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## Do Facebook profile pictures reflect user's personality?



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### ABSTRACT

Facebook has been gaining popularity ever since it was first introduced and offers the user the chance for self-presentation. This study examines the motivations behind the choice of a profile picture and the image of the user that it gives out. The research was conducted in the form of an on-site visual study evaluating the profile pictures of Facebook's users. Relations between profile pictures and user's personality were examined. User personalities were found to have an influence on choice of profile pictures and profile pictures were found to reflect the user's personality. Our study supports the theory of collaborative learning through learning from peers as results shows that other's choice of profile pictures affects viewer's own future choice of profile picture. If they like the impression made by a particular type of profile picture, they are likely to learn from it and upload the same type of profile picture with the aim of sending the same positive impression.

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### 1. Introduction

Social Media is now ubiquitous in today's world. Almost everyone is involved in social media and the platforms that exist currently are numerous. With the advent of smartphones and tablets, social media usage has also become mobile. Social media platforms like Facebook have provided a new platform for people to share their stories, express their opinions and share information that transcends conventional boundaries such as countries or society groups. Facebook is the largest social networking website with over one billion users as of 2012 and 98% of college/university students are found to possess a Facebook account (Lee, 2011). Zhao, Grasmuck, and Martin (2008) suggested a shift from relative anonymity toward "nonymity" when it comes to online self-presentation. In such an environment there is less actual face-to-face interaction between the user and his/her online friends. Joinson (2008) found evidence that suggest that Facebook profiles are an important tool for self-representation and is used for social capital gratification. Ellison, Steinfield, and Lampe (2007) found that Facebook serves a vital role in students forming and maintain social capital. Users use Facebook to maintain contact with people who they are no longer in physical interaction with in order to keep the relationship alive. Raacke and Bonds-Raacke (2008) found that

friend-networking sites, which includes Facebook, has many uses and gratifications that are met by users.

Therefore, the user has an online identity that he projects through his online actions that is distinct from his/her actual identity. One of the most important ways of doing just that is of course the choosing of a profile picture. This is the accompanying picture that appears with his/her name and the first picture that potential new friends see before they sent a friend request. As such, the profile picture is different from other pictures that the user uploads in the sense that they are available for both existing friends and people outside the user's accepted friend group. Coupled this with the fact that this picture appears for every comment, chat or friend request the user makes, it is easy to understand why a profile picture occupies a prominent position in shaping the user's online identity. In fact some applications such as Wechat has been known to use profile picture to verify a user's account when they forget their password.

There exists several social media platforms such as Twitter, Instagram, Tumblr, Snapchat and the question can arise, as to why Facebook is the chosen social media platform for this research. The most obvious factor lies in the fact that Facebook is the most ubiquitous social media platform and boasts a user base that far exceeds other media platform. Then a case can be made that Facebook is a less specialized social media platform that is used for a wide variety of reasons. Facebook attracts a global audience of over 606 million people (Gonzalez, 2011). For instance, LinkedIn is mostly use by professionals for professional reasons, Snapchat is

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used by those concerned with personal privacy, Instagram is essentially a photo-sharing social media platform whose profile picture is a small thumbnail, and so on. Previous studies have also shown that Facebook has a publicly open structure, looser behavioral norms and greater scope for members to leave cues for each other compared to social platforms like LinkedIn which produced tighter spaces and offers lesser scope for spontaneous interaction and network generation (Papacharissi, 2009).

Although several studies exist that examine the motivation behind the usage of social media platform in general and Facebook in particular, very few exist that look into the reasons behind the choice of profile picture and to the best of our knowledge, none that links Facebook profile picture with the various personality traits of the users. The purpose of this study is to examine the impression that a profile picture gives to viewers and the thought process that goes behind the choice of a profile picture. Although there exist previous research on whether narcissism can be used as a predictor of motivations behind Facebook Profile Picture selection (Kapidzic, 2013), this research will be looking beyond just narcissism as a factor. This study will attempt to determine the common profile picture types that are used, the motivation behind its choice and the impressions that choice of such profile pictures sends out to viewers. This study will explore the co-learning derived from peers' profile pictures and whether choice of profile picture can influence the viewer's prevalent image of the user. Finally, the link between user's personality and their choice of profile picture will be tested.

## 2. Literature review

### 2.1. Social media

More and more people are now using social media and there is a distinct reason for it (Mónica, Luís, Carlos, & António, 2013). People are able to express their "true selves" more easily online as compared to the real world (Marriott & Buchanan, 2014). Turkle (1997) suggested that people use the internet to explore themselves. That everyone has two different entities; 'true' self and 'actual' self have been proposed before (McKenna, 2007). The user is highly motivated to project himself in the best possible way in the virtual world (Emmons, 1987). People with introvert personalities may find themselves more at ease expressing themselves online than in a physical interaction (McKenna, Green, & Gleason, 2002). Tosun and Lajunen (2010) suggested that Internet use is driven by the need for people to compensate for their weakness in actual face-to-face interaction and as a tool for others to maintain long-distance relationships and support daily physical interaction. Tosun and Lajunen (2010) also found neuroticism and psychoticism to have a positive influence in the expression of "true self" online. The information shared depends on the personality traits of the users (Matzler, Renzl, Müller, Herting, & Mooradian, 2008) and various motivational sources.

As mentioned above there are several reasons behind the usage of social media by increasing numbers of people. It is a bit simplistic to suggest that social media usage is driven by the need for people to substitute their inferior face-to-face interaction as social media is also used by a lot of people who are skilled in face-to-face interpersonal relationships. These people use it to widen their social network beyond a physical network.

### 2.2. Facebook

Grieve, Indian, Witteveen, Anne Tolan, and Marrington (2013) suggested that Facebook is distinct from face-to-face connections and that Facebook use has a positive impact on depression, anxiety

and greater satisfaction with life. It is argued in the research that Facebook is helpful for developing and maintaining relationships and has a range of positive psychological outcomes. Facebook serves as tool for revitalizing or maintaining past social ties (Boyd & Ellison, 2007). Karakayali and Kilic (2013) claims that the outcome of actual meetings arising from reinitializing old friendships through Facebook were not always a success story and communication more often than not tends to cease after the initial excitement recedes. Karakayali and Kilic (2013) continue to suggest that Facebook usage exists not just to obtain "personal information" about other individuals but also to observe the relationships between users. Users more likely than not tend to feel guilty about such personal scrutiny of other users and are also conscious of the fact that they themselves may be subject to scrutiny from others. Stutzman and Kramer-Duffield (2010) suggested that Facebook users appear to be more unperturbed by stranger's observation as compare to people in their own social circle.

