Original Article

Managing Capacity and Waits in Hospitality

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ABSTRACT

This paper presents a theoretical study of capacity and wait management issues in hospitality operations, with emphasis on their practical applications, technological integration in service delivery, and guest perceptions/service experience implications. Keeping in view concepts from Queuing Theory, Theory of Constraints, Psychological Theory of Waiting, and numerous perspectives from service operations, the author investigates how these core theoretical frameworks are applied theoretically in capacity planning, resource allocation, and experiential transformations in the fast-paced hospitality environment. The methodology of this study was structured around a comprehensive literature review and a critical synthesis of contemporary research spanning capacity planning, wait management techniques, case studies, and technological innovations relevant to the hotel, restaurant, and allied service sectors. Findings indicate that capacity and wait management are best achieved when the physical infrastructure and human resource pool are managed in harmony and are supported at the decision- and service-making levels by tools such as predictive analytics, virtual queuing, and AI-based demand forecasting processes. The study foregrounds the psychological implications of waiting, suggesting that, from the guest's perspective, actual or perceived time spent waiting is paramount, as is clear communication. Further, it was established that there are potential gains in terms of operational throughput and customer experience by looking into integrated strategies that include environmental stimuli, flexible staffing, and technology. This research contributes theoretically by integrating a multidisciplinary framework for a holistic understanding of capacity-wait dynamics. Practically, it lends itself to the realisation of a responsive service system geared toward throughput enhancement without compromising service quality. In terms of policy, there is a pronounced consideration for regulatory frameworks that can embrace the adoption of technology and the flexibility of the workforce. The study concludes that capacity and wait management are critical for sustaining operational excellence and competitive advantage within the hospitality industry. Further, it provides a framework advising managers to promote the use of integrated technologies

in congruence with human resource capabilities and focus on transparent communication with customers, also conducting regular assessments of capacity strategies to ensure adaptability to fluctuating demand and guest expectations.

INTRODUCTION

The hospitality sector faces inevitable challenges surrounding the matter of capacity management and customer wait time. Discrepancies in balancing the demand for service against available operational capacity often cause customer dissatisfaction, revenue leakage, and employee burnout, extending from front-desk operations to restaurant service and park entries. Thus, growing guest expectations and mounting operational volatility plied by seasonal fluctuations, unexpected spikes in demand, labour shortages, or shifting consumption patterns keep hospitality managers under Herculean pressure to keep seamless services rendered with limited resources (Verma et al., 2017; Zhuang et al., 2017). This is in clear distinction to the resources paradox: how is it that hospitality firms could optimise resource usage while at the same time maintaining customer satisfaction and employee welfare?

Capacity management in hospitality refers to the organised management process of balancing existing service facilities such as labour, infrastructure, space, etc., with predicted demand or actual demand. It involves long-term strategic decisions for minimising under- or overutilization, like investment in infrastructure, the introduction of new technologies, etc., and operational short-term decisions, such as scheduling, changes to working practices, or reallocating staff (Pullman & Rodgers, 2010; Szende et al., 2021). In contrast, wait management refers to techniques used to manage the actual or perceived delays that guests endure. These wait techniques include queueing systems, sensory embellishments of surroundings, reservation systems, and communication strategies that all mitigate dissatisfaction associated with waiting (Maister, 1984; Sun et al., 2022).

These are problems still faced by many hospitality organisations balancing efficiency and experience despite the advent of technology-aided mobile check-in, AI-forecasting tools, and virtual queuing systems. These strategies would, on the contrary, introduce some variability and compromise on consistency, especially when overbooking and casual labour options are entertained (Riasi et al., 2019; Terrah et al., 2023). On the same note, despite all these digital means being applied in crisp capacity management activities, there are still questions as to their accessibility, privacy of guest data, and adaptability of staff (Sheoran, 2025; Somera & Petrova, 2024). It becomes clear, therefore, that capacity and wait management transcend mere operational problems into complex

issues that must be interpreted and addressed through a multi-dimensional approach linking technology, human capital, and customer experience design.

