

Show your teeth and tilt your head!

Customer preferences towards a service with a smile

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Abstract

The notion of service with a smile is a commonplace one in the realm of customer service. However, there are cultural variations when it comes to the perception and display of a smile as customers interpret smiles differently, depending on their background, gender and/or ethnicity. This research paper aims to analyze in greater depth, the distinct characteristics and nuances behind the smiles of presenters (i.e., service agents) and to investigate the interpreters' (i.e., customers) perceptions. The findings revealed that non-Asians, normally regarded as more individualistic, tend to display a wider spectrum of different facial expressions, compared to Asians. The association between an Asian cultural identity and collectivism might partly account for this difference. In addition, it was discovered that customers are more likely to be attracted by service representatives of a different ethnicity during a service encounter, with gender playing a negligible role. On the whole, this paper will present significant contributions to the tourism and hospitality industries, by providing guidelines and insights for managers, hotel operators, and human resource departments, to improve and refine employee training.

Keywords: emotional labour; service encounter; smile; collectivism; individualism

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Introduction

Globalization has resulted in a greater fluidity of labour movement between countries and it is thus normal to have people with different cultural backgrounds working in the same place. This is especially evident in the hospitality industry where we often encounter demographic diversity of personnel and employees. According to DSEC (2018), there were 179,465 expatriates in Macau in 2017, from mainland China, Philippines, United States, Australia, to name a few; among those, 80,394 workers were in hospitality-related industries. Since most of the works in the hospitality industry require customer-employee interaction, service representatives are often asked to exhibit positive emotions (e.g. a smile), also known as emotional labour (James, 1989). Despite the high number of workers, the 2017 Smiling Report announced that from the survey of 67 countries and regions assessed in the smiling index for customer services in the service industry, Macau was ranked at the bottom (Better Business World Wide, 2017). One of the reasons might be the consequences of emotional labour, since the workers could have been experiencing exhaustion and stress, alongside distress and depression (Pugliesi, 1999).

A smile from a service staff conveys a generally positive first impression and a welcome message to the guests (Andrzejewski and Mooney, 2016). However, a smile can generate a broad range of meaning and connotations as tourists from different cultures may not have a universally shared understanding of a smile, and inversely the same smile may be interpreted differently based on the cultural background of the recipient (Yuki *et al.*, 2007). Nonetheless, there are few common characteristics when people smile; namely, smile with teeth showing, smile with crow's feet wrinkles displaying (Ambadar *et al.*, 2009), and smile with head tilting (Costa and Bitti, 2000). Therefore, understanding smiling is crucial for service entities since it has been constantly proven that smiles are correlated with customer perceived satisfaction (Gabriel *et al.*, 2015), intentions to visit, trustworthiness, customer loyalty (Houston *et al.*, 2018), and even tipping (Chi *et al.*, 2011). A smile lies at the crux of a customer service

experience and therefore, warrants further study as a subject of interest for researchers and especially service managers who are keen to create unique service experience and customized service (Prahalad and Ramaswamy, 2004).

In spite of acknowledging its importance, there is a lot of ambiguity and insufficient knowledge on the smiles displayed by people, and how the general acceptability of smiles during service encounters. Hence, this study answers the following two research questions: (1) What are the distinct characteristics of smiles from people of different gender and ethnicity? (2) How do customers of different gender and ethnicity most commonly perceive smiles during a service encounter?

Literature review

Emotional labour

In the tourism and hospitality industries, companies have to ensure that staff are aware of their behaviour especially with regard to emotional expressions. Previous research indicated that customer satisfaction is positively linked to the service agent's smile (Otterbring, 2017). Due to the inseparability of the service, where production and consumption occur simultaneously, the emotional display by the service representative becomes a critical factor in shaping customer purchasing behaviour as well as their intentions to revisit the service entity (Tsai and Huang, 2002). Thus, most of the employees especially those engaging in service and clerical work are asked to display a positive emotion during working hours no matter whether it is authentic or not. This situation then takes the form of emotional labour (James, 1989), whereby emotional labour refers to the method of managing emotion and expression to meet the job requirements when staff interact with customers, colleagues, or supervisors. For instance, casinos often ask staff to exhibit a smile during any face-to-face interaction (Li *et al.*, 2017).

With the fierce competition in the service industry, service providers differentiate themselves by offering better service in order to maintain their reputation. One effective and direct way is to please the customers by

demonstrating positive emotions (i.e., smiling faces) (Ashforth and Humphrey, 1993). In general, the emotional expressions of the service representatives have a positive influence on the level of customers' satisfaction, return intention as well as customers' loyalty (Collishaw *et al.*, 2008). Notwithstanding the aforementioned benefits, the display of various emotions might bring more negative consequences than positive ones to service agents, such as emotional dissonance (Hochschild, 1979), meaning that the service representative displays an emotion that may not necessarily reflect his/her actual feelings. Previous research stated that emotional dissonance will result in employees' job dissatisfaction and have a negative impact on their level of commitment or loyalty to the enterprises (Abraham, 1999).

