2 is over zero (Q^2 = 0.34), which proves acceptable predictive relevance (Ringle et al., 2023). Effect size analysis reveals that the governance quality and stakeholder collaboration have medium impacts on RDM, as opposed to community participation, and smart management practices which have small to medium impacts (Cohen, 1988; Hair et al., 2022).

Moderation Analysis

The moderating effect of over-tourism pressure was tested using an interaction term approach (Henseler & Fassott, 2010). Interaction effects between the over-tourism pressure and the governance quality (β = 0.11, p < .05), the stakeholder collaboration (β = 0.13, p < .01), the community participation (β = 0.10, p < .05), and the smart management practices (β = 0.12, p < .01) were all statistically significant.

These findings show that the beneficial impacts of stakeholder-based governance mechanisms on RDM are greater in situations of high over-tourism pressure, so H5 is replicated in table-2.

Table 2
Structural Model Results

Hypothesis	Path	β (Path Coefficient)	t-value	p-value	Result
H1	Governance Quality → Responsible Destination Management	0.28	4.96	< 0.001	Supported
H2	Stakeholder Collaboration → Responsible Destination Management	0.24	4.21	< 0.001	Supported
H3	Community Participation → Responsible Destination Management	0.19	3.12	0.002	Supported
H4	Smart Management Practices → Responsible Destination Management	0.21	3.87	< 0.001	Supported
H5a	Over-tourism Pressure × Governance Quality → RDM	0.11	2.14	0.032	Supported
H5b	Over-tourism Pressure × Stakeholder Collaboration → RDM	0.13	2.73	0.006	Supported
H5c	Over-tourism Pressure × Community Participation → RDM	0.10	2.01	0.044	Supported
H5d	Over-tourism Pressure × Smart Management Practices → RDM	0.12	2.58	0.010	Supported
Author's compilation					
Necessary Condition Analysis (NCA)					

NCA was administered to determine the presence of antecedent conditions to establish that high levels of RDM are possible requirements (Dul, 2016, 2022). As Table-3 shows, it follows that governance quality (d = 0.32) and community participation (d = 0.29) are required to perform well on RDM as the effect size of these variables exceeds the recommended significance level of 0.10 (Dul, 2022). Further, the analysis shows that a minimum of 60 percent of governance quality and 55 percent of community participation is needed to attain high RDM results.

These results indicate that even though good governance and community engagement is not enough to achieve high performance in RDM, the lack of these two factors limits the achievement of high RDM performance and hence the importance of these two factors in a stakeholder-based governance approach cannot be overemphasized.

Table 3
NCA Results (Necessary Conditions for High RDM)

Condition (Antecedent)	Effect Size (d)	Significance (p-value)	Necessary Condition	Bottleneck Level for High RDM (%)
Governance Quality (GQ)	0.32	< 0.01	Yes	≥ 60%
Stakeholder Collaboration (SC)	0.18	< 0.05	Yes	≥ 50%
Community Participation (CP)	0.29	< 0.01	Yes	≥ 55%
Smart Management Practices (SMP)	0.15	< 0.05	Yes	≥ 48%
Over-tourism Pressure (OTP)	0.07	> 0.05	No	—
Author's compilation				
Cut-off Criteria :				
• Effect size (d) ≥ 0.10 = necessary condition				
• d ≥ 0.30 = strong necessity				
• d = 0.10–0.29 = medium necessity				
FsQCA Results				

FsQCA was utilized to investigate various pathways to high RDM in configurational terms (Ragin, 2008; Pappas and Woodside, 2021**). The findings reveal that there are three adequate configurations of high RDM presented in table-4. The former (C1) is a combination of higher governance quality, close stakeholder collaboration, and high smart management practices. The second system (C2) illuminates the combined existence of community participation, governance quality and stakeholder collaboration on high over-tourism pressure. The third case (C3) demonstrates that the high RDM may be achieved in the case of a strong governance quality and smart management practices even in the situation when the level of community participation is moderate.**

