

FEELING CONFLICT BETWEEN RESIDENTS AND TOURISTS BASED ON FEELING EXPANSION MODEL IN TERMS OF ENVIRONMENT-RELATED QOL

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Received September 2019; accepted December 2019

ABSTRACT. *Leisure tourism generates the feeling of satisfaction for quality of life and wellbeing especially subjective wellbeing. This viewpoint comes from tourists not from residents in famous places. The activity of tourists does not directly connect to the economic impact to the local area and residents. When the number of tourists increases a large volume, there is the community backlash against tourists and tourism development in terms of local community. These kinds of negative impact called “over tourism” provokes to resident disadvantages in economic and social aspects. We proposed the Feeling Expansion Model showing that the feeling expands space and time axis focusing on the specific expression based on Twitter data extracted by the multiple rules. In addition, we proposed the concept of Environment-related QOL viewing the effect of QOL influenced by the environment. In this research, we will extend the concept of the Feeling Expansion Model in relation to the over tourism based on the Twitter data. In this research, we newly propose the heuristic problem-solving method to detect the positive impact from the expansion of feeling of over tourism. As the results of experiments, this heuristic approach could detect the clue of resolution of conflict between tourists and residents. The Feeling Expansion Model could analyze the factors of positive and negative feeling and could detect the positive solution for improving subjective wellbeing of both residents and tourists.*

Keywords: Over tourism, Resident, Tourist, SNS, Environment, Quality of life, Impact

1. **Introduction.** For many years, Gross Domestic Product (GDP) has been adopted as a central concept to measure economic performance. Although it is widely understood that GDP is a measure of economic production, rather than of people’s wellbeing. GDP, however, does not capture important elements of living standards, such as leisure time, health, social connections or the quality of working environment, which are important for the assessment of the wellbeing of any community of people to sustain wellbeing over time. In recognition of GDP’s inadequacy for capturing several critical dimensions of people’s wellbeing, a strong movement has emerged to go “beyond GDP” [2] and bring into greater focus measures that can capture broader aspects of people’s living conditions and of the quality of their lives [1]. On the other hand, enhancing Quality of Life (QOL) has long been an explicit or implicit goal for individuals, communities, nations, and the world. In 2015, the United Nations formally adopted the new framework, “Transforming Our World: the 2030 Agenda for Sustainable Development”, which comprises seventeen goals and 169 targets to wipe out poverty, fight inequality, and tackle climate change over the next fifteen years. These goals are called Sustainable Development Goals (SDGs) [4] and include “good health and wellbeing” as elements of QOL indicating human wellbeing.

Tourism studies began to focus on wellbeing through a broad range of terms partially inspired by philosophy as well as psychology, such as ‘quality of life’ and ‘life satisfaction’. The research of Uysal et al. resulted that tourism experiences and activities have a significant effect on both tourists’ overall life satisfaction and wellbeing of residents. That is, tourists’ experiences and tourism activities tend to contribute to positive effect in a variety of life domains such as family life, social life, leisure life, cultural life, among others [3]. In 2018, the Japan Tourism Agency announced that GDP of tourism in 2016 was estimated to be about 10.5 trillion yen in the 2018 white paper. Tourism GDP is a summary of the added value of tourism-related industries such as accommodation and retail for foreign visitors to Japan, an increase of 2 trillion yen compared to 4 years ago. It accounts for about 4.5% of Japan’s nominal GDP growth during this period and plays an important role in economic growth. The background of this increase comes from the new tourism trends such as Internet websites and low-cost tourism using Low Cost Carrier (LCC), generating a new environment of interactions between tourism and the residents. Despite these increasing data for tourists, a feeling of rejection towards tourism has emerged over the past few years in some tourist areas. ‘Over tourism’ can be defined as “the impact of tourism on a destination, or parts thereof, that excessively influences perceived quality of life of citizens and/or quality of visitors experiences in a negative way” in United Nations World Tourism Organization (UNWTO) [5]. In recent years, demonstrations opposing the development of tourism have occurred in famous tourist destinations such as Barcelona and Venice. In Japan as well, crowded tourists have rushed into the bus station in front of Kyoto JR station causing difficulty to ride on the commuter bus for businessman or students. These impacts generate conflict between tourists and residents.

