

Research project and supervisor team

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Short introduction & description of research project	<p>Abstract</p> <p>This project aims to understand fake reviews from the platform’s perspective. While past literature has provided rich understandings on why and how merchants and customers engage in posting fake reviews, the factors affecting how platform owners manage or respond to fake reviews remain unclear. In addition, past literature has prominently focused on the negative influence of fake reviews, which to a great extent disregards that fake reviews may be beneficial for platform development in some circumstances. Because of the critical role of platform owners in developing and enhancing the whole platform ecosystem, it is of both theoretical and practical significance to understand the mechanisms affecting how platform owners manage fake reviews and the influence of fake reviews at the platform level. This PhD project thus aims to 1) investigate the factors affecting platforms’ fake review strategies; 2) understand the effects of fake reviews on platform ecosystems in different scenarios; and 3) examine the relationship between platforms’ fake review strategies and outcomes on platform development. To achieve research objectives, a mixed-method study will be conducted which combines natural language processing techniques, machine learning methods, and econometric models.</p> <p>Introduction</p> <p>Despite the potential detrimental effects of fake reviews on the development of platform ecosystems, large e-commerce platforms such as Amazon have been criticized of failing to actively detect and remove fake reviews posted by third-party promulgators (He et al., 2020; Ovide, 2020). Platform owners may even engage in manipulating and publishing fake reviews (Lee et al. 2018). For example, in 2018, the Chinese tourism platform Mafengwo.com admitted to faking reviews after being accused of manipulating online reviews (Zhao 2018). The reported behaviors of platforms reveal a conundrum faced by platform owners to balance short-term benefits and long-term development. While short-term profits could be boosted by fake reviews because of the increase in platform traffics and customer engagement (Lee et al. 2018), in the long-term, fake reviews could harm customer satisfaction and trust (Ahmad and Sun 2018; DeAndrea et al. 2018), damage platform reputation (Ahmad and Sun 2018; Filieri et al., 2015), and lead to customer churn. The flourish and long-term survival of</p>

the whole platform ecosystem thus hinge on how platform owners respond to and manage fake reviews, which entails an understanding towards the mechanisms driving platforms' strategies on fake reviews. Despite the significant role of platform owners in intervening fake reviews and the subsequent impact on overall development of the platform (, past studies on fake reviews have mainly been conducted from the perspectives of merchants and customers (Choi et al. 2017; Dellarocas 2006; Heydari et al. 2015). The motivations and intervention strategies of platform owners towards fake reviews remain under-explored.

Another knowledge gap which hinders our understanding of fake reviews at the platform level is the emphasis on the negative impacts of fake reviews in the current literature, which largely ignores that fake reviews may benefit platforms in some circumstances (Wu et al., 2020). When fake reviews are posted by merchants selling high quality products or services, these reviews may not be misleading and deceptive because they provide the correct signals for customers. Such harmless fake reviews could be highly effective in driving the market and the platform ecosystem (He et al., 2020), especially in the early stage of platform development. It is therefore of great importance to understand the differential effects of fake reviews in different scenarios, markets, or environments. A granular understanding of the effects of fake reviews is also the key to understanding why platform owners have established different policies and strategies towards fake reviews.

The objective of this PhD project is three-fold. First, it aims to investigate the motivations behind platforms' fake review strategies and explore how platforms manage or combat fake reviews to balance the trade-off between the negative and positive effects of fake reviews. Second, the effects of fake reviews on platform ecosystems will be examined by understanding how fake reviews may hurt or benefit platform in different scenarios. Third, this study will develop an understanding on how platforms' fake review strategies will affect the short-term and long-term outcomes of the platforms. A mixed method approach will be developed by combining natural language processing techniques (e.g., opinion mining and text analytics), machine learning methods (e.g., supervised learning and unsupervised learning) and econometric models (e.g., heckman models and PSM-DID) to solve previous methodological limitations in quantifying fake review factors and impacts.

Research Objectives

1. To understand the factors affecting platforms' fake review strategies
2. To examine the effects of fake reviews on platform development in different scenarios

	3. To understand the relationship between platforms' fake review strategies and the outcomes on platform development.
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