Campsite revenue management decision-making - a semi-systematic review

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Abstract

This paper provides a semi-systematic review of the extant literature surrounding the concept of camping and campground revenue management from 1984 until 2023 and presents a conceptual model that encircles and categorizes all the subjects treated in the previous research which was found to be disparate and multidisciplinary in nature. This paper provides a comprehensive review of the state of knowledge in the field and a conceptual structuring of the topic which was previously lacking. By synthesising the various disparate conceptual strands of the topic that have developed over time, the paper presents a revenue management decision-support tool tailored for campsites that organizes the camping revenue management literature around its own conceptual model whilst also highlighting areas for future research.

Keywords – camping, campsites, revenue management, decision-making, semi-systematic review

Introduction

The principles and applications of campsite revenue management are currently underexplored, despite it sharing several characteristics with the hotels where revenue management has been investigated since the 1980s. Although there is extant literature that touches on the topic dating back to the 1970s, it is disparate and multidisciplinary, making it hard to characterise the evolving concept of campsite revenue management. Due to these challenges, a comprehensive review of the state of knowledge in campsite revenue management decision-making is lacking. This paper addresses this through presenting a semi-systematic review of the related literature between 1984 and 2023, providing a "coherent conceptual structuring of the topic" (Bem, 1995, p.172). By synthesising the various disparate conceptual strands of the topic that have developed over time, the paper is able to present a revenue management decision-support tool tailored for campsites that organizes the camping revenue management literature around its own conceptual model whilst also highlighting areas for future research. We define a campsite as a private or public for-profit establishment, classified and authorized to receive tents, caravans, motor homes, leisure homes and mobile homes for revenue-generating activities.

Theoretical Background

In the context of performance, decision-making involves identifying actions and strategies that will maximize the organization's effectiveness, efficiency, and productivity (Barros, 2005; Assaf et al., 2010). This can include decisions such as allocating resources, defining performance objectives, implementing continuous improvement measures, and managing key performance indicators (Botti et al., 2009; Assaf and Tsionas, 2018). This involves

choosing among several possible alternatives to optimize results, profitability, or the achievement of long-term corporate objectives. In the hotel revenue management context, it generally takes the form of data-driven automated systems and analytical tools that assist managers in the optimal allocation of resources (rooms, locations, seats, etc.) to maximize revenues, while considering constraints such as capacity, fluctuating demand, customer segmentation, and customer preferences (Mariani et al., 2018; Talón-Ballestero et al., 2022). However, the challenge of modern revenue decision-making is the need for multi-dimensional data analysis managing large quantities of structured and unstructured data, often in real time generated by automated revenue decision tools moderated by manager knowledge and insight (Egan and Haynes, 2019). This use of multidimensional data analysis can remove ambiguity and lead to more accurate decision-making but requires revenue systems that can synthesize highly detailed data (Egan and Haynes, 2019).

In campsite revenue management literature, the decision-making tools are less obvious and there have been few articles directly concerned with the subject over the last ten years. The ones that have touched on this subject (Rottembourg and Masson, 2017; Poldrugovac et al., 2019; Salo et al., 2020) are linked to decision support aimed at understanding or shedding light on how to better optimize revenue sources by considering consumer expectations, competitor facilities, types of tourist destination, external factors that can influence choices but rarely make the link to often overlooked parameters such as climatology (Ma et al., 2020; Craig et al., 2023), seasonality (Rice et al., 2019), and lodging quality (Cvelić-Bonifačić et al. 2017). While several tools and scientific contributions have emerged from the literature review on camping management, none of them (Brooker and Joppe, 2014; Rogerson and Rogerson, 2020) have thought to put the puzzle together to show how to combine all the

contributions with a view to offer a conceptual model of revenue management (RM) decision-making for the for-profit campsites.

Faced with these challenges we proposed the need to develop a global and integrated revenue management decision-making approach for campsites. This required taking a comprehensive, integrated and fully coordinated review of all relevant research considering not only the individual elements, but also the relationships, interactions, and mutual impacts between these investigations. Such an approach provided a holistic overview that avoided silos or fragmented treatment of different parts of a complex situation by coordinating different disciplines, methodologies, or perspectives to create a more complete and in-depth understanding of a given situation. In the context of revenue management for campsites, a holistic and integrated approach meant considering not only traditional revenue management parameters, but also elements such as climatology, seasonality, and quality, while combining them in a conceptual RM decision-making model with a view to building a suitable decision-making tool.

Literature Review Method and Search Strategy

The existing literature on camping revenue management draws from a multi-disciplinary field which raises challenges and complexities for doing a review (Watson and Webster, 2020). When a topic is studied by various groups of researchers within diverse disciplines, a fully systematic approach which calls for the review of every single article that could be relevant to the topic are argued to be impractical (Wong et al., 2013). Instead, this paper follows a semi-systematic approach which offers a pragmatic solution recognising it may be impossible to include every article that is judged to have some relevance to the topic, in

contrast to the statistical approaches of fully systematic literature reviews (Hall et al., 2016). Zunder (2021) agrees that the approach is "rigorous but flexible" (p.2) and is being increasingly used in a variety of settings. In addition, Fisch and Block (2018) describe this method as a goal of "summarizing and categorizing knowledge" (p.104) and Wong et al. (2013) argue it aids understanding of all relevant topics and synthesizes these using meta-narratives instead of measuring effect by size as may be achieved with a more quantitative approach literature reviews such as meta-analysis. Snyder (2019) supports this is a good strategy when the purpose of a review is to identify themes, knowledge gaps and track development of knowledge over time. Thus, a semi-systematic review supports our thematic analysis approach to the papers included by identifying major themes in each period, tracking the development or removal of these themes over time, as well as gaps to formulate a conceptual framework that highlights the key dimensions of camping revenue management.

A semi-systematic review still requires rigour in identifying and selecting articles to be included in the review and this paper adopted the approach of Kharawala et al. (2020) who divided the process into four stages of identification, screening, eligibility, and inclusion (see figure 1). This demonstrates that the review is transparent, reproducible and centred on a clearly defined topic. In the first stage, articles were identified for inclusion by a single reviewer via Google Scholar using various search terms to be combined with "camping", "campsite" including "revenue management", "pricing", "financial management". A snowball sampling approach was then used where further articles were identified through reviewing the reference list of previously identified papers. This approach was successfully used by Almela and Calvet (2021) in their semi-systematic review of volunteer tourism and

gender. A second reviewer then conducted a quality check identifying four additional papers. In the second screening, records were checked for relevance using the article title and abstract. Full-text articles were then assessed for eligibility in the third stage and were excluded if they were not peer reviewed or relevant to pricing, revenue management or financial management. This led to the fourth stage where papers were selected for inclusion in the review.