We proposed the concept of Environment-related QOL (e-QOL) viewing the effect of QOL influenced by the environment [6]. Proposed concept of e-QOL should be classified into four levels: the individual level, the local community level, the national level, and the global level. Impact of over tourism could be ranked in the individual level. In addition, we proposed the Feeling Expansion Model showing that the feeling expands space and time axis focusing on the specific expression using Twitter data extracted by the multiple rules [7]. In this research, we will extend the concept of the Feeling Expansion Model in relation to the conflict between tourists and residents based on the Twitter data. This research focuses on analyzing the factors fueling citizen’s rejection towards tourism using Feeling Expansion Model and extracting the positive impacts. The categories of the positive impact are extracted using heuristic approach. Finally, the new positive policies are extracted by the new positive categories.

2. Related Research. There are a lot of researches relating tourism impact with satisfying residents’ wellbeing. The objective of research [8] is to test a theoretical model that links community residents’ perceptions of tourism impact (economic, social, cultural, and environmental) with residents’ satisfaction with particular life domain (material wellbeing, community wellbeing, emotional wellbeing, and health and safety wellbeing) and overall life satisfaction. They defined the tourism development life cycle (introduction, growth, early maturity, late maturity, and decline) and developed and tested a theoretical model using a survey of 321 respondents that describes how residents’ perception of tourism affects their satisfaction with particular life domains and life overall in the various stages of the tourism development cycle. They set twelve hypotheses and evaluated the relation between tourism impact and resident’s wellbeing in detail. The classification and the relation between tourism impact and wellbeing are clearly described. The changeable feeling, however, could not be analyzed using this method. The research [9] pointed the social impact of tourism on communities is extremely important and action can be taken to reduce the likelihood of a community backlash against tourists and tourism development. In addition, they proposed a new research agenda based on ‘layers’ of social impact

understanding through the use of ethnography or phenomenology. The research [10] has focused on the over tourism in Barcelona and has determined that the negative economic effects derived from the increase in the number of accommodations destined for vacation rentals and in the demand lie behind this rejection.

In our approach, we focused on the subjective wellbeing based on the Twitter data. Twitter data has a huge volume of dataset indicating that the bottom line of feeling could be extracted compared to the official questionably based approach. In addition, Twitter data are written in different languages leading that the cultural features could be extracted in each different language.

3. Our Proposed Approach. Figure 1 shows the proposed data analysis. In our research, we assume that “positive feeling” could generate and enhance QOL or e-QOL. Enhancing QOL means to fulfill the wellbeing and happiness which elements are extracted from the positive feelings. The proposed Feeling Expansion Model could be expanded step by step using positive feeling extracting the new elements of wellbeing. In this research, we will propose a two-step problem solving method in terms of the conflict of tourists and residents called over tourism. We will gather the tweets relating to the 2-words co-occurrence in the first step and categorize these tweets based on the feeling of people representing the negative or positive impacts. Based on the assumption that the negative impacts could not expand the feeling of wellbeing, the positive categories will be gathered and analyzed using the heuristic approach. In the second step, keywords relating the positive categories will be used to the next feeling expansion. These approaches could propose the method of enhancing the QOL for the difficult problems.

