An Analysis of Tweets by Local Mascot Characters for Regional Promotions, called Yuru-charas, and Their Followers in Japan

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Abstract

This paper addresses an emerging pop culture trend in Japan involving *yuru-charas. Yuru-charas* are local mascot characters who work for cities and prefectures and are expected to serve as new tools for tourism promotion. Among several activities in which the *yuru-charas* engage, we studied their use of Twitter for public relations. We collected the tweet data of 16 major *yuru-charas*, as well as the data of their followers. Using three indexes for tweet data and another three indexes for follower data, we analysed the characteristics of the *yuru-charas* 'Twitter use and their followers. As a result, we found that the *yuru-charas* seem to have different policies regarding Twitter use but the popular *yuru-charas* share several common characteristics.

Keywords: yuru-chara; Twitter; mascot; public relations

1 Introduction

McGray (2002) points out that Japan's pop culture, including anime, comic books, and character goods, already possesses a vast reserve of potential soft power. As for comic books, MacWilliams (2014) notes that Japan is one of the only countries in the world today where comic books have become a full-fledged medium of expression, on par with novels, and seemingly read by everyone. The Japanese government starts Cool Japan Initiative, which promotes Japanese pop-culture content (e.g. anime, comics, movies, TV programs, music, entertainment, toys, and games) in overseas countries (Ministry of Economy, Trade and Industry, 2015). Meanwhile, the use of a yuru-chara is an emerging Japanese pop culture trend that has attracted a significant amount of attention in Japan; however, it is not yet well-known internationally, even though the Japan Expo of 2016 held in France introduced the characters in the newly-created YURU-CHARA SESSION (JTS Group, 2016). Yuru-charas are local mascots, usually with a cute and funny appearance and motions, who work for cities, villages and prefectures (in short, regions). In other words, they are expected to serve as tools for both external and internal marketing. Etymologically speaking, a yuru-chara stands for a yuru-i (loose) character. There are a lot of these characters in Japan. Their activities, however, as well as the underlying purpose of the yuru-chara managers (often local governments or tourism organizations) are different from characters to character. In addition, the degree of interest of the local residents and that of non-locals is radically different. Thus, we investigate the current situation of yuru-charas' activities and the interest-level of local/non-local people and based on the results, we clarify the merits of using yuru-charas for regional promotion. Our study will be helpful in the future when local governments and tourism organizations, especially in other countries, consider introducing yuru-charas as tools for regional promotion.

2 Defining the nature of Yuru-charas

Jun Miura, a Japanese illustrator and the first advocate for the *yuru-chara*, set forth three necessary conditions for a mascot character to be considered a *yuru-chara* (Oricon Style, 2009).

- It is designed with a strong message of love for its home province;
- Its motions are lovably awkward and unique; and
- Its character has the yuru-sa (looseness) that people feel attached to.

As an example of a character that satisfies the above three conditions, we can look at Fukka-chan, a *yuru-chara* from Fukaya city, Japan (Fig. 1). His horn symbolizes Fukaya's speciality product, green onions, for their promotion (Condition 1). Because he has a large head and short limbs, his motions, naturally, are lovably awkward (Condition 2). Finally, his cute appearance in a vague setting – a cross between a rabbit and a deer – satisfies Condition 3.



Fig. 1. An example of a yuru-chara: Fukka-chan from Fukaya City

Since 2011, the Yuru-chara Grand Prix has taken place annually in Japan, where visitors vote for the most popular *yuru-chara* of the year. As many as 1,722 characters participated in the Fifth Grand Prix in 2015 and a total of 3,477 characters have participated since its inception (Executive Committee of the Yuru-chara Grand Prix, 2016). This event, however, permits the participation of many characters that do not satisfy the above three conditions. This means that the notion of *yuru-chara* is becoming vague. Thus, this study re-defines a *yuru-chara* by considering the differences between *yuru-charas* and other mascot characters.

Disney characters and Pokémon characters are typical examples of mascot characters. They appear in animations and video games and are commercial products themselves. On the other hand, *yuru-charas* are not commercial products themselves but are marketing tools by nature. This is the first important feature of *yuru-charas*.

Like Michelin's Michelin Man and Expedia's Exbear, some mascot characters owned by companies are also used as marketing tools. These company characters are considered *yuru-charas* in a broader sense. Indeed, TripAdvisor's Owly entered the 2015 Yuru-chara Grand Prix. As Jun Miura advocates, however, *yuru-charas* in the original sense are characters for promoting particular regions, not companies. Thus, we consider that locality is another essential feature of *yuru-charas*.

Based on the above considerations, we re-define yuru-charas as follows:

Yuru-charas are cute mascot characters for the promotion of regions, notably for the promotion of their local products and/or tourism in the region.