The choice of a profile picture that is different from the real physical appearance of a person can be used to infer that a discrepancy exists, because the virtual profile picture does not correspond to the real self. Greater the distance, the larger the degree of discrepancy (Suh, 2013). Aronson, Wilson, and Akert (2010) suggested that people experience cognitive dissonance when perceptions exist regarding their self-images, which tends to have a negative effect on an individual's psychological well-being.

Karakayali and Kilic (2013) suggested that information such as the location, companions and time of the picture's user can be obtained from a picture. Pearson (2010) suggested that awareness of the implicit rules of conduct relevant to a particular social media or community is essential to create an image that will reflect well on the user. Factors like aesthetic preferences, color palettes, or subject choice has a huge impact on a viewer's image on the user for instance, in judging whether they are young, immature or of similar mind, etc. More critically is the negative impact a wrong choice can create in causing the user to be disregarded. By understanding the 'rules of conduct' a user can present a positive identity of himself. Secondly, Pearson (2010) also found that for visual aspects to have a value in online impression, there must exist a level of shared symbolic ties that conform to the unspoken in-group rules of reading and writing imagery. Violation of such conformity would indicate a lack of shared history or trust. As such the ability for visual creation, manipulation and deployment is a vital part of an overall individual and social impression management strategy.

Hum et al. (2011) is of the opinion that users are aware of profile picture importance in constructing a positive identity and different identities are being tested through frequent changes in profile pictures. The studies also found that the vast majority of profile pictures are appropriate in nature as users are aware of the fact that future employers may seek out their Facebook profile to analyze their suitability. In fact, users leverage their Facebook pages to give a professional outlook that may be beneficial to their future job prospects. The results also indicate that gender is not a determining factor in the quantity of photos or the materials contained in the photos. It is suggested that both genders aspire for similar perceptions when creating their online identity via their profile picture. Gosling, Augustine, Vazire, Holtzman, and Gaddis (2011) found extraversion as a factor in the prediction of frequency of Facebook usage as well as engagement in the site. Similar to physical socialization, extraverts are more active than introverts even in online environments.

Wang, Moon, Kwon, Evans, and Stefanone (2010) posited that the level of attractiveness of a profile picture as well as the gender of the user has a positive influence on the likelihood of friendship being initiated. The higher the level of attractiveness of the profile picture, the higher will also be the chance of others befriending the

user especially in the case of opposite genders. The profile picture of female users attracts significantly more attention than male users (Seidman & Miller, 2013). Wang et al. (2010) interestingly found that profile pictures that protect the anonymity of the user are preferred to those that are considered unattractive profile picture in terms of choosing users to befriend. Hancock and Toma (2009) found that in online dating photographs selective

self-presentation are chosen to enhance the user’s physical attractiveness without being judged deceptive. Kapidzic and Herring (2014) examine gender differences in choice of profile pictures which are not anonymous and found that girls are much more likely to choose profile pictures that are seductive as compared to boys. Kapidzic (2013) found that narcissistic individuals tend to present themselves in the best possible manner and this can

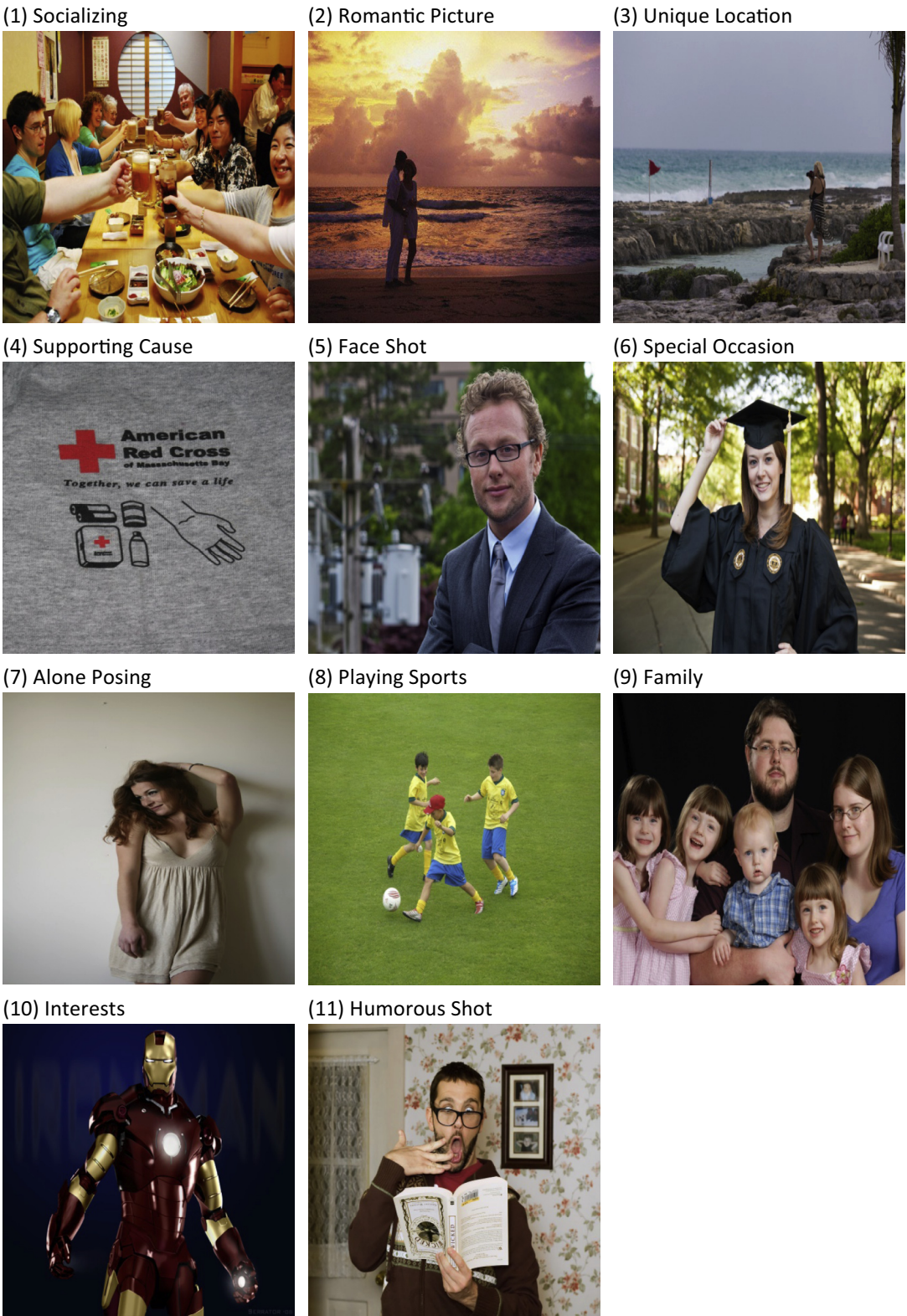


Fig. 1. Picture category.

be reflected in their choice of profile pictures. They will choose the profile picture that better emphasize the user's attractiveness. Narcissistic individuals are more likely to choose profile pictures that display their personality, lifestyle and activities.