The review critically examines the foundational theoretical underpinnings, strategic approaches, and practical interventions of managing capacity and waiting in hospitality settings. It questions the physical and perceptual perspectives of service delivery while also validating how innovations deployed within the right contexts could foster performance, augment guest satisfaction, and build organisational resilience. From this view, the study stands to add to an integrated conceptualisation of capacity and wait management as prime levers of sustainable and competitive hospitality operations.

This review starts with the Theoretical Frameworks Underpinning the study. Next, it undertakes a critical approach to the analysis of capacity and wait management techniques in hospitality settings, bringing forth operational, experiential, and financial consequences. It is concerned with how to strategically balance capacities for both people and physical entities; short-term and long-term planning; and specific strategies of overbooking, flexible work arrangements, and spatial extension. Wait management, meanwhile, is tackled from two perspectives: psychological and technological. Clear communication and sensory stimuli interventions are highly stressed. AI forecasting technologies, mobile apps, and CRM Systems are cited as new technologies for better resource allocation and guest satisfaction. Marriott, Disney, Hilton, and Royal Caribbean case studies show real-world applications. The next section discusses capacity strategies and their impacts on established performance metrics, labour efficiency, and profitability. The last section talks about the contribution of the study, comes with conclusions, along with recommendations.

Theoretical Frameworks Underpinning Capacity and Wait Management in Hospitality

There are certain fundamental theories on capacity and wait management in hospitality that reflect on operative dynamics and lend themselves to strategic improvements. Queuing theory, as suggested by Cooper (1981), is a mathematical tool by which one can understand and control waiting lines and draw from relationships between service rates, arrival rates, and system capacity. In the restaurant and hotel industries, this theory is applied in waiting time predictions and in the allocation of resources (Bhavani & Jayalalitha, 2021). The Theory of Constraints, as proposed by Goldratt (1990), concentrates on identifying and managing bottlenecks limiting overall system performance. In the hospitality environment, TOC is used to identify constraints, such as slow check-in counters or limited seating, for intervention to ease customer flow issues (Dalci & Kosan, 2012).

Another pertinent theory is Maister's (1984) Psychological Theory of Waiting, which differentiates between actual and perceived waiting time. The emphasis Maister makes is on unoccupied waits feeling longer than occupied ones, and uncertain waits creating more anxiety than known waits. This theory has critical applications in service design, where a guest's experience is influenced by not only the time they must wait but also by how that wait feels (Maister, 1984). Alongside this is the theory of service operations, linking operational capability with service quality results. It argues that discrepancies between service demand and supply contribute to customer dissatisfaction and inefficiencies in operations (Munichor & Cooke, 2022).

Also part of capacity and wait management from a service design perspective is the physical environment, staffing patterns, and the systems of reservation. Proper spatial arrangement lessens congestion while also allowing service visits to flow smoothly; flexible staffing supports service continuity during periods of high demand (Arun et

al., 2020). Capacity planning models, usually illustrious in the fields of operations management, enable organisations to estimate demand in the future and correspond it to resource availabilities, thus remaining ready but avoiding exorbitant costs (Kambli et al., 2020).

Critical Analysis of Capacity Management Strategies in Hospitality Operations

In hospitality, the effective management of capacity is one of the foundations of operational excellence, requiring a meticulous balancing of resource allocation with volatile consumer demand. The literature identifies capacity management as a dual-faceted situation set in tactical adjustments of the short-term and long-term planning and strategic approaches (Verma et al., 2017; Zhuang et al., 2017). The short term usually involves operational decisions in real time, such as reallocating labour or adjusting work schedules to confront a sudden peak. In contrast, the long term is more geared toward investments in capital, recruitment plans, or technology adoption communications that engender greater response capabilities to demand. Yet, seen in black and white, such bifurcation is a little challenging on the operational side, especially when it regards the synergy between physical and human capacities.