Some researchers study the commercial and non-commercial effects of *Yuru-charas* as well as their features. For example, Kaneko (2013) insists that Japanese pop culture may play an effective role in marketing tourism, studying the *yuru-chara* of Hikone city, Hiko-nyan, as a typical case of this type of economic success. Kaneko concludes that Hiko-nyan's great success inspired many cites, organizations, companies, and community groups to create their own *yuru-charas*. Yamamura (2015) studied an event hosted by Saitama prefecture where many *yuru-charas* across Japan got together as part of a unique tourism-related policy of the local government. He reported that the number of visitors for this event increased from 50,000 in 2010 to 410,000 in 2014.

Jiyavorananda et al. (2015) insisted that *yuru-sa* in the Japanese language is a vague concept, even though it is an essential feature of *yuru-chara*, and revealed by factor analysis that friendliness and childlikeness are closely related to *yuru-sa*. Birkett (2012) conducted an interview survey on *yuru-chara* managers and staff and reported that *yuru-charas* are allowed to make mistakes due to their childlikeness and, accordingly, the actors behind them do not need to be professionals. This is an important point for many organizations that lack a sufficient budget for alternative promotion mechanisms.

In the field of entertainment computing, Hotogi and Hagiwara (2015) developed a *yuru-chara* generator based on an analysis of *yuru-charas*' physical features such as eyes and mouths.

Among many *yuru-charas*, the most successful is probably Kumamoto prefecture's Kumamon. Kumamon is the champion of the first Yuru-chara Grand Prix of 2011. In 2015, the total sales of Kumamon-related products recorded one-hundred billion yen (around 990 million US dollars), including 2.1 billion yen in overseas markets, especially Hong-Kong, Taiwan, and Thailand (Kumamoto Prefecture, 2016). Horita (2014) studied the administration of Kumamon from the viewpoint of the business ecosystem and revealed that Kumamon plays an important role in regional promotion and development both in and out of the region. He insists that other *yuru-charas* should play such a role.

Promotion and communication with fans on a Social Networking Service (SNS) are also important missions of *yuru-charas*. In Japan, many *yuru-charas* have their own SNS accounts, especially on Twitter and Facebook. Because SNS allows marketing managers to communicate with many people without spending much time and money, it is used not only as a promotion tool to non-local consumers but also a tool of communicating with local residents (Suzuki and Morimoto, 2014). This implies that SNS can be a tool for *Yuru-charas* to conduct marketing for people in and out of the region. It is not clear, however, how *yuru-charas* make use of SNS today and what types of people are attracted to *yuru-charas*' activities on SNS. Thus, focusing on Twitter as an SNS, where interactive communication between users often takes place, this paper analyses *yuru-charas*' use of Twitter and the characteristics of their followers.

3 Research Method

We collected Twitter data related to *yuru-charas* using Twitter API. First, we listed all 26 *yuru-charas* who won first through tenth prize in any Yuru-chara Grand Prix from 2011 to 2015. Among these 26 *yuru-charas*, 17 characters have Twitter accounts but one account was stopped. Thus, we selected the remaining group of 16 characters (Table 1) as the target of our study.

Before explaining the analysis method, we will discuss the name and appearance of the *yuru-charas*. Typically, *yuru-charas* are named and designed according to the following three elements: i) the name of the region to which the *yuru-chara* belongs, ii) the region's speciality product, and iii) the name of a famous person/animal related to the region. For example, Kumamon belongs to Kumamoto prefecture and accordingly, its name includes the word *kuma* (bear) and looks like a bear. Ehime prefecture's Mican is named and designed after the region's speciality product, the *mikan* (orange) and looks like an orange. Finally, Shizuoka prefecture's Ieyasu-kun is named and designed after leyasu Tokugawa, who governed Japan in the 17th century and spent his youth and senior years in this region. Typically, through these names and appearances, people learn the name, speciality, and/or history of the region.

3.1 Analysis of tweets

We collected the tweets posted by each *yuru-chara* and analysed the content (text and photographs). We collected the tweets from the oldest through June 30, 2016 (note that Twitter API allows us to collect the most recent 3,200 tweets for each account). Then, we calculated the following three indexes to analyse the *yuru-charas*' tweets.

Replay rate. The reply rate of a *yuru-chara's* account is defined as the number of his/her reply tweets over the number of his/her total tweets. While ordinary tweets are sent to anonymous people, reply tweets indicate interactive communication with specific users. The reply rate is expected to indicate how actively each *yuru-chara* communicates with his/her followers and other Twitter users.

Photograph rate. The photograph rate of a *yuru-chara's* account is defined as the number of photograph-attached tweets over the total number of tweets (except reply tweets). The attachment of photographs to SNS posts evokes more interest from viewers and increases the number of reactions (e.g., retweets and like-button clicks) (Burkhalter, 2015; Rogers, 2014; Ross, 2014). Meanwhile, it requires more work to prepare a photograph for a tweet. Thus, the photograph rate is expected to indicate the eagerness of each *yuru-chara* on Twitter.