Previous studies have shown a positive correlation between extroversion and conscientiousness with the perceived use of social media (Rosen & Klumper, 2008). Extroversion was also found to play a huge factor in determining the size of a user's social network in several studies (Schrammel, Köffel, & Tscheligi, 2009; Selfhout et al., 2010). Agreeableness scores were shown to have a positive correlation with likelihood of being chosen as friends. (Selfhout et al., 2010).

### 2.3. Profile picture categorization

Nosko, Wood, and Molema (2010) tried to categorize profile picture types into self, friends, relationship partner, activity, random picture, family, animal, school and work. However this categorization seems to be too simple and incomplete. Strano (2008) found that the majority of Facebook profile pictures chosen by users are that of an image of the user alone. Strano (2008) also found that people tend to choose profile pictures based on level of attractiveness or perceived fun. The two most common reasons for change of profile pictures tends to be either that the user obtained a more recent photograph or that they are bored of the old one.

## 3. Methods

### 3.1. Participants and recruitment

A sample of 109 participants selected were taken from the researchers' Facebook friend list of 534 friends and are all graduate or post-graduate students. Participants are from over twenty countries to ensure that factors like local cultures, ethnicity, religious beliefs, and traditional norms of different countries do not affect the research. With such a diverse background, it is the hope of this study to ensure that the results of the research will reflect the global world as a whole. Participants include 43 males and 66 females to eliminate the risk of gender bias. Each participant was asked to evaluate the profile pictures of fifteen of their friends as well as their own profile picture. This means that the profile pictures of 1744 Facebook users were evaluated.

### 3.2. Procedure

Participants were offered cash incentives to agree to participate in study under the supervision of one author to ensure that the evaluation of profile pictures was done properly.

#### 3.2.1. Step 1

The first part of the study was done to gauge participants' evaluation of stranger's profile pictures and their categorization into the eleven profile picture categories based on previous researches (Nosko et al., 2010; Strano, 2008) (see Fig. 1).

#### 3.2.2. Step 2

Participants were required to evaluate their own Facebook profile picture to better understand their motivations behind the choice of profile pictures and to gauge the discrepancy when rating other's profile pictures and their own.

#### 3.2.3. Step 3

Participants were required to evaluate 15 of their Facebook's friends from their friend list. The first fifteen friends that appears

on their friends' list are chosen. Facebook coding means that these first fifteen friends are random and not based on frequency of interactions or other factors. Participants are asked to evaluate their friend's profile pictures and record the mutual friends shared as well as the content of the profile picture. They were then asked whether the user's choice of profile picture has an impact on their view of the person and whether their own profile picture reflects their own personality.

#### 3.2.4. Step 4

Participants were asked to take the Ten-Item Personality Inventory quiz to evaluate their personality based on the Big-Five inventory. This was chosen in place of the standard Big-Five instrument in view of the participants' time constraints. The 10-item instrument has been found to be a reasonable substitute for the longer Big-Five inventory when research conditions means that a short measure is the only way (Gosling, Rentfrow, & Swann, 2003). Participants were then required to answer a quiz to evaluate their narcissism based on sound researches (Raskin & Terry, 1988; Twenge, Konrath, Foster, Keith Campbell, & Bushman, 2008). The study ends with the participants recording their country of origin and gender.

### 3.3. Questions design

1. This study's first part contains eleven pictures representing each picture category with the aim of discovering the image that it sends out, the perceived motivations behind its choice and the extent by which it is liked without being affected by the viewer's familiarity with the user. A five point Likert scale was used to gauge the extent that each picture category is liked.
2. The second part of the study is design to make the participants think about the thought process that went into their own choice of profile picture and the category to which they belong.
3. Part three of the study has the participants trying to guess the thought process that went into the choice of profile pictures of his/her friends, the extent to which they liked the profile picture and the level of impact the friend's profile picture has on their own future choice of profile picture. The last part was designed with the intention of finding if co-learning occurs from a user's own virtual social network.
4. Finally, Part IV was designed to test the personality of the participants using the 10-item instrument and a narcissism test to find out whether the user's personality affects the choice of profile picture.

### 3.4. Measure

1. Profile Picture evaluations were done with a single choice multiple options method where the participants chose the option that they considered to be most relevant. The extent by which each profile picture is liked by the participant is measured using a five point Likert scale ("strongly disagree" to "strongly agree").
2. Own profile picture evaluations were done with the same method as above.
3. The level of impact that the profile picture has on their future choice of profile picture, the impact of the user's choice of profile picture on the participant's view of the person and the extent by which the participants own profile picture reflects their personality were all measured with a five point Likert scale (strongly disagree to strongly agree).

The content of the profile picture of their friends were coded with 1 representing a male, 2 representing a female, 3 representing a group and 4 representing others.

4. The Big Five Personality test was based on the Ten-Item Personality Inventory (TIPI) with a 1–7 Likert scale (disagree strongly to agree strongly). The Narcissism test was a single choice between two option quizzes consisting of forty questions. The analysis of the correlation coefficients shows in Table 1.

#### 4. Results

Table 2 indicates the participants' impression of the user of each picture category in the cases of people who are strangers to them. The table showcases the impressions of the participants that each picture category gives. The row depicts the various categories of profile pictures and the column depicts the impression derived from the profile picture. The numbers in brackets indicates the percentage of participants with that particular impression. The mean indicates how much the participants like each picture category. Profile pictures of supporting causes generally gives out the impression that the user is someone who does social work, while profile pictures of special occasions generally gives out the impression that the user is happy. Profile Pictures of Special Occasion are most liked with a mean of 4.01 whereas profile pictures with an object of one's interest are least liked with a mean of 2.72. This is probably because in a profile picture, the viewer expects to see an actual picture of the user himself and a profile with an anonymous picture is not liked. Hence, the picture category showing the cause the user supports is also third lowest because these two picture categories do not show an actual picture of the user (Evans, Gosling, & Carroll, 2008).

