



Implementation of the Fast-Track Method for Enhancing Time Efficiency to Support Green Tourism in the Asvara Resort Manuaba Ubud Project

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Abstract. In the tourism sector, the success of construction projects is closely tied to the efficiency of project scheduling, particularly in support of environmentally sustainable and green tourism operations. One effective strategy for reducing project duration without significantly increasing direct costs is the fast track method. This method allows certain construction activities that are typically sequential to be performed in parallel (overlapping), thereby accelerating the overall timeline. This study aims to analyze the implementation of the fast-track method to improve time efficiency in the Asvara Resort Manuaba Ubud project, thereby contributing to the green tourism framework. The research involves analyzing the initial project schedule, identifying activities with potential for overlapping, and evaluating their impact on time efficiency. A quantitative approach is employed, utilizing network modeling with the Critical Path Method (CPM), to simulate fast-track scenarios. The results of the study indicate that the implementation of the fast track method successfully reduced the project duration from 672 days to 626 days, achieving a time efficiency of 46 days. The fast-track strategy also supports the principles of sustainable development by reducing carbon emissions, minimizing construction waste, and accelerating local economic benefits, aligning with the triple bottom line principles (people, planet, profit). This study recommends the planned implementation of the fast track method as a project acceleration solution that is not only technically effective but also aligned with the concept of green tourism.

Keywords: CPM, Efficiency, Fast-track, Green Tourism, Time

1 Introduction

Construction projects involve a series of activities aimed at creating, developing, or improving infrastructure within a set timeframe while utilizing limited resources (Kerzner, 2009). The success of a construction project is determined by several factors, with three key aspects being critical: cost, time, and quality (Atkinson, 1999). An effective project is one that can be completed within the planned schedule and budget (Doloi et al., 2012). However, in practice, construction projects often face challenges that result in delays and cost overruns. These delays can be attributed to factors such as

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design changes, labor shortages, material supply chain disruptions, and external factors like weather or regulatory changes (Alaghbari et al., 2007).

In the context of sustainable development, construction projects supporting the concept of green tourism must consider resource usage efficiency, waste minimization, and environmental impact reduction (Huang et al., 2025). One way to support this concept is by optimizing project timelines to prevent unnecessary energy consumption, material waste, and additional costs resulting from delays. The fast-track method has emerged as a promising solution to achieve time and cost efficiency without compromising project quality. This method allows activities that were previously done sequentially to be carried out concurrently (overlapping), thus significantly reducing the overall project duration (Fazio et al., 1988). While the fast-track strategy improves time efficiency, its implementation requires excellent coordination to prevent rework, errors during execution, and potential conflicts between project stakeholders (Andi et al., 2020). A well-planned analysis is essential to ensure that the use of the fast-track method results in optimal cost efficiency while also supporting sustainability principles (Rijal et al., 2022).

This study applies the fast-track method to the Asvara Resort Manuaba Ubud project, a green tourism-based resort development. This project faces several challenges that could lead to delays, including recurring design changes at the owner's request and an imbalance in the labor force, which may cause construction activities to be postponed. Project delays could result in increased construction costs, delayed resort operations, and a postponed economic benefit from the anticipated sustainable tourism sector. Thus, implementing the fast-track method is expected to help accelerate project completion without significantly increasing the budget.

The research will utilize Microsoft Project software to model the project schedule and analyze the critical path using the Critical Path Method (CPM). The analysis will identify activities that can be overlapped and assess the impact of the fast-track method on costs and rework risks. With the right acceleration strategy, this project is expected to be completed more quickly, resulting in reduced energy consumption, minimized construction waste, and accelerated economic benefits. Therefore, this study aims to provide recommendations for implementing the fast-track method as an efficient project acceleration strategy that not only saves time and costs but also aligns with the principles of sustainable development in the tourism sector.

2 Methodology

This research methodology begins with conducting a site survey and submitting a request for permission to the contractor to carry out the research activities. Next, secondary data, including working drawings, the Budget Plan (RAB), and the project schedule, will be collected. Field observations will be made to count the number and type of labor used, as well as to determine the work methods and the time required for the workforce to complete the tasks. Additionally, interviews with the contractor will be conducted to obtain data regarding task dependencies.