[Figure 1]

Summary of Identified Publications

1980-89

Only two relevant papers were identified from the 1980s and both had pricing as the dominant focus, pursuing the theme of demand rationing using differential pricing. There was a strong tie between pricing and social policy including equity, community stability and environmental quality. The focus was not on using pricing for commercial gain with Rosenthal et al. (1984) commenting that "pricing has other important implications in addition to raising revenues," (p. 196) such as rationing demand finding doing so through pricing was more economically efficient that other rationing schemes. They focused on fixed carry capacities set to reduce congestion and ecological damage, but they did recognise that financial surplus could be used as stimulus for developing further campsites. However, what did emerge from this paper was a recognition of the importance of the customers willingness to pay. They recognised the link between price changes and changes in consumer behaviour, for example shifting demand from off-peak times if peak prices were increased. Finally,

Bamford et al. (1988) focused on differential pricing and price elasticity. The authors identified that quality of location (e.g., water or non-water-based locations) could impact elasticity, with water-based parks found to be price inelastic, therefore resulting in price increases driving revenue.

[Table 1]

1990-99

In 1991, Beaman et al. continued to explore price elasticity of demand. They identified the parameters affecting demand elasticity including price but also variables such as weather. They aimed to develop a pricing policy that shifted demand from extremely busy campgrounds towards those experiencing lower demand during the peak season using a three-tier pricing system where premium prices were charged for high-occupancy sites and discounts offered for low-occupancy sites. Interestingly this introduced the concept of the "feeder" campground, so called because they feed more desirable campgrounds when their consumption drops owing to price increases. Price increases resulted in the full campsites staying full but feeders suffering a greater reduction in use, as if price increases had not been introduced.

Arimond and Lethlean (1996) extended the discussion on pricing and demand to examine profit centre analysis, identifying a link between campsite size and annual average occupancy rates. They found that campsites with 200 or more pitches had an annual average occupancy percentage than those with less than 200 pitches. Unfortunately, the authors did not identify the reasons for this correlation although they did stress the importance of setting

the correct site rental fee. They identified that seasonal campers contributed little revenue through ancillary services and therefore pitching the site rental fee correctly for those segments was key to driving revenue. The paper also highlighted the complexity of camping market segmentation with very distinctive groups of longer-stay and shorter-stay customers that make revenue management in this industry more complex in terms of the impacts of price bundling or unbundling, market segmentation mixes, and total revenue management.

[Table 2].

2000-2009

After the last paper published in the 1990s, there is a six-year gap until the next relevant paper by Bell and Crilley (2002). This paper marked a significant shift to a focus on benchmarking techniques. They created a framework for implementing benchmarking for the camping sector. Interestingly the paper mentions the need to benchmark financial data such as costs but there is no discussion of benchmarking common revenue metrics such as occupancy percentages and average rates. This demonstrates that by the turn of the millennium, revenue KPIs were still not viewed as a focus for camping management., despite the operationalisation of revenue management benchmarking in the hospitality industry (Sigala, 2004).

Like Bell and Crilley (2002), Hayllar et al. (2006) also referred to financial benchmarks without considering non-financial revenue management metrics but did move onto to consider the value versus price equation. They indicated that prices had outstripped service

and facilities but stated that "further research was needed to tease out this service quality attribute" (p. 125).

[Table 3]

2010-2019

The next two papers were both published in 2011 by Pozo et al. (2011a; 2011b). The first paper (2011a) introduces hedonic pricing models which identify the internal and external factors and characteristics that affect an item's price in the market. They highlight the increasing sophistication of customers, commenting on the need for campsites to adapt to the constant requests from clients to improve quality of services and installations. The results were explored further later that year (2011b). The authors returned to using price as a tool of rationing campsite availability to reduce environmental harm. They argued that free campsites lead to increased environmental degradation. Alongside this they highlighted the increased complexity of campsite accommodation types and the need for a structured classification of inventory. Later, Brooker and Joppe (2014) stated that lack of access to data, especially from small businesses unwilling to share information have held up academic research in this area but they did identify themes that were now of much closer relevance to revenue management such as price, profitability, and market segments as well as themes related to user experience, operations and change management which all could be considered linked to revenue management.

Rottembourg and Masson (2017) were the first to mention revenue management in their paper title which examined how to improve decisions around allotment contracts with tour

operators and travel agents. They advanced the discussion of camping revenue management into the field of distribution channel management, discussing balancing volume through direct and in-direct channels. Later, Rottembourg and Masson (2017) described tour operator bookings as a "poisoned chalice" (p. 115) for the campsite owner because though these pre-booked sales guaranteed a good base level of sold inventory they could damage profits if high discount levels through these third-parties could not be controlled. In addition, they identified that less than 10 percent of French campsites used dynamic pricing, suggesting it was not a widely used practice. They argued this was due to popular RM software not being tailored to handle and optimise the combination of heterogeneous sales in the camping industry especially as the number of inventory combinations increased and further challenged the campsite owner to find the optimal mix. These frequent changes in inventory type were also found to pose a challenge for accurate forecasting.

Next Peršić et al. (2017) argued that "academic research has placed relatively little attention on the economic aspect of the camping business and that relevant reporting standards are missing" (p.451) and that both short- and long-term decision-making had not been adequately considered. They specifically focused on the lack of research into campsite benchmarking. They argued for the need to develop software to aid the implementation of benchmarking and for collaboration between experts, educational and consultancy organisations, so that an integrated approach of benchmarking could be applied, and results used in the right manner.

In the same year, Mikulić et al. (2017), presented a relevance-determinance analysis of camping attributes to understand how specific attributes influence customer experience.

