

## ABSTRAK

Penelitian ini berjudul “Analisis Manajemen Risiko Teknologi Informasi pada Sistem Informasi SMEGA *Learn* Menggunakan ISO 31000 (Studi Kasus: SMK Negeri 1 Purbalingga)”. Penelitian bertujuan untuk menganalisis manajemen risiko teknologi informasi pada Sistem Informasi SMEGA *Learn* serta memberikan rekomendasi perlakuan risiko menggunakan kerangka kerja ISO 31000:2018. Penelitian dibatasi pada analisis risiko terhadap komponen pendukung operasional sistem yang meliputi perangkat keras, perangkat lunak, basis data, jaringan, server, sumber daya manusia, dan prosedur operasional. Metode yang digunakan adalah penelitian deskriptif kualitatif dengan teknik pengumpulan data melalui observasi dan wawancara, sedangkan analisis dilakukan berdasarkan tahapan manajemen risiko ISO 31000:2018. Hasil penelitian menunjukkan bahwa proses identifikasi risiko berhasil menemukan 20 risiko yang berasal dari faktor internal, eksternal, *human error*, infrastruktur, pihak ketiga, pengembangan, dan teknis. Berdasarkan analisis menggunakan parameter *likelihood* dan *impact*, hasil evaluasi risiko menunjukkan 10 risiko berkategori *high*, 7 risiko berkategori *medium*, dan 3 risiko berkategori *low*. Risiko dengan kategori *high* didominasi oleh aspek tata kelola teknologi informasi, keamanan sistem, sumber daya manusia, ketergantungan terhadap Tim IT, kinerja server serta penggunaan dan ketersediaan sistem serta perlindungan data sehingga menjadi prioritas utama dalam penyusunan rekomendasi mitigasi. Rekomendasi perlakuan risiko meliputi penyusunan kebijakan manajemen risiko TI, SOP penanganan insiden, penerapan autentikasi dua faktor (2FA), peningkatan kapasitas server, penguatan keamanan sistem dan jaringan, pelaksanaan *backup* dan *restore test* secara berkala, pengembangan kompetensi pengguna, serta penyusunan mekanisme monitoring dan review. Dapat disimpulkan bahwa penerapan ISO 31000:2018 mampu mengidentifikasi, menganalisis, mengevaluasi, dan memberikan rekomendasi perlakuan risiko secara sistematis pada Sistem Informasi SMEGA *Learn*. Penerapan kerangka kerja ini diharapkan menjadi acuan bagi SMK Negeri 1 Purbalingga dalam meningkatkan keamanan, keandalan, serta keberlangsungan operasional sistem informasi pembelajaran melalui penerapan manajemen risiko yang berkelanjutan.

Kata kunci: manajemen risiko, ISO 31000, SMEGA *Learn*, teknologi informasi, sistem informasi.

## ABSTRACT

This research is titled “*Analysis of Information Technology Risk Management For the SMEGA Learn Information System Using ISO 31000 (Case Study: SMK Negeri 1 Purbalingga)*.” The study aims to analyze information technology risk management within the SMEGA Learn Information System and provide risk treatment recommendations using the ISO 31000:2018 framework. The scope is limited to analyzing risk associated with the system’s operational support components, including hardware, software, databases, networks, servers, human resources, and operational procedures. A qualitative descriptive research method was employed, with data collected through observation and interviews, while the analysis followed the ISO 31000:2018 risk management stages. The results indicate that the risk identification process successfully identified 20 risk stemming from internal and external factors, human error, infrastructure, third parties, development, and technical issues. Based on an analysis using likelihood and impact parameters, the risk evaluation revealed 10 high-risk, 7 medium-risk, and 3 low-risk item. High risk categories were dominated by aspects such as IT governance, system security, human resources, reliance on the IT team, server performance, system usage and availability, and data protection; consequently, these areas constitute the primary focus when formulating mitigation recommendations. Risk treatment recommendations include developing IT risk management policies and incident handling SOPs, implementing two-factor authentication (2FA), increasing server capacity, strengthening system and network security, conducting periodic backup and restore tests, developing user competencies, and establishing monitoring and review mechanisms. It can be concluded that the application of ISO 31000:2018 enables the systematic identification, analysis, and evaluation of risks, as well as the provision of risk treatment recommendations for the SMEGA Learn Information System. The implementation of this framework is expected to serve as a reference for SMK Negeri 1 Purbalingga in enhancing the security, reliability, and operational continuity of its learning information system through sustainable risk management practices.

**Keywords:** risk management, ISO 31000, SMEGA Learn, information technology, information systems.