Authentic smile vs non-authentic smile

Pertaining to a smile, there are three main features that people subconsciously display; namely, showing teeth, displaying crow's feet wrinkles (Ekman *et al.*, 1978), and tilting the head (Costa and Bitti, 2000). Defined by the Facial Action Coding System (FACS), the zygomaticus major muscle (AU12) is the muscle around the lip that could pull up the corner of the mouth and leads to teeth showing. Teeth showing is very commonly associated with an expression of enjoyment (Ambadar *et al.*, 2009). Next, the orbicularis oculi muscles (AU6) are a set of muscles around the eyes that affects other facial movements (the raising of cheeks) and the display of crow's feet wrinkles. However, since this muscle is difficult to control and activated only in amusing situations, AU6 is considered as a reliable indicator of an authentic smile (Krumhuber and Manstead, 2009). Ambadar *et al.* (2009) also indicated that AU6 activates more frequently when the person experiences enjoyment. Another characteristic associated with the smile is head tilting. Tilting the head is viewed as the most powerful and frequently occurring non-verbal cue in smiling behaviour, which is also found to be more attractive compared to the upright head position (Costa and Bitti, 2000). Alongside this, existing research suggests that head tilting conveys a positive first impression (Kostic and Chadee,

2015) and is associated with kindness or thoughtfulness (Krumhuber *et al.*, 2007).

Nonetheless, smiles do not always create positive outcome for the recipients (Grandy *et al.*, 2005) since people are able to fake their smiles. The non-authentic smile happens either when the presenter wants to mask negative emotions (Ekman *et al.*, 1988) or when there is a certain rule or norm in existence (Andrzejewski and Mooney, 2016). Technically, AU6 is only activated in a spontaneous situation rather than one that is posed (Frank *et al.*, 1993). With regards to a fake smile, only AU12 would be activated (Ekman, 1989), and this is considered as a non-authentic smile. According to Ekman *et al.* (1987), people display the non-authentic smile to mask their negative emotions, or to follow social norms (Andrzejewski and Mooney, 2016). Non-authentic smiles can be misleading for the recipients and the question of whether or not these are easily detected. Recent research points to the fact that the majority of people react positively towards authentic smiles, rather than non-authentic ones. (Grandey *et al.*, 2005).

Emotional contagion theory

Emotions are contagious, and they create powerful effects on people. The emotional contagion theory states that an individual's emotions could lead to another individual to display similar emotions but in an unconscious way, and vice versa (Hatfield *et al.*, 1993). For instance, when a person encounters someone with a specific emotion (e.g. fear, anger, sadness, happiness, disgust, or surprise), it is likely that he / she would be in that mood as well (Jung *et al.*, 2014). Take this principle into the workplace. The effect of emotions on people is normally manifested through facial expressions, and this has become an important issue, especially for the customer service representatives. The displays of positive facial expressions not only have a huge impact on the employees themselves, but also on job performance and customer satisfaction (Ashkanasy and Daus, 2002). Due to its contagion, facial expressions are able to change the recipients' feeling, and exhibiting positive emotional expression is one of the

factors correlated to the overall service quality (Grandey *et al.*, 2005).

Hence, to improve service quality, service providers need to pay more attention to the employees' emotions in the workplace. As mentioned in the earlier sections, this is commonly known as emotional labour. Since people internalize moods and attitudes around them, they have a tendency to mimic those emotions through the mirror neuron system. Evidence shows that when customers encounter employees with positive emotions, they are more likely to perceive the service as exceeding their expectations (Andrzejewski and Mooney, 2016). By displaying an authentic smile, this contributes to the customers' perception of the service provider's warmth, competence, or trustworthiness, and a sense of skilled professionalism while working (Grandey *et al.*, 2005). In short, the displays of smiles in the service industry benefits both customers and employee satisfaction, as well as the possibility of enhancing customer loyalty (Collishaw *et al.*, 2008).

Cultural differences in presenting and interpreting smiling behaviours

Due to cultural differences, people have different ways of exhibiting their emotions that mirror their inner feelings (Elfenbein *et al.*, 2007). Many cross-cultural studies have been done about the relationship between facial expressions and social interaction (Andrzejewski and Mooney, 2016; Matsumoto *et al.*, 2002; Matsumoto, 1991; Yuki *et al.*, 2007). One common way to define cultures is based on its degree in which people in a society are integrated into groups; that is, collectivism and individualism. According to Matsumoto (1991), collective cultures are associated with countries such as Japan, Korea, and China. People who share this cultural profile care about the needs and objectives of the whole group, and their relationship is inter-connected as well. Hence, displaying facial expression should be controlled in order to maintain the harmony of society. In contrast, emotional display is encouraged among individualistic cultures, such as the USA or Western Europe which value independence or autonomy. Following up on the repercussions of the differences

between collectivism and individualism, Japanese people have a higher tendency to mask negative emotions such as fear, anger or sadness (Matsumoto *et al.*, 2002), or even positive emotions such as happiness (Yuki *et al.*, 2007). On the whole, people with collectivist backgrounds are more likely to control their emotions or facial expression (Collishaw *et al.*, 2008).