They uncovered which campsite attributes were most important when choosing a campsite for a vacation, and those most important when on vacation. Infrastructure-related campsite attributes, as well as safety and ecological standards were identified as the most important attributes for both campsite choice and the camper's onsite experience confirming the emerging demand for more sophisticated inventory options such as glamping. Cvelić-Bonifačić et al. (2017) also looked at campsite attributes and price but related this to customer age finding that for the younger generation price was the most important driver but for the older generation proximity to the sea was key. Next, Poldrugovac et al. (2019) studied competitive pricing, specifically examining the relationship between pricing strategy and the average percentage difference in revenue per available capacity and occupancy relative to their competitor sets over a three-year period. Interestingly this paper also made the first reference to a camping revenue management metric aimed at measuring revenue per available capacity.

The final paper of the period returned the focus to demand forecasting (Rice et al., (2019). They also argued that the camping industry remained relatively under-researched contributing to challenges faced by park managers when increasing and predicting future demand. They focused on seasonality and how it can skew visitation patterns testing six different forecasting models. They found no universal measure that performed best for all campsites in the study due to the large variety of campsite characteristics and suggested a combination method was best. The paper also highlighted that park managers favoured non-market allocation of campsites such as lottery systems to smooth demand instead of dynamic pricing as this more directly conformed to pre-set ecological and social carrying capacities of protected areas.

[Table 4]

2020 onwards

Many key papers were published in this period. The first one by Saló et al. (2020) examined the impact of seasonality on supply as well as demand identifying a relationship between star category and the percentage of time spent open. During the period January-April the higher the star category the lesser percentage of opening periods. Once again, they offered also further confirmation that campsite pricing strategies remain under-researched.

A key set of papers studied exogeneous factors (Craig, 2021; Ma et al., 2020; Craig and Karabas, 2021; Ma et al., 2021; Craig et al., 2023). Authors, such as Ma et al. (2020), Ma et al., (2021) and Craig et al. (2023) introduced a Camping Climate Index (CCI), empirically tested, validated, and applied as a method to quantify the short and long-term effects of weather and climatic variability for camping demonstrating that demand is highly correlated with climate. The authors conclude that future studies should attempt to capture factors that can influence camping behaviors including shifting weather trends (including desirability of conditions within and between seasons), types of holidays, weekend versus weekday occupancy, advanced reservations, cost of stay, cancellation policies, travel distance, and the length of occupancy. Craig (2021) and Craig and Karabas (2021) stressed the importance of exogeneous factors on camping demand with a focus on the relationship between time and distance travelled to each campsite and consequent demand during the Covid-19 pandemic. They identified that concrete construal about time and distance positively impacted demand and that travel distance did not negatively influence demand for camping

decisions in contrast to other tourism offerings during the pandemic. Although not directly related to revenue management metrics these papers offer interesting insights into factors relevant to revenue management decision-making.

Next, Grande (2021) cited the continued lack of research in the campsite field and focused on the intrinsic resources which influence attractiveness and revenue management. Grande (2021) also picks up on the lack of a standardized, tailored method for benchmarking in the camping industry. Later, Grande and Camprubi (2022) identified the existing camping business models aimed at creating categories justified by consistent profiles. This first business model segmentation in the camping management literature aided the understanding of homogeneous categories in a very heterogeneous industry identifying both financial and non-financial indicators. The article ends with an analysis grid of performance and steering indicators adapted to the identified segments. The question of revenue management is addressed in the broadest sense by the revenue stream key theme, which includes bare pitches, rentals, and ancillary sales. They show that the revenues of campsites are dependent to the associated categories. In other words, following the characteristics of a category most likely leads to the identified revenue typologies. However, the authors do not explain how they aggregated the diversity of rentals with currently non-standard names.

Most recently, Grande and Botti (2023) propose a multi-criteria analysis of the intrinsic factors that make up campsites. Again, this article does not directly address revenue management techniques but is relevant due to the contributions it makes to the understanding of the leisure factors that will influence it. The challenge of this research is twofold since the authors aimed to identify categories and at the same time a model to perform a scan of the

competitive environment. The results of this research conclude with the operationalization of their conceptual model, the creation of a segmentation system by the intrinsic resources and the proposal of a benchmarking model adapted to the campsites. In the discussion, the authors show how star segmentation is much less relevant than segmentation by intrinsic resources. This raises the question of the relevance of segmentation in relation to comparable companies from a revenue optimization perspective.

[Table 5]

Observations

Overall, the literature review is disparate and often multidisciplinary, making it difficult to characterize management development and particularly revenue development in this industry. Thirteen articles have contributed to the research on revenue management applied to campsites between 2010 and 2023, but to date no conceptual model of revenue management linking all the contributions has been proposed. To this we add that the sub-criteria, criteria and dimensions of campsite revenue management are scantly clear and need to be structured based on all the scientific contributions. Categorizing and addressing a comprehensive review of the state of knowledge in this area is an opportunity to illuminate gaps and future research directions.

Sub-criteria and Criteria for Camping Revenue Management

As the review has shown, revenue management is multidimensional, complex, systemic, cross-functional, and requires the collection of information on the characteristics that make up the enterprise. It is necessary to focus on the entire value chain leading to revenue

management. To achieve this, we have categorized 58 sub-criteria into 12 main criteria based on the literature (see table 6 below).

[Table 6]

Dimensions for Campsite Revenue Management

Further analysis and conceptualization of the sub-criteria and criteria led to the identification of 7 dimensions; actors, key themes, measurements, analysis, corrective actions, benchmarking system, business plan and decisions (see table 7).

- Dimension 1 is related to the actors. They include criteria such as demand-side and the supply offer (competitors).
- Dimension 2 is related to key themes. They cover lodging facilities, resources, quality, experience, pricing, and exogeneous factors.
- Dimension 3 is related to measurement. This section includes measures related to market positioning and offer positioning, for example measurement of customer satisfaction and the attractiveness of companies in the camping market through intrinsic resources.
- Dimension 4 is related to analysis. It includes analysis methods to observe differences between competitors or customers.
- Dimension 5 is related to corrective actions. These are short-term actions that impact on the price adjustment, the adjustment of the product mix and creation of new added value.
- Dimension 6 is related to benchmarking systems. It concerns all non-financial data and financial data through the creation of a benchmarking tool to identify best performing firms.

- Dimension 7 is related to the business plan and decisions. This covers topics such as investment forecasting, innovation management, and the deployment and organization of support functions.