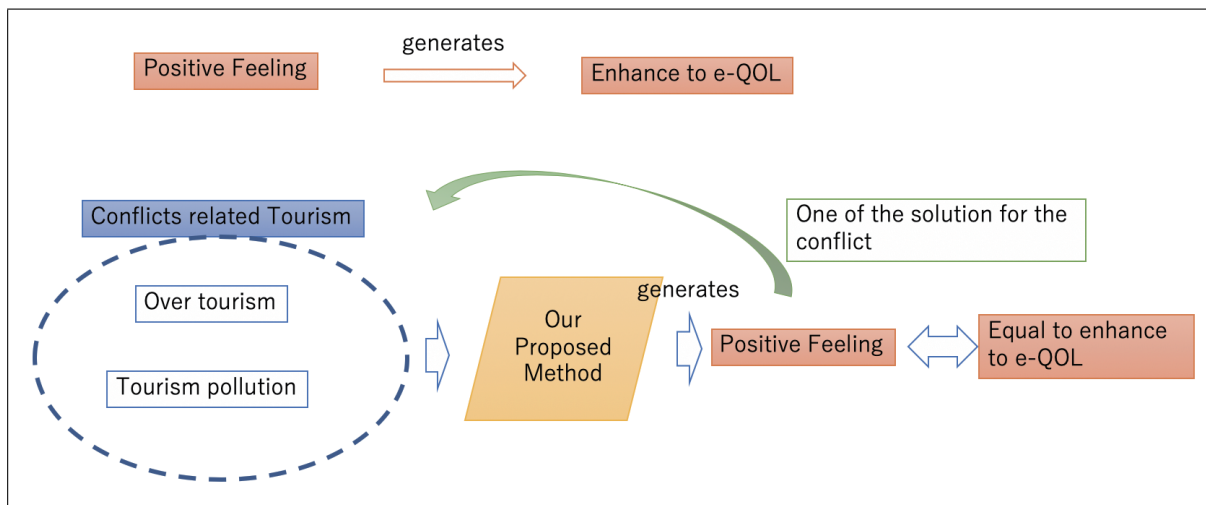


FIGURE 1. Proposed data analysis

4. Results and Experiments.

4.1. Experimental setup. We set up the extracting system written by Python program language. Figure 2 shows the overview of the data flow map of the experiments. Firstly, we used the Twitter REST API to collect sentences, written by JSON format, in several times a day. These Twitter data include many duplicate sentences because of multiple posts. We extracted unique data to eliminate multiple posts and eliminated commercial data. Then we applied the syntax analysis using Japanese dictionary and extracted related co-occurrence noun or adjective keywords. Finally, we measured the frequency of occurrence on tweets data in term of none and adjective words and classified into the categories with the features of positive and negative feelings.