The irony is that the distinction between physical capacity and human resource capacity, which relates to the availability of manpower and the required skills, is indeed very important but is mostly neglected in capacity planning frameworks (Pullman & Rodgers, 2010). When the two do not align well, one finds that either the resources get wasted or big time and cost go into making service delivery a success, thus saying that capacity planning must coordinate simultaneously with the maximisation of infrastructure and human resources (Szende et al., 2021). From this standpoint, a coordinated approach is imperative in sustaining operations, especially in an environment where demand patterns show volatility.

Compatibility with common strategies is overbooking, utilising data from historical no-shows in order to maximise asset utilisation, i.e., as a calculated risk with possible consequences to customer disapproval (Riasi et al., 2019; Schwartz et al., 2025). Being another way, flexible staffing with the use of part-time and on-call casual workers from the internal labour market contributes to organisational agility and cost efficiency (Terrah et al., 2023; Nair & Choudhary, 2018), yet might generate variability in service delivery and question workforce stability and engagement. Spatial management through auxiliary service locations, including outdoor venues or pop-up spaces, offers fascinating ways of augmenting capacity without involving heavy capital expenditures (Rishi et al., 2021). On the other hand, technology tools like predictive booking and accounting algorithms and occupancy sensors enable forms of dynamic capacity modulation, reflecting a broader industry trend toward data-driven decision-making (Khalili & Mosadegh Khah, 2020).

Of course, whatever capacity realisation strategy is implemented should achieve more than mere quantitative throughput improvements; it should minimise, or preferably enhance, negative effects on the guest experience. For example, Marriott International's implementation of mobile check-in demonstrates that capacity solutions can ease bottlenecks and improve customer satisfaction to help distinguish Marriott from its competitors (Mahalakshmi & Bharath, 2025; Štilić et al., 2023; Fernandes et al., 2024). It is in this overlap between operational efficiency and customer-centric innovation that future capacity management research and practice must locate a key focal area.

Nonetheless, barriers still remain due to labour shortages, regulatory constraints, and the inherent unpredictability of consumer behaviours. These challenges demand adaptive capacity frameworks that embed built-in feedback mechanisms and promote iterative evaluation so that their topicality

and effectiveness are sustained within a continually transforming marketplace.

Wait Management Techniques in Hospitality: A Critical Analysis

Customer wait time management is indeed central in service marketing since the perception of a delay profoundly moulds customer satisfaction and loyalty toward the brand. This section performs a critical review of existing methods in managing waiting: an exploration into wait management technologies and experiential enhancement, their underlying principles, and the contextual considerations needed for their effective adoption and implementation.

When combined, hospitality managers have for years relied on environmental and sensory interventions—ambient music, comfortable chairs, or some free drinks—to engage their customers in waiting and thereby reduce perceived delays according to Maister's (1984) Theory of Waiting. Contemporary research supports the idea that occupied and well-informed waiting experiences shorten perceived waiting time and increase positive satisfaction outcomes (Sun et al., 2022). Thus, transparency in communication, such as sharing accurate wait time estimates, drastically influences the perception customers have of their slowdown and can even hinder dissatisfaction if waits are uninformed or uncertainty-based (Kremer & Debo, 2016; De Vries et al., 2018).

Reservations are one of the basic strategies widely adopted in hospitality operations. It helps with demand forecasting and lessening the formation of physical queues, thereby allowing for better flow management during peak hours. Another capacity would be to assist in optimising table turnarounds in restaurants and staggered check-in times in hotels for operational gains, without compromising the quality of service (Mahalakshmi & Bharath, 2025; Fernandes et al., 2024). Aligning appointment scheduling, which is becoming much more common in spa, wellness, and recreation centres, with the

services being offered to guest arrival minimises downtime for both parties and exemplifies an approach taken by these establishments to capacity management (Niu et al., 2023).