Notice rate. The notice rate of a *yuru-chara's* account is defined as the number of notice tweets over the number of total tweets (except reply tweets). The main content of *yuru-charas'* tweets is in the form of activity reports (or diary entries), which are usually posted after an event. The *yuru-charas* who post notice of events and the contents of activities beforehand are considered active in their promotion activities on Twitter. We manually identify these notice tweets by looking for future dates expressed in the tweets.

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|------------------------|----------------------|----------------------------|---------------------------------|---------------------------|-------------------------|-------------------------|-------------------------|-------------------------------|
| | | | | | | | | |
| Name | Kumamon | Bary-san | Nishiko-kun | Fukka-chan | Takinomichi Yuzuru | Sanomaru | Shimanekko | Ieyasu-kun |
| Affiliation region | Kumamoto prei | f Imabari (Ehime pref.) | Nishikokubunji (Tokyo pref.) | Fukaya (Saitama pref.) | Minoh (Osaka pref.) | Sano (Tochigi pref.) | Shimane pref. | Hamamatsu (Shizuoka pref.) |
| Highest rank (Year) | ¢ 1 (2011) | 1 (2012) | 3 (2011) | 2 (2014) | 9 (2011) | 1 (2013) | 6 (2012) | 1 (2015) |
| | | | | 3)35 | | | 8.); | |
| Name | Choruru | Kawarimi senbei | Shippei | Mican | Shinjyo-kun | O-ujicha-ma | Merugyu-kun | Tochisuke |
| Affiliation region | Yamaguchi prei | f. Fukuoka pref. | Iwata (Shizuoka pref.) | Ehime pref. | Susaki (Kochi pref.) | Uji (Kyoto pref.) | Oyabe (Toyama pref.) | Tochigi (Tochigi pref.) |
| Highest rank (Year) | ¢ 2 (2012) | 8 (2013) | 9 (2013) | 2 (2015) | 4 (2015) | 5 (2014) | 5 (2015) | 6 (2015) |

Table 1. Profiles of our target study group

3.2 Analysis of Followers

We collected data on the followers of each *yuru-chara*'s account and analysed it. The data was collected on July 1, 2016. The follower data contains various items, among which, we used the location and description. The location was found in texts that expressed each follower's self-reported place of residence. The description was found in texts that expressed each follower's self-introduction. With these two items, we calculated the following three indexes:

Ratio of local followers. The ratio of local followers of a *yuru-chara*'s account is defined as the number of local followers who presumably live in the region that the *yuru-chara* promotes over the total number of its followers. This index is expected to indicate how much interest each *yuru-chara* attracts from local residents. Unfortunately, Twitter does not have a specific format for the location item and accordingly, we cannot apply the raw location data to the analysis. Thus, we manually identified from location expressions the county of the follower's residence and, if it was Japan, his/her prefecture as well and the identified country/prefecture to calculate the ratio of local followers. If multiple countries/prefectures were identified, the follower's place of residence was categorized as unclassifiable.

Ratio of official-account followers. The ratio of official-account followers of a *yuru-chara's* account is defined as the number of its official-account followers who use official accounts over the total number of followers. This index indicates the degree of non-personal followers such as companies and shops. Twitter verifies official accounts and Twitter API allows us to see whether or not an account is verified. However, many official accounts have not applied for Twitter verification. For example, the Twitter accounts of the 16 *yuru-charas* we analysed were claimed to be official accounts on their official websites but only two of them (Kumamon and Takinomichi Yuzuru) have been verified by Twitter. Thus, we simply consider all accounts with the description *koshiki* (meaning 'official' in English) to be official accounts.

Ratio of non-Japanese followers. The ratio of non-Japanese followers of a *yuru-chara*'s account is the number of followers who presumably live outside of Japan over the total number of followers. This index was calculated to measure the *yuru-chara*'s popularity. We also look at the countries that show interest in each *yuru-chara*.

3.3 Classification of Yuru-charas

Finally, we categorize the 16 *yuru-charas* using the content-related indexes in Section 3.1 and the follower-related indexes in Section 3.2. As a method of categorization, we adopted Multi-dimensional Scaling (MDS). MDS is a method to position target items in a low-dimensional space (usually 2D or 3D) based on a dissimilarity matrix (Borg and Groenen, 2005). A pair of items with low dissimilarity (i.e., similar items) are placed nearby, while those with high dissimilarity are placed further away. Thus, the 2D/3D plot gives us insight into inter-item similarities. We also standardized all items beforehand in order to remove the scale effect.

