

# THE FACTORS THAT AFFECT THE HOTEL OPERATION MANAGEMENT AND THE MEASUREMENT OF HOTEL BACK-OF-HOUSE EFFICIENCY FRAMEWORK THROUGH SYSTEMATIC REVIEW

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## ARTICLE HISTORY

**Received:** 10 May 2024

**Revised:** 31 May 2024

**Published:** 21 June 2024

## ABSTRACT

This research aims to examine the factors that affect hotel operation management which mainly focus on room maintenance management. The departments related to the room maintenance are mainly between housekeeping and engineering. This research also aims to find out the various aspects those can measure the hotel operation management efficiency. After that, the framework of this study will be conducted. This research collected the information throughout the systematic review. The result shows that there are numerous factors that affect the hotel operation management and a various number of measurements of hotel operation efficiency.

**Keywords:** Hotel, Operation Management, Hotel Efficiency, Back-of-house, Hotel Operation, Work Order, Housekeeping, Engineering

**CITATION INFORMATION:** Ochansiri, T., Chandrachai, A., & Sinthupinyo, S. (2024). The Factors That Affect the Hotel Operation Management and the Measurement of Hotel Back-of-House Efficiency Framework through Systematic Review. *Procedia of Multidisciplinary Research*, 2(6), 32.

## INTRODUCTION

Nowadays, the number of hotels has increased rapidly to serve the guests thus the hoteliers must improve their service, maintain the standard, and maintain their property that aim to maintain the existing customer and attract new customers (Israeli, 2014).

From various research studies it was found that most research has focused on groups of employees who interact directly with customers (Front-line operations). In addition, some of them are about the use of artificial intelligence to help work in hotels with only a small amount of research talking about the use of artificial intelligence to help coordinate between departments or operations management in the hotel.

Not only the front-line operation that important for the hotel, but also the back of house that is the main part of the hotel which have a responsibility to maintain the product in a good condition and ready to sell. Back of house play a crucial role in term of supporting the operation of the hotel to run smoothly. One of the important parties related to the back of house are the room maintenance party, those are the front desk, engineering department, and housekeeping department. These three departments will receive reports regarding problems that occur in rooms or common areas, such as water leaks, power outages, internet problems, etc. They must work together to solve problems quickly because the time lost may result in rooms with problems which are not able to be sold, causing loss of opportunity to generate income. In addition, if the problem occurs in a room where early customers are staying, it may have a negative effect on the image of the hotel.

Managing room maintenance costs is an important factor for always keeping rooms in good condition and ready for service. Jayawardena et al. (2013) stated that not managing budget allocation for room maintenance will have negative consequences, for example, tired products that will suffer by prolonged use without maintenance. This causes a decrease of room's value, resulting in a lower room rate which may have a negative effect on the image of the hotel when customers come to use the service, damaged reputation, in the long term. The rooms without maintenance will result in much higher costs when renovations are required. This is because the accumulation of problems makes repairs more difficult and expensive, combined with the urgency to get repairs done quickly. Dzhandzhugazova et al. (2016) conducted a study on the factors that drive hotel success. One of the important factors is "Room supply management", that is the main source of income in a hotel's business management system. Smart room supply management determines the profitability of the entire hotel business. Therefore, the efficiency of this business reflects the performance of the various hotel departments, which is achieved by relying on the impulse transferred by the various elements of the hotel's business management mechanism. However, there is still ambiguity regarding the factors affecting the coordination and planning of hotel operations.

In line with such importance, this study therefore investigated the factors that affect the hotel operation and the factors that measure the performance of the hotel operation. The findings of this study could have an implication for hotel's operation to emphasize the importance of cooperation in the hotel. Also, provide a framework that will be used to increase the performance of hotel operation which results in better hotel service and product that lead to higher hotel occupancy.

## LITERATURE REVIEWS

### **Operational management of hotel business.**

Operation management means management that involves designing and controlling the operating processes in a business. The aim is to conduct business efficiently in terms of using resources as necessary to meet customer needs (Pearce, 2013). In operations management, many decisions are made, such as operations strategy, process design, quality management, performance, facility planning, and inventory control. Each of these requires the ability to

analyze the current situation and find better solutions to improve the efficiency and effectiveness of service (Krajewski et al., 2010).