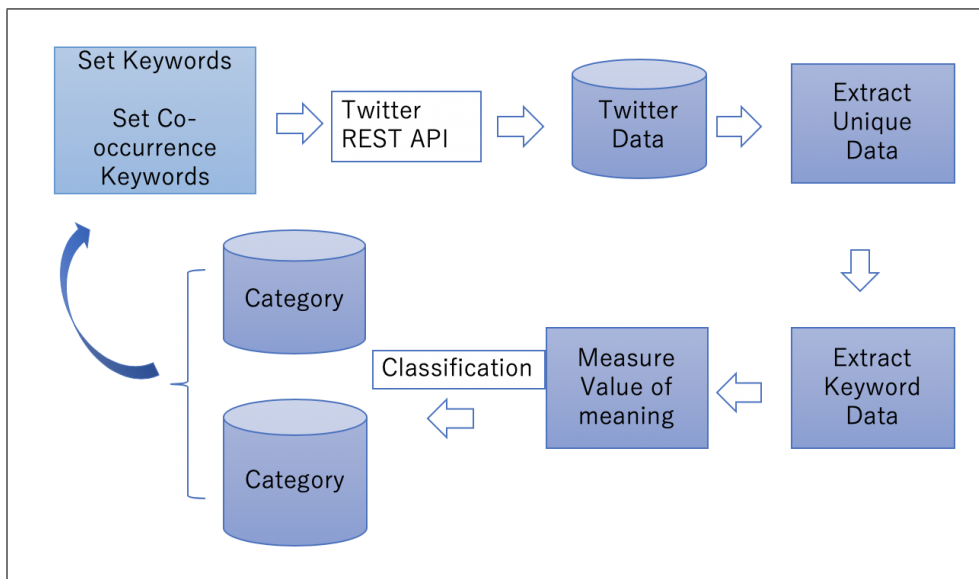


FIGURE 2. Overview of experiment environment

4.2. Results of experiments.

4.2.1. *Extraction of conflict factors.* We conducted the experiments based on the co-occurrence with “tourists” and “resident” for one week in April 2019 and gathered the 1763 tweets lines. Figure 3 shows the results of experiments.

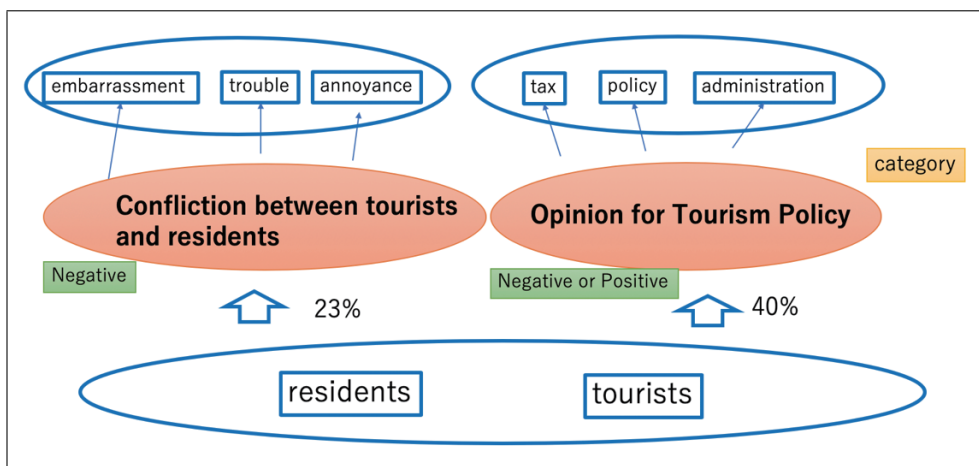


FIGURE 3. First experiment to extract the factors of conflicts

The results data are classified into two categories, “confliction between tourists and residents” shared with 23 percent and “opinion for tourism policy” with 40 percent. The first category, “confliction between tourists and residents” (hereinafter called “confliction”) includes negative words such as “embarrassment”, “trouble” and “annoyance”. On the other hand, “opinion for tourism policy” includes negative or positive feeling relating the theme of policy keywords such as “tax”, “policy” and “administration” (hereinafter called “policy”). Most of tweets for the category “confliction” are negative opinions such as the opinion for no relating matter between the increase of tourists and economic advantage for residents. The contents in this category include the opinion of condemnation for tourist’s attitude such that tourists make a lot of noise, throw away garbage and destruct the original nature. These results generate the hostility of residents for tourists. The category “policy” has negative with 21 percent and positive with 19 percent opinions. Negative opinions point out the tourism policy without resident perspective such that the

policy leads the local inconvenience. Tweets indicated these policies lead the faulty of city planning and regional loss generated by tourists. On the other hand, new proposals for tourism business were shown in tweets explaining that the collaboration with tourists and residents could produce new events such as the festival or joint event with Japanese culture. These collaborating joint events could produce the harmonic feelings with each other and generate the wellbeing in both tourists and residents.