4 Results

Table 2 shows the contents of tweets and characteristics of followers of the 16 *yuru-charas* listed in Table 1, which form the target group for our analysis.

| Name Reply rate Photo graph Notice rate Number graph Ratio of rate Ratio of local Ratio of Official Non- Poulation rate graph rate of Local Official Non- Poulation Prefecture Ratio of Prefecture Ratio of Prefecture Pre | | Tweets | | | Followers | | | | | | |
|--|--------------------|---------------|------------------------|----------------|---------------------------|--------------------------------|---|---|------------|---------------------------------------|-------------|
| Kumamon 65.2% 95.8% 2.7% $497,270$ 9.4% 0.2% 13.1% Kumamoto 1.40% 224 Bary-san 28.3% 79.9% 1.5% $190,282$ 11.6% 0.3% 3.0% Ehime 1.10% 212.3 Bary-san 55.3% 60.5% 4.3% 59.7% $190,282$ 11.6% 0.2% 11.9% 70.9% 10.20% 130.2 Nishiko-kun 55.3% 60.5% 4.3% 52.768 41.6% 0.2% 1.1% 70.9% 10.20% 130.2 Fukka-chan 96.4% 72.8% 18.4% 53.977 30.2% 41.1% 1.8% 560% 130.2 Takinomichi Yuzur 13.1% 28.0% 10.7% $11.3.97$ 18.7% 3.9% 1.4% 70.0% 50% Sanomaru 13.3% 70.0% 10.7% 11.397 18.7% 3.9% 1.4% 70.0% 50% Sanomaru 13.3% 70.0% 10.7% 11.397 18.7% 3.9% 1.4% 70% 50% Sanomaru 13.3% 70.0% 10.7% 11.397 18.7% 3.9% 1.4% 70% 50% 73.1 Sanomaru 13.3% 70.0% 10.7% 11.3% 10.7% 10.7% 50% 73.1 Sanomaru 13.3% 10.7% 12.3% 12.4% 12.9% 70% 20% Shinanekko 3.4% 53.9% 1.4% 1.3% 75% 70.0% 20% <t< th=""><th>Name</th><th>Reply rate</th><th>Photo graph rate</th><th>Notice rate</th><th>Number of Followers</th><th>Ratio of Local Followers</th><th>Ratio of Official- account Followers</th><th>Ratio of Non- Japanese Followers</th><th>Prefecture</th><th>Ratio of Prefectural Population</th><th>Z-Score</th></t<> | Name | Reply rate | Photo graph rate | Notice rate | Number of Followers | Ratio of Local Followers | Ratio of Official- account Followers | Ratio of Non- Japanese Followers | Prefecture | Ratio of Prefectural Population | Z-Score |
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| Sanomaru 13.3% 70.0% 10.7% $11,397$ 18.7% 3.9% 1.4% Tochigi 1.60% 73.1^{1} Shimanekko 3.4% 52.6% 5.4% 53.981 13.8% 0.1% 1.5% Shimane 0.60% 207.6 Fayau-kun 84.2% 53.9% 11.7% $14,322$ 52.0% 0.2% 10.0% Shimane 0.60% 204.4 Leyau-kun 84.2% 63.9% 11.7% $14,322$ 52.0% 0.2% 10.0% Shizuoka 2.90% 204.4 Choruru 0.0% 88.9% 13.9% $14,322$ 52.0% 0.2% 1.2% Yamaguchi 1.10% 133.6 Kawarimisenbei 78.0% 93.7% 11.7% $4,600$ 39.2% 6.3% 1.2% Yamaguchi 1.10% 133.6 Kawarimisenbei 78.0% 93.7% 1.1% $6,600$ 23.4% 2.0% 0.9% 4.00% 45.7 Shippei 97.7% 98.7% 16.0% 12.457 45.7% 1.8% 1.4% 8.0% 1.10% Mican 0.0% 0.1% 8.2% $5,536$ $5,33\%$ 1.9% 1.4% 8.0% 1.10% 136.7 Mican 0.0% 0.1% 8.2% 5.33% 1.2% 1.4% 1.4% 1.10% 136.7 Mican 0.0% 0.1% 20.2% 1.2% 1.2% 1.2% 1.4% 1.10% 1.10% Mican 0.0% 20.2% 2.0% $2.0.2$ | Takinomichi Yuzuru | 13.1% | 28.0% | 8.0% | 17,141 | 41.1% | 1.6% | 1.2% | Osaka | 6.90% | 97.5* |
| Shimanekko3.4%52.6%5.4%53.98113.8%0.1%1.5%Shimane0.60%207.0leyasu-kun84.2%63.9%11.7%14,32252.0%0.2%1.0%Shizuoka2.90%204.0leyasu-kun84.2%63.9%11.7%14,32252.0%0.2%1.0%Shizuoka2.90%204.0Choruru0.0%88.9%13.9%4,60039.2%6.3%1.2%Yamaguchi1.10%133.0Kawarimisenbei78.0%93.7%1.1%6,60023.4%2.0%0.9%Fukuoka4.00%45.7%Shippei97.7%98.7%16.0%12.45745.7%1.8%1.8%1.1%7.1%Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%2.90%136.O-ujicha-ma14.4%33.4%12.0%6,15124.1%1.2%1.7%71.2%Merugvu-kun25.1%20.2%3.0%2,5224.5%1.7%71.2%Merugvu-kun25.1%20.2%3.0%2,5224.5%1.7%71.2%Merugvu-kun25.1%10.3%5.2%4.5%1.7%70%71.2%Merugvu-kun25.1%20.2%3.0%2,522< | Sanomaru | 13.3% | 70.0% | 10.7% | 11,397 | 18.7% | 3.9% | 1.4% | Tochigi | 1.60% | 73.1* |