From a review of past literature, it was found that research supports factors from many perspectives that directly affect customer satisfaction and decision to choose a hotel. Hotel characteristic factors, property, are the general appearance and atmosphere of the hotel. Hotel amenities are things that add value to customers beyond the rooms. Brand image factors are the attitudes and feelings of customers when talking about the hotel (Amin et al., 2013; Assaf et al., 2015; Banga et al., 2013; Gallarza et al., 2015; Nasution & Mavondo, 2008; Raza et al., 2012; Xie et al., 2019; Xu & Chan, 2010). However, there is a limited study about the indirect beneficial aspect that affects customer satisfaction. Back of house or operation management that supports the hotel operation which is about maintaining the neatness of various elements within the hotel to ensure a good guest experience, whether it is in the matter of room or facility availability.

### **Concepts and theories regarding factors affecting operations.**

This research collected data through the systematic review of the journal related to the factors which affect the hotel operation. There are several aspects those have a benefit both direct and indirect to the operation, including system design, readiness of tools and equipment, manpower, the complexity of work, the quality of staff, work order features, and the experience of the hotel. All the aspects will be reviewed and analyzed, leading to a new framework regarding the crucial elements that support the hotel's operation efficiency.

Firstly, the design of the systems used to operate the hotel's operations has both direct and indirect effects on efficient operations. Whether it is in terms of convenient, fast, and accurate work for employees. Good system design can have a significant impact on work efficiency in the following ways: 1) Clarity and ease of understanding, a well-designed system should have clear objectives and be easily understood by users. 2) Compliance with needs, appropriate system design that is consistent with needs will help increase work efficiency. 3) Flexibility, a flexibly designed system can be improved and adapted according to changes in the organization. 4) Connection and communication, a system with effective connectivity and communication can help improve work efficiency. 5) Stability and safety, designing systems with stability and security can increase reliability and efficiency. (Moyeenudin et al., 2018; Krželj-Čolović & Cerović, 2013; Nirmala, 2021; Dyshkantiuk et al., 2020; Pucciani & Murphy, 2011). Good system design can greatly increase efficiency. Empirical findings show that the Information technology (IT) is not just being used to replace existing paper systems, but also to improve customer service and to increase operational efficiency (Law & Jogaratnam, 2005). Secondly, the readiness of tools and equipment is important when it comes to hotel maintenance. The availability of tools and equipment used in operations can affect efficiency in many aspects as follows: 1) Work efficiency, tools and equipment that are ready and working properly will increase the efficiency of the user's operations, including reducing operating time and increasing the efficiency of the work process. 2) Reliability and accuracy, tools and equipment that are ready and working properly are more reliable. 3) Technical performance, tools and equipment that are ready and able to work properly often have better technical capabilities, such as speed of work and accuracy in giving results 4) Easy to use, tools and equipment that are ready and easy to use often reduce problems that occur in the work process, such as reducing the time spent studying user manuals, reduce errors in use, and increase efficiency in use faster 5) Improvements and upgrades, tools and equipment that are ready will be able to receive new improvements and upgrades (Ihsan & Alshibani, 2018; Pitt et al., 2016; Sahid et al., 2021).

Thirdly, the amount of work affects job performance in the following ways: 1) Planning and time management, the amount of work can make planning and time management more difficult, creating appropriate work schedules and prioritizing tasks is an important aspect of managing

workload. 2) Work balance, adequate workload allows for a balance between tasks, without causing the specified work to exceed the ability to complete it within the specified time. 3) Quality of work, having the right workload allows enough time and resources to do the job correctly and pay attention to details. 4) Cooperation and teamwork, the appropriate amount of work helps create effective cooperation and teamwork. 5) Maintaining health and balance, having an appropriate workload helps those who work to maintain good health and balance between work and personal life (Wakhyuni, 2018; Lai & Yik, 2012; Lockyer & Scholarios, 2004). In conclusion, the right amount of work can have a positive impact not only increase work efficiency, but also reduce stress and confusion at work. Correct planning and time management, such as writing a work schedule and creating a balance in work, helps the work go according to plan and with good quality.