Virtual queuing and waitlist apps represent a considerable step forward in wait management in fast-casual dining and attractions-based hospitality (Kamruzzaman, 2020). Accessible via a mobile app, these systems provide real-time updates about the queue, coupling the information with service options that allow customers to engage in other activities while waiting, thus alleviating the psychological discomfort associated with physical standing (Robbins, 2021). Research shows that such technological innovations not only reduce spatial congestion but can also enhance the perception of service quality; thus, they are doubly beneficial operationally and experientially (Scheible & McNab, 2017; Robbins, 2021)

These sensory and distraction techniques remain relevant alongside technological advances, following Maister's (1984) Psychological Theory of Waiting, which states that "occupied time feels shorter than unoccupied time," with uncertainty aggravating the negative perception of waiting. Contemporary research underlines this view, implying that ambient stimuli such as complimentary beverages, music, and better seating reduce perceived wait time and enhance customer satisfaction (Sun et al., 2022; Yu et al., 2024; Spence, 2021). The psychological component of wait experiences must be targeted in conjunction with the temporal.

This subjective wait time is more significant in shaping the guest response than the actual real-time assessment. This research tends to note that guests tend to overestimate wait times, especially if they are given no information or during idle time (Arveson et al., 2025). Transparent communication that fills the void with accurate estimates, thus appears to be an effective way to curb dissatisfaction since it restores the feeling of control and

predictability during the service (Arveson et al., 2025; Wu et al., 2024)

Yet, although disqualified as highly effective remedies for waiting, their applicability undoubtedly must be chosen contextually. Any elements of a successful wait management must find a subtle, finely balanced compromise between operational concerns-for example, efficiency and throughput guest comfort and positive perception. According to Spence (2021), equating technological innovations with sensory enhancements tailored to the idiosyncrasies of each service environment must be considered the foremost aspiration. Hence, in the future, there should be a further study into how these strategies produce dynamics in diverse hospitality contexts to help maximise the fulfilment of both operational and customer experience.

Technology and Innovation in Managing Capacity and Wait Times in Hospitality

Technology is increasingly making itself important in solving capacity and wait-time problems encountered in the hospitality industry, the understanding of operational strategies having been transformed through applications of AI, machine learning, and big data analytics. Current research asserts that the efficacy of advanced technologies, from hotels to restaurants and resorts, in forecasting demand, scheduling resources, and customer management has helped shift management from passive to active mode(Scheible & McNab, 2017; Sheoran, 2025; Mahalakshmi & Bharath, 2025) With proposed interventions promising timely and optimised capacity utilisation with guests' experiences, the desired results from technology innovations will majorly depend on the organisational context, its strength, and readiness(Sun et al., 2022).

Technologically transforming demand forecasting through AI ensures that staffing is optimally conducted, inventory is adjusted, and space is allocated according to big data outputs that account for various elements-largely past booking records-

data, external factors, especially weather conditions (Shamim et al., 2021). For example, property management systems employ big data predictive analytics to forecast risks from overbooking or limitations of capacity beforehand, thus decreasing under-provisions and complaints from those being served (Horng et al., 2022). On the other hand, these insights are also utilised for dynamic pricing through revenue management platforms that balance demand and supply variations, maximising revenue without compromising the ability to serve(Gao, 2025; Nalley & Bufquin, 2020; Bale & Emmanuel, 2024).

Mobile applications and online reservation systems have come to form a vital element in technological capacity management. Open Table and Seven Rooms simplify the booking and wait-listing procedure while simultaneously gathering micro-level behavioural data for analysis by managers to further rely on service personalisation and more accurate dining forecasts (Vo-Thanh et al., 2022). Likewise, self-service kiosks and mobile key technologies in the hotel domain have been shown to alleviate congestion at the front desk and hasten room turnover, which underscores the operational efficiencies resulting from automation (Bagadiya & Kathiriya, 2024; Robbins, 2021).

