

THE INSTAGRAM OLYMPICS:
AN EXAMINATION OF NON-AMERICAN ATHLETES
USE OF INSTAGRAM DURING THE 2016 RIO OLYMPICS

By

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Abstract: Throughout history, athletes have been praised for their talents, success, and physical appearance. Historically, athletes had little control of how they were portrayed in the media as their portrayal was left in the hands of media gatekeepers and journalists. However, the growth and development of social media has given athletes more control of how they are portrayed, as athletes now have control over their self-presentation and self-image, rather than relying on mass media to portray them to their viewers. In turn, it comes into question as to whether mass media has subconsciously influenced how athletes self-present, and if it is similar to how non-athletes are influenced by the mass media. Face-ism research in traditional media report women are more likely to be pictured from a distant perspective than men, highlighting their physical features. Additional research has shown the media to present male and female athletes differently, as the media usually focuses on a woman's sexuality rather than highlighting her athletic ability. This thesis sought to understand how athlete's self-present, and if it is similar to how they are portrayed in the mass media. Furthermore, the thesis looks to understand the similarities and differences in self-presentation between gender, sports, and country. A total of 166 Instagram accounts of athletes from 32 countries were examined to gather information regarding photo frame, self versus family and friends, sport versus experience, and face-ism index. Images posted during the 3-week Olympic time frame were used and examined using the face-ism index. The research indicated that gender roles may not be a large factor in how athletes self-present on social media. Rather, for this hypothesis, it was discovered that gender did not prove to have significant differences in how athletes self-present. It also did not follow the similar trends of non-athletes and traditional mass media. Rather, the major differences in how athletes self-present relied on their country of origin and sport they participated in.

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Introduction

In 776 B.C., Coroebus, a cook in Olympia, Greece, became the world's first Olympian as he won the Olympic's only event, the 192-meter footrace. The Greeks continued to celebrate the Olympics every four years during a religious festival honoring Zeus. Freeborn male citizens of Greece gathered to compete in additional sports, such as long jump, discus and javelin throws, a wrestling match, chariot racing and various footraces to claim the title as an Olympian. By the end of the 6th century, the Olympics had become the most famous of all Greek sporting events. After the Roman Empire conquered Greece in the mid-2nd century, the standards and quality of the games met a rapid decline, and were eventually banned as they were considered a pagan festival. The Olympic Games would not be held again until 1896, when the first modern Olympics would resurrect in Athens, Greece.

One hundred and twenty years later, the Olympics continue to follow the ancient Greek tradition by holding the summer Olympic Games every four years, but strayed away from various aspects of the original Games. For example, in the 1900 Paris Games, Olympic participation was opened to allow both male and female athletes to compete. More events were, and continue to be, added (and eliminated) every Games to accommodate athlete participation, including croquet, softball, sailing, and many others. Athletes train for countless hours to become their country's next Olympian, and the International Olympic Committee spends years developing new facilities and arenas in preselected cities across the world. In 2016, the IOC hosted the 31st Olympic Games in Rio de Janeiro. More than 11,000 male and female athletes and 206 National Olympic Committees gathered in Rio to compete in 28 various sports. Analysts have deemed the Rio

Olympics to be the most watched in Olympic history with a worldwide audience of 3.8 billion tuned into the Olympic Games (*NBC Sports*).

In an adapting age of technology and social media, the Olympics have become the most glorified sporting event in the world. With instant access to information, viewers across the world can follow their favorite team and athletes through television, online streaming, and social media to obtain instant results and information. Images of athletes are spread throughout mass consumerism, as athletes appear on everything from the cover of *Sports Illustrated*, to a commercial for Brita water filters. The growth of social media has also increased access to specific athletes, as viewers can follow their favorite athletes on platforms such as Facebook, Twitter, and Instagram. In turn, an athlete has complete control over their self-presentation and self-image, rather than relying on mass media to portray them to the viewers.

However, the mass media is claimed to have an ambiguous role in how athletes self-portray on social media, as many researchers believe the media is to blame for the stereotypical images of women prevalent in society (Duggan & McCreary, 2004; Fernandez & Pritchard, 2012; Grogan, 2008; Wolf, 1991). These issues are important, as it questions how athletes self-present on social media sites, and if the mass media has played affected their social media behavior. Many studies analyze the difference in the portrayal of male and female athletes in the media, but little research exists on the way athletes self-portray on their social media platforms. Social media is an industry that is increasing the control of an individual's self-presentation, and it is important to understand the influence, if any, the media has on one's self-presentation. By utilizing the Face-ism Index, Baumeister and Hutton's self-presentation theory, and heteronormative stereotypes for athletes, the following thesis will discover how athletes self-present on social media.

Theory

Research on face-ism and self-identification has analyzed gender differences and how individuals portray themselves on social media. However, the proposed thesis will research beyond gender and sexuality to include the potential influence athleticism may have on face-ism and self-identification. Specifically, this thesis will focus on Olympic athletes to gather research and information. Using Olympian's Instagram profiles, conducted research will focus on areas such as gender, country, face-ism ratio, selfie type, position type, photo type, and individuals presented in the photos. Research will analyze how these different factors influence self-identification, and if there are Olympic athletes succumb to self-presenting in ways that emulate the methods of the media. This thesis will benefit the study of face-ism and self-identification as it will uncover the similarities and differences between Olympic athletes, day-to-day individuals, and the effects of mass media on self-presentation.

Review of Literature

Portrayal of Athletes

Before the eruption of social media, print media had complete control of how athletes were displayed to the public. Despite an individual's athleticism, the media frequently presents male and female athletes in gender-stereotypical fashion. As sports have been historically considered an activity for males, male athletes are depicted in the media as powerful, independent, dominating, and valued (Hilliard, 1984; Messener, 1988; Sabo & Jansen, 1992; Trujillo, 1991). Narratives of male athletes focus on their athletic talent and achievement, and are notably longer than most highlights on female athletes (Knight and Giulano, 219).

As femininity is opposite of masculinity, women that played sports were, historically, considered unfeminine (Kane, 1989). Female participation is inconsistent with society's prescribed idea of the female role, and as a result, leads the media to emphasize on other "feminine" qualities of the athlete (Kane, 1996). Female athletes are overcompensated for their feminine qualities as sport commentators and writers often allude or explicitly refer to a female athlete's attractiveness, emotionality, femininity, and heterosexuality (Hilliard, 1984; Messener, 1988; Sabo & Jansen, 1992; Trujillo, 1991). Female athletes are sexually objectified and judged not on their athleticism, but on their attractiveness and overall role as a woman (Daniels & Warten, 2011). Most narratives on female athletes focus on their roles outside of the sports arena, and they hone in on their role as a wife, mother, daughter, or other feminine role model (Fink, 1998).

Athlete Self-Presentation

The media's role in an athlete's portrayal to the general public has changed as social media has opened up an individual's world to the public eye. Anyone, in this specific case Olympic athletes, has the opportunity to expose their lives to their followers. Male and female athletes have the power to self-present online in various ways, all of which they have control over. However, there is interest in the way athletes self-present, and if they, even unwittingly, have adopted the gendered, stereotypical portrayals traditionally seen in the mass media (Smith & Cooley, 2012; Smith & Cooley, 2013). This expands past the traditional studies of how non-athletes are portrayed in the mass media, as the focus in on the overcompensation of promoting femininity in a female athlete.