| Icyasu-kun84.2%63.9%11.7%14,32252.0%0.2%1.0%Shizuoka2.90%204.Choruru0.0%88.9%13.9%4,60039.2%6.3%1.2%Yamaguchi1.10%133.0Kawarimisenbei78.0%93.7%1.1%6,60023.4%2.0%0.9%Fukuoka4,00%45.7Shippei97.7%98.7%16.0%12,45745.7%1.8%1.8%8hizuoka2.90%151.3Mican0.0%0.1%82.2%5,53634.9%9.3%1.4%Ehime1.10%136.7Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.7Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.7Oujicharma14.4%33.4%12.0%6.15124.1%1.2%1.7%Kyoto2.10%71.2Merugyu-kun25.1%20.2%3.0%2,52%4.5%1.7%70%71.271.2Merugyu-kun25.1%20.2%3.0%2,52%4.5%1.7%70%71.2Merugyu-kun25.1%20.2%3.0%2,52%4.5%7.7%71.2Merugyu-kun25.1%20.2%3.0%2,52%4.5%7.7%70%71.2Merugyu-kun25.1%20.2%3.0%2,52%4.5%7.7%70%70%71.2Merugyu-kun25.1% | Shimanekko | 3.4% | 52.6% | 5.4% | 53,981 | 13.8% | 0.1% | 1.5% | Shimane | 0.60% | 207.6* |
| Choruru0.0%88.9%13.9%4,60039.2%6.3%1.2%Yamaguchi1.10%133.Kawarimisenbei78.0%93.7%1.1%6,60023.4%2.0%0.9%Fukuoka4.00%45.7Shippei97.7%98.7%16.0%12,45745.7%1.8%5.8%2.90%151.Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.Mican0.0%0.1%8.2%5,53613.3%1.0%1.5%Kochi1.10%91.7Oujicha-ma14.4%33.4%12.0%6,15124.1%1.2%1.7%Kyoto2.10%71.2Merugyu-kun25.1%20.2%3.0%2,50225.2%4.5%1.7%Toyama0.90%85.0Merugyu-kun25.1%54.2%1.2.0%1,64344.2%5.3%0.9%Tokinia1.60%80.2 | Ieyasu-kun | 84.2% | 63.9% | 11.7% | 14,322 | 52.0% | 0.2% | 1.0% | Shizuoka | 2.90% | 204.6* |
| Kawarimisenbei78.0%93.7%1.1%6,60023.4%2.0%0.9%Fukuoka4.00%45.7%Shippei97.7%98.7%16.0%12,45745.7%1.8%1.8%Shizuoka2.90%151.1Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.7Shinjyo-kun92.3%5.6%6.0%20,25513.3%1.0%1.5%Kochi1.10%91.7O-ujicha-ma14.4%33.4%12.0%6,15124.1%1.2%1.7%Kyoto2.10%71.2Merugyu-kun25.1%20.2%3.0%2,50225.2%4.5%1.7%Toyama0.90%85.0Tochisuke10.3%54.2%12.2%1,64344.2%5.3%0.9%Tochigi1.60%80.2 | Choruru | 0.0% | 88.9% | 13.9% | 4,600 | 39.2% | 6.3% | 1.2% | Yamaguchi | 1.10% | 133.0^{*} |
| Shippei97.7%98.7%16.0%12,45745.7%1.8%1.8%Shizuoka2.90%151.3Mican0.0%0.1%8.2%5,53634.9%9.3%1.4%Ehime1.10%136.3Shinjyo-kun92.3%55.6%6.0%20,25513.3%1.0%1.5%Kochi1.10%91.7O-ujicha-ma14.4%33.4%12.0%6,15124.1%1.2%1.7%Kyoto2.10%71.2Merugyu-kun25.1%20.2%3.0%2,50225.2%4.5%1.7%Toyama0.90%85.0Tochisuke10.3%54.2%12.2%1,64344.2%5.3%0.9%Tochigi1.60%80.2 | Kawarimisenbei | 78.0% | 93.7% | 1.1% | 6,600 | 23.4% | 2.0% | 0.9% | Fukuoka | 4.00% | 45.7* |
| Mican 0.0% 0.1% 8.2% 5,536 34.9% 9.3% 1.4% Ehime 1.10% 136. Shinjyo-kun 92.3% 55.6% 6.0% 20,255 13.3% 1.0% 1.5% Kochi 1.10% 91.7 O-ujicha-ma 14.4% 33.4% 12.0% 6,151 24.1% 1.2% 1.7% Kyoto 2.10% 71.2 Merugyu-kun 25.1% 20.2% 2,502 25.2% 4.5% 1.7% Toyama 0.90% 85.0 Tochisuke 10.3% 54.2% 12.2% 1,643 44.2% 5.3% 0.9% Tochigi 1.60% 80.2 | Shippei | 97.7% | 98.7% | 16.0% | 12,457 | 45.7% | 1.8% | 1.8% | Shizuoka | 2.90% | 151.3* |
| Shinjyo-kun 92.3% 55.6% 6.0% 20,255 13.3% 1.0% 1.5% Kochi 1.10% 91.7 O-ujicha-ma 14.4% 33.4% 12.0% 6,151 24.1% 1.2% Kyoto 2.10% 71.2 Merugyu-kun 25.1% 20.2% 3.0% 2,502 25.2% 4.5% 1.7% Toyama 0.90% 85.0 Tochisuke 10.3% 54.2% 1,643 44.2% 5.3% 0.9% Tochigi 1.60% 80.2 | Mican | 0.0% | 0.1% | 8.2% | 5,536 | 34.9% | 9.3% | 1.4% | Ehime | 1.10% | 136.7* |
| O-ujicha-ma 14.4% 33.4% 12.0% 6,151 24.1% 1.2% 1.7% Kyoto 2.10% 71.2 Merugyu-kun 25.1% 2.02% 3.0% 2,502 25.2% 4.5% 1.7% Toyama 0.90% 85.0° Tochisuke 10.3% 54.2% 1,643 44.2% 5.3% 0.9% Tochigi 1.60% 80.2° | Shinjyo-kun | 92.3% | 55.6% | 6.0% | 20,255 | 13.3% | 1.0% | 1.5% | Kochi | 1.10% | 91.7* |
| Merugyu-kun 25.1% 20.2% 3.0% 2,502 25.2% 4.5% 1.7% Toyama 0.90% 85.0 Tochisuke 10.3% 54.2% 1,643 44.2% 5.3% 0.9% 80.2 | O-ujicha-ma | 14.4% | 33.4% | 12.0% | 6,151 | 24.1% | 1.2% | 1.7% | Kyoto | 2.10% | 71.2* |
| Tochisuke 10.3% 54.2% 12.2% 1,643 44.2% 5.3% 0.9% Tochigi 1.60% 80.2 | Merugyu-kun | 25.1% | 20.2% | 3.0% | 2,502 | 25.2% | 4.5% | 1.7% | Toyama | 0.90% | 85.0* |
| | Tochisuke | 10.3% | 54.2% | 12.2% | 1,643 | 44.2% | 5.3% | 0.9% | Tochigi | 1.60% | 80.2* |