Next, the complexity of work affects work efficiency in different ways as follows: 1) Planning and managing resource, complex jobs often require more planning and management of resources such as time, budget, and labor, which can increase planning and management time for those doing the work. 2) Difficulty in working, complex tasks often have more complications thus it might require further exploration and study. 3) Communication and cooperation, complex tasks often require communication and cooperation between those doing the work which can cause confusion or communication errors. 4) Urgency, complex tasks often have a greater urgency. This may require working for a limited period and must deal with a lot of physical strength. (Lai & Yik, 2012; Marinakou & Giousmpasoglou, 2019; Var & Gunn, 2020; Darvishmotevali et al., 2020). Overall, job complexity can have a direct effect on job performance. This may make the job more difficult resulting in increased time and resources, and the higher risk of errors. However, managing job complexity effectively can help reduce these impacts by proper planning and resource allocation along with communication, cooperation, and creating teams that are experts in complex tasks.

Furthermore, manpower affects work efficiency in the following ways: 1) Abilities and expertise, people who have the ability and expertise in the work they do will have an opportunity to work more efficiently because they have the knowledge and skills required for that job. 2) Teamwork, working as a team with appropriate and high-quality manpower increases the efficiency of the work. Teams with members who can collaborate and communicate effectively facilitate a good division of duties and tasks. 3) Management and support, proper management and support for the employees improve their work efficiency in various ways. 4) Work environment, a creative and supportive environment can increase job performance (Parmar & Dalal, 2017; Pitt et al., 2016; Lai, 2013; Olimovich et al., 2020). Overall, manpower directly affects job performance because of the ability and expertise in the work that they do. Teamwork with cooperation and good communication, proper management and support, and a good working environment are the keys that can increase work efficiency. Moreover, a work order is an important document for defining and delivering work to the person or team responsible for the work. The nature of the work order affects operations in the following ways: 1) Clarity and easy understanding, work orders with clear detail and easy-to-understand explanations are helpful to reduce anxiety and confusion at work. 2) Specified period, work orders with appropriate timelines help with prioritization and time management. 3) Conformity to needs, work orders written that are consistent with the needs and goals of the job help the contractor understand the needs and be able to work effectively to meet the goals. 4) Adequate information and resources, work orders contain sufficient information and resources to enable contractors to carry out the orders received. In conclusion, work order is a necessary part of the operation that must be clear and easy to understand. (Siguaw & Enz, 1992; Gado & SamehHussien, 2019; Lai & Yik, 2012)

Finally, the age of a hotel is a controversial factor that affects the hotel operations in many aspects as follows; 1) Basic and architecture, older hotels may have fundamentals and

architecture that are incompatible with the needs of today's customers. 2) Management, older hotels may have antiquated and inefficient management processes. Adopting modern technology and methods in management can increase operational efficiency such as using an online booking system. 3) Competitiveness, a hotel age may affect its ability to compete with other hotels. 4) Retaining old customers, older hotels may rely heavily on past customers and customer satisfaction that comes first. In conclusion, the age of a hotel affects its operations in various ways, for example, maintaining structural integrity and upgrading management resources and taking care of old customers. Improving and rebalancing hotel operations can help hotels become more competitive and successful in the market (Aissa & Goaid, 2016; Baum & Mezas, 1992; Dimitrić et al., 2019; Madanoglu & Ozdemir, 2016).

### **Concepts and theories regarding efficiency in hotel operations management.**

With the increasing intensive information demands from customers and hotel operators, hotels have adopted computerized IT facilities to improve operational efficiency, reduce costs and increase service quality (Law & Jogaratnam, 2005). To ensure the long-term economic performance of the hotel, managers must choose investments essentially by deciding on various combinations of costs that create value. Many studies show that hotels investing in service staff, higher labor salary and costs per room, will benefit from higher future efficiency. Basically, when hotels spend more on service staff, hotels will realize higher operating income in the years to come. Hotels that invest in hospitality staff will have higher performance whether the property provides full or limited services (Canina et al., 2006).

Analysis of the literature shows the gradual importance of a satisfactory performance measurement system. Findings related to outcome factors, on the other hand, are highly complex and far-reaching. Determining factors are often looked for within an organization. Four main functional research areas are identified: strategy, production, marketing, and organization, and for each a main research goal is identified. A balanced summary of statistics is the customer perspective, strategy perspective, and process perspective. It is the greatest area of research. This is evidenced by the structural nature of the hotel business and is important, respectively, by customer relations and the protection of the efficiency of management processes (Sainaghi, 2010). There can be many indicators of efficiency in the back-end operations of a hotel which can specify various indicators as follows.

Firstly, the cost of room maintenance, the amount of money that goes into each maintenance, also includes the use of less labor but with the same efficiency. Efficient use of available materials and equipment for the maintenance of that room to get the best results.