Yet Customer Relationship Management (CRM) systems underline technology's central role in balancing demand and retaining customers. CRM identifies guest segmentation and high-value customers to focus retention efforts for peak demand periods to ensure retention and satisfaction (Boadu & Achiaa, 2019). Another aspect of this relationship is the integration of CRM with marketing automation software, which provides the ability to strategically level demand with personalised promotions for off-peak times (Sigala et al., 2019). Virtual queuing solutions and AI-driven chatbots, meanwhile, promote customer empowerment by delivering real-time wait time updates, alternatives, and remote check-in confirmation (Sheoran, 2025; Mahalakshmi & Bharath, 2025; Robbins, 2021)

Yet despite these advances, the literature contends that successful adoption requires large investment, staff training programs, and a culture predisposed to digital change (Somera & Petrova, 2024). It is absolutely imperative for hospitality operators to ensure that these tools are fitted into their existing workflows and in concert with employee capabilities and guest expectations. If not, this would be a huge lost opportunity for technology to fully unfold and will ultimately compromise their service quality. Therefore, while technology and innovation have great potential to manage capacity and wait, their implementation should be professionally matched to sustain improvements in operations and experiences.

Case Studies and Industry Applications in Capacity and Wait Management

An efficient handling of capacity and waiting is important for the success of any business, the state of satisfaction of customers, and profitability in the service industry. Industry leaders have shown that combining technology and data-oriented management practices can significantly enhance results. Queue management innovation thus turns the fast track at Disney FastPass into a good way of transforming guest experiences in high-demand situations. Guests pre-book access to attractions at specific times, which cuts down on perceived and actual wait times, thus adding to customer satisfaction and throughput efficiency (Li & Li, 2023). The subsequent addition of a mobile interface to FastPass, with real-time operational updates for ride distribution and guest capacity, stands out as exemplary of how theme park operations face their complex challenges with technology (Sakamoto, 2019). Nevertheless, some issues that could fade with FastPass improvements in guest experiences are issues about equity and accessibility, because those who cannot use such technologies might find themselves waiting comparatively longer.

The hotel industry reveals another example: Marriott International manages capacity dynamically through advanced forecasting techniques, while integrating CRM and property management systems to strategically allocate resources according to changing demand levels (Jin et al., 2025). Such a strategy maximises revenue per available room (RevPAR), while simultaneously supporting the stereotyping of operational activities, such as at the front desk and housekeeping (Schwartz et al., 2017). The Marriott model serves as a shining example of how predictive analytics can enhance personalisation of services and operational flexibility; however, its implementation demands the stumping of considerable financial resources into some very sophisticated technology and the training of new staff, thus rendering the model less applicable to small or resource-constrained properties (Hormby et al., 2010).

Similarly, Hilton Hotels engages in digital innovations for capital improvement and guest satisfaction through its Hilton Honors app, which supports digital check-in, room selection, and mobile room keys, cutting down front desk congestion while encouraging guest autonomy (Linxi, 2021). This case highlights the increasing significance of frictionless digital experiences in hospitality operations and how real-time occupancy data guides dynamic housekeeping and staffing decisions (Anwar et al., 2024). On the flip side, depending on mobile technology has the potential to isolate the less technically inclined movers and will need strong cybersecurity protocols.

On the food and beverage side, OpenTable-type reservation apps have transformed table management by offering restaurants actionable metrics to improve seating turnover, reduce no-shows, and minimise wait complaints (Vo-Thanh et al., 2022). Also, via integration, waitlist apps like Nowait bring a psychological component to the wait experience by allowing users to view real-time queue status, boosting customer perception and satisfaction (Zambetta et al., 2020). Despite their evident operational benefits, these platforms introduce operational considerations around

dependence on third-party technologies and raise privacy concerns regarding customer data.

Large-scale hospitality operations, like Royal Caribbean with its staggered boarding times and wearable tracking devices, bring to the fore the need will dynamic balancing, in real-time, guest flow towards efficiency and personalisation of complex service environments (Buhalis et al, 2022). The dynamising of scheduling and capacity is provided for by these modern disparities; however, they also set an arena for heated discussions regarding guest privacy and consent.