The Self-Presentation Theory, as explained by Baumeister and Hutton (1987), is controlled by two working factors, "self-construction" and "audience pleasing." Together, these

two factors determine how an individual will self-present. The audience-pleasing factors varies according to the individual, as individuals have different audiences, preferences and situations. In this case, an athlete will present differently on Instagram than a college student will. This factor will also vary based on the influence an audience has for an individual, and the dependence upon the audience (Baumeister & Hutton, 1987).

The self-constructive motive is expected to remain stable, as the overall goal is to impress, manipulate or influence the audience to benefit the self-presenter. Baumeister and Hutton (1987) proposed that a stable disposition should lead to self-presentations that are consistent across contexts and audiences. For example, the Olympic athletes of interest will, overall, have a common self-presentation as many focus on a similar audience. Athletes may focus more on their athletic abilities, accomplishments, and body image to present themselves as powerful, successful, and attractive to the audience.

Hogan (1982) further explains self-presentation as motivated by two fundamental needs of human social life: popularity and status. This is fitting for a growing generation fueled by “Likes,” followers, and shares, as the main goal is to gain as many followers and obtain as many likes without actually having social interaction with a majority of their followers. Leary (1996) further explains self-presentation by focusing on nonverbal behaviors. Leary’s nonverbal behavior tactics refer to expressions of emotions, physical appearance, gestures, and movement. Physical appearance is significant, as being attractive is considered positive and is typically associated with positive attributes, such as intelligence, dominance, socially skilled, and adjusted (Leary, 1996).

Athletes may reap the benefits of nonverbal presentation through physical appearance more, as they have the ideal physique determined by society (Davis & Cowles, 1989). Researchers have found that athletes report lower or similar body image concerns compared to

non-athletes (Anderson, Zager, Hetzler, Nahikian-Nelms, & Syler, 1996; Fulkerson, Keel, Leon & Door, 1999; Hausenblas & Mack, 1999), and may self-present in a way that emphasizes their physical appearance and ability to further promote an attractive perception to their audience. This factor may vary across genders, as male athletes are typically portrayed in ways that emphasize their athleticism, while media regarding a female athlete focuses on feminine qualities outside the sport. That is, of course, if Olympic athletes' self-presentation is influenced by the mass media.

Impression Management

These theories of self-presentation are what Leary (1993) refers to as “impression management.” Leary defines impression management as “the management of others’ impressions of a social unit such as people or organizations” (p.3). Leary further explains that “our behavior is...constrained by our concerns with others’ impressions” (p.3). While many studies refer to face-to-face impression management, there is a distinction between that and online impression management. Online impression management differs, as it allows users to “inspect, edit and revise” their photos and posts before making it available to their followers (Walther, Slovacek, & Tidwell, 2001. p. 110). An individual is able to control the message, and can therefore present themselves in any way they want their audience to see.

As mentioned earlier, self-presentation is motivated by two fundamental needs of human social life: popularity and status. Impression management furthers these aspects, as people also have needs that influence their online impression management. Brewer (1991) explains that people have needs to be both unique and the need to similar to others, in which he termed the “personal self” and the “social self.” The personal self presents an image of the idiosyncratic aspects of the self, while the social self reflects information about the groups to which an individual belongs (1991). Social context influences an individual’s personal self, as one’s social

influence and standing plays a part in how they are personally viewed. Typically, an individual will find a balance between these two to place themselves in the most positive and influential light to avoid disclosing vulnerable characteristics or weaknesses (Staculescu, 2011).

Face-ism Index

Measurement of self-presentation and impression management can be completed through a measurement of ones “selfies.” The face-ism index analyzes the differences in facial prominence in photos of males compared to females (Archer, Iritani, Kimes, & Barrios, 1983). The research will use the face-ism index to further argue that Olympic athletes reflect the heterosexual and stereotypical presentations found in the mainstream media. Therefore, it is important to understand the measurements of the face-ism ratio to adequately understand the research results.

The face-ism index was created to analyze facial prominence in both mass media and fine art (Archer, 1983). The index is expressed as a ratio, in which the numerator measures the distance from the top of the head to the lowest point of the chin. The denominator measures the distance from the top of the head to the lowest visible part of the body. The face-ism index can range from a score of zero, in which no face is visible in the picture, to 1.00, where the picture only shows the face with no other part of the body visible.

When Archer first began his study, they used the index to analyze periodicals from the US, global artwork from different centuries, magazine photographs from 11 countries and drawings. They discovered that men had a greater focus on their faces than their bodies than women did across all media. The same individual with more facial prominence was determined to also be more intelligent and ambitious than those who showed more body prominence. The researchers concluded that a “prototypically male” includes a focus on the facial structure, while

the “prototypically female” will have a lower ratio, as more of a female’s body is typically displayed in an image.

Additional face-ism research has been completed to support Archer’s theory on male versus female face-ism ratios. A study completed in 2007 by Szillis and Stahlberg concluded a face-ism effect for online photos of college professors and politicians, where males were shown with significantly more facial prominence than females. In support, Smith and Cooley (2012) examined 1400 online profile pictures from seven nations, and they found that men had a significantly higher facial prominence than women across multiple cultures.

In association, complimenting studies regarding facial prominence determined that a high degree of facial prominence elicited more positive attributes in general. Individuals with a higher facial prominence, mostly males, were perceived to be more active, intelligent, assertive, and independent than those depicted with a low degree of facial prominence (Schwarz and Kurz, 1989). Archer’s work also found that gender differences affected interpersonal perceptions, such as higher facial prominence correlating with higher intelligence, assertiveness, and ambitiousness.

Research Questions and Hypotheses

For this research, the face-ism ratio is specifically important, as female athletes are typically deemed to have a lower face-ism ratio than their male counterparts. Face-ism ratio will assist in the evaluation of research regarding heteronormative appearances, and if athletes self-present in stereotypical and gender-based ways. The research aims to determine how Olympic athletes self-presented during the Rio Olympics on Instagram, and how the face-ism ratio, heteronormative standards, impression management, and the Theory of Self-Presentation effect their images. Therefore, the first question is:

- RQ1: How do athletes use Instagram during the Olympics?

- H1: Male athletes will have a significantly higher number of images that are true to the face-ism index, and thus more likely to display facial-centric images.
- H2: Female athletes will have a significantly higher number of images that are true to the face-ism index, and thus more likely to display body-centric images.
- RQ2: How do gender, sport, and country influence how athletes portray themselves on Instagram?
 - H3: Male athletes will have posts that emphasize their strength and athleticism.
 - H4: Female athletes will post images that emphasize their feminine nature.

Methodology

Sample

Systematic random sampling was used for the present study examining the Instagram accounts of Olympic athletes who competed in the 2016 Rio Summer Olympics. General data was gathered through the official Olympic website, www.olympic.org/rio-2016, specific country's official Olympic websites, and athlete's Instagram accounts. Athletes were chosen based on criteria that will be explained throughout the methodology.

Country

The official Olympic website was accessed to verify which countries participated in the Rio 2016 Olympics. Each page had a basic biography that included a country's Olympic Committee title, address, phone number, fax number, email, website, and various details about each country. Countries were ciphered based on the presence of a country's official Olympic

website on the page. If a website was listed, the countries were included in the data. Countries were going to be categorized by mandated state religions, however, the only athletes with Instagrams were those from countries that were mandated Christian or did not have mandated religions.

