How your colleagues' reputation impact your patients' odds of posting experiences: Evidence from an online health community

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ABSTRACT

Given our limited and irrational use of medical resources, governments hope that using online health communities can help patients receive necessary treatments. Although abundant research has studied the role of reputation in e-commerce, studies on the role of reputation in online health communities (OHCs) remain scarce. This paper focuses on investigating how the reputation of one physician's colleagues affects the focal physician's future review amount, which is an important predictor for physicians' performance in the future. We examine this question by studying a special service: Online Booking, Service in Hospitals (OBSH). We find that both the focal physician's reputation and his/her colleagues' reputation have significant impact on his/her patients' odds of sharing their treatment experience online. In addition, colleagues' reputation negatively moderates the relationship between the focal physician's reputation and his/her patients' odds of sharing their treatment experience.

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1. Introduction

With the growing popularity of web 2.0 technologies, online health communities (OHCs) has become an integral part of people's daily lives. Patients can search for health information by participating in OHCs, and hospitals can participate in online health services to develop their marketing strategies. Moreover, the OHCs provide review forums, in which patients can share their information, experience, and knowledge with other members of OHCs. Therefore, the OHCs provide an opportunity for the health sector to improve its service.

In China and many other countries, medical resources are limited and irrationally used (Anderson et al. 2003, Fabricant and Hirschhorn 1987, Otoom and Sequeira 2006, Patel et al. 2005, Waddell 1996). In addition, it is very difficult for patients to make appointments with physicians (Fitzgerald 2013, Sohu Health 2008, Rogers et al. 2011). In order to solve this problem, many online health websites have started to provide special appointment services, such as Practo.com (https://www.practo.com/) in India and Singapore, and Guohao.com (http://www.guahao.com/) in China. Patients can choose physicians online according to the physicians' individual as well as their hospitals' information. They make appointments online and receive services offline in the hospitals.

As this online selection of physician is a new platform, it is of interest to study the role of physician's reputation played in the patients' choices of their physicians.

Word-of-mouth (WOM) plays an important role in product or service receivers' perceptions of products or services (Lee et al. 2008, Lu et al. 2010). Many studies have shown that online reviews significantly affect product or service receivers' choices and performance (Boersma et al. 2007, Brett et al. 2007, Chintagunta et al. 2010, Duan et al. 2008, Forman et al. 2008, Li and Hitt 2008, Park and Kim 2009, Sun 2012, Zhu and Zhang 2010). The receivers of a product or service will make their opinions known to others through WOM when they are very pleased with the product or service (Hu et al. 2006, Richins 1983). Conversely, they will also tell others about their negative experience and may also switch brands (Richins 1983). Reputation has been considered as the product or service receivers' perception of quality associated with the product or service (Aaker and Keller 1990, Barone et al. 2000, Ye et al. 2013); the more the receivers are satisfied with the product or service, the more likely they are to write a feedback for the provider (De Matos and Rossi 2008). Prior studies suggest that review traffic positively affects sale performance (Resnick and Zeckhauser 2002, Ye et al. 2013). Studies also show that firms not only regularly post their product information via online forums (Mayzlin 2006), but also proactively induce their product or service receivers to spread the word about their products online (Godes and Mayzlin 2004). Some firms even strategically manipulate online reviews as an

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effort to influence product or service receivers' purchase decisions (Dellarocas 2006). Some recent studies emphasize how ratings may affect each other, in the sense that expressed WOM of others may influence future WOM (Moe and Trusov 2011). Similarly, patients' reviews are also very important for physicians in the OHCs. However, much less is known about how patients' reviews are generated in the first place. As an important predictor of sales performance (Resnick and Zeckhauser 2002, Ye et al. 2013), it is of interest to study how physicians can increase their review traffic, namely how they can improve patients' odds of sharing their treatment experiences online.

Unlike e-commerce websites, which after choosing a product, the consumer just waits at home for the delivery of the product, patients who use OHCs such as Guahao.com to make appointments need to receive the services offline (in the hospitals). Because of geographical limitation, patients often have to choose cities first, followed by hospitals, and then physicians. As a result, who one physician works together with may affect his/her patients' choices or propensity to share their experiences. However, existing studies rarely investigate the relationship between employees who work in the same organization, especially in the healthcare area. Prior studies mostly focus on the relationship between organizations and employees (Korschun et al. 2014), employees and customers (Chan and Wan 2012, Yagil 2012). From the "Competition" perspective, physicians need to improve their performance for promotion and reputation to attract more patients. On the other hand, from consideration of "Cooperation" for these physicians who work for the same hospital, the quality of all physicians reflects the hospital's overall quality of service, and improving the hospital's overall quality can attract more patients and affect individual physicians' performance in turn. This "*Cooperation*" *effect* in our research context can be described as a "spillover", namely physicians working together can improve the hospital's overall quality of care and service and improve popularity. Thus, it is of interest to elucidate the relationship between the roles of focal physician and their colleagues in increasing patients' propensity to share their experiences.