Impact of Capacity and Wait Management on Hospitality Performance Metrics

Capacity and wait-time management represent a critical factor in the key performance indicators (KPI) of the hospitality sector. Strategically assigning operational resources in response to demand fluctuations enhances customer satisfaction, while improving financial and operational performance (Buluda, 2020). Capacity management additionally works to maximise occupancy and utilisation rates so that improvements in key indicators, such as RevPAR for hotels and RevPASH for restaurants, can be made without compromising service quality (Schwartz et al., 2017). Improving throughput and flow management allows hospitality organisations to convert idle time into instances of productive engagement, hence realigning operational efficiency.

A considerable range of effects of good wait-capacity management concerns the satisfaction of guests. Empirical studies identify that unmanaged waits and overextended queues stand among the top causes of dissatisfaction in service-intensive industries, extending to fine-dining restaurants, theme parks, and front-desk operations (Shamim et al., 2021; Nalley & Bufquin, 2020). Perceptual factors such as perceived fairness or communication of expected wait times may mediate their tolerance and value appreciation (Arveson et al., 2025; Wu et al., 2024). More interestingly, well-managed waits where mechanisms such as entertainment, real-time updates, or engaging interactions are infused into the delay experience may keep or even increase satisfaction levels despite the lack of change in actual wait time (Arveson et al., 2025). This means that the nuances of perceived experience pose more than enough complexities beyond those of pure service metrics.

This capacity and wait management approach, guided by demand forecasting, queue modelling, and dynamic staffing models, drives further operational efficiencies (Mahalakshmi & Bharath, 2025; Robbins, 2021; Ananda, 2024). With the assistance of predictive analytics, managers are able to plan for peak demands, so as to avoid understaffing or overstaffing - both affecting the speed of service and labour costs. Thus, allocating the physical infrastructure, along with human capital, increases throughput while eliminating operational wastages; this presents a compelling case for integrating data-driven management tools into hospitality operations.

Capacity and wait management have implications, too, in employee well-being and performance, oftentimes ignored in this literature. Such reactive operating methods during peak times tend to overwhelm workers, resulting in burnout, mistakes, and elevated turnover rates (Liu et al., 2021; Meiliana, 2024). On the other hand, with better demand distribution and arming employees with adequate tools for managing customer expectations, a healthy work environment can be promoted, fostering higher employee morale and productivity.

Finally, a well-established link exists between great queue and capacity management and profitability (Nair & Choudhary, 2018; Nalley & Bufquin, 2020). These operational levers propagating revenue generation-larger guest throughputs, faster table-turnover, and maximum utilisation of space-give a stretch to current competitive advantages in hospitality markets of high demand without compromising service quality. Hence, capacity and

wait management are the dual levers by which service excellence and financial sustenance are possible.

CURRENT LITERATURE AND RESEARCH GAPS

There are still major gaps in capacity management in hospitality (with increasing volumes of research). This operational integration of physical and human resources is few or never seen from studies (Pullman & Rodgers, 2010; Szende et al., 2021), thus avoiding synchronised planning. Overbooking and flexible staffing aid agility (Riasi et al., 2019; Terrah et al., 2023; Nair & Choudhary, 2018), yet trade-offs concerning consistency of service and employee engagement have hardly ever been investigated. Predictive algorithms are talked about as part of technological advances (Khalili & Mosadegh Khah, 2020), but there is limited evidence that they improve guest satisfaction in the long run, though. Finally, a few studies combine operational efficiency with customer experience, thus stressing the need for adaptive frameworks (Mahalakshmi & Bharath, 2025; Štilić et al., 2023).

However, with the research having been prolonged in this field of wait time management, gaps persist. Limited things are measured empirically about how environmental and technology-based interventions interact in hospitality-related contexts, with most studies looking at one strategy in isolation from others, rather than combinations of them (Maister, 1984; Sun et al., 2022; Kamruzzaman, 2020; Robbins, 2021; Spence, 2021). Virtual queuing may provide operational benefits, but longitudinal studies concerning effects on guest satisfaction and fairness have not been carried out (Mahalakshmi & Bharath, 2025; Fernandes et al., 2024). Yet communication and transparency are important, while how to best convey real-time information among different demographic groups and service contexts merits further investigation (Kremer & Debo, 2016; De Vries et al., 2018; Arveson et al., 2025; Wu et al., 2024; Yu et al., 2024).