4.1 Analysis of Yuru-chara Tweets

Table 2 summarizes the results of the three tweet indexes we calculated. The reply rates of Fukka-chan, Shippei, and Shinjyo-kun were over 90%, while those of Choruru and Mican were 0%. This contrasting result indicates that some *yuru-charas* have a clear policy of active reply or non-reply. Photograph rates for the 16 characters were generally high with a mean of 60.5% and a median of 62.2%, with the exception of Mican at 0.1%. Notice rates were generally low and the highest was that of Fukka-chan (18.4%). Most of the tweets other than notice tweets were activity reports from each *yuru-chara*.

4.2 Analysis of Followers

The total number of followers of the 16 *yuru-charas*' accounts was 982,040 and the number is reduced to 701,150 when we exclude overlaps. Among the 701,150 followers, 312,788 report their locations (45%) but the identification of area of residence was successful for only 191,132 followers (27%).

Table 2 shows the results of the three follower indexes we calculated. First, ratio of local followers depends on the *yuru-chara*. Precisely speaking, we had to take population into account. For example, Nishiko-kun's ratio of local followers is high (41.6%) but this may simply be because it is from Tokyo, which has the largest population among all prefectures in Japan. Thus, we calculated the significance of the ratio of local followers using hypothesis testing for the population proportion. In this statistical test, we use the following Z-Score:

$$Z_0 = \frac{|p - P_0|}{\sqrt{P_0(1 - P_0)/n}} \tag{1}$$

where p is the ratio of local followers, P_0 is the ratio of prefectural population to Japan's total population and n is the number of Japanese followers. The test results show that for every character, the ratio of the local followers is significantly larger than the ratio of the prefectural population to Japan's total population. The *yuru-chara* with the largest Z-sore (i.e., the *yuru-chara* followed by the most local people considering population) was Kumamon and that with the smallest Z-score was Kawarimisenbei. A possible reason why Kawarimisenbei is not followed by local people, relatively speaking, is that this character is not managed by a public organization such as a local government but by a company (a local food manufacturer).

Second, ratios of official-account followers were less than 10% for all *yuru-charas* (Table 2) and the ratios for Kumamon, Bary-san, Nishiko-kun, Shimanekko, and Ieyasu-kun were as low as less than 0.3%. Meanwhile, Mican had the highest rate of official-account followers.

