

Summer 7-26-2022

## Can Yield More Economic Returns: An Empirical Study from mHealth Services

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### Recommended Citation

Chen, Shuqing; Guo, Xitong; Wu, Tianshi; and Lai, Kee-Hung, "Can Yield More Economic Returns: An Empirical Study from mHealth Services" (2022). *WHICEB 2022 Proceedings*. 77.  
<https://aisel.aisnet.org/whiceb2022/77>

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Extended Abstract

## Can Yield More Economic Returns: An Empirical Study from mHealth Services

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**Abstract:** Given the role of congeniality in interpersonal communication, congenial people can experience better relationships, including friend relationships, roommate relationships, marriage relationships, and business cooperation. However, in the medical field, it is worth further exploring whether congeniality can have similar benefits. From the perspective of similarity interpersonal attraction theory, this study explores the influence of doctor-patient personality similarity on doctors' economic returns, as well as the moderating effects of doctors' titles and patients' disease types. This study takes mHealth services as the research context, extracts the personality traits of both doctors and patients from the doctor-patient interaction text. The results show that (1) doctor-patient personality similarity has a positive impact on the doctor's economic return; (2) the doctor's title and the patient's disease type play a important role in moderating effect on the relationship between doctor-patient personality similarity and the doctor's economic return. The results of this study verify the feasibility of extracting personality traits from doctor-patient interaction text and enrich the application of similarity interpersonal attraction theory in mHealth services.

Keywords: mHealth services, doctor-patient interaction, personality similarity, doctor's economic return

### 1. INTRODUCTION

As a part of digital health, mHealth services pay more health dividends to both doctors and patients, which not only facilitates doctor-patient contact but also brings more economic returns to doctors <sup>[1]</sup>. The theory of similarity interpersonal attraction tells us that in any population, there are always some people who share similar interests and/or traits. Online consultation is essentially a process of interpersonal communication, as doctors and patients use mHealth services to discuss diseases. It then stands to reason that similarity between a doctor and a patient (in personality traits, communication style, etc.) will also increase the attraction between the two parties and will even affect patients' decisions about providing returns (including satisfaction evaluation and virtual gift giving) <sup>[2]</sup>. **Therefore, in the mHealth services context, the effects of the personality traits of and similarities between doctors and patients on the process of online interaction is a problem worthy of study.** In addition, with the help of text mining technology, some scholars have successfully mined the personality traits of users on social media and studied the influence of those personality traits on word-of-mouth (WOM) <sup>[3]</sup>. **Therefore, it is also feasible to mine the personality traits of doctors and patients through text mining technology.** In sum, this study hopes to make up for the gaps in the research on the personality traits of doctors and patients and the economic returns of doctors in the field of mHealth services at home and abroad.

### 2. THEORETICAL FOUNDATION AND HYPOTHESES

The theory of interpersonal attraction posits that similarity between individuals will affect interpersonal relationships and individual decision-making. In essence, online consultation is also a process of communication between doctors and patients <sup>[4]</sup>, and the doctor-patient relationship is also an interpersonal relationship.

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According to the theory of interpersonal attraction, if patients or doctors perceive that they and the other person share a high degree of similarity, then doctors and patients are more likely to have a mutual attraction, and it is easier to form a good doctor-patient relationship. In addition, considering the differences of personality traits between doctors and patients, there may be differences in communication between them. Therefore, doctors and patients with high personality similarity may achieve better communication results, which may result in a better consultation experience for patients. These patients often, after the online consultation ends, report a higher degree of satisfaction when they evaluate the doctor's service. They may even send a virtual gift to the doctor to express their recognition and thanks for the doctor's service by giving the doctor an economic return.

### 3. RESEARCH METHODOLOGY AND RESULTS

This study mainly uses Python and fiddler software to collect the relevant data from the mHealth platform chunyuisheng.com. After preprocessing, we finally obtain all the online consultation data from 1,736 doctors and 308,968 patients. The regression results indicate that doctor-patient personality similarity has a positive impact on the doctor's economic return ( $\beta=0.094$ ,  $p<0.01$ ). Therefore, H1 is supported. In addition, the moderating effect of doctor's title on the effects of the doctor-patient personality similarity on the doctor's economic return is positive ( $\beta=0.144$ ,  $p<0.001$ ), thus supporting H2. Finally, the results also show that, taking gynecological diseases as the benchmark, andrology, internal medicine and surgical diseases have a significant positive moderating effect on the relationship between doctor-patient personality similarity and the doctor's economic return ( $\beta=0.29$ ,  $p<0.05$ ;  $\beta=0.815$ ,  $p<0.001$ ;  $\beta=0.229$ ,  $p<0.05$ ), thus supporting H3.

### 4. CONCLUSION AND DISCUSSIONS

This study provides several theoretical contributions. First, this study can provide theoretical insights for further exploring other potential traits of doctors and patients (such as emotion) and their impact on individual behavior. Second, this study proves the effectiveness of using text mining technology to extract the personality traits of doctors and patients from unstructured short text data generated by doctor-patient interactions in the mHealth services context. Finally, this study provides a theoretical basis for the moderating role of doctor's title and patient's disease type between doctor-patient personality similarity and doctor's economic return. The findings of this study also provide some practical implications that can help doctors provide better services for patients and obtain more economic returns, as well as implication that may aid in the design of mHealth services and in medical policy-making.

### ACKNOWLEDGEMENT

This research was supported by the National Natural Science Foundation of China under Grant 72071054, 71771065, 71871074, 71871073.

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