4.2.2. *Expanding affection of conflict factors.* We proposed the two-word expanding model using one word based on the two-word cooccurrence relation called “Feeling Expansion Model” [7]. Following in our model, we conducted the feeling expansion for the results of feeling generated by both “tourists” and “residents”. In the category of “confliction”, we selected “annoyance” as the typical word for “confliction between tourists and residents”. In addition, we selected the words of “tourist” as the subject of “annoyance”. In this second level feeling expansion step, we experimented for one week in August 2019 and gathered 518 unique tweets. The opinions of newly settled two keywords were almost classified into four categories namely blame for tourists, over tourism, blame for policy and comment to accidents. As the matter of “blame for tourists” with 25%, blames are essentially rooted in discrimination against foreigners especially Chinese and Korean. The results show that the element of over tourism for foreign countries includes the racial discrimination. It seems that Japanese has the hostile subconscious for Chinese and Koreans. Next category includes over tourism and tourist pollution shared with 29%. Tweets showed that residents blame behaviors of tourists such as nuisances to the local community, dumping of trash and violation of traffic rule. Third category with 23% is the blame for the local government such as the blame for tourism policy and dissatisfaction with political activities. Final category with 23% is comments for attacks by wild animals. This category is the temporal matter. As the summary of this expansion, factors of negative elements generate the negative loop.

4.2.3. *Heuristic approach.* When we gather the category with two-keywords co-occurrence, negative feeling generates repeatedly negative opinions we already described. If we could extract positive elements in the results of one step feeling expansion, we pick up the positive keywords as the next step feeling expansion. Heuristic approach is the typical approach based on the human oriented problem solving, could select the most suitable one from the multiple choice based on the experimental knowledge. In this research, we propose the heuristic problem solving to step forward the next processing. Figure 4 shows the concept of the proposed heuristic approach.

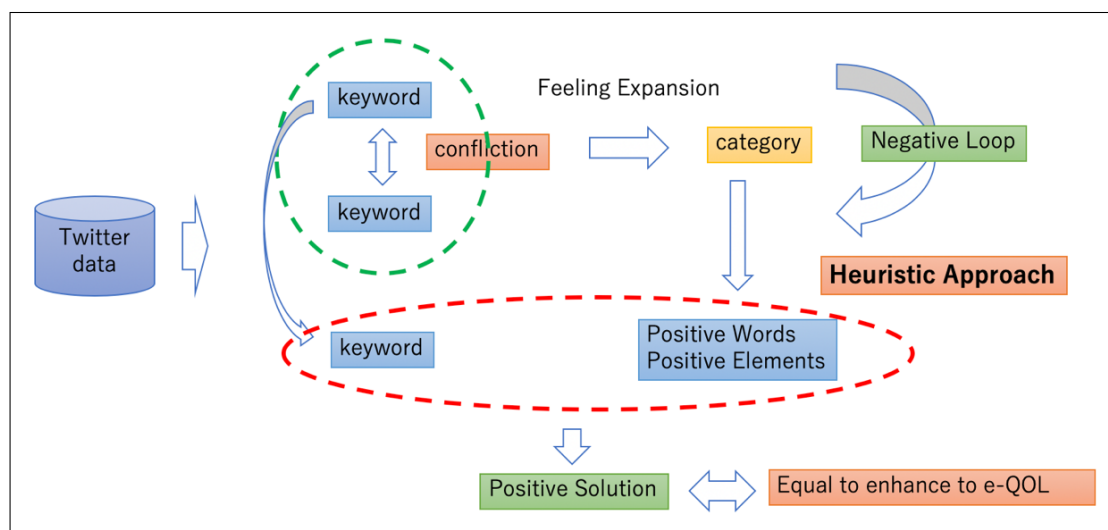


FIGURE 4. Proposed heuristic approach

We firstly select the positive words in the main category, then generate the related words by heuristic approach. In the second step, the keyword in the generated word list is the one of the data of co-occurred relation. Finally, the generated keyword and “tourists” are the basic keywords and gather from Tweets data with co-occurred “tourists” and selected keywords. Using this heuristic approach, collected Tweets data include the positive expression. We assume these second step feeling expansion could produce the solution of original conflicts. This solution with positive feeling could enhance the QOL of tourists as the subject. The original conflict was mainly caused by human-to-human relation. On the other hand, new solution of this conflict could be reduced by the human-to-society relation.