[Table 7]

Discussion

Conceptual model

This literature review shows that campsite management has changed radically since the 80s. The main publications focused on pricing and the few variables that influenced it. Most articles on campsite management dealt with non-profit organizations. With the growing popularity of leisure time, camping facilities and infrastructures have moved upmarket to meet the quality expectations of holidaymakers. Camping has become a profitable industry, open to investment funds, which means that financial resources vary widely, putting pressure on competitive levers. To remain competitive, revenue management is the perspective addressed in this article. It highlights 7 dimensions as levers to revenue management by decision-makers.

The proposed categorization of the 7 dimensions corresponds to the articulation of the topics revolving around revenue management decision-making. To provide a "coherent conceptual structuring of the subject" (Bem, 1995, p. 172), we have drawn on all the dimensions, key themes, criteria, and sub-criteria identified in this literature review to provide Figure 2. This conceptual framework allowed for the organization and categorization of often disjointed themes in the extant literature to help better understand the current position of camping revenue management understanding and practice (Watson and Webster, 2020) and identify

the way forward for future research and IT development. Globally, our findings show that the lack of clear definitions and understanding of boundary conditions in the theoretical application of revenue management creates a bottleneck for further adoption of revenue management functions. However, this study presents a conceptual model to ground new research and emit the sensitive links that these research wishes to address. This conceptual framework provides a clear architecture that guides readers through the topics of campsite revenue management.

[Figure 2]

Dimension 1: Actors

This dimension allows the research to be grounded either on the demand side or on the supply side. It questions the gap obtained via an analysis of the company and its manager or employees on the one hand, but also via the analysis of customer segments on the other. The article by Pozo et al. (2011, a, b) addresses the question of demand, as does Mikulić et al. (2017) and Rice et al. (2019) with the capacity side addressed by Bell and Crilley (2002), Hayllar et al. (2006) and Persic et al. (2017).

Dimension 2: Key themes

This dimension links themes that have been found to be revenue dependent. Articles by Saló et al. (2020) and Ma et al. (2022) show how seasonality and climate factors impact revenue. Likewise, Poldrugovac et al. (2019) emphasize the importance of evaluating prices by "night rates, weekly rates, period" or Grande and Camprubi (2022) include quality of service or intrinsic resources.

Dimension 3: Measurements

This dimension is interesting to include insofar as it appears to be a first milestone of results in relation to the parameters identified in the key themes. The articles cited in the previous key themes offer diagnostic tools from the demand or supply perspective. The measurement then allows for the identification of the most appropriate management methods (Rottembourg and Masson, 2017; Grande and Botti, 2023).

Dimension 4: Analysis

This dimension expresses the results obtained and analysis drawn from the measures applied. The objective is to analyze the gaps between competitor segments (Grande and Camprubi, 2022), between customer segments (Brooker and Joppe, 2013) or even the gap between supply and demand (Hayllar et al. 2006) depending on the key theme selected.

Dimension 5: Corrective actions

Next comes the dimension of corrective actions on prices and products. Here, many authors have challenged each other about pricing policies (Rosenthal et al. 1984) or price elasticity (Willis et al., 1975; Bamford et al., 1988; Beaman et al., 1991). Moreover, Rosenthal et al. (1984) explained the difficulty of segmenting the market, but this is necessary to adjust prices and/or products in the face of economic, geographical, and ecological realities.

Dimension 6: Benchmarking system

This dimension integrates financial and non-financial elements and deals with the outputs obtained based on the measures, analysis and corrective actions taken for each key theme

from the demand or supply perspective. The concept of benchmarking links to the work of Bell and Crilley (2002), Hayllar et al. (2006), Persic et al. (2017), Grande and Camprubi (2022) and Grande and Botti (2023). The issue of data aggregation is addressed, as is the creation of a digital system of data collection, measurement, and analysis. This links the theoretical construction of revenue management models, the empirical application for scientific validation and the democratization and valorization of revenue management techniques. Rottembourg and Masson (2017) are an example of this since they have operationalized their research to democratize it via the tools marketed by Eurodecision.

Dimension 7: Business plan and decisions

This dimension is important because it confirms the contribution of research in the camping industry. Specifically, it is the moment when the valorization of research is done and at the same time contributes to the development of companies that adopt techniques and tools. The whole aims at producing knowledge that has an impact on the managerial organization and the business plan. In revenue management, the work of Persic et al. (2017), Poldrugovac et al. (2019), Grande and Botti (2023) led to the development of a benchmarking tool. However, if these research-based techniques and tools are to be effectively implemented within companies in the camping industry, it is essential to take a closer look at certain key support functions, employee training programs and investment decisions. Regarding support functions, it is crucial to ensure smooth coordination and integration between different departments such as marketing, operations, sales and finance. In addition, data management and information systems play a central role in capturing, analyzing and interpreting the data required for informed decision-making (Grande and Botti, 2023). When it comes to employee training, it is imperative to put in place development programs that enable staff to

understand new techniques and tools, as well as their implications for day-to-day operations (Breen et al. 2006). A well-trained workforce will contribute to the effective and efficient implementation of revenue management strategies. As for investment decisions, it is important to conduct a thorough cost-benefit analysis to assess the potential impact on long-term profitability. Investment decisions must be aligned with the company's strategic objectives and consider both short- and long-term advantages.

Research Agenda

The future of research in this area could focus on many emerging topics, including those related to:

(i) The best and most profitable mix of stocks.

(ii) The restrictions specific to campgrounds versus hotels, e.g., overbooking, upgrading, etc.

(iii) Existing business models that highlight the best revenue optimization,

(iv) Available data sources and difficulties in consolidating them

(v) The way to combine the data produced

(vi) The degree of complexity of the hosting/inventory segments for effective revenue management and revenue growth

(vii) Factors that influence revenue management by family-owned campsites and VSEs

(viii) Identifying the optimal mix of long and short stay customers for a campsite.

Overall, it would be interesting to observe to what extent European camping managers have integrated revenue management into their business. In addition, it would also be relevant to explore a level of maturity to the business strategy. That is, what is the degree of applicability of all the key themes in integrated criteria in the managerial organization of the camping company.