Despite advances in managing capacity and wait times, key gaps remain. While AI, big data, and analytics have shown promise (Scheible & McNab, 2017; Shamim et al., 2021), there remains little research on their effectiveness in low-resource hospitality settings. Research has also underexplored the role of internal environmental factors, such as staff adaptability and digital skills, in determining tech uptake (Sun et al., 2022). While self-service can improve efficiency (Vo-Thanh et al., 2022; Sigala et al., 2019), its long-term effects on satisfaction and loyalty are unknown, and trade-offs between automation and human interaction have not been sufficiently addressed.

Despite technological advances that enhance capacity and wait management, depriving certain areas of attention still exists. Although the research focuses mainly on dining and lodgings in operations such as Disney and Marriott (Li & Li, 2023; Jin et al., 2025), there are almost no instructions for smaller operators or those that operate under budgetary constraints (Hormby et al., 2010). For instance, even if operational software such as mobile apps is excellent in instilling efficiency (Linxi, 2021; Vo-Thanh et al., 2022), until now, its impact on digital underprivileged guests has yet to be studied (Sakamoto, 2019). Although equity, privacy, and data concerns are acknowledged (Zambetta et al., 2020; Buhalis et al., 2022), no link has yet been identified between these considerations and their potential to foster trust and loyalty. Lastly, behavioural and organisational barriers in technology adoption tend to receive insufficient attention (Schwartz et al., 2017; Anwar et al., 2024).

Despite some gaps in capacity and wait-time management, their recognised worth cannot be denied when it comes to service quality and profitability. Most studies talk about KPIs such as RevPAR and RevPASH (Schwartz et al., 2017) but overlook perceptual aspects such as fairness and communication (Arveson et al., 2025; Wu et al., 2024). Little has been researched on the emotional side of waiting beyond shallow cures like

entertainment (Arveson et al., 2025). Additionally, reactive models remain silent on staff well-being, burnout, and turnover (Liu et al., 2021; Meiliana, 2024). Also, predictive analytics have not been empirically tested with the breadth that their development editions promise (Mahalakshmi & Bharath, 2025).

Contribution to Theory, Practice, and Policy in Capacity and Wait Management in Hospitality

Contribution to Theory

This study has greatly contributed by way of extending, integrating, and validating theory toward capacity and wait management in hospitality. First, it extends Queuing Theory (Cooper, 1981) and Maister's Psychological Theory of Waiting (1984) to incorporate situations beyond traditional queue models, emphasising how sensory interventions, transparency of communication, and real-time digital updates form the subjective impressions of the guest experience (Arveson et al., 2025; Sun et al., 2022). Second, integrating Theory of Constraints (Goldratt, 1990) with capacity planning models and service design theories provides an integrated framework linking physical-technology-human resource capacity to both service flow and customer satisfaction. This integration supports the ideological shift away from narrow, linear, and siloed applications of theory to the development of dynamic, system-wide hospitality management strategies. Third, the research validates the theory with empirical alignments with such contemporary operational practices as virtual queuing, mobile check-ins, and AI-driven demand forecasting, thus emphasising the potential of these theories in the times of digital transformation (Robbins, 2021; Sheoran, 2025). Putting it together, this multidimensional contribution strengthens the key notion of the ability of hospitality theory to play an operative role in practice, thereby proposing a unified and adaptable framework that accounts for the interaction between operational efficiency, guest psychological responses, and technology-facilitated service encounters in a mercurial demand situation.

