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**Factors affecting the adoption of AI-driven automation
within DevOps practices among IT professionals in Sri
Lanka**

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Declaration

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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ABSTRACT

This research explores the factors influencing the adoption of AI-driven automation within DevOps practices among IT professionals in Sri Lanka. Drawing on a conceptual framework that integrates technical, strategic, and organizational dimensions, the study examines how four key constructs—technical Enablers (access to AI tools and efficiency gains), Future Focus (strategic orientation toward AI expansion), Barriers (cost, skills, integration complexity), and Organizational Readiness (culture and change-management support)—relate to the degree of AI adoption in CI/CD pipelines, automated testing, and real-time monitoring.

A quantitative survey was administered online to a stratified sample of 384 respondents across job roles (developers, DevOps engineers, QA Engineers, project managers) and organization sizes. Items were measured on five-point Likert scales and organized into five sections: Demographics, Enablers, Future Focus, Barriers, and Organizational Readiness, plus a direct measure of Adoption Level. Data were analyzed using IBM SPSS: reliability testing (Cronbach's alpha) confirmed internal consistency; exploratory factor analysis validated the measurement structure; Pearson correlation assessed bivariate relationships; and Hayes' PROCESS macro tested mediation (Future Focus) and moderation (Organizational Readiness) hypotheses.

By combining robust statistical methods with a multi-dimensional conceptual model, this study provides insights into the mechanisms through which AI capabilities, strategic planning, and organizational context drive or inhibit the integration of AI into DevOps workflows in emerging-economy settings.

Keywords: AI-driven automation, DevOps adoption, Organizational readiness, Technology enablers, Adoption barriers, Future focus, Sri Lankan IT sector

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