Third, the ratios of non-Japanese followers were not much different among the *yuru-charas* with one exception: Kumamon (13.1%). We calculated the proportion of the residential locations of the non-Japanese followers of the 16 *yuru-charas*. The country with the highest number of followers was Taiwan (39%), followed by Thailand (18%), China (12%), Hong Kong (7%) and USA (7%).The popularity in Taiwan is probably due to active promotion targeting Taiwanese by Kumamon. In addition, because all of

the tweets of the *yuru-charas* are in Japanese, countries with a larger number of people who understand Japanese will likely have a larger number of *yuru-chara* followers. This implies that in order to acquire international followers, each *yuru-chara* must tweet in non-Japanese languages as well.

4.3 Classification of Yuru-charas

Using MDS, we made a two-dimensional scatter plot that indicates similarities between *yuru-charas* (Fig. 2). In this plot, Mican and Fukka-chan are distanced from other characters, which implies the peculiarity of these two characters. The most successful *yuru-chara*, Kumamon, is located in the first quadrant of the graph and Bary-san and Ieyasu-kun are located relatively near Kumamon. In addition, Nishiko-kun and Shimanekko, both located in the graph's first quadrant, are considered to have similar index values related to Twitter. Among the distances between each pair of *yuru-charas*, the distance between Kawarimisenbei and Shinjyo-kun is the shortest, which implies that this pair is the most similar in terms of Twitter use. Similarly, Sanomaru is located near Choruru and O-ujicha-ma, which implies their similarity. Unfortunately, however, the graph does not help us to categorize *yuru-charas*.

5 Discussion

We analysed the Twitter use and characteristics of followers of major *yuru-charas*, using the six indexes introduced in Section 3. Based on our results, especially the results of the MDS plot in Section 4.3, this chapter discusses the characteristics of each *yuru-chara*.

First, we examine the features of two *yuru-charas* that are remotely located in the MDS plot; Mican and Fukka-chan. Mican shows the lowest reply and photograph rates, which indicate Mican's negative attitude toward Twitter use. Indeed, Mican attracts a small number of followers (5,563 followers), even though it has won second place in a Yuru-chara Grand Prix. Conversely, Fukka-chan shows very high reply and photograph rates, which indicate his positive attitude toward Twitter use. Indeed, Fukka-chan attracts the fourth largest number of followers among the 16 *yuru-charas* (53,977 followers). Among the top five *yuru-charas* with more than 50,000 followers, however, he is the only one located at the left side of the MDS plot. This is due to his distinctively high notice rate. We discuss the meaning of high/low notice rates below.

Next, we examine the features of several *yuru-charas* who have similarities to the most popular yuru-chara, Kumamon. Bary-san has similar features to Kumamon except his low reply rate. Ieyasu-kun has similar features to Kumamon except his high notice rate. Both Bary-san and Ieyasu-kun are popular characters, having won the first prize in a Yuru-chara Grand Prix. In addition, Nishiko-kun and Shimanekko, who are located in the first quadrant of the MDS plot with Kumamon, are among the top five popular characters in terms of follower number. Among the six indexes we proposed, we observed a remarkable difference in the notice rates between these popular *yuru-charas* and others. At first, we expected that *yuru-charas* would have high notice rates because their mission is regional promotion. In reality, however, popular *yuru-charas* have low notice rates. This is probably because consumers want *yuru-charas* to speak as themselves, instead of speaking directly about regional promotions. In other words,

like Disney characters, *yuru-charas* themselves attract fans and become icons with commercial value. This contradicts the definition of *yuru-charas* in Section 2 and makes the concept vague.



Fig. 2. Similarities between the yuru-charas based on our Twitter findings

6 Conclusions and Future Work

Yuru-charas have begun to be used for regional promotion in Japan and many *yuru-charas* are making use of SNS. However, it is not clear why they use SNS. Thus, first we studied *yuru-charas*' use of Twitter and the characteristics of their followers.

Our results show that *yuru-charas* generally have many followers, including both fans of the characters and fans of the *yuru-charas*' regions. Thus, by using *yuru-chara*-name accounts, public relations messages can even reach people who are not interested

in the region and accordingly, they may eventually become fans of the region. In addition, because *yuru-charas* have many local followers, *yuru-chara*-name accounts can be used as tools for internal marketing. For example, local organizations that manage *yuru-charas*, such as local governments and tourism organizations, can ask local residents to participate in local festivals and events as volunteers or inform them of local attractions by using the *yuru-charas*' tweets. In this way, *yuru-charas* can likely contribute to regional development and promotion as marketing tools.

Meanwhile, local organizations will often have *yuru-chara*-name accounts as well as formal/official accounts. It is still not clear why some local organizations use two accounts or when and why they choose to conduct public relations activities under the name of the *yuru-chara* instead of the formal/official account.