Managerial implications

Our research has high levels of relevance to camping industry stakeholders. Researchers (Persic et al. 2017; Grande and Camprubi, 2022) and stakeholders (Croatian, English, French, and Spanish Camping Federations) have been working for several years to build a revenue management decision-making tool. This research demonstrates to managers the range of factors to consider in their revenue management decision-making. Firstly, this research contributes to drawing up specifications for a future RM tool based on scientific contributions in camping management and where each dimension and key theme is an IT development brick to be modeled, justified by our solid literature review. For teams of engineers and developers, each dimension is justified by articles that influence the choice of analysis techniques. The architecture of the tool can follow the conceptual model presented. Secondly it should help mobilize regional/national/international funds for proof-of-concept on a first test platform. Actors seeking credibility will be able to draw on the body of work to justify the need to develop a revenue management brick. This study is a guarantee of the growing interest in research and the lack of IT development of support tools. Finally, stakeholder collaboration could be initiated based on this input. The RM decision-making model encourages collaboration with stakeholders, including local communities and national campsite organizations. This could open opportunities for partnerships and joint projects to improve the camper experience and strengthen the camping industry.

Conclusions

An analysis of the literature review was proposed based on a semi-systematic approach. Based on the analysis of the literature review, our research focused on the constitution of a conceptual model aiming at encircling and categorizing all the subjects treated in the previous research. Beyond structuring the contributions, this research proposes a conceptual model to follow for the development of new multidimensional revenue management tools. Finally, this paper raises awareness of revenue management practices among camping managers with a view to democratizing the adoption of existing tools.

Our research has a few limitations that are also perspectives. This article uses a semi-systematic methodology to form a conceptual model based on the sub-criteria, criteria, key themes and dimensions identified by the authors. Camping revenue management practitioners were not interviewed. It would be helpful to have their perspective on how market knowledge is structured and understand the most important attributes. Furthermore, future research should focus on the factors identified by camping RM experts to assess the gap between the literature review and the expert review.

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Tables

Authors	Criteria used	Gaps
Rosenthal et al. (1984)	- Marginal costs, - Ecological costs, - Operating costs, - Prices, - Demand, - Sites quantity, - Investments (facilities and amenities)	Operationalize the pricing decision model. Identify solutions to relieve congestion in high-demand locations.
Bamford et al. (1988)	- Location, - Prices, - Occupancy rates, - Facilities, - Income of campers, - Length of stay, - History of Park Use - Satisfaction with fee	Social equity of revenue management. Formulating pricing policy with management objectives.

Table 1 - Camping management literature including criteria and gaps from 1980-1989.

Authors	Criteria used	Gaps
Beaman et al. (1991)	- Annual capacity, - Current capacity, - Number of campgrounds around, - Level of services available, - Weather conditions, - Prices, - Revenue, - Total nights,	Authors call for better prediction of behaviour. This study points to additional parameters which need to be incorporated to produce accurate estimates of price elasticity of demand in relation to campgrounds and tourism-related services.
Arimond and Lethlean (1996)	- Campsite rental, - Store, - Supplement services, - Recreation, - Occupancy rate, - Prices, - Size, - Net profit,	Organized recreational activities and rental equipment should increase camping profits. Financial reports help in assessing net profit, but the influence of expenses not considered. Impact of family-ownership on the acceptance and adoption of revenue management techniques for campgrounds.

Table 2 - Camping management literature including criteria and gaps from 1990-1999.

Authors	Criteria used	Gaps
Bell and Crilley (2002)	- Performance indicators - Service quality - Facilities and service - Marketing - Secondary spend	Create a benchmarking program and software Explore further the performance indicators required for benchmarking exercises
Hayllar et al. (2006)	- Visitor service quality - Income share (cabin, powered sites, ensuite, unpowered sites, secondary spend) - Cost share (cleaning, maintenance, energy, water, marketing, labour) - Other (Operational expenses, occupancy rate, cabin cleaning and maintenance, secondary services)	The parallel between the types of indicators obtained and customer satisfaction is not proposed. The article proposes a set of indicators without being able to offer segmented indicators according to company type. Lack of indicator consistency. Create a benchmarking program and software

Table 3 - Camping management literature including criteria and gaps from 2000-2009.

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Authors	Criteria used	Gaps
Pozo et al. (2011a)	- Total travellers Spanish - Total overnight stays Spanish - Foreigners - Open campsites - Estimated spaces - Estimated pitches - Estimated occupied pitches - Week-end occupation - Employees - With websites - With online booking - With online publicity	Pricing analysis using hedonic methods at a national scale. Complexity of campsite inventory with new types of accommodations.
Pozo et al. (2011b)	- Mean daily price - Infrastructures - Prices - Regions	Limited database with only supply information. Hedonic pricing model and the attributes of tourism products. Complexity of campsite inventory with new types of accommodations.
Brooker and Joppe (2013)	- Individual demand dependent on market segment - Service experience - Product innovation and variety (e.g., glamping) - Price	Provides review of existing literature only. Suggests the need for research to focus not just on the attraction of repeat business but on ways to attract new market segments.
Rottembourg and Masson (2017)	- Capacity - Allotment requests (Mobile-home week quantity) - Length of stay - Prices - Individual demand	Full time pricing analysts or revenue managers are still very rare and to date there is no training course available in the camping industry. This discipline is new and advocates for dedicated expertise and tools.
Peršić et al. (2017)	- Site occupancy - Secondary services income share (per visitor/per night) - Cabin income share - Powered site - En-suite powered site income share and un-	Relevant reporting standards. Benchmarking tools and software for comparative analysis. Lack of research in performance measurement. Lack of research in camping categorization.

	powered site income share	
Mikulic et al. (2017)	19 attributes: - Accommodation infrastructures, - Leisure infrastructures - Quality of services	Authors explain that there is no study that has tried to understand the processes of campsite choice and camping experience.
Cvelić-Bonifačić et al. (2017)	- Age - Nationality - Family status - Location/Destination - Sense of privacy - Safety - Price - New experiences - Entertainment - Food and beverage services - Family community	Authors explain the negative impact on the validity of research results when there is no clear definition or categorization of the term "glamping" and campsite relate glamping to a large range of different accommodation types.
Poldrugovac et al. (2019)	- Occupancy rate - Revenue per available capacity - Revenue per overnight stay - Average daily rate - Length of stay - Double occupancy factor	Data were collected in 2010 and the sample size was low. Future research should consider other sources of revenue (FandB and other services). Research should follow campsite segmentation by quality, location, brand, affiliation, and similar businesses.
Rice et al. (2019)	- Occupancy, - Booking, - Length of stay, - Number of people, - Daily fee, - Daily paid, - Start date, - End date,	These amenities could translate into a measure of relative importance for a given NPS unit or subunit. Future research should assess the validity of the reservation window, occupancy, and other measures as indicators of significance.