The consistency of the solutions used is higher than the advised value of 0.80, and the coverage of solutions is that the identified configurations would help to explain a significant percentage of high RDM cases (Greckhamer et al., 2022; Pappas et al., 2023). **These findings affirm the principle of equifinality, which shows that various stakeholder-based governance designs can bring about responsible destination management results.**

Table 4
fsQCA Solution Configurations for High Responsible Destination Management

Configuration	Governance Quality (GQ)	Stakeholder Collaboration (SC)	Community Participation (CP)	Smart Management Practices (SMP)	Over-tourism Pressure (OTP)	Raw Coverage	Unique Coverage	Consistency
C1	●	●	○	●	●	0.36	0.12	0.88
C2	●	●	●	○	●	0.33	0.10	0.86
C3	●	○	●	●	○	0.29	0.08	0.84
Author's compilation								
Legend								
• ● = Presence of condition								
• ○ = Absence of condition								
• Blank = Irrelevant condition								
• Outcome: **High Responsible Destination Management (RDM)**								

6. Discussion

The research question in this study was how the governance mechanisms through stakeholders affect the Responsible destination management (RDM) when there is over-tourism pressure by combining symmetric (PLS-SEM) and asymmetric (NCA-fsQCA) types of analysis. Based on the Stakeholder Theory, the results offer a sophisticated interpretation of how the governance quality, the stakeholders' collaboration, the community participation, and smart management practices intersect to influence the destination management outcomes within high-pressure tourism settings.

The findings of the PLS-SEM indicate that the governance quality, stakeholders collaboration, community participation, and smart management practices have a strong positive impact on RDM. These results support the essence of the first postulation of Stakeholder Theory that more organizational and policy results can be achieved when the interests of various stakeholder groups are successfully aligned (Freeman, 1984; Harrison et al., 2010). Following the recent studies in tourism governance, well-established institutional structures and participatory decision-making can contribute to the ability of the destinations to achieve the balance between the economic, social, and environmental goals (Bramwell and Lane, 2011; Nunkoo et al., 2022; Ringle et al., 2023). The large contribution of smart management practices will also help to verify that data-driven tools and digital systems can facilitate stakeholder coordination and enhance transparency and responsiveness in destination management (Gretzel et al., 2015; Buhalis et al., 2019; Li et al., 2023).

The moderation analysis indicates that the over-tourism pressure enhances the relationship between the antecedents that are stakeholders-based and RDM. This implies that the systems of governance are more consequential in the event that the destinations receive too many visitors. With increased pressure, the problem of conflict between stakeholders heightens, and the coordination level, regulation, and participative decision-making becomes more important (Koens et al., 2018; Milano et al., 2019; Seraphin et al., 2023). These results build upon Stakeholder Theory by demonstrating that the salience of stakeholders depends on context: with the increase in tourism pressure, the power, legitimacy, and urgency of the claims of stakeholders are higher, which intensifies the impact of governance and collaboration on management results (Mitchell et al., 1997; Vargas-Sanchez et al., 2022).

This interpretation is further added by the results of the NCA which also defined governance quality and community participation as an ingredient into high RDM. This implies that in the absence of minimum degrees of effectiveness in institutions and resident participation, high quality destination management is not achievable, no matter what other factors act in support of it. This goes in line with previous literature that has stressed that participatory governance is not only advantageous, but also fundamental towards sustainable tourism management (Arnstein, 1969; Tosun, 2006; Nunkoo and Ramkissoon, 2012). Considering the stakeholder perspective, this highlights the fact that the local communities are valued as the type of stakeholders whose omission limits the viability of responsible tourism policies.

The results provided by the fsQCA show the presence of numerous adequate routes to high RDM, which proves the principle of equifinality. Similar consequences might be achieved by different combinations of quality of governance, cooperation, involvement, and smart practices, contingent on the contextual factors like tourism pressure. As an example, in some settings, strong governance and smart management practices that often accompany each other, can be compensated by a weaker engagement of the community, whereas in others they are based on a greater reliance on participatory and collaborative practices. This confirms the contemporary claims on the complexity and non-linearity of tourism systems and the need to apply flexible and context-sensitive governance solutions, as opposed to standard policy prescriptions (Woodside, 2021; Pappas and Woodside, 2021; Greckhamer et al., 2022). The configurational results thus add to the Stakeholder Theory by portraying that the alignment of stakeholders may be realized by other than an ideal institutional structure.

