Research Methodology

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| Methodology Stage | Description |
| 1. Defining the Scope | * Research Question: The review is guided the research question, “The Impact of DevOps on Software Architecture: Evolving Practices and Team Collaboration?” * Inclusion and Exclusion criteria: To ensure focus, only peer reviewed articles and conference papers from 2015 to 2024 in English were included. Sources cover the impact of DevOps within the field of Software architecture. |
| 1. Systematic Literature Search | * Databases and Keywords: The literature search was conducted using Google Scholar. Key search terms included “The Impact of DevOps on Software Architecture: Evolving Practices and Team Collaboration”, “DevOps in Software Architecture”, “The Effects of DevOps on Software Architecture” Boolean operators (AND, OR) were used to combine terms for comprehensive coverage. * Screening for Relevance: Abstracts were reviewed for relevance, with full-text analysis conducted for studies meeting the inclusion criteria. |
| 1. Data Extraction and Organization | * Data Points Collected: Each study’s aim, methodology, key findings, limitations, and the impact of DevOps in software architecture were recorded. * Thematic Organization: Studies were grouped into 2 primary themes based on recurring trends: (1) Impact of DevOps, (2) Challenges in Adopting DevOps |
| 1. Thematic Synthesis and Analysis | * Synthesis of Findings: Findings within each theme were synthesized to explore current applications, benefits, and challenges of DevOps. * Gap Analysis: Identified research gaps include a Limited Understanding of Architectural Implications in DevOps, as well as Inadequate Focus on Deployability Requirements and Limited Coverage of Cultural and Process Changes |
| 1. Critical Reflection and Limitations | * Bias and Quality Check: Potential biases, such as many studies rely on surveys or case studies with limited sample sizes or specific organizational contexts were considered. The review seeks to provide a balanced perspective by including studies across various regions where available. * Limitations: Limitations of this review include language constraints (only English-language articles were reviewed) and possible publication bias toward recent advancements, given the fast-evolving nature of DevOps technologies. |