Table 4 - Camping management literature including criteria and gaps from 2010-2019.

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Authors	Criteria used	Gaps
Saló et al. (2020)	- Number of campsites - Number of sites - Prices - Facilities and services - Location - Size - Star categories	Pricing strategies for bungalows, caravans and motor homes and the comparison with tents. Not only is it worth analysing the price seasonality pattern, but also the effects on pricing of different attributes also mentioned in this paper (services, campsite size, and location).
Ma et al. (2020)	- Daytime comfort index - Daily comfort index - Thermal comfort - Precipitation - Windspeed - Sunshine hours - Cloud cover	The CCI addresses four gaps in the nature-based tourism literature by (1) introducing a camping sector index, (2) empirically testing relationships between weather variables and actual outcomes (3) independently integrating extreme/adverse weather events into an index, and (4) empirically capturing seasonality using multiple methods.
Craig (2021)	- Location - Safety beliefs - 2019 camping experience - 2020 camping plans - Timing - Distance - Overcrowding	Lack of longitudinality and in-depth measurements. Lack of accounts of travelers' attitudes and social norms. At the same time, the rules of distancing meant that, by default, people had to go to places where social distance was easily respected. The study focuses on behaviors that are planned but not real. Lack of consideration of perceived vs. experienced risks. Lack of differentiation of camping typologies.
Craig et al. (2021)	- Travel time - Travel distance - Impact of Covid-19	A concrete construal about time and distance positively impacted demand and that distance did not negatively influence demand for camping decisions in contrast to other tourism offering during the pandemic.
Craig and Karabas (2021)	- Post Covid-19 trip plans for glamping - Post Covid-19 trip plans for resort / hotel - Trips taken in 2019 and pre-Covid-19 - Sociodemographic data	Influence of Factors Other than Leisure; Fuzzy Temporal Definition; Lack of Characterization of Different Types of Accommodation; Diversification of Travel Motives; Longitudinal Study; Comparison with Other Disruptive Events.
Ma et al. (2021)	- Thermal comfort - Sunshine hours - Max/Min temperature - Precipitation Windspeed	Spatial distribution of seasons, regional trends in the CCI index, and adaptation to climatic extremes illustrate the main findings of this research. There are gaps to be filled, such as the geographical resolution of campsites, evaluation of campsite characteristics, and the impact of climate change on consumption patterns.

Grande (2021)	- Intrinsic resources - Star rating - Size	The proposed conceptual model has not been empirically tested. No benchmarking methodology is proposed. No financial data is associated with intrinsic resources. Proposed evaluation under a multi-criteria analysis logic.
Grande and Camprubi (2022)	- Key resources - Key activities - Key partners - Value proposition - Customer channel - Customer relationship - Cost structure - Revenue stream - Human Resources - Size - Number of sites - Service Quality - Length of stay - Customer satisfaction - External providers - Maintenance and Repairs - Salaries - Accommodation revenues - Additional sales	Benchmarking at the micro level. Integrate more companies to conceptualize the results. Revenues are not detailed due to a lack of data standardization. Firm performance analysis. Operationalize the method via a data consolidation platform
Craig et al. (2023)	- Tent and RV occupancy (dependent variables) - Climate resources (independent variables) - CCI index	This article introduces the notion of heterogeneous climatic resources by territory, thus broadening the scope of RBV, between public and private resources. The gaps considered are based on Lack of Theoretical Application, Segmentation of Camping Types, Limited Temporal Data. Comparing different climatic indices and seeing which are the most appropriate for the world's tourist destinations. Also, how climatic resources influence different camping activities and especially their revenues.
Grande and Botti (2023)	- Lodging facilities - Additional sales - Bathing areas -Additional amenities - Entertainments and activities organized - Sports and activities non-organized - Multimedia facilities	Evaluating the performance of tourism companies. Measure the camping-destination effect, business model, firm efficiency and finally create a complete model for measuring camping competitiveness

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805 Table 5 - Camping management literature including criteria and gaps after 2020.

The 58 sub-criteria and 12 criteria related to revenue management for the camping industry.			
	Contribution	Sub-criteria	Criteria
1	Hayllar et al. (2006) Pozo et al. (2011a, b) Mikulic et al. (2017) Cvelić-Bonifačić et al. (2017) Rice et al. (2019)	- Main motivations (lodging, attracting resources, quality, pricing, exogeneous factors) - Variety of facilities - Occupancy rate - Number of Booking - Number of customers - Length of stay - Daily fee - Daily paid - Start date - End date - Customer Satisfaction	Demand
2	Rosenthal et al. (1984) Bell and Crilley (2002) Hayllar et al. (2006) Brooker and Joppe (2014) Persic et al. (2017) Poldrugovac et al. (2019) Grande (2021) Grande and Camprubi (2022) Grande and Botti (2023)	- Typologies of innovative managers - Typologies of businesses - Profiles of managers - Profiles of businesses - Diversity of resources - Diversity of business models - Stakeholder impact studies	Supply
3	Hayllar et al. (2006) Brooker and Joppe (2013) Rottembourg and Masson (2017) Cvelić-Bonifačić et al. (2017) Grande and Botti (2023)	- Quantities - Characteristics - Specificities - Year of purchase - Maintenance budget	Lodging
4	Brooker and Joppe (2013) Salo et al. (2020) Grande (2021) Grande and Camprubi (2022) Grande and Botti (2023)	- Internal Attractive Potential - External attractive potential	Recreation Resources
5	Hayllar et al. (2006) Mikulic et al. (2017) Cvelić-Bonifačić et al. (2017) Grande and Camprubi (2022)	- Value for money - Park Cleanliness - Accommodation comfort - Suitable secondary services - Customer satisfaction - Star-rating	Quality, experience and reputation