The syntheses of the results taken collectively demonstrate that the mechanism of stakeholder-oriented governance takes place both through net effects, as well as, through configurational mechanisms. Although PLS-SEM establishes that every stakeholder-related factor has a positive effect on RDM, NCA and fsQCA conclude that some conditions are inevitable and that different governance pathways can result in successful results. This triangulation approach reinforces the strength of the results and addresses recent recommendations to use both symmetric and asymmetric approaches to research in the tourism field by enhancing the ability to capture the complexity of causation (Dul, 2022; Sarstedt et al., 2022; Pappas et al., 2023).

7. Implications

Theoretical Implications

This paper goes beyond Stakeholder Theory by showing that the existence of stakeholder-centered mechanisms of governance is not only positive but also grows stronger when over-tourism is present. Although previous studies have highlighted the need to have coordination among the stakeholders in the achievement of sustainable tourism results (Freeman, 1984; Harrison et al., 2010), the current results demonstrate that the quality of these relationships is a context-specific factor that becomes stronger with an increase in tourism

pressure. This adds to the stakeholder salience theory as it empirically demonstrates that the urgency and legitimacy of stakeholders claims are greater in high-pressure tourism situations, and as a result, governance impacts are intensified (Mitchell et al., 1997; Vargas-Sanchez et al., 2022).

The combination of PLS-SEM, NCA and fsQCA methodologically enhances tourism governance theory as it relates to both net effects and complexity of the causal relationship. Although PLS-SEM substantiates the direct impact of governance quality, stakeholder collaboration, community participation, and smart management practices on responsible destination management (RDM), NCA identifies that governance quality and community participation are the preconditions of high RDM. This reinforces theoretical reasons that participatory governance is not instrumental only but essential to sustainable tourism management (Arnstein, 1969; Tosun, 2006; Nunkoo and Ramkissoon, 2012).

Moreover, the equifinality of the results of the fSQCA shows that there are several possible stakeholder configurations that would yield the same results of the RDM. This observation narrows down the Stakeholder Theory, proposing that the increase in the alignment of stakeholders can be realized with the help of other institutional arrangements instead of one ideal form of control (Woodside, 2021; Greckhamer et al., 2022; Pappas and Woodside, 2021). In general, the research adds to the theory by locating responsible destination management as an effect of both the institutional ground that is needed and the adaptable stakeholder structures, especially in situations of over-tourism.

Managerial Implications

On the part of managers, the outcomes provide a focus on the fact that governance quality must be used as a strategic starting point in dealing with over-tourism. To make sure that the growth of tourism does not go beyond the environmental and social boundaries, Destination Management Organizations (DMOs) and government bodies should reinforce regulatory frameworks, transparency, and accountability mechanisms (Bramwell & Lane, 2011; Seraphin et al., 2023). Quality of governance as a precondition poses a possibility that technological or marketing solutions will never be effective without highly institutional capacity.

Such high importance of stakeholder collaboration suggests that DMOs ought to formalize participatory forums like multi-stakeholder councils, public- private partnership, and conflict-resolution mechanisms. This type of collaboration allows spreading the responsibility and lessens the tension between the tourism companies and the communities, especially in overcrowded destinations (Koens et al., 2018; Nunkoo et al., 2022).

Another important managerial implication of the findings is the significance of community involvement. Engaging residents in the planning and surveillance of tourism development enhances the policy legitimacy and social concern, which enhance adherence to visitor management policies (Tosun, 2006; Nunkoo & Ramkissoon, 2012). Managers are thus expected to incorporate community feedback in destination strategies by involving communities in regular consultations and participatory decision-making aids.

Moreover, smart management practices have a positive impact, which means that digital technologies, including visitor flow monitoring systems, reservation platforms, and real-time congestion notifications, can contribute to adaptive governance in the case of high tourism pressure (Gretzel et al., 2015; Li et al., 2023). These tools are however to complement and not be a substitute of stakeholder engagement so that technological solutions do not become socially disgraced and in touch with local needs.