This study focuses on the following questions:

- RQ1. How does a focal physician's reputation affect his/her patients' odds of sharing treatment experiences?
- RQ2. How does the reputation of focal physician's colleagues affect their patients' odds of sharing treatment experiences?
- RQ3. How does the reputation of focal physician's colleagues moderate the relationship between focal physician's reputation and their patients' odds of sharing treatment experiences?

We analyzed a dataset of 29,594 physicians' information from a Chinese online health community—Guohao.com (http://www.gua-hao.com/), where physicians can provide appointment services for patients. Our empirical results show that first, focal physicians' reputation has a positive impact on their patients' odds of sharing treatment experiences. Second, the reputation of focal physicians' colleagues also has a positive impact on their patients' odds of sharing treatment experiences. Thus, our results suggest that "co-operation" effects that a focal physician's colleagues give patients a good image for the focal physician. Third, the reputation of focal physician's colleagues has a negative moderation effect on the relationship between focal physician's reputation and patients' odds of sharing treatment experiences of the focal physician.

This study makes three important contributions to our knowledge. First, our study fills the existing research gap by investigating the role of colleagues' reputation in online communities. Existing studies mainly believe a competitive relationship between employees. In contrast, our results show that there is also a "cooperative" relationship between different physicians working in the

same hospital. Second, our study contributes to the literature on reputation. Prior studies mainly examine the role of reputation in affecting sales performance, and we fill the gap by studying patients' odds of sharing treatment experience, which is also an important performance driver for the physicians, and could impact performance of physicians. (Resnick and Zeckhauser 2002, Ye et al. 2013). Third, our study contributes to the understanding on the OHCs. Comparing with e-commerce, patients need to consider geographic and logistic issues when making appointments with physicians. Our research provides a new perspective on consumer choices in the healthcare delivery setting.

This paper is organized as follows. In Section 2, we review the literature on online health communities, brand extension, and motives for posting reviews. In Section 3, we develop our hypotheses. In Section 4, we present our data, variables, and the research model. In Section 5, we show our results. In Section 6, we discuss our contributions, limitations and directions for future research.

2. Literature review

2.1. Online health communities

The use of social network software to promote the connections between patients and the rest of the medical industry has been dubbed "Health 2.0", and the number of organizations adopting Health 2.0 is growing (Hughes et al. 2008, Van De Belt et al. 2010). With the emergence of online health communities (OHCs), it becomes easier for patients to get medical information and treatments (Ba and Wang 2013). Moreover, patients can discuss their health concerns, share information about treatments, and support and communicate with physicians in the OHCs, such as Patients-likeme.com. One specific kind of OHCs is a virtual forum where physicians provide appointment services for patients, such as Practo.com and Guohao.com. If patients have made appointments with physicians via such online services, they have to receive the service in the hospitals.

In China and many other countries, making appointments with physicians are very difficult (Fitzgerald 2013, Sohu Health 2008, Rogers et al. 2011), and the medical resources cannot be used efficiently. With the emergence of OHCs, patients can now make appointments online. In addition, online information can help patients choose the right physicians. Nonetheless, studies on the OHCs are still limited, and our study aims to fill in this gap.

2.2. Brand extension

To reduce cost and decrease risk, organizations usually introduce a new product by trying the name of a well-known brand (parent brand) (Bhat and Reddy 2001). We call such strategies "brand extensions", and call the well-known brand products "parent brand". Brand extensions leverage the most valuable hidden asset of an organization—brand name (Tauber 1981, 1988), which has a strong effect on customer loyalty (Smith and Park 1992). Products extension can rent the reputations of their parent products (Senecal and Nantel 2004). Brand reputation can be managed to adjust expectations in line with the disconfirmation of expectation paradigm (Churchill and Surprenant 1982, Oliver 1980).

Most research focuses on the similarity between brand extensions and parent brands (Keller and Richey 2003), demonstrating that similarity of product categories is important (Aaker and Keller 1990, Ahluwalia 2008, Völckner and Sattler 2007) and will affect product or service receivers' brand evaluation (Aaker and Keller 1990, Choi et al. 2010, Fu et al. 2009). When a brand extension is similar to the parent brand category, product or service receivers' evaluation of the extension will be based on the brand