Table 3 indicates what the viewer believes to be the user's motivations behind the choice of profile picture, for each picture category. The row depicts the various categories of profile pictures and the column depicts the motivation behind the choice of the profile picture. The numbers in brackets indicate the percentage of participants with that particular motivation. From this table, information can be derived regarding the motivations behind the choice of each picture categories for profile picture. For instance, a profile picture of the user alone posing is mostly chosen because it depicts the user in an attractive manner. While the participants also agree that the most common reason for choosing a face shot as a profile picture is to look attractive, a significant number of participants (10.1%) recorded in their evaluation that face shot pictures are chosen to make the user look professional. Romantic picture are chosen to display the romantic side of the user. Profile pictures of the user player sports are generally chosen to show the user having fun. Profile pictures of a humorous shot are generally chosen to portray the user as a humorous person, and profile pictures of family are generally chosen to portray the user as a family oriented person.

Table 4 indicates the participant's belief of the image that their own profile picture sends to the viewers. The row depicts the various categories of profile pictures and the column depicts the participant's perception of the image sent out by their profile picture. The numbers in brackets indicates the percentage of participants with that particular perception. A quick glance reveals that

the picture category commonly chosen for a profile picture depicts the user alone posing, which is in conformity to previous studies by Strano (2008). Socializing was found to be the most common type of picture chosen by the participants and the majority is of the belief that the image sent out by the choice of profile picture is that of a fun-loving person. The mean depicts how much they like their own profile picture. We can see from this table that the largest percentage of participants wants to send out the image of being fun-loving, followed by being friendly. This is probably because they want to come off as approachable, in order to achieve the objective of seeking friends.

Table 5 depicts the motivation behind the choice of their own profile pictures of the participants, and the picture category that they belong in. The row depicts the various categories of profile pictures and the column depicts the motivation behind the participant choice of their own profile picture. The numbers in brackets indicate the percentage of participants with that particular motivation. A good number of participants chose their profile picture based on their desire to look attractive (17.4%). The reason behind this can be found in previous studies by Wang et al. (2010) that suggested that the level of attractiveness of a profile picture has a positive influence on the likelihood of friendship being initiated. However, the biggest motivation behind the choice of profile picture for the participants was the desire to show them having fun. From the table we can discern that profile pictures tend to be chosen to make the user look attractive, to show them having fun or to show their humorous side.

Table 6 indicates the participants' evaluation of fifteen of their Facebook friends. The row depicts the various categories of profile pictures and the column depicts the impression of the user from their profile pictures. They categorize the type of profile picture of the user and the impression that the profile picture gave. 1635 Facebook user's profile pictures were evaluated in total, which means that a sufficient sample exists to gauge the trend of Facebook's profile pictures. According to the table, the most common chosen picture category was that of the user alone posing (28.93%) and the impression that such a picture tends to give out is that of the user being happy (30.7%) and friendly (15%). From the table we can conclude that a profile picture is usually a picture of the user alone because profile pictures are used to identify the user of the profile. We can also conclude that the impression most users send out is that of being happy and friendly, followed closely by fun-loving and self-conscious. Profile pictures of user's alone posing usually send out the impression of the user as friendly and happy whereas profile pictures of face shot are also likely to send out an impression of being self-conscious in addition to being friendly. Profile picture of family sends out the impression that the user is happy. The mean denotes how much the viewer liked each picture category. The two most used type of profile pictures are of the user alone posing and a face shot. The means are as follows; 3.63 and 3.59. This leads us to believe that in general, these categories are well-liked by viewers. Profile pictures that depict the user's interests instead of an actual picture of the user are least liked with a mean of 3.23. The reason behind this may be the viewer expects

**Table 1**  
Relationship between TIPI and Narcissism.

| Variables            | N   | 1      | 2      | 3      | 4      | 5     | 6 | Mean  | Std. |
|----------------------|-----|--------|--------|--------|--------|-------|---|-------|------|
| 1. Extraversion      | 109 | 1      |        |        |        |       |   | 5.02  | 5.96 |
| 2. Agreeableness     | 109 | .949** | 1      |        |        |       |   | 5.32  | 5.43 |
| 3. Conscientiousness | 109 | .954** | .951** | 1      |        |       |   | 5.48  | 5.39 |
| 4. Emotional         | 109 | .893** | .926** | .901** | 1      |       |   | 4.69  | 3.16 |
| 5. Openness          | 109 | .972** | .958** | .963** | .918** | 1     |   | 5.72  | 5.83 |
| 6. Narcissism        | 109 | -.046  | -.175  | -.094  | -.125  | -.084 | 1 | 15.32 | 7.56 |

\*\*  $p < 0.01$ .

**Table 2**

User's Impression from Facebook profile picture.

|                  | User's Impression |          |           |                |              |           |           |             |           |          |          | Total | Likeness |      |
|------------------|-------------------|----------|-----------|----------------|--------------|-----------|-----------|-------------|-----------|----------|----------|-------|----------|------|
|                  | Fun-loving        | Friendly | Happy     | Self-conscious | Relationship | Active    | Loving    | Social work | Emotional | Nerdy    | Others   |       | Mean     | Std. |
| Socializing      | 25(22.9)          | 15(13.8) | 41(37.6)  | 4(3.7)         | 11(10.1)     | 1(0.9)    | 1(0.9)    | 8(7.3)      | –         | –        | 3(2.8)   | 109   | 3.58     | 0.91 |
| Romantic picture | 8(7.3)            | –        | 6(5.5)    | –              | 36(33)       | 1(0.9)    | 47(43.1)  | –           | 9(8.3)    | –        | 2(1.8)   | 109   | 3.74     | 1.01 |
| Unique location  | 10(9.2)           | –        | 5(4.6)    | 27(24.8)       | –            | 49(45)    | –         | 2(1.8)      | 8(7.3)    | 1(0.9)   | 7(6.4)   | 109   | 3.61     | 0.92 |
| Supporting cause | –                 | 4(3.7)   | 1(0.9)    | 7(6.4)         | –            | 2(1.8)    | 26(23.9)  | 65(59.6)    | 4(3.7)    | –        | –        | 109   | 3.12     | 1.11 |
| Face shot        | –                 | 16(14.7) | 9(8.3)    | 54(49.5)       | 1(0.9)       | 2(1.8)    | –         | 6(5.5)      | 1(0.9)    | 10(9.2)  | 10(9.2)  | 109   | 2.88     | 1.05 |
| Special occasion | 3(2.8)            | 10(9.2)  | 70(64.2)  | 8(7.3)         | 4(3.7)       | –         | 1(0.9)    | 1(0.9)      | 4(3.7)    | 2(1.8)   | 6(5.5)   | 109   | 4.01     | 0.83 |
| Alone posing     | 14(12.8)          | 2(1.8)   | 3(2.8)    | 45(41.3)       | 2(1.8)       | 3(2.8)    | 5(4.6)    | 1(0.9)      | 24(22)    | 2(1.8)   | 8(7.3)   | 109   | 3.55     | 1.18 |
| Playing sports   | 16(14.7)          | 5(4.6)   | 17(15.6)  | 1(0.9)         | 1(0.9)       | 62(56.9)  | 6(5.5)    | –           | –         | 1(0.9)   | –        | 109   | 3.81     | 1.01 |
| Family           | 3(2.8)            | 4(3.7)   | 20(18.3)  | 1(0.9)         | 31(28.4)     | –         | 46(42.2)  | –           | 3(2.8)    | –        | 1(0.9)   | 109   | 3.97     | 0.96 |
| Interests        | 12(11)            | –        | 1(0.9)    | 22(20.2)       | 1(0.9)       | 22(20.2)  | 1(0.9)    | 1(0.9)      | 5(4.6)    | 35(32.1) | 9(8.3)   | 109   | 2.72     | 1.27 |
| Humorous shot    | 44(40.4)          | 4(3.7)   | 5(4.6)    | 6(5.5)         | 1(0.9)       | 4(3.7)    | 1(0.9)    | –           | 12(11)    | 15(13.8) | 17(15.6) | 109   | 3.59     | 1.09 |
| Total            | 135(11.3)         | 60(5)    | 178(14.8) | 175(14.6)      | 88(7.3)      | 146(12.2) | 134(11.2) | 84(7)       | 70(5.8)   | 66(5.5)  | 63(5.3)  | 1199  | 3.58     | 0.91 |