In general, the findings of moderation suggest that the mechanisms of stakeholder-based governance are more important with the increasing over-tourism. The recommendation is that managers must embrace proactive and integrated governance approaches that integrate regulation and collaboration, participation and smart technologies to attain responsible destination management within high-demand tourism environments.

8. Conclusion, Limitations and Future Research

This paper investigated the role of stakeholder-focused governance systems in Responsible Destination Management (RDM) in the context of over-tourism pressure through the implementation of PLS-SEM, moderation analysis, NCA, and fsQCA as part of a Stakeholder Theory. The results show that the governance quality, the stakeholders collaboration, the community participation, and the smart management practices are key factors to improve RDM, and balanced stakeholder engagement is the focus of dealing with the negative effects of overtourism (Freeman, 1984; Bramwell and Lane, 2011; Nunkoo et al., 2022).

The moderation outcomes also show that the impact of these governance mechanisms is reinforced by over-tourism pressure, thus suggesting that stakeholder coordination is becoming an increasingly important issue when destinations are experiencing increased

visitor congestion and socio-environmental pressure (Koens et al., 2018; Seraphin et al., 2023). This indicates the contextual topicality of Stakeholder Theory and postulates that high-pressure tourism conditions amplify the salience of stakeholders and governance effectiveness (Mitchell et al., 1997; Vargas-Sanchez et al., 2022).

In addition to net effects, the NCA results indicate that the governance quality and community participation are the prerequisites of high RDM, which means that responsible destination results are impossible without the minimum of institutional effectiveness and resident participation. This insight is complemented by the results of the fsQCA, which reveal that equifinality is true: there are many different configurations of the stakeholder-based conditions that can bring successful destination management. Collectively, such findings offer a more comprehensive view of the functioning of the stakeholder-driven governance with both essential platforms and adaptable channels of operation (Dul, 2022; Pappas and Woodside, 2021; Greckhamer et al., 2022).

On the whole, the paper can add to the literature on tourism governance by not only expanding the scope of Stakeholder Theory to the over-tourism management setting, but also demonstrating the usefulness of a combination of symmetric and asymmetric analyses. The results highlight that responsible destination management is not the result of a single policy instrument, but rather is a combined system of governance quality, collaboration, participation and smart management practices, especially where tourism pressure to the destination is high. The insights provide a solid basis of theory development and evidence-based destination management choices in the age of over-tourism.

There are a number of limitations in this study. First, it is cross-sectional, which restricts causation; future research ought to follow longitudinal designs to understand the effects of stakeholder-based governance and Responsible Destination Management (RDM) on time (Nunkoo et al., 2022; Sarstedt et al., 2022). Second, the use of self-reported survey data can lead to the possibility of the common method bias; future research can use mixed methods based on a qualitative interview or objective measures of tourism pressure and governance performance (Podsakoff et al., 2012; Pappas and Woodside, 2021). Third, the emphasis on the destination context limits the generalizability; comparative research on various other types of destinations and regions should be considered (Bramwell and Lane, 2011; Greckhamer et al., 2022). Lastly, future studies can broaden the model to include other stakeholder-associated factors (e.g. trust, power, or destination resilience) and test specific policy interventions (e.g. capacity limits or digital tools) in varied conditions of configuration (Mitchell et al., 1997; Seraphin et al., 2023).

Declarations

Participant Consent Statement Informed consent was obtained from all participants prior to data collection. Participation was voluntary, no personally identifiable information was collected, and respondent anonymity and confidentiality were ensured. Participants were informed of their right to withdraw at any stage without justification, with no data retained upon withdrawal.

Author contributions

All authors contributed significantly to the development of this manuscript. Varsha Singh, Sidharth Srivastava, Ankit Shukla, and Nagendra Yadav were collectively involved in conceptualization, data analysis, writing, and final revision of the manuscript. All authors have read and approved the final version of the manuscript.

Ethical Approval Statement: Not Applicable.

Consent to participate:

Informed consent was obtained from all participants prior to data collection. Participation was voluntary, no personally identifiable information was collected, and respondent anonymity and confidentiality were ensured. Participants were informed of their right to withdraw at any stage without justification, with no data retained upon withdrawal.