Practical Contributions

This study provides crucial practical insights for the hospitality manager in his or her attempt to improve operational performance and guest satisfaction via management of capacity and wait-time. The most critical point that this study draws attention to is the importance of achieving a balance between technology, space, and human resources to enhance the throughput of services without compromising guest satisfaction, while examining strategies that include overbooking, space innovations, predictive analytics, and virtual queues. This study brings out the fact that, except for the planning of deployment of physical infrastructure and workforce in integration, this matter is scarcely addressed in practice. The research also offers guidance as to the application of perceptual approaches to service delays, like environmental distractions and real-time communication, in a wider situational context. Moreover, it stresses the importance of staff adaptability and engagement when the organisation is deploying flexible labour models and technological instruments. It thus constitutes a very valuable guide for active professionals who want to enhance service quality, reduce labour waste, and design responsive systems within jurisdictional constraints on the ever-changing hospitality scene.

Policy Contributions

The study helps to formulate hospitality policies by bringing out the regulatory and structural issues that can make capacity and wait-time management effective. It calls for policies that foster digital transformation within the sector, including providing subsidies or tax incentives to small and medium operators through the adoption of forecasting tools, CRM systems, or mobile digital queue technologies. The study calls into question the development of labour policies that support various forms of flexible staffing without compromising workers' rights, town, or morale - at least for casual or on-call employment arrangements. Moreover, the research points out gaps in consumer protection and

data privacy legislation that make a real-time monitoring system, virtual queue, and personalisation technologies feasible, especially in circumstances where contest and technology interaction abound. The research opens the issue of digital disparity and, in consequence, urges public policies aimed at promoting understanding and digital inclusion among consumers as well as hospitality providers to guarantee fair access and exclusion reduction. This guidance can provide governments and industry associations when creating socially responsible hospitality policies that are fair and resilient.

CONCLUSION

This critical analysis reveals some pragmatic insights that capacity and wait-time management, being the two constitute of operational interperformance, guest satisfaction, and profitability, are crucial occasions in the hospitality sector. Capacity management interplays strategically with the planning organisation of both human and physical resources as a response to the oscillation of demand. What technology brings into the scenery-the predictive analytical tools, mobile app services, and virtual queuing systems-has, in other words, defined the operational landscape, yet the integration should approach the organisational capacity, nature of the guests, and service situation. Good practices combine flexible staffing with space optimisation and implementation of personalised digital tools, all with a focus on maintaining experiential quality. Perceptual considerations-fairness, transparency, and communication - also intercede in guest tolerance and satisfaction, sometimes eclipsing the time spent waiting. A few challenges still remain, however, like labour shortages, disparities in technology, and physical/psychological impacts on workers. It is at the balance of efficiency, compassion, and equity that long-term capacity and wait-time management strategies for hospitality need to be developed.

Recommendations

Hospitality managers should embrace an integrated and adaptive capacity management framework that matches physical infrastructure to human resource planning. First, demand forecasting through AI and data analytics should be used to guide dynamic staff rostering and scheduling as well as spatial resource allocation. Second, investment should be made in mobile applications, virtual queue management systems, and automated check-in and check-out facilities that smooth guest flows and reduce their perception of having to wait. On the other hand, these technological tools should be tracked via contextual deployment to ensure accessibility for all sections of customer demographics. Third, transparent communication should be prioritised, including real-time wait updates, as those developments would greatly enhance the perceived fairness of the operation and notable decrease dissatisfaction. Environmental improvements such as ambient resistance and classy waiting areas are still highly relevant and should be combined with technological advances for a total engagement of the guest. Finally, managers should look after the well-being of employees by providing balanced workloads and training programs that help avoid burnout. The operators should also maintain continuous reviews based on customer feedback and performance data to keep their operations agile and responsive in an ever-dynamic service space.

Study Limitations and Areas for Further Research.

The study is limited by using secondary data and conceptual synthesis, and the risk of overlooking some subtle but important operational realities in the hospitality environment. Many of the insights applied come from large-scale operations and so might lack generalizability to smaller, resource-constrained operators. There has been little research proven on the long-term effects of interventions on wait time on psychology and emotion. Future research should also focus on underrepresented markets for the integration of human-centred and

AI-based solutions; look at levels of adaptability among employees in the uptake of technology; and consider the implications of automation on service quality and customer loyalty. Long-term and context-based studies of capacity strategies are needed in a variety of hospitality subsectors for validation purposes.

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