Secondly, efficiency in data management, the information here refers to information that is useful and affects the maintenance of rooms in the hotel back of house. Measuring the efficiency of back-end processes including cleaning process, material storage, data storage and backups, is helpful for checking that the operating process follows proper procedures and methods.

Thirdly, service quality, the quality of coordination in the back office can be measured by many things, such as the speed of coordination among various departments. Coordination between departments without errors or missing information can reduce conflicts between departments.

Lastly, speed is a measure of the efficiency of time spent on back-office operations, such as checking and reviewing guest rooms and managing room repairs. Measuring the duration of the work helps in checking whether the work is carried out within the specified time or not and can improve the process to be more efficient in using time.

By measuring and tracking these Key Performance Indicators (KPIs), it helps to improve and develop the hotel back-end operations to increase efficiency and provide good service to customers. In conclusion, operational management efficiency is one of the important parts that can drive the hotel to become success which can be measured in various ways.

## RESEARCH METHODOLOGY

This research will screen only the research of those in the hotel industry and will collect only the positive aspects related to each factor to reduce the bias from the authors.

This research will develop a comprehensive search strategy to identify relevant studies by searching electronic databases those are PubMed, Web of Science, and Scopus. Moreover, this research will use a combination of keywords related to research objectives. After screening titles and abstracts to find possibly pertinent articles, full-text screening is done to decide which papers are ultimately included. To reduce bias, this research will employ a systematic procedure and engage several reviewers. In addition, this research will consider the research question, study limitations, and evidence quality when interpreting the systematic review's conclusions, and consider the consequences for practice, policy, and future study.

## RESEARCH RESULTS

The systematic reviews of various research have found that there are many factors that affect the hotel operation, leading to the operation's performance. Furthermore, the elements used to measure the performance of the hotel operation have been analyzed as follows.

### Factors affecting operations.

There are numerous factors that affect the operation management in the hotel industry. The designed system is the way that the system supports the user while they are doing their job. The availability of tools and equipment is also important, without tools and equipment it might take more time to finish their tasks or cannot get it done. The allocation of work appropriately to manpower is useful as it helps to balance the work to each staff and put the right man to the most appropriate work that they are expertise. Planning complex work before assigning is necessary as it helps to prepare and manage work during the period. Personal characteristics are also important as it shows the quality of each member and is easy for the manager to evaluate them. Work order is the key for operation management as it is the center point to coordinate between each department to get the task done. Hotel age can affect the operation performance in various ways, both beneficial and detrimental aspects. All the factors are evaluated and concluded as shown in table 1.

**Table 1** The factors related to hotel operation

Factors	Reference
Designed System	Moyeenudin et al. (2018) Krželj-Čolović and Cerović (2013) Nirmala (2021) Dyshkantiuk et al. (2020) Pucciani and Murphy (2011)
Availability of tools and equipment	Ihsan and Alshibani (2018) Pitt et al. (2016) Sahid et al. (2021) Manjunatha, Srinivas, and Ramachandra (2018)
Allocation of work to manpower	Wakhyuni (2018) Lai and Yik (2012) Lockyer and Scholarios (2004) Belias, Vasiliadis, and Mantas (2020)
Planning difficult and complex work	Lai and Yik (2012) Marinakou and Giousmpasoglou (2019) Var and Gunn (2020) Darvishmotevali, Altinay, and Köseoglu (2020)
Personnel quality	Parmar and Dalal (2017) Pitt et al. (2016) Lai (2013) Olimovich, Bakhtiyorovich, and Salimovna (2020)
Work order features	Siguaw and Enz (1992) Gado and SamehHussien (2019) Lai and Yik (2012)
Hotel age	Aissa and Goaid (2016) Baum and Mezas (1992) Dimitrić, Tomas Žiković, and Arbula Blecich (2019) Madanoglu and Ozdemir (2016)