In total, 32 out of the 206 countries represented during the Rio 2016 Olympics were analyzed. Countries that met the criteria for sampling were Albania, Australia, Austria, Bahamas, Barbados, Belgium, Bermuda, Brazil, Canada, Cape Verde, Cayman Islands, Colombia, Costa Rica, Croatia, Czech Republic, Dominica, Dominican Republic, Estonia, Finland, France, Great Britain, Honduras, Hungary, Ireland, Italy, Jamaica, Mexico, New Zealand, Norway, Portugal, South Africa, Sweden, and Switzerland. Each country that met the criteria was reviewed under further guidelines.

If a country's official Olympic website included updated biographies of their 2016 Olympic competitors, the country and its athletes were used for the large data. Each biography had to include the athlete's name and sport. Some country's included athlete's statistics, Olympic history, a short biography, and links to social media accounts. While these aspects were not necessary to be included in the data, they did assist in the search for athlete's Instagram accounts.

Athlete

Athletes of interest were searched using a country's official Olympic website, Google search engine, various articles, and the Instagram search engine. Both athletes who did and did not have an Instagram were entered into an Excel spreadsheet, which would then be narrowed down to contain only the Olympic participants who posted during the Olympics. As research was conducted over a month long period, the images of interest could fall between a 28-35-week period. This compensated for a three-week Olympic time period and research analysis.

Athletes were categorized based on sport, gender and country. Gender was categorized by male or female. Sport was categorized by archery, badminton, basketball, boxing, cycling, diving, field hockey, golf, handball, rowing, shooting, soccer, swimming, taekwondo, tennis, canoe, equestrian, fencing, gymnastic, judo, pentathlon, rugby, sailing, table tennis, track and field, triathlon, volleyball, water polo, weight lifting, and wrestling.

As countries varied in athlete participation, 4,168 of 11,237 athletes were analyzed for a number of variables including the number of photos posted during the Olympics, the photo type, the type of people in the photo, whether it was a selfie or not, whether the image was heteronormative, the experience type, the photo type, the duckface, body positioning, and face-ism.

Gender

Once cleaned, data indicated that of the total population of athletes ($N=4,166$), 55.3% were male ($n=2,302$) and 44.7% were female ($n=1,864$). Images were also analyzed for heteronormative behavior from the athlete. Heteronormative standards were based on stance, photo type, “duck face,” and findings listed in the literature review. Photo type analyzed whether the image was a portrayal of the sport the athlete participated in or the overall experience of the Olympics.

Stance of the athlete was categorized by x-static, s-curve and c-curve. Static position is when the subject is standing straight and facing the camera. S-curve is a female pose where the body is shaped in the S position, with one shoulder tilted toward the extended hip. Body weight is positioned on the leg under the extended hip with the intention of producing curves and making the model look slimmer. C-curve is a masculine pose where the subject’s head and shoulders are curved forward, typically with the arms flexed to accentuate muscle definition. This pose is also

prevalent when the subject is sitting, and the subject's head and body are tilted forward to create a C shape. Data indicated that Instagram athletes used the X-static shape 52.6% ($n=647$) of the time, with Other ($n=4-9$, 33.3%), s-curve ($n=157$, 12.8%), and c-curve ($n=15$, 1.2%) following.

Heteronormative behavior was also examined through information established in the literature review. In relation to athletes, it is believed the media focuses on a female athlete's attractiveness rather than their athletic ability (Duggan & McCreary, 2008; Krane, 2001). The role as a female athlete is considered to be inconsistent with traditional gender roles, as sports have historically been considered a male activity (Lenskyj, 1987; Krane, 2001). The media "tend to represent female athletes as women first and as athletes second" (Knight & Guiliano, 2001). If athleticism is portrayed, it is typically posed while male athletes are shot in action. Male athletes are also rarely displayed as fathers, sons, and husbands in the media. Furthermore, heteronormative behavior was based on the individual's stance, relationship depicted in the image, and the use of the "duck face." In total, 1,089 (88.5%) of images were deemed to represent the athlete in a heteronormative manner, while 139 (11.3%) of the images were deemed not heteronormative.

Coders examined images for the "duckface," an exaggerated pouting of the lips (Oxford, 2015). Data indicated that Instagram users used a duckface 1.0% ($n=12$), of the time but most users do not pose in that manner ($n=1214$, 98.7%).

Selfies and Photo Frame

Selfies were analyzed with a basic "yes" and "no" response. Originally, the "photo frame" category focused strictly on selfies. As the selected sample had minimal selfies, the coders changed the category to include all images, not just selfies. Coders categorized images by shot

type. Criteria and operational definitions for shot type were based on the six categories established by Clark (1997):

1. Close up: when the frame includes only the face or certain details of the face
2. Portrait: when the shot includes the face or the face & shoulders
3. Half-bust: when the bottom border of the photo corresponds to the line just below the chest
4. Half-figure: when the person is cut off at the waist
5. American shot: when people are cut off at knee level
6. Whole figure: when the subject is fully pictured

Two additional categories were added to code for, including “body parts,” whereby a user would post a portion of their body with no head or just a body part. The “other” category was used for images focused on various aspects of the Olympics, but did not include the athlete. After the total images ($N=1,228$) were coded, the seven categories were used to classify the types of images that were being portrayed: close-up (5.6%, $n=69$), portrait (0.5%, $n=6$), half-bust (14.6%, $n=180$), half-figure (23.6%, $n=290$), American (7.3%, $n=90$), whole figure (40.3%, $n=496$), body part (1.6%, $n=20$), and Other (6.3% $n=77$). As Ryan & Nichols (2015) did, the selfie categories were broken into two groups: face-centric ($n=75$, 6.1%)—which included close up and portraits shots—and body-centric images ($n=1,076$, 87.6%)—which included half-bust, half-figure, American, whole figure, and body part shots.

Face-ism

Images were measured using the criteria of the face-ism index, which calculates facial dominance in a photo. In order to determine this dominance, two measures were taken: “the distance in a depiction from the top of the head to the lowest point of the chin... [and] the distance

from the top of the head to the lowest visible part of the subject's body'' (Archer et. al., 1983, p. 726). The measurement of the head was then divided by the measurement of the body to create a ratio. As noted by Peng et al. (2008), the ''ratio nature of the face-ism index warrants high inter-coder reliability and advantages in statistical analysis'' (p. 12).

Findings

The purpose of this study was to examine how non-American athletes used Instagram during the 2016 Rio Olympics. To answer RQ1, the number of countries ($N=32$) and athletes participating in the Olympics ($N=4,166$) were examined by sourcing official Olympic websites. Of these athletes, 55.3% were male ($n=2,302$) and 44.7% were female ($n=1,864$). These athletes participated in 31 different sports. A breakdown of the sports by gender can be found in Table 1.

Next, the number of athletes who had Instagram accounts was determined. The majority of athletes participating in the Rio Olympics had Instagram accounts ($n=2,460$, 59.0%). However, only 5.4% of those athletes posted during the actual Olympics ($n=133$). The number of pictures that each athlete posted during the three weeks of the Rio Olympics varied from three to 35. In total, 1,331 images were posted by non-American athletes during the Olympics. The breakdown of where these athletes are from and their gender distribution by country can be found in Table 2.

To further explore RQ1, the types of images posted by athletes during the Rio Olympics were examined. The independent variables of phototype, photopeople, selfie, heteronormative, and stance will be explored in the following paragraphs.