Note: Figures in bracket depicts percentages.

**Table 3**

User's motivations behind choice of profile picture. (Anonymous).

|                  | Motivation |            |          |          |            |           |          |           |          |           |          | Total |
|------------------|------------|------------|----------|----------|------------|-----------|----------|-----------|----------|-----------|----------|-------|
|                  | Attractive | Having fun | Humorous | Romantic | Friendship | Moment    | Family   | Interests | Cause    | Anonymity | Others   |       |
| Socializing      | 8(7.3)     | 47(43.1)   | 1(0.9)   | –        | 20(18.3)   | 28(25.7)  | 2(1.8)   | 2(1.8)    | –        | 1(0.9)    | –        | 109   |
| Romantic picture | 3(2.8)     | –          | 1(0.9)   | 85(78)   | 5(4.6)     | 12(11)    | –        | 1(0.9)    | –        | –         | 2(1.8)   | 109   |
| Unique location  | 7(6.4)     | 7(6.4)     | 1(0.9)   | 1(0.9)   | 1(0.9)     | 18(16.5)  | 2(1.8)   | 68(62.3)  | 1(0.9)   | 1(0.9)    | 2(1.8)   | 109   |
| Supporting cause | 4(3.7)     | –          | –        | 2(1.8)   | 2(1.8)     | –         | –        | 8(7.3)    | 87(79.8) | 2(1.8)    | 4(3.7)   | 109   |
| Face shot        | 59(54.1)   | –          | 9(8.3)   | 1(0.9)   | 1(0.9)     | 8(7.3)    | 1(0.9)   | 5(4.6)    | 1(0.9)   | 13(11.9)  | 11(10.1) | 109   |
| Special occasion | 6(5.5)     | 5(4.6)     | 2(1.8)   | –        | 6(5.5)     | 84(77.1)  | 1(0.9)   | 1(0.9)    | 2(1.8)   | 1(0.9)    | 1(0.9)   | 109   |
| Alone posing     | 87(79.8)   | 3(2.8)     | 2(1.8)   | –        | –          | 3(2.8)    | 2(1.8)   | 6(5.5)    | 1(0.9)   | 3(2.8)    | 2(1.8)   | 109   |
| Playing sports   | 3(2.8)     | 45(41.3)   | 2(1.8)   | –        | 7(6.4)     | 12(11)    | 9(8.3)   | 30(27.5)  | –        | 1(0.9)    | –        | 109   |
| Family           | 1(0.9)     | 4(3.7)     | 3(2.8)   | 4(3.7)   | 5(4.6)     | 16(14.7)  | 75(68.8) | –         | 1(0.9)   | –         | –        | 109   |
| Interests        | 10(9.2)    | 3(2.8)     | 8(7.3)   | 2(1.8)   | –          | 3(2.8)    | –        | 32(29.4)  | 7(6.4)   | 42(38.5)  | 2(1.8)   | 109   |
| Humorous shot    | 3(2.8)     | 20(18.3)   | 56(51.4) | –        | 2(1.8)     | 7(6.4)    | 2(1.8)   | 8(7.3)    | –        | 9(8.3)    | 2(1.8)   | 109   |
| Total            | 191(15.9)  | 134(11.2)  | 85(7.1)  | 95(7.9)  | 49(4.1)    | 191(15.9) | 94(7.8)  | 161(13.4) | 100(8.3) | 73(6.1)   | 26(2.2)  | 1199  |

Note: Figures in bracket depicts percentages.

**Table 4**

Participant's perception of the image send out by own profile picture.

|                  | Participant's perception |          |         |                |          |             |           |         |         | Total | Likeness |      |
|------------------|--------------------------|----------|---------|----------------|----------|-------------|-----------|---------|---------|-------|----------|------|
|                  | Fun-loving               | Friendly | Happy   | Self-conscious | Active   | Social work | Emotional | Nerdy   | Others  |       | Mean     | Std. |
| Socializing      | 21(61.8)                 | 7(20.6)  | 2(5.9)  | –              | 3(8.3)   | 1(2.9)      | –         | –       | –       | 34    | 3.85     | 0.70 |
| Romantic picture | 2(50)                    | –        | –       | –              | –        | 1(25)       | 1(25)     | –       | –       | 4     | 3.25     | 0.50 |
| Unique location  | 1(50)                    | –        | –       | –              | –        | –           | 1(50)     | –       | –       | 2     | 3.50     | 0.71 |
| Supporting cause | 3(37.5)                  | –        | –       | –              | 5(62.5)  | –           | –         | –       | –       | 8     | 3.88     | 0.64 |
| Face shot        | –                        | 1(50)    | –       | 1(50)          | –        | –           | –         | –       | –       | 2     | 4.00     | 0.00 |
| Special occasion | –                        | 3(50)    | 3(50)   | –              | –        | –           | –         | –       | –       | 6     | 4.33     | 0.52 |
| Alone posing     | 5(31.3)                  | 5(31.3)  | 1(6.3)  | –              | 3(18.8)  | 1(6.3)      | –         | 1(6.3)  | –       | 16    | 3.81     | 0.83 |
| Playing sports   | 14(70)                   | 3(15)    | 1(5)    | –              | 1(5)     | –           | –         | –       | 1(5)    | 20    | 3.85     | 0.75 |
| Family           | 1(25)                    | 1(25)    | –       | –              | –        | 2(50)       | –         | –       | –       | 4     | 5.00     | 0.00 |
| Interests        | –                        | –        | –       | –              | 2(66.7)  | 1(33.3)     | –         | –       | –       | 3     | 3.33     | 1.53 |
| Humorous shot    | 2(28.6)                  | 1(14.3)  | 1(14.3) | –              | –        | 1(14.3)     | –         | –       | 2(28.6) | 7     | 3.43     | 0.53 |
| Other            | –                        | –        | 1(33.3) | –              | –        | 1(33.3)     | –         | 1(33.3) | –       | 3     | 3.00     | 2.00 |
| Total            | 49(45)                   | 21(19.3) | 9(8.3)  | 1(0.9)         | 14(12.8) | 8(7.3)      | 2(1.8)    | 2(1.8)  | 3(2.8)  | 109   | 3.83     | 0.80 |