### Efficiency in hotel operations management.

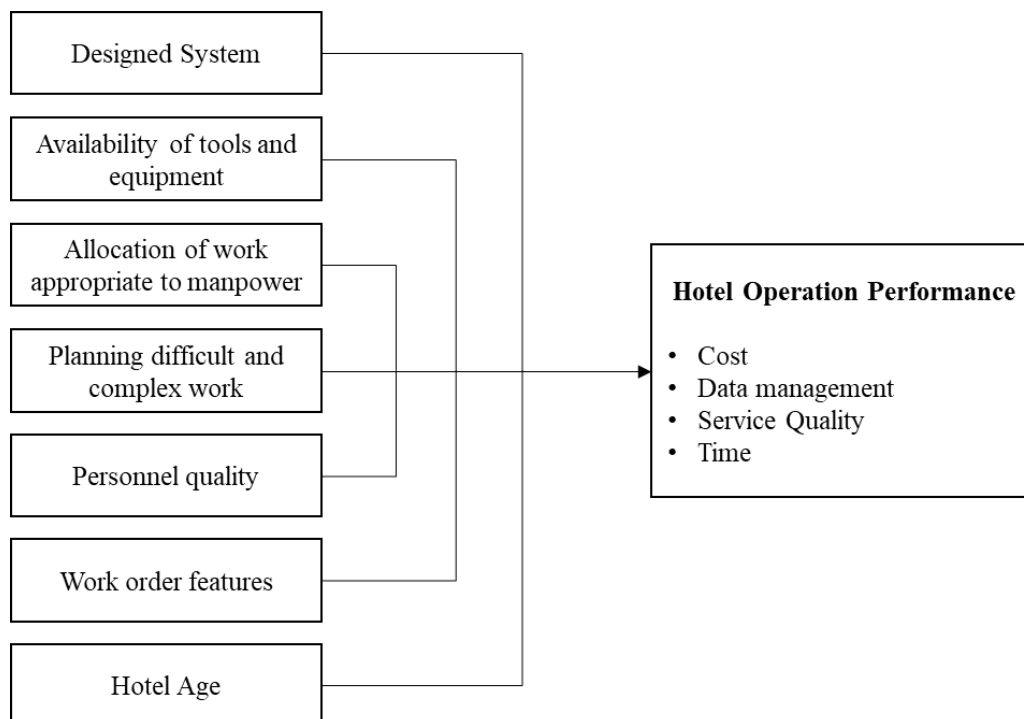
The measurement of the performance in hotel operation are controversial topics. A different perspective has its own reason and depends on the management team giving the importance to which point. The conclusion of the measurement that the researchers have found can be shown in table 2.

**Table 2** Operation performance elements

Elements	Reference
Cost	Arbelo, Perez-Gomez, and Arbelo-Perez (2017) Barros (2005)
Data management	Manasakis, Apostolakis, and Datseris (2013) Lado-Sestayo and Fernández-Castro (2019)
Service quality	Arbelo-Pérez, Arbelo, and Pérez-Gómez (2017) Rauch et al. (2015)
Time	Barros (2005) Aguilar-Escobar et al. (2021)

### The framework of hotel operation management.

Thus, all the elements, both the factors that affect the hotel operation and the factors that used to measure the operation performance have been evaluated and combined, resulting in the framework showed in figure 1.



**Figure 1** The framework of hotel operation performance

## DISCUSSION & CONCLUSION

This research provides the framework related to the factors affecting the hotel operation management and the measurement of hotel operation performance. From the systematic review in this research, it can be concluded that the factors that affect the back-of-house hotel operation are helpful in various ways.

The study found in this article can provide two main contributions, managerial and theoretical issues. For managerial contribution, it can help the hotel to enhance performance in the back of house operation. In addition, by providing each element, the owner or the management team of the hotel can evaluate each factor to find out what is the weakness of the hotel. Moreover,

the measurement of hotel performance is helpful by providing criteria for evaluating the capabilities of the hotel's back end in various aspects. This might result in creating the opportunity to generate more revenue due to being more efficient in room preparing for the guest and reduce some cost that occur during the process. For theoretical contribution, it is helpful to create new knowledge about maintenance systems for operations in the context of the hotel industry from studies, research, and development of management processes.

For further study, this result can be used as the guideline for future research about the hotel operation to investigate each factor related to the hotel performance since there is limited research about this field.

This study has some limitations that the result is based on the systematic review that it might have a bias opinion from the researchers which may resulting in the overrepresentation of certain findings in the literature. Moreover, the conclusions from the systematic review may be constrained or prejudiced if there are insufficient or low-quality studies. The generalizability of findings from individual research included in the review can be impacted by variables such geographic location, socio-cultural diversity, and healthcare systems.

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**Data Availability Statement:** The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

**Conflicts of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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