Phototype

For the independent variable of phototypes, data indicated most athletes posted images that were oriented toward their experience ($n=787$, 64.1%) over featuring their sport ($n=398$, 35.9%). Chi-square test of independence were calculated comparing the distributions of this

variable between gender, sport, and country. No significant interaction ($\chi^2 (1) = 1.94, p > .091$) was found between the phototype groups of sport versus experience to men versus women, indicating no significant differences in how athletes presented their experiences on Instagram by gender. Thus, answering H3 and H4—men and women had the same patterns of posting images featuring their sport and experience.

Chi-square tests of independence were also calculated comparing the distributions of phototype images (sport, experience) and the sport the athlete is competing. Data suggested significant differences ($\chi^2 (29) = 107.02, p < .001$) between groups, indicating some athletes were more likely to post about their experience than their sport. A breakdown of these posts can be found in Table 3a. Chi-square tests of independence were also calculated comparing the distributions of phototype images (sport, experience) by country. Data suggested significant differences ($\chi^2 (28) = 102.32, p < .001$) between groups, indicating athletes from certain countries were more likely to post about their experience than their sport. A breakdown of these posts can be found in Table 3b.

Photo People

For the independent variable of Photo People (self, family/friends), data indicated roughly half of the images posted by athletes were of themselves ($n=607, 49.1\%$) and half included family and friends ($n=629, 50.9\%$). Chi-square test of independence were calculated comparing the distributions of this variable between gender, sport, and country. No significant interaction ($\chi^2 (1) = .455, p > .269$) was found between the photo people groups of self and family/friends to men versus women, indicating no significant differences in how athletes presented their pictures on Instagram by gender. Chi-square tests of independence were also calculated comparing the distributions of Photo People images (self, friends/family) and the sport the athlete is competing.

Data indicated significant differences ($\chi^2 (29) = 130.28, p < .001$) between groups, suggesting a relationship between types of sport and whether the athlete posted images with family and friends. A breakdown of these posts can be found in Table 3a. Chi-square tests of independence were also calculated comparing the distributions of Photo people and country. Data suggested significant differences ($\chi^2 (31) = 123.18, p < .001$) between groups, indicating athletes from certain countries were more likely to post images with family and friends than others. A breakdown of these posts can be found in Table 3b.

Selfie

For the independent variable of Selfie, data indicated only a quarter of male (22.5%, $n=129$) and female (22.5%, $n=163$) athletes took selfies, with no significant differences between the groups ($\chi^2 (1) = .772, p > .209$). Chi-square tests of independence were also calculated comparing the distributions of selfie and the sport the athlete is competing. Data indicated significant differences ($\chi^2 (28) = 66.06, p < .001$) between groups. Chi-square tests of independence were also calculated comparing the distributions of selfie and country. Data suggested significant differences ($\chi^2 (31) = 50.36, p < .015$) between groups, indicating athletes from certain countries framed their images differently than athletes from other countries.

Photo Frame

For the independent variable of Photo Frame (Close-up/Face, Portrait, Half-bust, Half-figure, American Shot, Whole figure, Body Part, Other), data indicated Whole Figure to be used most frequently ($n=496, 40.4\%$), followed by Half-figure ($n=290, 23.6\%$), Half-bust ($n=180, 14.7\%$), American Shot ($n=90, 7.3\%$), Other ($n=77, 6.3\%$), Close-up ($n=69, 5.6\%$), Body Part ($n=20, 1.6\%$), and portrait ($n=6, .5\%$). Chi-square test of independence were calculated comparing the distributions of this variable between gender, sport, and country. No significant

interaction ($\chi^2(1) = .455, p > .269$) was found between the photo framing and gender, indicating no significant difference in how male and female athletes framed their Instagram images. Chi-square tests of independence were also calculated comparing the distributions of Photo Frame and the sport the athlete is competing. Data indicated significant differences ($\chi^2(196) = 361.64, p < .001$) between groups, suggesting a relationship between the framing of the image and the type of sport the athlete played. A breakdown of this relationship can be found in Table 4a. Chi-square tests of independence were also calculated comparing the distributions of Photo Frame and country. Data suggested significant differences ($\chi^2(217) = 272.78, p < .006$) between groups, indicating athletes from certain countries framed their images differently than athletes from other countries. A breakdown of these posts can be found in Table 4b.

