

## ABSTRACT

Performance efficiency is important in mobile application development because mobile devices have limitations in terms of power and resources. Performance efficiency can be improved by applying architecture patterns. In this paper, we use the Model View ViewModel (MVVM) architecture. The application of the architecture is carried out to analyze how practical the application of the MVVM architecture pattern is in increasing performance efficiency in the mobile application. Performance efficiency is measured based on CPU usage, memory usage, and execution Time. The case study shows that the CPU usage and execution Time on MVVM are smaller than Base architecture pattern from the AR Ruler. This is due to the third-party library RxSwift in the MVVM architecture that increases the application's response so that CPU usage and execution time is better than Base architecture pattern. However, the existence of the third-party library RxSwift has a negative impact on memory usage, resulting in higher memory usage than the Base Architecture Pattern. The MVVM pattern is highly recommended for mobile application development to improve performance efficiency.

**Keywords:** Architecture Pattern, Mobile Application, MVVM, Performance efficiency, RxSwift.