On the other hand, there are also cultural variations when it comes to recipients' interpretation of the smile. Matsumoto *et al.* (2002) pointed out that Japanese pays more attention to internal experience. When Japanese observe a facial expression that is less intense, they are likely to interpret that the encoder is feeling emotions more strongly, which is the opposite perception of Americans. Americans would assume that the presenter's expression merely just corresponds to what he or she actually feels.

Methodology

The current research analyzed the distinct characteristics of smiles from people of different gender and ethnicity, and investigated customers' perceptions and attitudes toward different types of smiles during a service encounter. To achieve the stated objectives, there were two phases of study. In phase I, the researcher asked people from different cultures (i.e., Asian and non-Asian) to smile and photographs were subsequently taken. Next, content analysis was done using a face recognition software, *OpenFace*, to identify the different smile features. With the identified characteristics, phase II evaluated people's preferences toward the interpersonal warmth and the attractiveness of the smile displayed by the service representative by using scenarios / questionnaire. Participants were categorized according to the geographical standards defined in United Nations Statistics Division (n.d.): Asian and non-Asian, similar to previous literature which also classified participants as Asian and non-Asian (Nisbett and Miyamoto 2005). Namely, Asian would include people from China, Hong Kong, Macau, Philippine; non-Asian refers to countries in Europe, America, Oceania, and Africa. This research grouped people into Asian and non-Asian, since Asian societies tend to be collectivistic in

nature while non-Asian societies are individualistic (Heckhausen and Schulz, 1999).

Phase I

Sample and sampling procedure

The sample consisted of 210 participants (M=99, F=111) with different cultural backgrounds. In the current study, there were 110 Asians and 100 non-Asians. In an attempt to capture the most generic profiles, data was collected at street intersections in major tourist attractions in Macau (e.g. Ruins of St. Paul's, Senado Square, and Cunha Street). Informed consent was obtained prior to the data collection. Participants were asked to smile before being photographed by the researcher, with no incentive provided. Instructions were given, "Please think of positive / pleasant things when we take a picture of you, and please note that the picture will only be taken once". Finally, demographic information related to participants' nationality and gender was obtained.

Data treatment

Content analysis was applied in phase I. According to Stepchenkova and Zhan (2013), it is a method used to describe a trend of patterns and correlations among a series of images. By applying content analysis to cultural studies, images would be processed based on content and composition (Albers and James, 1988). The former refers to the signs captured in a photo, and the latter refers to the relationship among each photo. In phase I, the intensity of muscle activation of AU6, and AU12 as well as the degree of head inclination were measured by a face recognition software, *OpenFace*. Following that, two-way ANOVAs were conducted for a comparison of Asian and non-Asian participants.

As a face recognition software, *OpenFace* analyzes facial landmark detection, head pose estimation, and facial action unit (AU) recognition with source code. The exact procedures are described as follows. First, after the image(s) were imported, the software detected the face, facial landmarks, as well as the estimated head pose. The face alignment and appearance were then extracted, resulting in the feature fusion and person normalization. Eventually, the outputs were digitized as facial action unit (AU) (Baltrušaitis *et al.*, 2016). AU6,

AU12, and the head pose estimation are the highlights of the present study. The intensity of the muscle activation was measured based on a 5-point Likert scale, where 1 referred to the minimum intensity and 5 referred to the maximum intensity of AU. With regards to the head pose estimation, yaw and roll were analysed. Yaw, the rotation around Y-axis, referred to the left side (+) and right side (-) movement; roll, the rotation around Z-axis, referred to turning left (+) and turning right (-).

Phase II

Sample and sampling procedures

Based on the results of phase I, one picture among each group was selected to represent the most common smiles for the four different categories in phase II: Asian male, Asian female, non-Asian male, and non-Asian female. Pictures were chosen based on the Asian and non-Asian medians of AU values (i.e., AU6 and AU12), and head movement (i.e., yaw and roll) (Table 1). This was to ensure that the chosen pictures were representative of the most commonly displayed smiles. The median was included since the mean was subject to the extreme values. In order to select the most common smiles, phase II used quartiles as reference. It divided data by three points, and each represented a fourth of the distributed sample population: the first quartile (Q1), the second quartile (Q2), and the third quartile (Q3). Q2, the median, was equivalent to 50% of the data. To analyze pictures having the closest values to the median, among all the pictures, phase II selected pictures based on 25% of the lower value and upper value of the medians.