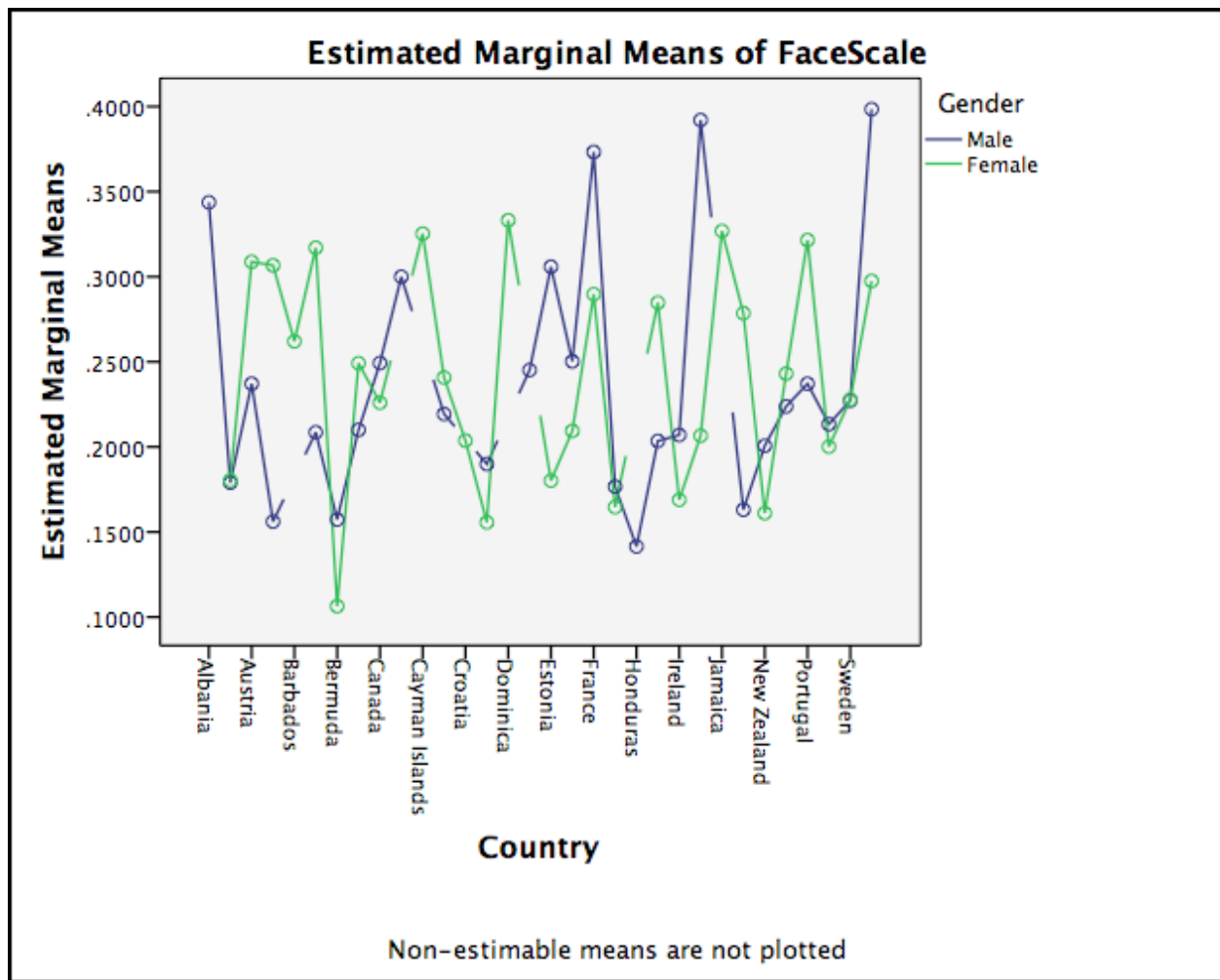
Facial Prominence

To understand whether athletes model their self-portrayals on Instagram using the same patterns as mass media, RQ1 examines the tenets of face-ism. Specifically, H1 & H2 posit that male and female athletes will replicate the same patterns of framing that are presented in mass media—where men are more face-centric and women are more body-centric. In order to explore these predictions, gender and the face-ism ratio were analyzed through a one-way ANOVA. No significant differences ($F(1) = .128, p < .720$), were found between the presentation of male ($\mu = 0.24, SD = 0.23$) and female ($\mu = 0.24, SD = 0.22$) athletes were found. Thus, H1 & H2 are not supported.

To further answer RQ2, the face-ism index was also analyzed by sport and country. A one-way ANOVA indicated significant differences ($F(28) = 2.109, p < .001$) in face-ism and sport, where had the boxing ($\mu = 0.352, SD = 0.23$) and weightlifting ($\mu = 0.342, SD = 0.23$) had the most body-centric image reflecting male mass media portrayals, and archery ($\mu = 0.039, SD = 0.08$) &

equestrian ($\mu= 0.787, SD=0.20$) had the most face-centric images reflecting female mass media portrayals. See Table 5b for details.

A one-way ANOVA also found significant differences ($F(31) = 2.103, p<.001$), were found between country and face-ism index, where Switzerland ($\mu= 0.356, SD=0.27$) and Albania ($\mu=0.343, SD=0.24$) had the highest body-centric images, and Bermuda ($\mu= 0.136, SD=0.19$) and Honduras ($\mu= 0.141, SD=0.12$) had the most face-centric images. See Chart 1 and Table 5b for discernable country patterns.

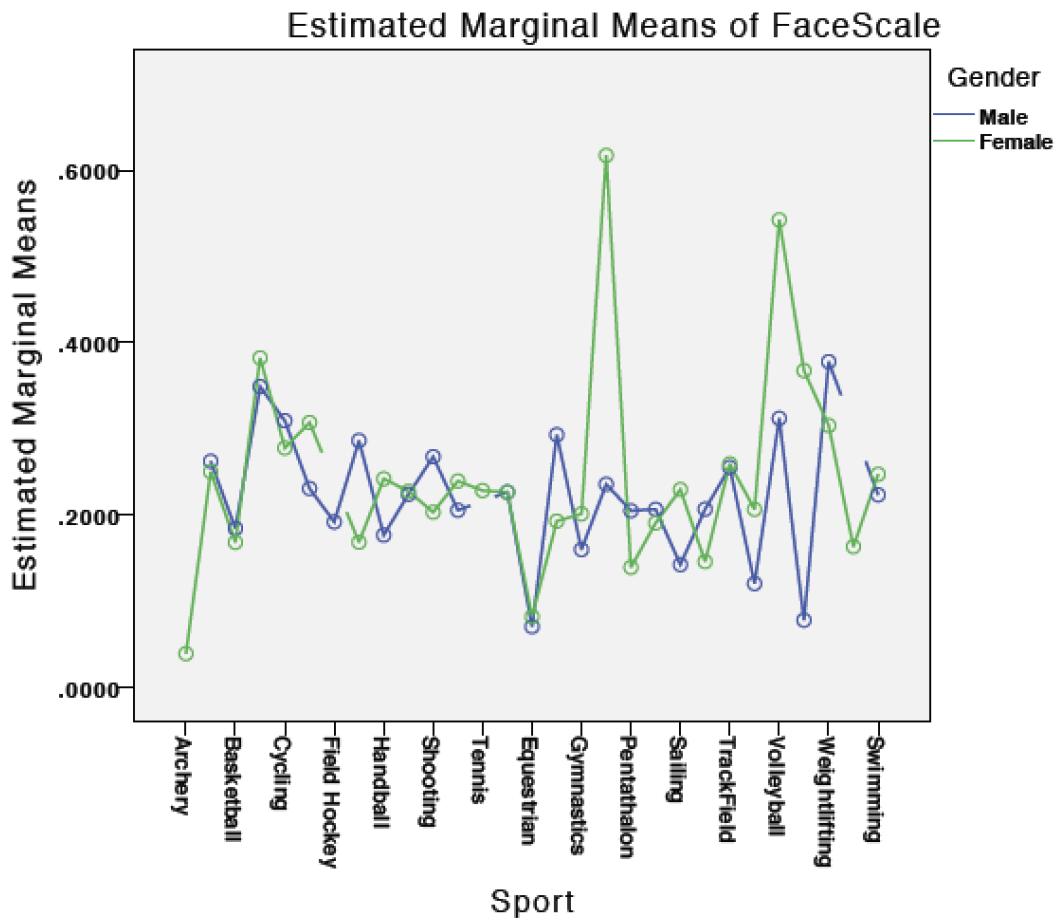


Facial Prominence & Variable Interactions

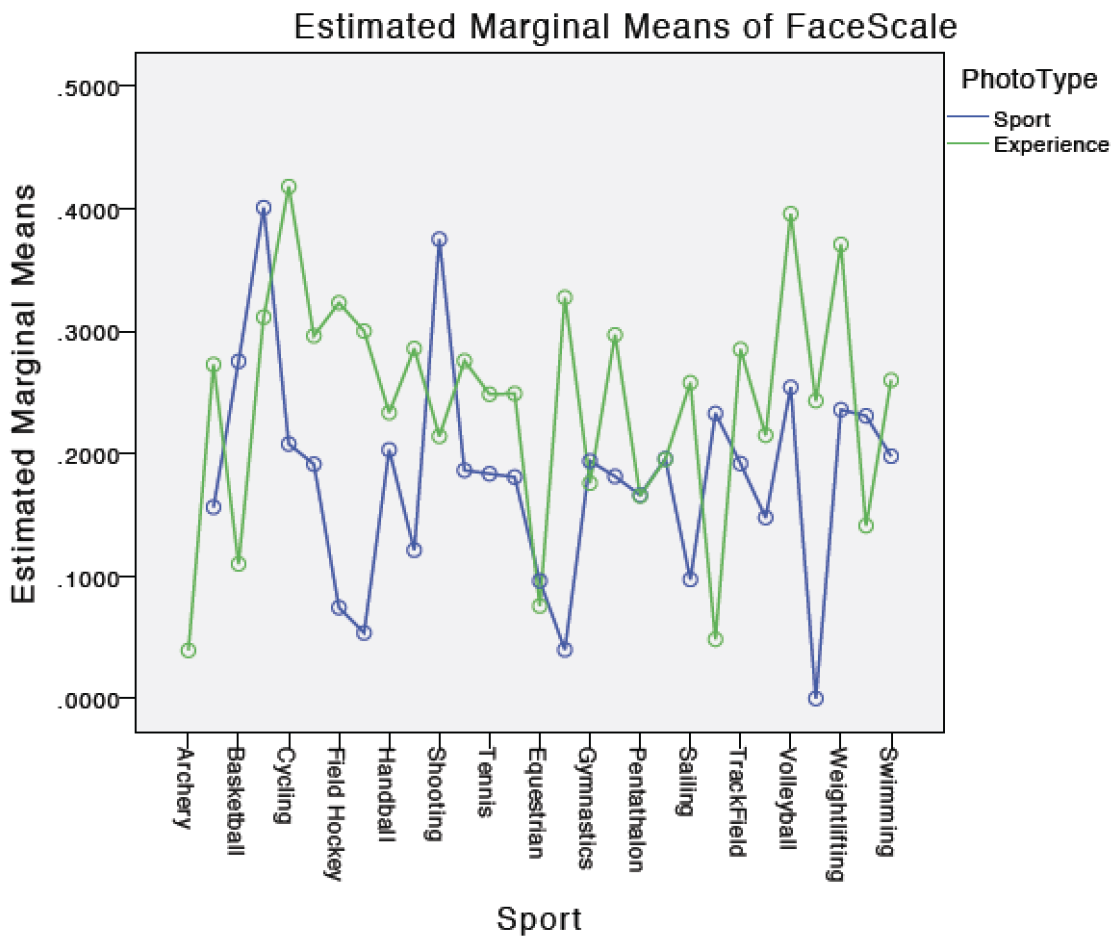
To further explore how athletes use Instagram during the Olympics, interactions with facial prominence and sport, gender, phototype and photoframe were examined.