Once the data is collected, an analysis will be performed to identify tasks that can be done concurrently (overlapping) using the PDM (Precedence Diagramming Method) approach through Microsoft Project software, thereby developing the project schedule. The fast-track method will then be applied to accelerate the project completion process, and its impact on time will be analyzed. The analysis will also include the environmental impact of project acceleration, which is expected to support sustainability in the development of the green tourism sector. Ultimately, this research will conclude whether the fast-track method is effective in saving time and providing benefits for the project's sustainability.

3 Result and Discussion

3.1 Result

Asvara Resort Manuaba Ubud is located in Kenderan Village, Tegalalang, with a land area of 8,477 m². The resort adopts a natural concept with complete facilities, including 16 units of 1 Bedroom Bamboo Villas, 1 unit of 2 Bedroom Bamboo Villa, and public spaces such as a Lobby, Restaurant, Swimming Pool, Yoga Area, Spa, Gym, and others. The 1 Bedroom Bamboo Villa has an area of 110 m², while the 2 Bedroom Villa has an area of 240 m², with a total villa area of 2,000 m².



Figure 1. Layout Plat Asvara Resort Manuaba Ubud

The facilities within the villa include a bedroom with a daybed and furniture, a bathroom complete with sanitary fixtures, a private infinity pool, a wooden pool deck, a terrace with furniture, and a tropical garden. The total budget for the construction of this project is IDR 54,000,000,000, which includes planning costs, land preparation, structural work, architecture, MEP, and the contractor's operational costs.

As a follow-up step in the analysis, the proposed schedule from the contractor was previously obtained and presented in the form of a bar chart (attached). To facilitate the identification of the critical path and project acceleration, this bar chart was then input into Microsoft Project. Based on the scheduling results processed using Microsoft Project, which enables more accurate mapping of the critical path and more effective time management at each stage of the project, the total planned project duration was determined to be 672 days. This analysis details each project activity, including its duration, the dependencies between activities, and identifies several critical paths that require more attention. Delays in activities on the critical path will directly impact the overall project delay. The list of these critical paths can be seen in the following table:

Table 1. Critical Paths List

No.	Critical Path Identification	Duration
1	Preliminaries I One Bedroom Bamboo Villa Unit A-G	42 days
2	Footing Work	84 days
3	Structural Work	112 days
4	Architectural Work	126 days
5	Landscape Work One Bedroom Bamboo Villa Unit H-P	56 days
6	Architectural Work	112 days
7	Bamboo Structural	140 days
8	Landscape Work Two Bedroom Bamboo Villa Unit Q	56 days
9	Structural Work	56 days
10	Bamboo Structural	84 days
11	Swimming Pool, Pond & Pump Room Architectural Work	56 days
12	Landscape Work BOH & Restaurant	56 days
13	Architectural Work	112 days
14	Bamboo Structural Lobby & Lounge	112 days
15	Foundation Work	56 days
16	MEP II Yoga & Spa	28 days
17	Structural Work	84 days
18	Bamboo Structural Main Pool	98 days
19	Structural Work	238 days

No.	Critical Path Identification	Duration
20	Architectural Work Infrastructure	168 days
21	Landscape Work	56 days
22	Parking	56 days

Based on Table 1, there are 22 tasks have been identified as critical activities in this project. These tasks are part of the critical path, which is a sequence of activities that have zero total float and directly affect the overall project duration. This means that any delay in one of these 22 tasks will directly impact the completion of the entire project. Therefore, these 22 activities will be the primary focus of the acceleration strategy, utilizing the fast-track method. This approach involves speeding up the execution of critical activities by either overlapping tasks or optimizing resources, ensuring the project is completed on time without compromising quality.

3.2 Discussion

After scheduling and identifying the project's critical path, the next step is the implementation of the acceleration strategy using the fast track method. This acceleration focuses on activities within the critical path, as they directly influence the total project duration. By utilizing the Finish-to-Start (FS) and Start-to-Start (SS) principles, acceleration is achieved by adjusting the lag time between tasks, allowing some activities to start earlier without waiting for the previous activity to be completed fully. This strategy aims to reduce the total project duration from its normal state, while maintaining the dependencies between activities and ensuring continuity in the work process. Thus, the fast track method is expected to generate a more optimal, efficient, and timely execution schedule without compromising the quality of work.

