Digital Wallets for Online Authentication in Taiwan: An Alternative to Citizen Digital Certificates

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Abstract:

This study examines how digital wallets can serve as an alternative mechanism for online authentication in Taiwan and compares their applicability with the existing Citizen Digital Certificate in practical service scenarios. The Citizen Digital Certificate has long been used for identity verification in government portals, financial services, and other sensitive digital systems. However, its reliance on specific hardware, software installation, and user-side configuration may create usability barriers, especially for citizens who need fast and device-flexible access to online services. To address this issue, this study uses an illustrative land-administration service flow to analyze typical authentication processes involving public services and sensitive online transactions. It evaluates the two mechanisms in terms of accessibility, convenience, security assurance, deployment complexity, and user experience. The analysis suggests that digital wallets may reduce operational friction by supporting mobile-based identity presentation and selective disclosure, while technically enabling cryptographic signing through user-held keys. However, the legal recognition of wallet-based digital signatures remains a critical issue in Taiwan. At the same time, the study identifies challenges related to trust infrastructure, interoperability, regulatory acceptance, and user adoption. The findings indicate that digital wallets should not simply replace existing authentication mechanisms, but can function as a complementary option for improving the inclusiveness and efficiency of Taiwan's digital services. This research contributes to ongoing discussions on digital identity, user-centered authentication, and the modernization of public digital infrastructure.

Keywords:

Digital wallet, decentralized identity, verifiable credential, online authentication.