Gender x sport.

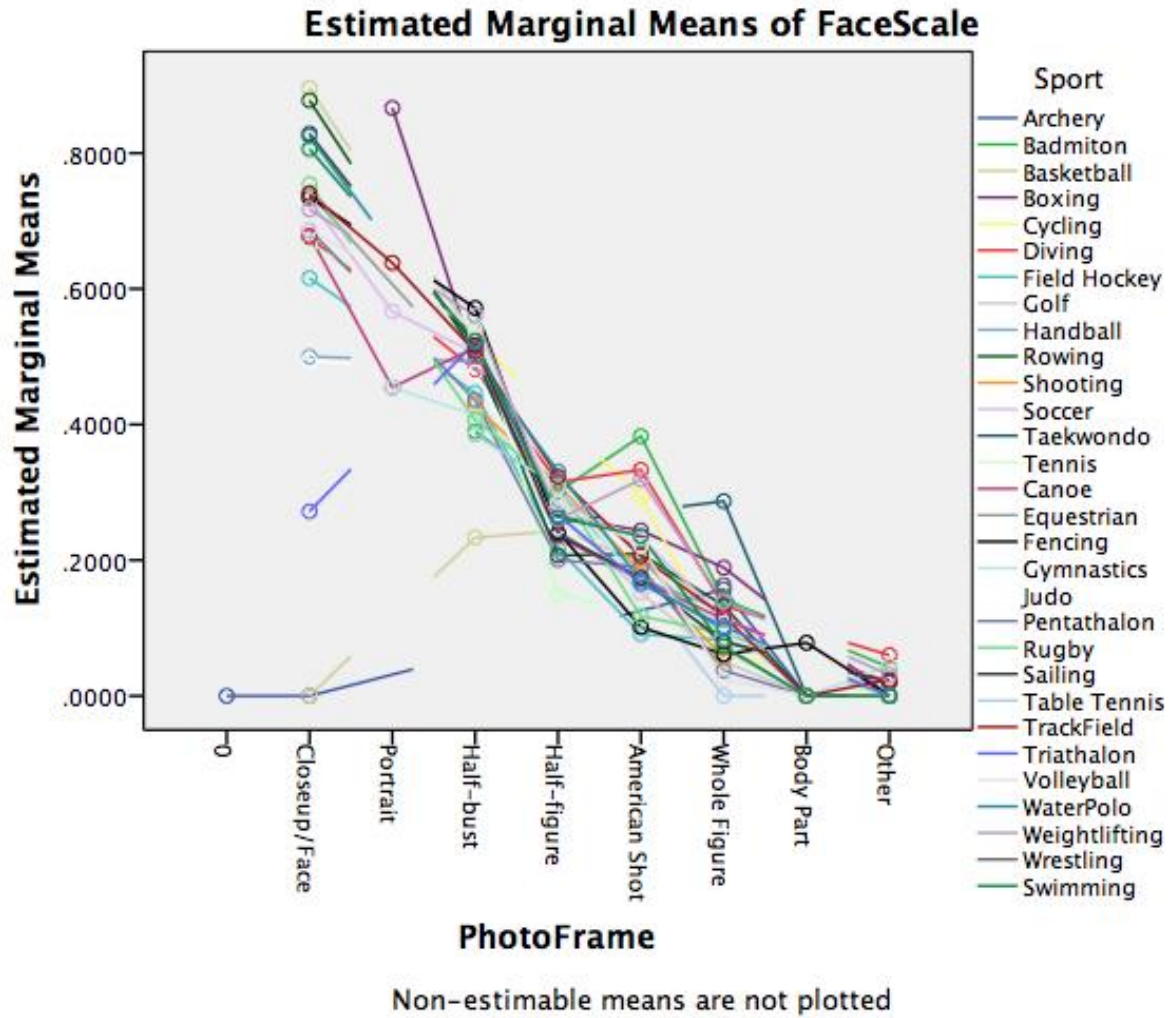
The data was also analyzed by means of a two-way mixed design ANOVA with two levels of gender and sport. However, the interaction effect between the variables was not significant ($F(24) = .976, p < .128$). Results did not indicate differences in facial prominence in the sport categories between the gender. However, discernable patterns did emerge. See Table 5a and Chart 2 for complete breakdown of categories.



Sport x Photo type. The data was also analyzed by means of a two-way mixed design ANOVA with two levels of phototype (sport versus experience) and sport. The interaction effect between the variables was significant ($F(27) = 1.635, p < .022$), indicating differences in facial prominence in the sport categories when depicting the experience of the Rio Olympics versus the sport participating. See Table 6 and Chart 3 for complete breakdown of categories.



Sport x Photo frame. The data was also analyzed by means of a two-way mixed design ANOVA with eight levels of photoframe and sport. Data indicated significant difference in facial prominence between the type of sport and the frame of the image ($F(132) = 1.961, p < .001$). See Table 7 and Chart 4 for complete breakdown of categories.



Discussion

Instagram users have complete freedom and control to present themselves online in the manner they desire. Previous research (Ryan & Nichols, 2015) found that male and female non-athlete Instagram users self-present online in the same patterns of traditional mass media. However, this research indicates that non-American athletes do not follow the trends of mass media portrayal. Using the variable of country, sport, photo type (experience versus sport), photo frame, and photo people (self versus family and friends), new patterns of athlete’s self-presentation were found. Non-American athletes who used Instagram during the 2016 Rio Olympics do not follow the patterns of traditional mass media.

When analyzing the data and crosstab, it is interesting to discover that the gender variable did not present significant differences between how male and female non-American athletes self-present. Previous research has indicated that males are more likely to display facial-centric images, while females are more likely to display body-centric images. The data gathered for this study indicates that non-American athletes do not follow this trend, as there were no significant differences found in the presentation of male versus female on the face-ism scale. When combining the gender variable with photo frame (whole figure, half figure, half-bust, etc.), the data further indicated no significant differences between male and female athletes, nor were their significant differences in athlete's selfies. Thus, not supporting H1 and H2. Overall, the gender variable did not show significant differences when combined with any of the other variables.