Data collection was processed based on profiles gathered from street intersections at major tourist attractions in Macau (e.g. Ruins of St. Paul's, Senado Square, and Cunha street), and no incentives were offered. The sample consisted of 210 participants (M = 85, F = 115). Of those participants, 154 people were Asians, and the rest of 46 people were non-Asians. The majority of Asians were from mainland China (19.5%), Macau (15.0%), and Taiwan (13.0%); for non-Asians, the main nationalities were Canada (8.5%), Portugal (7.5%), and USA (4.5%).

Table 1. Medians of the smiling characteristics

	AU6	AU12	Yaw	Roll
Asian male	1.35	2.05	-0.97	0.34
Asian female	0.83	1.99	-1.15	-0.46
Asian	1.17	2.02	-1.12	0.17
Non-Asian male	1.60	2.44	1.35	0.14
Non-Asian female	1.59	2.75	0.86	1.72
Non-Asian	1.60	2.58	1.15	0.83
Grand total	1.39	2.30	0.01	0.50

Note: AU6= orbicularis oculi muscles or cheek raiser; AU12= zygomaticus major muscle or lip corner puller; Yaw= movement of left side and right side; Roll= movement of turning right and turning left.

Perceptions toward the smile were examined based on the idea of interpersonal warmth, consisting of unique traits such as politeness, generosity, humbleness, helpfulness, and sensitiveness (Mara and Appel, 2015). Additionally, perceptions towards the attractiveness of the smile were included (Rodrigues *et al.*, 2009). Participants were asked to imagine they were in a hotel reception area and had to rate each smile based on a 4-point Likert scale, where 1 was the lowest score, and 4 was the highest. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of 0.719 for non-Asian male, 0.799 for Asian male, 0.758 for non-Asian male female, and 0.803 for Asian female. Following that, participants had to choose one of the smiles out of the four images that they preferred most during service encounter. The last part included questions related to the demographic information.

Results

Overall, from the perspectives of the displayers, the intensity of AU6 and AU12 muscle activation of non-Asians were higher than Asians. Consistently, non-Asians were more likely to tilt their head when smiling, and particularly to the right side. From the perspectives of the customers, ethnicity played a role in perceiving the smiles of Asian males and Asian females smiling when judging the warmth, and non-Asian male and Asian male's smiling when evaluating the attractiveness. Furthermore, men and women had different perceptions when it came to assessing the attractiveness of the smile displayed by non-Asian females. Finally, gender and ethnicity both affected the perception of smiles from non-Asian females, and whether this was an indicator of warmth. The detailed results of phase I and II are presented below:

Phase I Results

Two-way ANOVAs were conducted to examine the differences of the intensity on muscle activation (i.e., eyes and mouth), and the degree of head inclination (i.e., yaw and roll) based on different gender and ethnicity.

The results showed that there was a statistically significant interaction between Asian and non-Asian males and females for the mean values of AU6, $F(1, 206) = 5.875$, $p = 0.016$, partial $\eta^2 = 0.028$. Hence, an analysis of simple main effects was conducted, showing no significant difference of AU6 between males and females, $F(1, 206) = 2.856$, $p = 0.093$, partial $\eta^2 = 0.014$. However, there was a statistically significant difference between Asians and non-Asians, $F(1, 206) = 27.700$, $p < 0.001$, partial $\eta^2 = 0.119$. Compared to non-Asians, both Asian males and females had a lower intensity of AU6, and among them, Asian females were the lowest. In contrast, non-Asian males and females had a tendency towards greater eye muscle activation, with non-Asian females having the highest intensity (Fig 1).

There was no significant interaction between Asian and non-Asian males and females regarding the mean values of AU12, $F(1, 206) = 1.692$, $p = 0.195$, partial $\eta^2 = 0.008$. Therefore, it was followed by an analysis of the simple main effects for Asians and non-Asians, and the results suggested that there was a significant difference, $F(1, 206) = 14.742$, $p < 0.001$, partial $\eta^2 = 0.067$. However, there were no significant differences among gender, $F(1, 206) = 2.408$, $p = 0.122$, partial $\eta^2 = 0.012$. Therefore, regardless of ethnicity, the intensity of AU12 on females was always higher than males. Besides, a huge difference of AU12 activation existed between Asian and non-Asian females; non-Asian females scored the

highest intensity when it came to activating muscles around the lips (Fig 2).