One example of applying the fast track method in this project's scheduling acceleration is on the Architectural Work and Bamboo Structural tasks for the BOH & Restaurant buildings. In the normal scheduling, the relationship between these two tasks was established using a Start-to-Start (SS) dependency with a lag time of +14 days, meaning the bamboo structure work could only commence 14 days after the architectural work began. After applying the acceleration analysis, the lag time between these two activities was reduced to +12 days, allowing the bamboo structural work to begin earlier without waiting too long after the architectural work had started. This acceleration enabled more effective task overlapping without disrupting the technical sequence of work, directly reducing the overall project duration.

After implementing the fast-track method with the help of Microsoft Project, the total project duration was successfully reduced from 672 days to 626 days, resulting in a time savings of 46 days. This reduction was achieved by adjusting the relationships between activities, particularly on the critical path tasks, and by applying a parallel execution strategy through adjustments to the lag time. In addition to accelerating the execution time, this acceleration also altered the critical path sequence, which now

serves as the new reference for monitoring and controlling the project to ensure it stays on track with the optimized timeline (Sugiyarto et al., 2013).

In sustainable development, time efficiency in construction projects is not only a key performance indicator but also essential for supporting green tourism principles. Green tourism focuses on minimizing environmental impact and benefiting the local economy and natural resources. The fast-track method, which allows overlapping project activities, helps achieve these goals by shortening the project duration while maintaining quality. In the Asvara Resort Manuaba Ubud project, architectural work began before all structural elements were completed, which reduced the overall duration from 672 to 626 days. This time-saving strategy not only reduced costs but also contributed positively to environmental and social aspects by minimizing energy consumption and carbon emissions (Mensah, 2019).

Fast track also supports green tourism by reducing construction waste through careful planning to avoid rework, improving socio-economic impacts by enabling the resort to open earlier, and boosting local economic activity. The method aligns with the triple bottom line of sustainability people, planet, and profit by providing job opportunities, reducing environmental impacts, and increasing project ROI. The use of construction management software, such as Microsoft Project, further supported precise scheduling, ensuring efficient management and contributing to the overall sustainability of the project. The fast track approach, therefore, serves as an effective solution that integrates technical efficiency with sustainable tourism principles.

The application of the fast track method in the Asvara Resort Manuaba Ubud project provides several important theoretical implications. From the perspective of project management theory, this study reinforces the principle that overlapping activities within the critical path can significantly reduce project duration without compromising quality. This finding aligns with the concepts of the Critical Path Method (CPM) and the Precedence Diagramming Method (PDM), which emphasize the importance of managing dependencies between activities through Start-to-Start (SS) relationships and optimized lag times. The reduction of 46 days in project duration confirms that the fast-track method can be applied effectively in tourism-related construction projects, thereby extending the applicability of project scheduling theory in real-world cases.

In relation to sustainability theory, the results highlight the importance of integrating modern project management strategies with the concept of green tourism. The acceleration achieved through the fast track not only produced technical efficiency but also supported the triple bottom line framework: people, planet, and profit. The shortened project duration minimized indirect costs such as operational energy use and site management overhead, thereby reducing emissions and construction-related waste. At the same time, earlier project completion accelerated local economic benefits through faster resort operation, while also enhancing the social value of the project by providing earlier employment opportunities. These results confirm the theoretical proposition that sustainable development in construction requires both efficiency and environmental responsibility. The current study integrates these perspectives by demonstrating that the fast-track not only enhances efficiency in terms of time and cost but also directly contributes to green tourism practices. Thus, this research provides

empirical evidence that combining project management theory with sustainable development principles can create a strategic advantage in the tourism sector.

4 Conclusion

In conclusion, the implementation of the fast-track method in the Asvara Resort Manuaba Ubud project successfully reduced the overall project duration from 672 days to 626 days, thereby optimizing time by 46 days. This acceleration was achieved through strategic overlapping of critical path activities, which allowed for parallel execution without compromising the technical sequence of tasks. The use of Microsoft Project ensured precise scheduling and effective time management. At the same time, the focus on critical path activities enabled the project to stay on track and meet its optimized timeline.

Furthermore, the fast track approach aligns with sustainable development and green tourism principles by reducing environmental impacts, such as energy consumption and carbon emissions, and supporting local economic growth. By completing the project earlier, the resort can begin operations sooner, benefiting the local community. The method also supports the triple bottom line of sustainability: people, planet, and profit by providing job opportunities, reducing waste, and increasing project ROI. Thus, fast track not only optimizes project efficiency but also contributes to the broader goals of sustainable tourism.

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