When comparing country and sport with other variables, significant differences were discovered. When analyzing country and sport with phototype (sport versus experience) data suggested significant differences ($\chi^2 (29) = 107.02, p < .001$) between groups, indicating some athletes were more likely to post about their experience than their sport. Athletes who were involved in sports such as, cycling (56.7%), field hockey (52.6%), handball (51.2%), soccer (57.1%), table tennis (75%), and triathlon (61.5%) were more likely to post about the sport rather than their Olympic experience. Data also suggested significant differences ($\chi^2 (28) = 102.32, p < .001$) between groups, indicating athletes from certain countries were more likely to post about their experience than their sport. Of the countries analyzed, Bermuda (60%), France (52.4%), Great Britain (54.9%), and Honduras (63.6%) were more likely to post about the sport rather than the experience.

In addition to the significance in Table 3a and 3b, some important patterns were presented in the data. When comparing country and sport with photo frame (whole figure, half figure, half

bust, etc.) data presented significant differences. Data indicated significant differences ($\chi^2 (196) = 361.64, p < .001$) between groups, suggesting a relationship between the framing of the image and the type of sport the athlete played. However, it is interesting to find that the photo frame Whole Figure was the most dominant percentage in a majority of the sports, with Half-Figure following closely behind. If Whole Figure was not the highest, Half-Figure represented the majority with Whole Figure following. This is with the exception of Equestrian, as a majority (53.8%) of the images analyzed were categorized as Other.

A similar pattern was discovered when analyzing data concerning countries and photo frame. Data suggested significant differences ($\chi^2 (217) = 272.78, p < .006$) between groups, indicating athletes from certain countries framed their images differently than athletes from other countries. The research indicates athletes from various countries are more likely to portray images that represent their Whole Figure or Half Figure. This trend can be attributed to the fact that athletes are more likely to portray a majority of their bodies, as they have the “ideal” image, as discussed in the literature review.

In addition to analyzing photo frame, the research also found trends in the face-ism index between sports and country. For male athletes, boxing and weightlifting contained the most body-centric image reflecting male mass media portrayals. Furthermore, female athletes who participated equestrian and archery had the most face-centric images reflecting female mass media portrayals. Furthermore, specific countries represented more body-centric and face-centric images than others. Switzerland and Albania contained the highest amount of body-centric images while Bermuda and Honduras presented the most face-centric images. This analysis could lead to further research as to common factors among the countries.

Overall, all of the results reveal an important trend among athletes: non-American athletes

who present themselves on Instagram do not follow the trends in traditional, gendered mass media. Furthermore, gender plays a minor role in how athletes present themselves. Rather than finding gender differences, research shows that the differences for self-portrayal among athletes rely on their country of origin and the sport they participate in. Although previous research has shown gender trends in how non-athletes self-portray on mass media, these trends do not correlate with non-American athletes. Despite there being clear trends between country and sport, focusing on differences between genders resulted in Instagram users not necessarily following the trends suggested by the hypothesis.

This hypothesis has presented information that concludes there are differences between how athletes from various countries involved in various sports self-portray on social media platforms. It has concluded that gender may not play a large role in how athletes self-present online. It has also opened opportunities for continuing research regarding athletes and how their respected countries and sport may affect their self-presentation. Furthermore, it may be of interest to include American athletes, and analyze if they follow the same trends as non-American athletes. While the hypothesis answers how gender, sport, and country influence how athletes portray themselves on Instagram, it would be of interest to further the research to discover how athletes differ from non-athletes and their self-portrayal on Instagram.

Although major trends and patterns were identified in the data, the research contained some minor limitations. Within the 32 countries, there were some countries that had a much lower numbers of athletes than other countries. Furthermore, there was also a higher representation of athletes in certain sports than others. The uneven distribution of the data among sports and countries could have potentially skewed the data.

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Table 1
Sports in the Rio Olympics Broken Down by Gender and Instagram

Sport	Gender					Instagram				
	Male		Female		Total	No		Yes		Total
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>N</i>
Archery	20	51.3%	19	48.7%	39	23	59.0%	16	41.0%	39
Badminton	16	53.3%	14	46.7%	30	17	56.7%	13	43.3%	30
Basketball	48	50.5%	47	49.5%	95	33	34.7%	62	65.3%	95
Boxing	58	80.6%	14	19.4%	72	33	45.8%	39	54.2%	72
Canoe	89	65.4%	47	34.6%	136	60	44.1%	76	55.9%	136
Cycling	157	64.1%	88	35.9%	245	68	27.8%	177	72.2%	245
Diving	34	51.5%	32	48.5%	66	16	24.2%	50	75.8%	66
Equestrian	60	56.1%	47	43.9%	107	68	63.6%	39	36.4%	107
Fencing	50	55.6%	40	44.4%	90	35	38.9%	55	61.1%	90
Field Hockey	117	70.9%	48	29.1%	165	45	27.3%	120	72.7%	165
Golf	29	49.2%	30	50.8%	59	22	37.3%	37	62.7%	59
Gymnastics	41	39.4%	63	60.6%	104	33	31.7%	71	68.3%	104
Handball	56	49.6%	57	50.4%	113	47	41.6%	66	58.4%	113
Judo	55	55.6%	44	44.4%	99	42	42.4%	57	57.6%	99
Pentathlon	14	50.0%	14	50.0%	28	13	46.4%	15	53.6%	28
Rowing	159	65.2%	85	34.8%	244	126	51.6%	118	48.4%	244
Rugby	75	46.9%	85	53.1%	160	54	33.8%	106	66.3%	160
Sailing	101	58.0%	73	42.0%	174	98	56.3%	76	43.7%	174
Shooting	69	63.3%	40	36.7%	109	80	73.4%	29	26.6%	109
Soccer	132	47.5%	146	52.5%	278	88	31.7%	190	68.3%	278
Swimming	181	46.8%	206	53.2%	387	120	31.0%	267	69.0%	387
Table Tennis	30	61.2%	19	38.8%	49	33	67.3%	16	32.7%	49
Taekwondo	17	42.5%	23	57.5%	40	10	25.0%	30	75.0%	40
Tennis	45	59.2%	31	40.8%	76	15	19.7%	61	80.3%	76
Track & Field	400	51.3%	380	48.7%	780	337	43.2%	443	56.8%	780
Triathlon	35	53.0%	31	47.0%	66	20	30.3%	46	69.7%	66
Volleyball	79	63.2%	46	36.8%	125	49	39.2%	76	60.8%	125
Water Polo	77	59.7%	52	40.3%	129	71	55.0%	58	45.0%	129
Weightlifting	29	60.4%	19	39.6%	48	22	45.8%	26	54.2%	48
Wrestling	29	54.7%	24	45.3%	53	28	52.8%	25	47.2%	53

Table 2

Non-U.S. Country Participation in the Rio Olympics Broken Down by Gender and Instagram