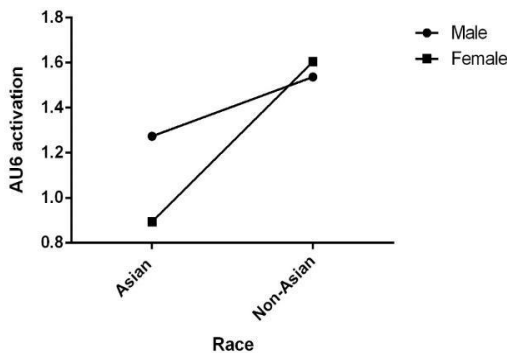


Figure 1. Mean scores of AU6

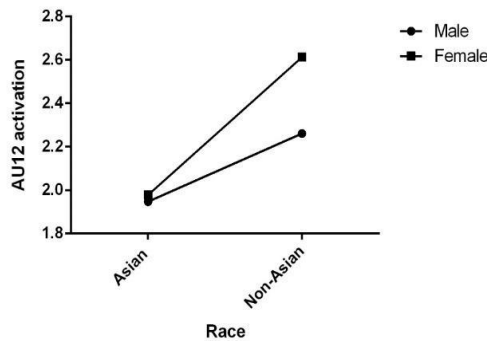


Figure 2. Mean scores of AU12

The findings displayed that there was no statistically significant interaction between Asian and non-Asian males and females on the mean values of yaw, $F(1, 206) = 0.114$, $p = 0.735$, partial $\eta^2 = 0.001$. Hence, following the analysis of a simple main effect, a significant difference existed among Asians and non-Asians, $F(1, 206) = 8.987$, $p = 0.003$, partial $\eta^2 = 0.042$. As can be seen from Figure 3, non-Asians are more likely to turn their head and especially to the right side while Asians had lower degree of inclination. Additionally, non-Asian males' mean scores of yaw was the highest (Fig 3).

Similarly, there was no significant interaction between Asian and non-Asian males and females on the mean values of roll, $F(1, 206) = 1.094$, $p = 0.297$, partial $\eta^2 = 0.005$. Additionally, there was no significant difference

due to gender, $F(1, 206) = 0.003$, $p = 0.953$, partial $\eta^2 = 0.000$, and ethnicity, $F(1, 206) = 1.673$, $p = 0.197$, partial $\eta^2 = 0.008$. The results demonstrated that there was no difference when people rotate their head. Based on the results of this study, the mean values of non-Asians are still higher comparing to Asians, meaning that they have a higher tendency to rotate the head and specifically to the right side (Fig 4).

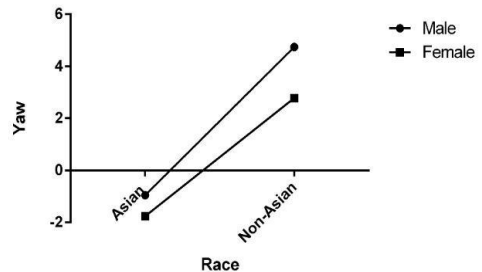


Figure 3. Means of yaw

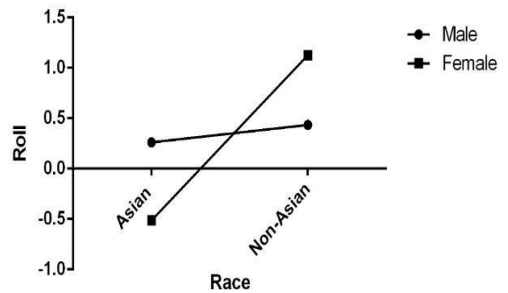


Figure 4. Means of roll

Phase II Results

Two-way ANOVAs were conducted to examine the effects between interpersonal warmth and people's perceptual differences based on their ethnicity and gender (i.e., Asian males / females, and non-Asian males / females). Firstly, for the perceptions towards non-Asian males' smiles, there was no statistically significant interaction between Asian and non-Asian males and females, $F(1, 200) = 1.739$, $p = 0.189$. Therefore, analysis of simple main effects was conducted based on ethnicity, $F(1, 200) = 0.447$, $p = 0.505$. Also, there was no statistically significant difference among males and females, $F(1, 200) = 0.375$, $p = 0.541$. Specifically, male and female Asians and non-Asians evaluated/perceived non-Asian males as coming across warmly, without any differences (Table 2).

With regards to the smiles of Asian males, there was no significant interaction between Asian and non-Asian males and females, $F(1, 200) = 1.149$, $p = 0.285$. Hence, it was followed by a simple main effect, indicating that there was significant difference between Asians and non-Asians, $F(1, 200) = 17.225$, $p < 0.001$. The results showed that there was no statistically significant difference in the mean values between male and female, $F(1, 200) = 2.601$, $p = 0.108$. In short, significant differences arose when it came to judging the interpersonal warmth of Asian males, based on the ethnicity of the participant. Regardless of gender, non-Asian participants scored a higher average higher than Asians (Table 2).