Note: Figures in bracket depicts percentages.

an actual picture of the user in a profile picture and not an anonymous picture.

From Table 7, it can be discerned that the level of influence of each picture category varies. However the average mean of 3.01 means that participants agree that other's choice of profile picture has an influence on their own choice.

Table 8 depicts the extent to which participants agreed that the choice of profile picture has an impact on their view of the user and the extent to which a profile picture reflects the participant's

personality. A five point Likert scale was used. A mean of 3.56 denotes that the majority of the participants agree that the choice of profile picture has an impact on their view of the user. A mean of 3.64 indicates that the majority of the participants believe that their own profile picture reflects their personality. From the results, we can conclude that choice of profile pictures are important as they have an impact on viewer's perception of the user and that participant's agreed that choice of profile picture reflects user's personality.

**Table 5**  
Motivations behind choice of participants' profile pictures.

|                  | Motivations |            |          |          |            |         |         |         |           |         | Total |
|------------------|-------------|------------|----------|----------|------------|---------|---------|---------|-----------|---------|-------|
|                  | Attractive  | Having fun | Humorous | Romantic | Friendship | Moment  | Family  | Cause   | Anonymity | Other   |       |
| Socializing      | 5(14.7)     | 13(38.2)   | 5(14.7)  | 6(17.6)  | –          | 2(5.9)  | 2(5.9)  | 1(2.9)  | –         | –       | 34    |
| Romantic picture | 1(25)       | 1(25)      | 1(25)    | 1(25)    | –          | –       | –       | –       | –         | –       | 4     |
| Unique location  | –           | –          | 1(50)    | –        | –          | 1(50)   | –       | –       | –         | –       | 2     |
| Supporting cause | –           | 1(12.5)    | 2(25)    | 2(25)    | 2(25)      | –       | –       | –       | –         | 1(12.5) | 8     |
| Face shot        | 1(50)       | –          | 1(50)    | –        | –          | –       | –       | –       | –         | –       | 2     |
| Special occasion | 2(33.3)     | 2(33.3)    | 1(16.7)  | 1(16.7)  | –          | –       | –       | –       | –         | –       | 6     |
| Alone posing     | 5(31.3)     | 1(6.3)     | 5(31.3)  | 2(12.5)  | –          | 1(6.3)  | –       | –       | –         | 2(12.5) | 16    |
| Playing sports   | 1(5)        | 10(50)     | 3(15)    | 5(25)    | –          | –       | 1(5)    | –       | –         | –       | 20    |
| Family           | 2(50)       | –          | 1(25)    | –        | –          | 1(25)   | –       | –       | –         | –       | 4     |
| Interests        | –           | –          | –        | –        | –          | –       | 1(33.3) | –       | 1(33.3)   | 1(33.3) | 3     |
| Humorous shot    | 1(14.3)     | 1(14.3)    | 3(42.9)  | –        | –          | –       | –       | 1(14.3) | –         | 1(14.3) | 7     |
| Other            | 1(33.3)     | –          | –        | –        | –          | 1(33.3) | –       | –       | –         | 1(33.3) | 3     |
| Total            | 19(17.4)    | 29(26.6)   | 23(21.1) | 17(15.6) | 2(1.8)     | 6(5.5)  | 4(3.7)  | 2(1.8)  | 1(0.9)    | 6(5.5)  | 109   |

Note: Figures in bracket depicts percentages.