Authors	Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5	Dimension 6	Dimension 7
	Actors	Key themes	Measurements	Analysis	Corrective	Benchmark-	Decision
6	Bamford et al (1988) Beaman, Hegmann and DuWors (1991) Arimond and Lethlean (1996) Pozo et al. (2011a, b) Rottembourg and Masson (2017) Cvelić-Bonifačić et al. (2017) Poldrugovac et al. (2019) Salo et al. (2020)		- Period - Night rates - Weekly rates - Previous night rates - Previous week rates				Pricing
7	Beaman et al. (1991) Pozo et al. (2011a, b) Rice et al. (2019) Salo et al. (2020) Craig (2021) Ma et al. (2020) Ma et al. (2021) Craig and Karabas (2021) Craig et al. (2023)		- Weather forecast - Exceptional natural events - Tourist destination governance - Economic crisis - Climate crisis - Epidemic crisis				Exogeneous factors
8	Brooker and Joppe (2013) Rottembourg and Masson (2017) Grande and Camprubi (2022)		- Customer channel - Customer relationship				Distribution actions and impacts
9	Arimond and Lethlean (1991) Hayllar et al. (2006) Peršić et al. (2019) Grande (2021) Grande and Botti (2023)		- Period - Short stay - Long stay - Current occupancy level - Occupancy related to previous years - Industry occupancy level				Non-Financial Data
10	Rosenthal et al. (1984) Arimond and Lethlean (1991) Bell and Crilley (2002) Hayllar et al. (2006) Grande and Camprubi (2022)		- Overall revenue per lodging category - EBITDA - Operating income after taxes				Financial Data
11	Rosenthal et al. (1984) Arimond and Lethlean (1991) Bell and Crilley (2002) Hayllar et al. (2006) Poldrugovac et al. (2019) Peršić et al. (2019) Grande and Camprubi (2022)		- Occupancy rate - Length of stay - Quantity of demand - Revenue stream - Cost of structure				Performance Analysis
12	Grande and Botti (2023) Rottembourg and Masson (2017) Brooker and Joppe. (2014)		- Investment forecast - Training process - Support function				Business Plan

Table 6 - The 58 sub-criteria and 12 criteria related to revenue management for the camping industry.

					actions	ing	process
Rosenthal et al. (1984)	Both	-	-	-	Product adjustment	-	Investment forecast
Bamford et al. (1988)	Supply	Pricing and forecasting	-	-	Price adjustment	-	Support function
Beaman et al. (1991)	Demand	-	-	-	Price adjustment	-	Support function
Arimond and Lethlean (1996)	Supply	Leisure resources; Pricing and forecasting	-	-	Both	-	Investment forecast
Bell and Crilley (2002)	Supply		Market position	-	Both	Financial	Support function
Hayllar et al. (2006)	Both	Lodging and Leisure resources; Quality	Both	Both	Both	Both	Support function
Pozo et al. (2011a)	Supply	-	Market position	Gaps to competitors	Price adjustment	Non-financial	Support function
Pozo et al. (2011b)	Supply	-	Market position	-	Price adjustment	-	Support function
Brooker and Joppe (2014)	Demand	-	-	-	Product adjustment	-	Investment forecast
Rottembourg and Masson (2017)	Supply	Pricing and forecasting	-	-	Distribution actions	-	Support function
Peršić et al. (2017)	Supply	Pricing and forecasting	-	-	-	Both	Support function
Mikulić et al. (2017)	Demand	Lodging and Leisure resources	Demand position	-	Product adjustment	-	Investment forecast
Cvelić-Bonifačić et al. (2017)	Demand	Pricing, Lodging, Exogeneous factors	Demand position	-	-	-	Support function
Poldrugovac et al. (2019)	Supply	Pricing and forecasting	Market position	Gaps to competitors	-	Both	Support function
Rice et al. (2019)	Demand	Pricing and forecasting; Exogeneous factors	Demand position	-	-	-	Investment forecast
Saló et al. (2020)	Supply	Lodging and Leisure resources; Exogeneous factors	Market position	Gaps to competitors	-	-	Support function
Ma et al. (2020)	Both	Exogeneous factors	Market position	Gaps to competitors	Both	Non-financial	Support function
Craig (2021)	Both	Exogeneous factors	Demand position	-	Both	-	Support function
Craig and	Both	Exogeneous	Demand	-	Both	-	Support

Karabas (2021)		factors	position				function
Craig et al. (2021)	Both	Exogeneous factors	Demand position	-	Both		
Ma et al. (2021)	Both	Exogeneous factors	Market position	Gaps to competitors	Both	Non-financial	Support function
Grande (2021)	Supply	Leisure resources	Market position	Gaps to competitors	Product adjustment	Non-financial	Investment forecast
Grande and Camprubi (2022)	Supply	Lodging and Leisure resources	Market position	Gaps to competitors	Both	Both	Business plan
Craig et al. (2023)	Both	Exogeneous factors	Market position	Gaps to competitors	Both	Non-financial	Support function
Grande and Botti (2023)	Supply	Lodging and Leisure resources; Pricing and forecasting	Market position	Gaps to competitors	Product adjustment	Non-financial	Investment forecast

Table 7 - The dimensions of revenue management in the camping sector: Analysis of academic contributions.