When it comes to the smiles of non-Asian females, the results revealed that there was a statistically significant interaction between Asian and non-Asian males and females, $F(1, 200) = 4.143$, $p = 0.043$. Therefore, analysis of simple main effect was conducted based on ethnicity, showing that a significant difference also existed between Asians and non-Asians, $F(1, 200) = 12.830$, $p < 0.001$. Moreover, there was a significant difference among males and females, $F(1, 200) = 9.440$, $p = 0.002$. That is to say that Asian and non-Asian males and females evaluated non-Asian female's differently when it came to the perception of warmth as a personal attribute As shown in Table 2, regardless of the ethnicity, female participants scored higher than males when it came to the evaluation of interpersonal warmth from non-Asian females. Moreover, the mean of Asian participants in judging the

interpersonal warmth toward non-Asian females is higher than non-Asian participants.

Finally, when it came to evaluating smiles from Asian females, there was no significant interaction between Asian and non-Asian males and females on its mean, $F(1, 200) = 0.050$, $p = 0.823$. Thus, it was followed by the analysis of simple main effect on gender. The results showed that there was no significant difference between males and females, $F(1, 200) = 0.691$, $p = 0.407$. However, significant difference was found among Asians and non-Asians, $F(1, 200) = 5.687$, $p = 0.018$. To be more specific, without gender as a consideration, the mean of Asian participants in perceiving the interpersonal warmth towards an Asian female is lower compared to non-Asian participants (Table 2).

To investigate the effects between attractiveness and people's perceptual differences based on the ethnicity and gender, two-way ANOVAs were conducted. With respect to non-Asian males' smiling, there was no significant interaction between Asian and non-Asian males and females, $F(1, 200) = 0.062$, $p = 0.804$. The analysis of the simple main effect indicated that there was no difference among gender either, $F(1, 200) = 2.394$, $p = 0.123$. Nonetheless, significant differences existed when an Asian or non-Asian perceived attractiveness, $F(1, 200) = 5.932$, $p = 0.016$. As can be seen in Table 3, without considering gender, compared to non-Asians, Asian participants scored a higher mean when it came to perceiving

Table 2. Mean values of people's perceptions in judging interpersonal warmth

Participants	Non-Asian Males' Smile		Asian Males' Smile		Non-Asian Females' Smile		Asian Females' Smile	
	M	SD	M	SD	M	SD	M	SD
Males	2.90	0.56	2.58	0.64	2.60	0.57	3.00	0.60
Females	3.02	0.47	2.73	0.56	2.83	0.54	3.05	0.53
Asian	2.99	0.50	2.58	0.57	2.82	0.54	2.98	0.54
Non-Asian	2.92	0.55	2.95	0.61	2.44	0.053	3.19	0.62
Asian*Males	2.88	0.55	2.41	0.60	2.76	0.53	2.91	0.56
Asian*Females	3.05	0.45	2.68	0.53	2.86	0.55	3.02	0.52
Non-Asian*Males	2.94	0.57	2.93	0.58	2.25	0.49	3.16	0.65
Non-Asian*Females	2.88	0.55	2.98	0.67	2.72	0.49	3.22	0.58

attractiveness. Among them, both Asian and non-Asian females scored higher on attractiveness compared to males.

Second, with regards to Asian males' smiling, there was no interaction between Asian and non-Asian males and females, $F(1, 200) = 3.570, p = 0.060$. Consequently, the analysis of simple main effect showed that there was also no significant difference among gender, $F(1, 200) = 0.002, p = 0.965$. However, statistically significant difference was found in the mean values of Asian and non-Asian, $F(1, 200) = 10.032, p = 0.002$. As shown in Table 3, in any case, Asian participants displayed lower mean values on attractiveness. Among them, Asian males rated the lowest, while non-Asian males had the highest mean scores.

With non-Asian females' smiling, it was found that there was no significant difference between Asian and non-Asian males and females, $F(1, 200) = 3.051, p = 0.082$. Thus, followed by the analysis of simple main effect on the ethnicity; the results showed that there was no significant difference either, $F(1, 200) = 0.711, p = 0.400$. In spite of that, there was significant difference according to gender, when it came to the perception of attractiveness, $F(1, 200) = 6.020, p = 0.015$. In short, female participants scored higher than male participants; particularly, non-Asian females had the highest mean while non-Asian males had the lowest (Table 3).

Lastly, in the case of Asian females' smiling, there was no significant difference between Asian and non-Asian males and females, $F(1,$

$200) = 0.051, p = 0.945$. Therefore, the analysis of simple main effects was done based on gender and ethnicity respectively. The results showed that there was no significant difference between males and females, $F(1, 200) = 0.032, p = 0.858$. Moreover, the significant difference also did not exist among Asians and non-Asians, $F(1, 200) = 0.086, p = 0.769$. Table 3 indicated that Asian and non-Asian males and females evaluated Asian female's attractiveness in a similar way.