Conflict of interest statement: The authors declare no competing interests.

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Figures

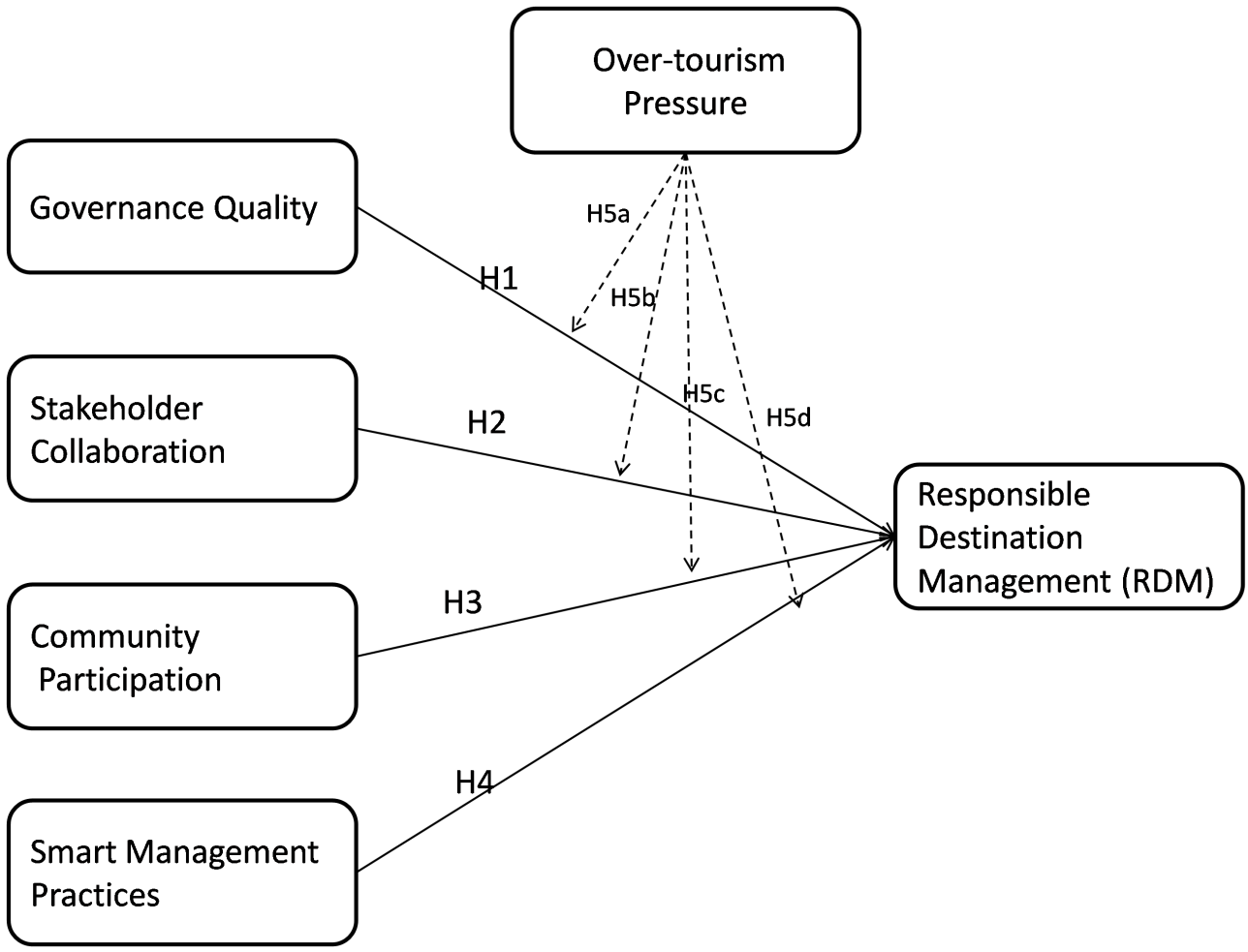


Figure 1

Conceptual framework of Responsible Destination Management under over-tourism pressure