

# Empirical Analysis of Determinants of Perceived Customer Satisfaction with Open Source Software

Sanjeev Kumar

M. S. Krishnan

Ross School of Business, Univ of Michigan, Ann Arbor

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Open-source software (“OSS”) is developed by Internet-based communities of software developers who voluntarily collaborate in order to develop software that they or their organization need. OSS has become an important economic and cultural phenomenon and has emerged as a viable alternative to commercial software. As the OSS products and their unique distribution and support mechanisms gain volumes, debate on business value of OSS is gaining prominence. However, many important aspects of OSS adoption and usage have not been rigorously studied as yet. In this research we contribute to the debate by providing insights relevant to both user firms and the OSS community regarding drivers of customer satisfaction with the representative OSS product: the Linux operating system.

Previous research have found three broad determinants of satisfaction with information systems: user characteristics, organizational characteristics and perceived benefits. We extend the current model to include unique characteristics of OSS. We tested the extended model using dataset collected through a survey of 392 business-technology professionals conducted during April-May 2004. As our dependent variable

is ordinal, we use Ordered Logit to test our hypotheses. We control for firm size and industry affiliations in our model.

The results support the hypotheses that customer satisfaction with Linux increases with higher duration of use. Higher level of support from OSS support providers was found to have a significant positive impact on customer satisfaction while firm's internal capability to support OSS was found to have no significant impact on customer satisfaction. This result is remarkable as it indicates toward maturity of OSS distribution and support channels. The results indicate that OSS support providers have been successful in effectively replacing in-house support functions in firms. User of popular distribution (RedHat) was found to have a significant and positive impact on customer satisfaction with Linux. This is in line with expectations that larger distributions have the resources to sufficiently fulfill support requirements and also have large community support for sustaining future development. Further, customer satisfaction with Linux was found to be significantly and positively affected by higher prevalence of other OSS applications in the organization, indicating that there exists positive network externality benefits between users of different OSS applications. The industry control was found to be insignificant while the firm size control showed higher user satisfaction for larger firms.

Our results highlight the conventional aspects of OSS where OSS is similar to commercial software and also uncovered unique aspects of OSS. Current OSS research has focused mostly on the development process and motivation of developers. Through this research we have tried to put the focus on the use of OSS and the user experience with OSS. Our results have significant implications for both the OSS development community and OSS user firms. Our results provide potential approaches for OSS development communities to develop OSS application that achieve higher customer satisfaction. OSS user firms can leverage our results to select OSS products and OSS policies to provide an environment with high satisfaction for their users <sup>1</sup>

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<sup>1</sup>Due to limited space, we have removed references from this extended abstract. The full version of the paper is available upon request.