Discussion and conclusion

Phase I examined the most common smiles shown by people of different gender and ethnicity. Overall, the results demonstrated that non-Asians who are more individualistic in nature (Heckhausen and Schulz, 1999) have a greater tendency in activating their muscles to express the smile, while Asians who are considered as collectivistic have the reverse tendencies. Specifically, in the case of muscle activation, consistent with previous work, the intensity of mouth muscle activation (AU12) is higher than eyes muscle activation (AU6) when smiling (Kostic and Chadee, 2015). First, it is because a smile expressing amusement occurs more often together with teeth showing (Ambadar *et al.*, 2009). Second, given that it is impossible to ascertain whether someone's smile is fake or not, as long as the smiles are not spontaneous, there is a higher chance of activation in AU12 (Davidson *et al.*, 1990; Ekman *et al.*, 1988). Similarly, if the smile is posed, the eyes muscle activation would be lower (Frank *et al.*, 1993), meaning that there are less chances for people to display crow's feet wrinkles.

Table 3. Mean values of people's perceptions in judging attractiveness

	Non-Asian Males' Smile		Asian Males' Smile		Non-Asian Females' Smile		Asian Females' Smile	
	M	SD	M	SD	M	SD	M	SD
Males	2.85	0.92	2.14	0.92	2.64	0.91	2.94	0.84
Females	3.10	0.74	2.22	0.80	2.89	0.86	2.90	0.82
Asian	3.08	0.81	2.08	0.82	2.82	0.88	2.91	0.81
Non-Asian	2.70	0.81	2.52	0.89	2.63	0.90	2.96	0.87
Asian*Males	2.97	0.94	1.91	0.86	2.76	0.90	2.93	0.81
Asian*Females	3.15	0.73	2.19	0.77	2.86	0.87	2.90	0.81
Non-Asian*Males	2.59	0.84	2.63	0.84	2.37	0.88	2.96	0.90
Non-Asian*Females	2.84	0.77	2.37	0.96	3.00	0.82	2.95	0.85

With regards to head tilts, it is evident that tilting the head occurs more frequently in non-verbal communication (Ambadar *et al.*, 2009; Mara and Appel, 2015), and even in some portrait paintings (Costa *et al.*, 2001). Consistent with our results, all the participants have a tendency to tilt the head when smiling, either to the right or left. Furthermore, due to cultural norms (Krys *et al.*, 2014), non-Asians are often encouraged to present themselves (Matsumoto, 1991); in this case, they tilt their heads more compared to Asians.

Applying these findings to the workplace, since cultural differences exist via emotional expression, one can conclude that there are variations in the way Asian and non-Asian customer service representatives display their smiles. Although the smile serves as a crucial factor for customers in evaluating their satisfaction or perceiving the quality of service provided, the management ought to re-consider the notion that employees can and should only display one universal kind of smile. It would not be suitable to ask an Asian person to smile with lots of teeth showing since it might lead to the feeling of discomfort. The front desk personnel would likely feel awkward or unnecessarily pressurized by doing something totally different from what they usually do. Phase I demonstrated the most common smiles that Asian and non-Asian males and females tend to display, which could also be explained that exhibiting these particular types of smiles are what they feel the most comfortable with. Nonetheless, although there exists a broad spectrum of smiles across different cultures, customers' preferences remain unclear and there is little knowledge on how customers interpret different types of smiles shown by service representatives of different ethnicity.

In conclusion, the agenda of phase II was to examine if different interpretations of preference for smiling behaviour exist in different cultures. Reiterating previous literature, people explain smiles differently (Elfenbein *et al.*, 2007); more specifically, people's perception toward smiles vary from person to person, and from culture to culture (Elfenbein *et al.*, 2007; Matsumoto *et al.*, 2002; Yuki *et al.*, 2007). In general, the findings were consistent with previous literature, showing that

people with different demographic backgrounds interpret or perceive smiles differently. Table 4 provides an outline of which factor(s) influence customers' judgement on smiles from people of different gender and ethnicity.

Customers' perception toward the service agents' interpersonal warmth is important since it serves as the most powerful aspect of a human being's personality in social situations (Williams and Bargh, 2008); service representatives who perform outstandingly well in this dimension are perceived as warm while those who do poorly in this dimension are considered as cold. Interpersonal warmth is evaluated by the politeness, generosity, humbleness, helpfulness, and sensitiveness of the person. The results showed that there were differences when evaluating smiles from Asian males, whereby non-Asian participants perceived Asian males as coming across warmly, more so than the perceptions from Asian participants. In the case of a non-Asian female's smile, female participants perceived a higher degree of interpersonal warmth than males. However, when it comes to an Asian female's smile, both male and female evaluated the smile in a similar way; however, among them, non-Asian participants showed higher mean scores in perceiving the interpersonal warmth compared to Asian participants. Next, without considering gender difference, Asians showed higher mean scores than non-Asians in judging the interpersonal warmth conveyed by a non-Asian female's smile.