Figures

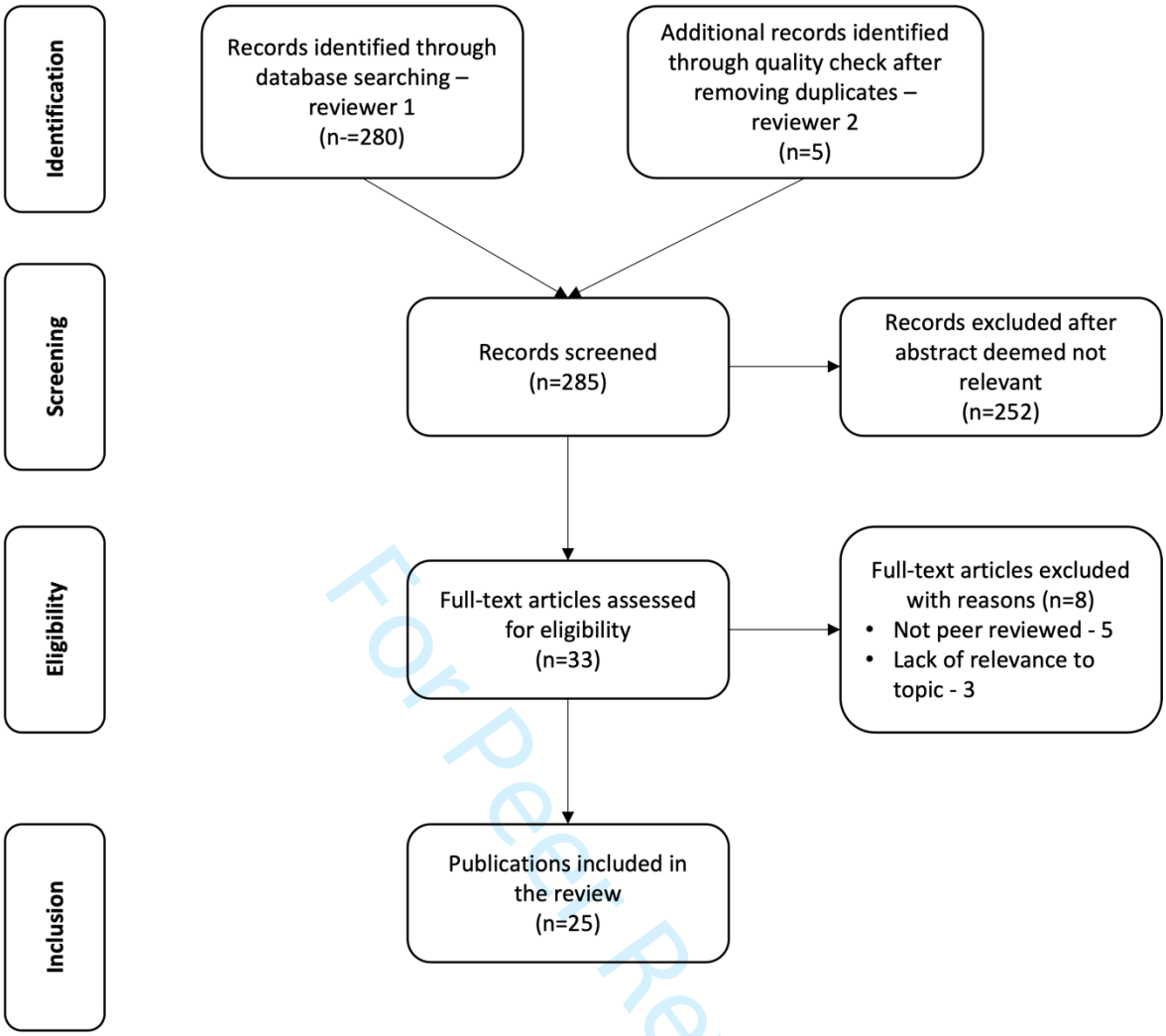
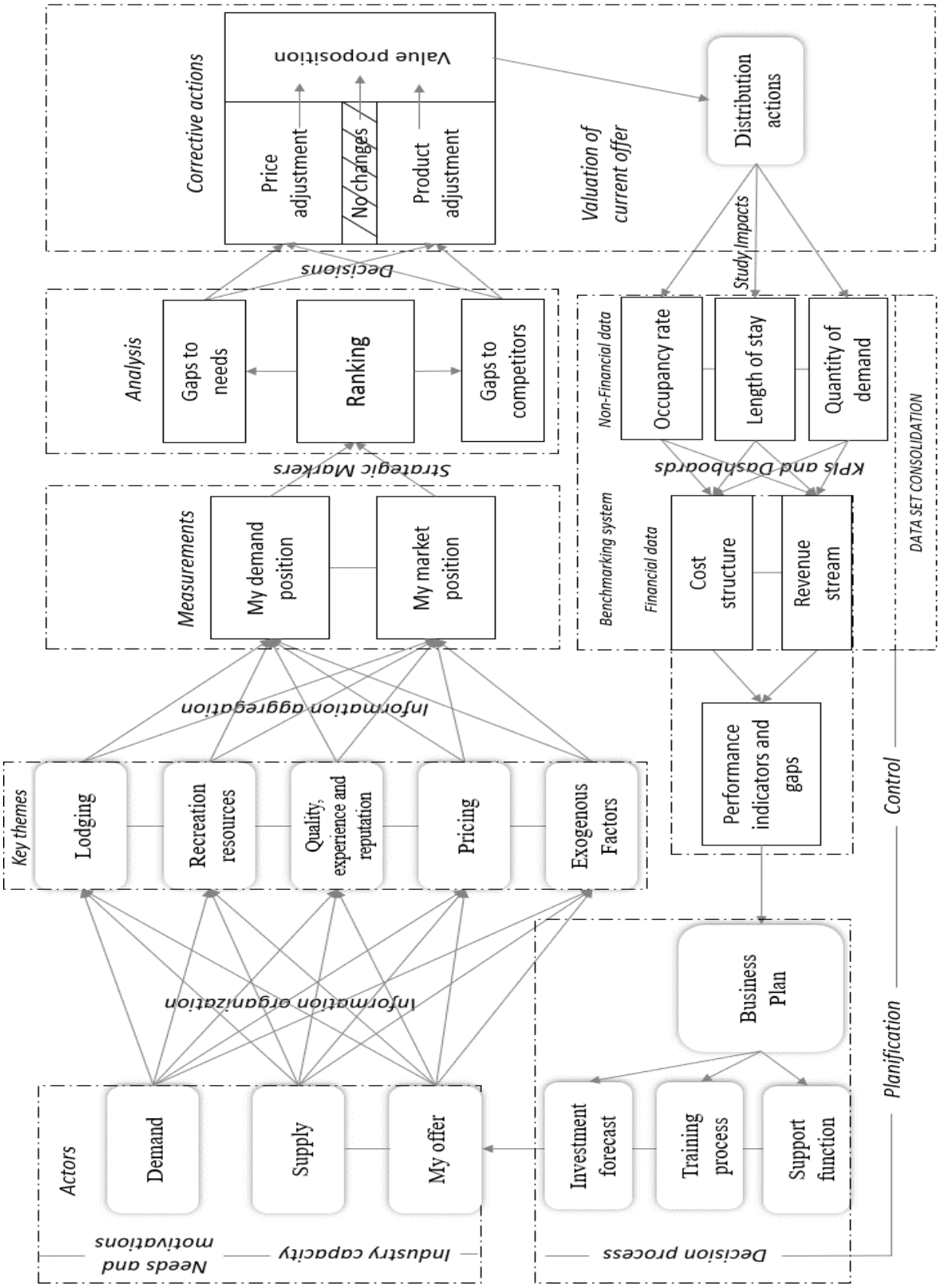


Figure 1 - Flowchart for the identification, selection, and prioritisation of articles in the review

831 Figure 2 - Dimensions of camping revenue management - a conceptual framework



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