There are likely several reasons why *yuru-chara*-name accounts work better than formal/official accounts. First, as our study clarified, it is very possible that *yuru-chara*-name accounts' public relations activities reach many non-local people. Second, *yuru-chara*-name accounts can communicate with followers interactively on Twitter. This interactive communication is difficult through formal/official accounts because public organizations, including those who manage *yuru-charas*, are required to provide strictly factual information on their formal/official accounts. Third, once a *yuru-chara's* way of talking and personality is established, the *yuru-chara's* tweet style is rarely influenced by a change of operators or a change in management.

Due to these reasons, it is likely that the number of local organizations who use *yuru-chara*-name accounts will rapidly increase. In order to confirm this, further studies are needed. To this end, we should compare the characteristics of the followers of formal/official accounts and those of *yuru-chara*-name accounts. In addition, in order to see the interactiveness, replies to the followers on the formal accounts and those on the *yuru-chara*-name accounts should be compared. Of course, we should also interview the local organizations regarding their strategies for Twitter use.

Recently, *yuru-charas* (or *yuru-chara-*like mascot characters) have been created in many countries other than Japan. For example, Xochimilco, Mexico has created *Lupita*, a funny-looking character that is modelled after a Mexican salamander. Berlin, Germany has BearlinTower, which is modelled after the Berlin Tower and a white bear. Big Lincoln, modelled after Abraham Lincoln, promotes the State of Illinois in the USA. Likely, many *yuru-charas* will be created in various countries in the future. The above studies, which clarifies the benefits and potential issues of *yuru-chara*-name Twitter accounts, will be useful for regional promotion organizations in various countries to discuss the future use of *yuru-charas* and SNS public relations under the name of the respective *yuru-charas*.

References

- Birkett, M. (2012). Amateur Mascots on the Loose: The Pragmatics of Kawaii (Cute). *Doctoral dissertation*, University of Michigan.
- Borg, I. & Groenen, P. (2005). *Modern Multidimensional Scaling: Theory and Applications* (2nd ed.). Springer.
- Burkhalter, J. N. (Ed.). (2015). Maximizing Commerce and Marketing Strategies through Micro-Blogging. IGI Global.

- Executive Committee of Yuru-chara Grand Prix (2016). Yuru-chara GP official web site. Retrieved from http://www.yurugp.jp/ (in Japanese).
- Hirota, A. (2014). Business Ecosystem Model in Regional Activation Case of 'KUMAMOTO SURPRISE' and 'KUMAMON'. Journal of the Japan Association of Regional Development and Vitalization, 5: 347-356 (in Japanese).
- Hotogi, M. & Hagiwara, M. (2015). Analyses of Local Mascot Characters and Proposal of Automatic Character Creation System Using Affective Words. *International Journal of Affective Engineering*, 14(4): 299-307.
- Jiyavorananda, S., Ishikawa, H., Sakai, S., Yamanaka, K., Yamanaka, T., & Masuda, T. (2016). Elucidation of Factors Predicting the Impression of 'Yuru-sa' in Japanese Yuru-kyara Mascot Characters. *International Journal of Affective Engineering*, 15(3): 231-238.
- JTS Group. (2016). YURU-CHARASESSION with UMI ☆ KUUN. Retrieved from http://www.japan-expo-paris.com/en/programme/yuru-chara-session-with-umikuun 1389.htm
- Kaneko, K. (2013). An Analysis of Japan's Popular Cultural Tourism: Constructing Japan's Self-Image as a Provider of 'Unique' Culture. *Global Journal of Human-Social Science Research*, 13(4).
- Kumamoto Prefecture. (2016). 2015 KUMAMON Product Use and Annual Sales. Retrieved from

https://www.pref.kumamoto.jp/common/UploadFileOutput.ashx?c_id=3&id=14996&su b_id=1&flid=60627 (in Japanese).

McGray, D. (2002). Japan's Gross National Cool. Foreign Policy, 130: 44-54.

- MacWilliams, M. W. (2014). Japanese Visual Culture: Explorations in the World of Manga and Anime. New York: Routledge.
- Ministry of Economy, Trade and Industry. (2015). Cool Japan Initiative. Retrieved from http://www.meti.go.jp/policy/mono_info_service/mono/creative/150706CJInitiativeJuly. pdf
- Oricon Style. (2009). Interview with Jun Miura. Retrieved from http://www.oricon.co.jp/news/71089/full/ (in Japanese).
- Rogers, S. (2014). What Fuels a Tweet's Engagement? Retrieved from http://blog.twitter.com/2014/what-fuels-a-tweets-engagement
- Ross, P. (2014). Photos Are Still King on Facebook. Retrieved from http://www.socialbakers.com/blog/2149-photos-are-still-king-on-facebook
- Suzuki, S., & Morimoto, S. (2014). Electronic Internal Marketing for Tourism: A New Tourism Marketing Approach. In 2014 11th International Conference on E-Business (ICE-B) IEEE.

Yamamura, T. (2015). Contents for Tourism Promotion and Prefectural Government Policy: The Case of Saitama Prefecture. *The Theory and Practice of Contents Tourism*, 46-50.

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