

# **The Changing Landscape of Open Source: Sponsorships, Protestware, and Sanctions on Software Ecosystems**

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Abstract:

Open source software (OSS) has become a critical component of the modern software community, but ensuring its sustainability faces a multifaceted challenge that requires understanding the complex interplay of economic, social, and political factors. This thesis presents an in-depth empirical analysis of three critical issues affecting OSS sustainability within the software ecosystem: the role of sponsorships in supporting developers, the impact of "protestware" on project health, and the effects of government sanctions on developer participation. Our findings highlight the positive impact of sponsorships on developer engagement, the developers' response to projects in the face of protestware disruptions, and the adaptability of developers affected by sanctions. Additionally, our results underscore the potential of sponsorships to incentivize developer engagement, the limited impact of protestware on project abandonment, and the resilience of sanctioned developers in finding ways to contribute. By shedding light on these dynamics, this thesis contributes valuable insights for OSS stakeholders seeking to navigate the evolving landscape of sustainability challenges and support the long-term health of the open source community.