4.2.4. *Next positive feeling expansion.* Figure 5 shows each step of proposed heuristic approach. The detail of each step consists as follows. In the heuristic approach, positive words such as “development”, “cooperation”, “service”, “interesting”, “exchange” are extracted. We select the keyword “participate” as the meaning of cooperation between tourists and residents and conducted the experiments for four days in August 2019 with 161 unique tweets in the next step feeling expansion. The co-occurrence tweets both “tourists” and “participation” are classified into two positive categories and two negative categories. One of most effective opinions shared with 28% is the participation with both tourists and residents in festivals especially in Japanese dance festival. In addition, events with some music are recommended in 19% tweets with positive phase. Tweets with 22% are negative opinions caused by the racial discrimination for foreign tourists, against for policy of foreign countries such as Korea. Other opinions in tweets are not classified into positive or negative opinions. As the results of experiments, the Feeling Expansion Model could gather and propose the new policy to enhance the QOL. The positive opinions in tweets could generate some clue to enhance the wellbeing for tourists and residents.

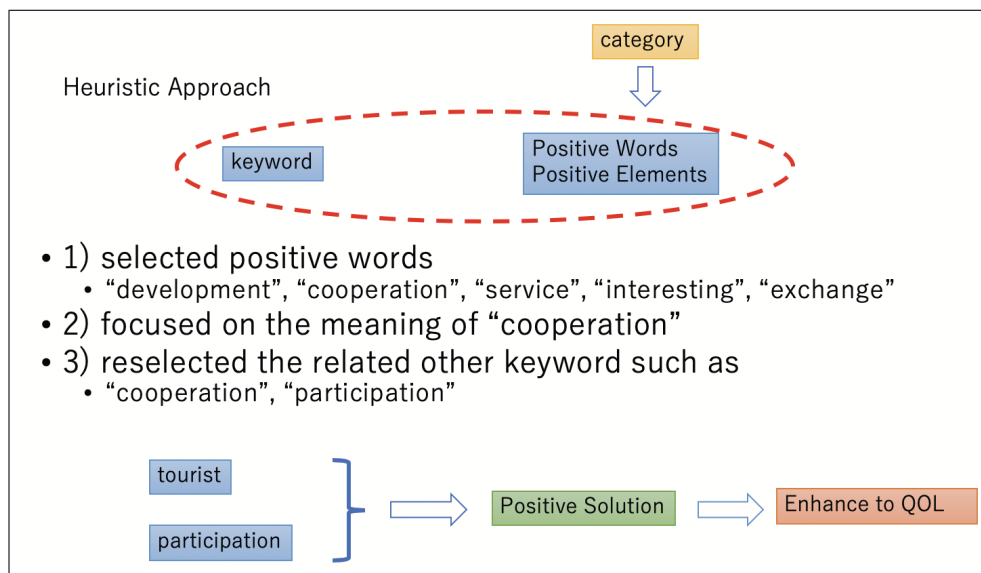


FIGURE 5. Each step of proposed heuristic approach

5. **Conclusions.** In this research, we focused on the conflict between tourists and residents called “over tourism”. Firstly, we gathered tweets related conflicts based on the co-occurred keywords with “tourist” and “residents”. As the results of experiments, the negative concept such as “conflict” generates almost negative opinion and classified into two categories “confliction between tourists and residents” and “opinion for tourism policy”. First category of conflict was produced into the negative loop. On the other hand, the positive keywords are filtered from the positive category and the word “participation” was

selected using the heuristic approach to conduct the next step feeling expansion. Based on the new set of keywords “tourist” and “participation”, tweets data are gathered and found the positive opinion such as “festival with dance”. These positive opinions could give the clue of solution for the conflict condition and generate the wellbeing for both “tourist” and “resident”. Our approach could show the hint to solve the over tourism.

In the future, analyzing positive opinion on tweets would be a good solution for over tourism and could enhance wellbeing and QOL.

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