Another highlight in phase II is the degree of attractiveness. The results showed that among Asian and non-Asian males and females, there were no differences in judging the smiles shown by non-Asian males, Asian males, non-Asian females, and Asian females. Hence, examining separately, non-Asian male's smile was more attracted to females. On the other hand, when removing gender from the equation, a non-Asian male's smile attracted more attention from Asian participants. There was no significant difference between male and female participants towards the smiles displayed by Asian males; yet, in any case, non-Asian participants perceived their attractiveness higher than Asian participants.

Asian and non-Asian participants perceived both non-Asian and Asian female's smiles without any significant difference. However, in the case of a non-Asian female's smile, participants of different gender interpreted the smile differently.

This paper differs from previous studies which suggest that a common cultural background shared by presenter and receiver would automatically lead to a more accurate judgement and decoding of the intention and meaning behind a smile, since both share the same understanding in non-verbal communication (Matsumoto *et al.*, 2002; Yuki *et al.*, 2007). Nonetheless, our results showed that when evaluating the interpersonal warmth and the degree of attractiveness, Asian participants found smiles from non-Asians more attractive, and conversely non-Asian participants found Asian smiles more attractive. One possible explanation is because of the opposites attract theory; customers perceived the smile as warmer and more attractive when displayed by someone of a different ethnicity (Fallon and Rozin, 1985).

The importance of the findings

To the best of our knowledge, this is the first research project that has investigated the smiles among Asian and non-Asian males and females from the perspective of both the displayers and the interpreters. It presents insights on the general perceptions and preferences towards smiles displayed by people of different ethnicity and gender. Within the tourism and hospitality industries, it is a basic requirement that the representatives

should always exhibit a smile whenever they are approached by the customers. No matter whether the smile is authentic or not, such a gesture is known as emotional labour (James, 1989). However, employees may not know how to display their smile effectively, and it is unclear as to whether customers find their smile favourable.

Therefore, these findings can contribute considerably to tourism and hospitality industries for managerial insights; especially when they provide guidelines to the hotel operators, human resources department and the front desk employees to better understand customers' perceptions and preferences of smiles which vary according to different cultural backgrounds. In order to make employees feel more comfortable at the workplace, one suggestion is that employees could display a smile corresponding to the innate familiarity of their own cultural background since adopting a foreign smile might distress the employees. It further benefits employee training; by doing this, the trainer would know how to educate Asian and non-Asian service representatives separately. In addition, it might be a good idea for the management to think about whether or not to assign a non-Asian service representative to the Asian customers, and the other way around.

Limitations and recommendations for future research

Several possible limitations still exist in the current research. Firstly, the selected pictures might not reflect an actual face-to-face situation although this method is the most appropriate to

Table 4. Summary of the factors influencing customers' judgements

	Gender	Ethnicity	Gender*Ethnicity
<i>Interpersonal warmth</i>			
Asian male's smile	No	Yes	No
Asian female's smile	No	Yes	No
Non-Asian male's smile	No	No	No
Non-Asian female's smile	No	No	Yes
<i>Attractiveness</i>			
Asian male's smile	No	Yes	No
Asian female's smile	No	No	No
Non-Asian male's smile	No	Yes	No
Non-Asian female's smile	Yes	No	No

capture the most common expressions and characteristics in smiling behaviours. Also, previous researchers normally selected groups of people in specific countries for evaluation (e.g. Japanese and American) (Ekman *et al.*, 1987; Matsumoto, 1989); yet, our sample was more general; in which 12 nationalities from Asia and 14 non-Asian nationalities were included. As mentioned earlier, the majority of Asians were from mainland China, Macau, and Taiwan, whereas the non-Asians mainly came from Canada, Portugal, and USA. It must be highlighted that all Asian smiles do not mean the same thing since "Asian" is a very broad term. Therefore, the author suggests that future researchers replicate the methodology to include a larger sample size as well as examine specific cultural backgrounds, such as analyzing participants' demography using Hofstede's cultural dimensions theory in order to get more precise segments. Besides, it is also possible to include the usage of sensor technology such as the eye tracker. In that case, the eye tracking data would disclose customers' visual attention and visual pattern. Put in another way, since there are three different unique characteristics of smiles, it would be interesting to examine whether customers pay more attention to the agents when he or she shows teeth or exhibits crow's feet wrinkles when smiling. Finally, future research could include an actual service interaction to reduce the margin for error brought about by hypothetical vignettes and scenarios.

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