**Table 6**  
Impression of user from their profile picture (friends).

|                  | User's Impression |           |           |                |              |          |          |             |           |          |         | Total |      | Likeness |      |
|------------------|-------------------|-----------|-----------|----------------|--------------|----------|----------|-------------|-----------|----------|---------|-------|------|----------|------|
|                  | Fun-loving        | Friendly  | Happy     | Self-conscious | Relationship | Active   | Loving   | Social work | Emotional | Nerdy    | Others  | Mean  | Std. | Mean     | Std. |
| Alone posing     | 64(13.5)          | 71(15)    | 145(30.7) | 93(19.7)       | 5(1.1)       | 35(7.4)  | 15(3.2)  | 8(1.7)      | 13(2.7)   | 5(1.1)   | 19(4)   | 473   | 3.63 | 2.01     |      |
| Socializing      | 13(14.9)          | 12(13.8)  | 22(25.3)  | 5(5.7)         | 16(18.4)     | 7(8)     | 5(5.7)   | 6(6.9)      | 1(1.1)    | –        | –       | 87    | 3.52 | 1.13     |      |
| Supporting cause | 7(11.5)           | 4(6.6)    | 5(8.2)    | 10(16.4)       | 3(4.9)       | 7(11.5)  | 3(4.9)   | 18(29.5)    | 2(3.3)    | 2(3.3)   | –       | 61    | 3.36 | 1.11     |      |
| Special occasion | 18(15)            | 9(7.5)    | 44(36.7)  | 9(7.5)         | 9(7.5)       | 15(12.5) | 6(5)     | 7(5.8)      | 2(1.7)    | –        | 1(0.8)  | 120   | 3.75 | 0.89     |      |
| Romantic picture | 5(4.5)            | 2(1.8)    | 19(17.1)  | –              | 44(39.6)     | 1(0.9)   | 28(25.2) | 2(1.8)      | 8(7.2)    | 1(0.9)   | 1(0.9)  | 111   | 3.73 | 0.95     |      |
| Humorous shot    | 25(27.8)          | 11(12.2)  | 21(23.3)  | 4(4.4)         | 4(4.4)       | 9(10)    | 10(11.1) | –           | 1(1.1)    | 2(2.2)   | 3(3.3)  | 90    | 3.66 | 1.13     |      |
| Unique location  | 28(17.8)          | 16(10.2)  | 49(31.2)  | 13(8.3)        | 7(4.5)       | 23(14.6) | 2(1.3)   | 4(2.5)      | 6(3.8)    | 1(0.6)   | 8(5.1)  | 157   | 3.82 | 0.99     |      |
| Face shot        | 28(9.9)           | 81(28.6)  | 61(21.6)  | 55(19.4)       | 5(1.8)       | 5(1.8)   | 16(5.7)  | 7(2.5)      | 16(5.7)   | 3(1.1)   | 6(2.1)  | 283   | 3.59 | 1.06     |      |
| Playing sports   | 2(3.2)            | 7(11.3)   | 7(11.3)   | 4(6.5)         | 2(3.2)       | 33(53.2) | 2(3.2)   | 3(4.8)      | –         | 1(1.6)   | 1(1.6)  | 62    | 3.79 | 0.99     |      |
| Family           | 4(4.8)            | 7(8.4)    | 26(31.3)  | 2(2.4)         | 11(13.3)     | 3(3.6)   | 19(22.9) | 3(3.6)      | 4(4.8)    | 1(1.2)   | 3(3.6)  | 83    | 3.95 | 1.16     |      |
| Interests        | 9(11.5)           | 3(3.8)    | 11(14.1)  | 17(21.8)       | –            | 8(10.3)  | 4(5.1)   | 8(10.3)     | 5(6.4)    | 11(14.1) | 2(2.6)  | 78    | 3.23 | 1.13     |      |
| Others           | 3(10)             | 2(6.7)    | 2(6.7)    | 4(13.3)        | 1(3.3)       | 2(6.7)   | 2(6.7)   | 2(6.7)      | 3(10)     | 1(3.3)   | 8(26.7) | 30    | 2.67 | 1.37     |      |
| Total            | 206(12.6)         | 225(13.8) | 412(25.2) | 216(13.2)      | 107(6.5)     | 148(9.1) | 112(6.9) | 68(4.2)     | 61(3.7)   | 28(1.7)  | 52(3.2) | 1635  | 3.63 | 1.41     |      |

Note: Figures in bracket depicts percentages.

**Table 7**  
Level of impact on viewer's future choice of profile picture.

|                  | N    | Mean | Std. |
|------------------|------|------|------|
| Alone posing     | 473  | 3.01 | 1.29 |
| Socializing      | 87   | 2.99 | 1.50 |
| Supporting cause | 61   | 2.85 | 1.30 |
| Special occasion | 120  | 3.06 | 1.31 |
| Romantic picture | 111  | 3.14 | 1.36 |
| Humorous shot    | 90   | 3.16 | 1.31 |
| Unique location  | 157  | 3.25 | 1.45 |
| Face shot        | 283  | 2.87 | 1.20 |
| Playing sports   | 62   | 3.15 | 1.40 |
| Family           | 83   | 3.23 | 1.29 |
| Interests        | 78   | 2.64 | 1.35 |
| Others           | 30   | 2.67 | 2.01 |
| Total            | 1635 | 3.01 | 1.34 |

**Table 8**  
Profile picture impact on viewer's impression of user and profile picture as a reflection of user's personality.

|                          | N   | Minimum | Maximum | Mean | Std. |
|--------------------------|-----|---------|---------|------|------|
| Impact on view of user   | 108 | 1       | 5       | 3.56 | 0.97 |
| Reflects own personality | 108 | 1       | 5       | 3.64 | 1.01 |

The statistically insignificant differences were found between picture categories on extraversion ( $F = 0.337$ ,  $p > 0.1$ ), agreeableness ( $F = 0.182$ ,  $p > 0.1$ ), conscientiousness ( $F = 0.150$ ,  $p > 0.1$ ),

emotional stability ( $F = 0.171$ ,  $p > 0.1$ ), and openness ( $F = 0.234$ ,  $p > 0.1$ ). The statistically significant difference exists on narcissism ( $F = 1.978$ ,  $p < 0.1$ ). However more extraverted users have been known to manifest their personalities in their profile pictures in the sense that they tend to be more involved in the presentation of themselves online than less extraverted individuals (Correa, Hinsley, & de Zúñiga, 2010). Results show that narcissism is a motivator behind the choice of profile pictures which agrees with previous research (Kapidzic, 2013). Ong et al. (2011) also found narcissism to account for self-presentation through self-generated content such as profile pictures. Even with the influence of extraversion, users who are more narcissistic tend to rate their own profile pictures higher and chose profile pictures that are indeed more physically attractive to represent themselves in the virtual world. In accordance with previous researches, user's personalities have had an influence on his/her choice of profile pictures. Frequency of usage of Facebook has also been known to be linked to personality of user (Ryan & Xenos, 2011). Personality factors as defined by the Five-Factor approach were not as influential and are similar to results obtained by previous studies (Ross et al., 2009; Swickert, Hittner, Harris, & Herring, 2002).

Finally, this study tests the effect of gender and nationality (Fig. 2). A two-way ANOVA using impact on view of user as the dependent variable and gender and nationality as the two independent factors showed no significance for main and interaction effects ( $F < 2.75$ ). Furthermore, a two-way ANOVA with self-personality reflection as the dependent variable and gender and

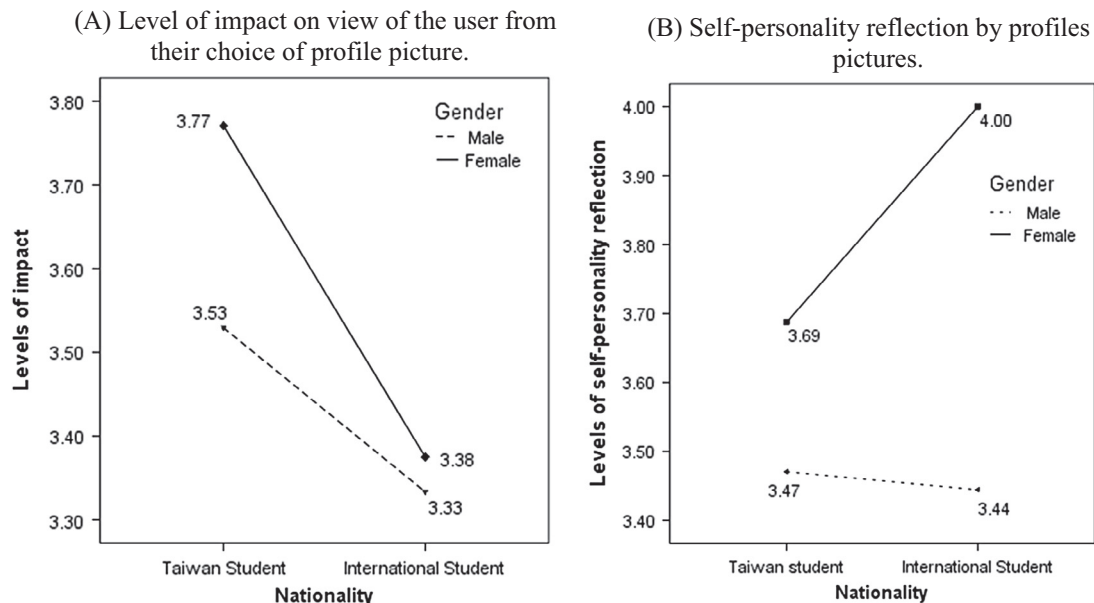


Fig. 2. Effect of nationality and gender on the other personal and themselves.

nationality as the two independent factors showed a main effect only for gender on self-personality reflection ( $F(1,104) = 3.23$ ,  $p < 0.1$ ). Female for international student rated levels of self-personality reflection as significantly higher ( $M = 4$ ) than male for international students ( $M = 3.44$ ). However, all other main and interaction effects for these ANOVAs were non-significant ( $F < 2.75$ ).

## 5. Conclusion

The study found that a majority of the users are aware of the impressions sent by a particular type of picture and often select a certain type of picture in order to send a desired image of themselves to potential viewers. This is in line with previous research that states that Facebook use is motivated by two primary needs: (1) to belong and; (2) self-presentation (Nadkarni & Hofmann, 2012). The choice of profile picture has an impact on viewer's impressions of the user and the choice of a profile picture generally reflects the user's personality. The motive of this study was to explore the motivations behind the choice of profile pictures and the image that it gives out. Users are aware of the important role of profile pictures in giving out a positive impression which supports previous research (Hum et al., 2011). Users tends to choose profile pictures based on what they think makes them look attractive which also supports previous researches. For example, the research that suggested that selective self-presentation is chosen to enhance the user's physical attractiveness without being judged deceptive (Hancock & Toma, 2009). There is a thought process that goes behind the selection of profile pictures in which the users try to choose a profile picture that best emits a positive image to viewers. The type of image varies with users and the extent of its appeal also depends on the viewer. A pattern could discern that for each picture category, a particular impression of the user is commonly given out to viewers. From this, we can posit that by a choice of picture category, the user can send out a desired identity to the virtual community. Profile pictures that do not show the face of the user are generally less liked as compared to those that show the face of the user, which again supports previous studies (Evans et al., 2008). The results were consistent with previous research on interpersonal perception which suggested that the

greater the information about user's personality reflected in photos, the higher the impression agreed on by viewers (Zebrowitz & Montepare, 2008). Others choices of profile pictures have a slight influence on viewer's own future choice of profile picture which suggests co-learning among users in a virtual network. Choice of profile pictures of users were found to have an impact on the viewer's perception of the person showing that profile picture. This can influence people's impression of said user (mean of 3.62). Majority of participants agreed that their own profile picture reflects their personality with a mean of 3.79. From this we can discern, that it is possible to have an idea of the user's personality by looking at user choice of profile pictures. User's personality traits were found to have an influence on the choice of profile picture with more extraverted users selecting more self-representative photos and narcissistic users choosing pictures that are more physically attractive.

To conclude, this study expands on the growing research on identity construction in the virtual world with a focus on choice of profile picture. While previous research (Zebrowitz & Collins, 1997) may have been done on the impact of photos that revealed facial features and hairstyles on impression agreement in viewers, this study extends this literature by categorizing picture types and the impact that the choice of each profile picture type has on the impression of the viewer. Viewer's impressions were also not gauged just by the level of agreeableness as was the case in previous literature but an actual view into the thoughts evoked by each type of profile picture. This study's novelty lies in its unprecedented in-depth research into profile pictures from various aspects where it examines each type of profile picture, the motivation behind the choice, the level of impression agreement it invokes, the impression invoked in the minds of viewers, impact on viewer's own choice of profile pictures, and change in impression of a profile's picture owner after viewing their profile pictures. It presents a first view as to the thought process that goes behind the choice of profile pictures and profile picture's categories with the image of the user that it sends out. Each picture category gives out a certain impression of the user and the extent of its appeal. Anonymous profile pictures are less liked compare to profile picture that contains the face of the user. Profile pictures influence other's choices of profile picture and change other's views of the user reflecting the user's personality. The personality of the user has an

influence on their choice of profile picture which suggests that profile pictures can be used to gauge the user's personality. One approach is the use of Personal Digital Environment which has been found to facilitate the contribution of collective knowledge (Mangione, Orcioli, Ritrovato, & Salerno, 2013). Research found that knowledge-creating can be developed through socialization between individuals (Matsudaira, 2010). Collaborative learning has been found in previous studies (Kabilan, Ahmad, & Abidin, 2010) to exist in Facebook as a useful and meaningful learning environment. Our study supports the theory of learning from peers as results show that other's choices of profile pictures affect viewer's own future choice of profile pictures. If they like the impression made by a particular type of profile picture, they are likely to learn from it and upload the same type of profile picture with the aim of sending the same positive impression. With the importance of social media marketing ever increasing and the need to understand consumer's personalities to design a best suited marketing strategy such studies will become more pertinent.

An important factor to keep in mind is that the participants were from over twenty countries, located over several continents. This was done in an attempt to minimize the influence of cultural differences in the motivations behind the choice of social media. Different cultural values and educational values mean that differences exist among cultures as to the method of usage and the reasons behind it. Previous studies (Kim, Sohn, & Choi, 2011) have found that even if the major motives are similar the weight placed on them must be different.

However some limitations exist in the present study and some suggestions for future research are stated below. Firstly, the research targets graduate and undergraduate students only without expanding into other categories like adolescents, working professionals, kids, retirees etc. Different users group are likely to have different results as their priorities will also be different. Next, the platform chosen for this research was Facebook. With different platforms, the results may be different. For instance for platforms like Twitter, Instagram, Line and WhatsApp the type of profile pictures that a user chooses may differ and a user may use several profile pictures for different platforms. This is because different platforms serve different purposes, for instance Instagram for picture sharing, Twitter for status sharing, and WhatsApp for communication purposes so the thought process that goes behind each choice of profile picture will be different. Another interesting angle will be to look into the recent increasingly pivotal role played by mobile phone (Wu, Chang, & Dong, 2013) and whether it changes the usage of Facebook.

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