Country	Gender					Instagram				
	Male		Female		<u>Tota</u> <u>l</u> <u>N</u>	No		Yes		<u>Tota</u> <u>l</u> <u>N</u>
	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%	
Albania	3	50.0%	3	50.0%	6	3	50.0%	3	50.0%	6
Australia	20	49.8%	21	50.2%	420	87	20.7%	33	79.3%	420
Austria	37	52.1%	34	47.9%	71	43	60.6%	28	39.4%	71
Bahamas	17	63.0%	10	37.0%	27	12	44.4%	15	55.6%	27
Barbados	7	58.3%	5	41.7%	12	8	66.7%	4	33.3%	27
Belgium	21	7.6%	39	2100.0%	39	28	25.7%	81	74.3%	109
Bermuda	4	50.0%	4	50.0%	8	5	62.5%	3	37.5%	8
Brazil	25	13.8%	20	44.6%	464	22	49.1%	23	50.9%	464
Canada	12	39.6%	18	60.4%	313	91	29.1%	22	70.9%	313
Cape Verde	2	40.0%	3	60.0%	5	4	80.0%	1	20.0%	5
Cayman Islands	3	60.0%	40	3.0%	5	4	80.0%	1	20.0%	5
Colombia	75	51.4%	71	48.6%	146	85	58.2%	61	41.8%	146
Costa Rica	6	54.5%	5	45.5%	11	7	63.6%	4	36.4%	11
Croatia	68	78.2%	19	21.8%	86	43	49.4%	44	50.6%	87
Czech Republic	62	59.6%	42	40.4%	104	53	51.0%	51	49.0%	104
Dominica	1	50.0%	1	50.0%	2	1	50.0%	1	50.0%	2
Dominican Rep.	21	72.4%	8	27.6%	29	19	65.5%	10	34.5%	29
Estonia	28	60.9%	18	39.1%	46	19	41.3%	27	58.7%	46

Finland	26	50.0 %	26	50.0%	52	24	46.2 %	28	53.8 %	52
France	23 0	58.5 %	16 3	41.5%	393	12 3	31.3 %	27 0	68.7 %	393
Great Britain	20 1	55.8 %	15 9	44.2%	360	11 9	33.1 %	24 1	66.9 %	360
Honduras	24	96.0 %	1	4.0%	25	19	76.0 %	6	24.0 %	25
Hungary	88	57.9 %	64	42.1%	152	10 5	69.1 %	47	30.9 %	152
Ireland	51	66.2 %	26	33.8%	77	42	54.5 %	35	45.5 %	77
Italy	16 7	53.7 %	14 4	46.3%	311	10 8	34.7 %	20 3	65.3 %	311
Jamaica	25	44.6 %	31	55.4%	56	21	37.5 %	35	62.5 %	56
Mexico	83	64.8 %	45	35.2%	128	67	52.3 %	61	47.7 %	128
New Zealand	10 1	50.8 %	98	49.2%	199	89	44.7 %	11 0	55.3 %	199
Norway	28	45.9 %	33	54.1%	61	21	34.4 %	40	65.6 %	61
Portugal	62	67.4 %	20	32.6%	92	56	60.9 %	36	39.1 %	92
South Africa	95	67.4 %	46	32.6%	141	73	51.8 %	68	48.2 %	141
Sweden	67	43.8 %	86	56.2%	153	54	35.3 %	99	64.7 %	153
Switzerland	57	56.4 %	44	43.6%	101	45	44.6 %	56	55.4 %	101

Table 3a
Phototype, Photo People & Sport

Sport	Phototype					Photo People				
	Sport Image		Experience		Total	Family & Friends		Self		Total
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>N</i>
Archery	0	0.0%	4	100.0%	4	2	50.0%	2	50.0%	4
Badminton	2	11.1%	16	88.9%	18	8	44.4%	10	55.6%	18
Basketball	8	42.1%	11	57.9%	19	11	57.9%	8	42.1%	19
Boxing	5	45.5%	6	54.5%	11	2	18.2%	9	81.8%	11
Canoe	21	32.8%	43	67.2%	64	42	65.6%	22	34.4%	64
Cycling	17	56.7%	13	43.3%	30	20	66.7%	10	33.3%	30
Diving	10	23.3%	33	76.7%	43	23	53.5%	20	46.5%	43
Equestrian	2	15.4%	11	84.6%	13	8	61.5%	5	38.5%	13
Fencing	8	20.5%	31	79.5%	39	20	50.0%	20	50.0%	40
Field Hockey	20	52.6%	18	47.4%	38	31	81.6%	7	18.4%	38
Golf	20	47.6%	22	52.4%	42	22	52.4%	20	47.6%	42
Gymnastics	23	41.8%	32	58.2%	55	25	45.5%	30	54.5%	55
Handball	22	51.2%	21	48.8%	43	20	46.5%	23	53.5%	43
Judo	3	13.6%	19	86.4%	22	13	59.1%	9	40.9%	22
Pentathlon	9	36.0%	16	64.0%	25	18	72.0%	7	28.0%	25
Rowing	15	36.6%	26	63.4%	41	23	56.1%	18	43.9%	41
Rugby	20	47.6%	22	52.4%	42	35	43.3%	7	16.7%	42
Sailing	15	41.7%	21	58.3%	36	17	47.2%	19	52.8%	36
Shooting	1	6.7%	14	93.3%	15	9	60.0%	6	40.0%	15
Soccer	48	57.1%	36	42.9%	84	52	42.7%	32	41.3%	84
Swimming	47	29.9%	110	70.1%	157	80	51.0%	77	49.0%	157
Table Tennis	9	75.0%	3	25.0%	12	3	25.0%	9	75.0%	12
Taekwondo	1	16.7%	5	83.3%	6	1	16.7%	5	83.3%	6
Tennis	4	30.8%	9	69.2%	13	3	23.1%	10	76.9%	13
Track & Field	61	28.2%	155	71.8%	216	72	33.2%	145	66.8%	217
Triathlon	16	61.5%	10	38.5%	26	10	38.5%	16	61.5%	26
Volleyball	18	50.0%	18	50.0%	36	29	80.6%	7	19.4%	36
Water Polo	1	8.3%	11	91.7%	12	10	83.3%	2	16.7%	12
Weightlifting	14	20.9%	53	79.1%	67	18	26.9%	49	73.1%	67
Wrestling	2	40.0%	3	60.0%	5	2	40.0%	3	60.0%	5

Table 3b
Phototype, Photo People & Country

Country	Phototype					Photo People				
	Sport Image		Experience		Total	Family & Friends		Self		Total
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>n</i>	%	<i>N</i>
Albania	8	20.0%	32	80%	40	14	35.9%	25	64.1%	39
Australia	25	34.7%	47	65.3%	72	50	74.6%	17	25.4%	67
Austria	20	47.6%	22	52.4%	42	17	43.6%	22	56.4%	39
Bahamas	7	30.4%	16	69.6%	23	3	13.0%	20	87.0%	23
Barbados	4	18.2%	18	81.8%	22	9	40.9%	13	59.1%	22
Belgium	23	39.0%	36	61.0%	59	37	68.5%	17	31.5%	54
Bermuda	9	60.0%	6	40.0%	15	5	41.7%	7	58.3%	12
Brazil	43	35.5%	78	64.5%	121	55	47.4%	61	52.6%	116
Canada	23	22.8%	78	77.2%	101	47	51.6%	44	48.4%	91
Cape Verde	4	30.8%	9	69.2%	13	3	23.1%	10	76.9%	13
Cayman Islands	0	0.0%	7	100.0%	7	2	40.0%	3	60.0%	5
Colombia	14	41.2%	20	58.8%	34	16	48.5%	17	51.5%	33
Costa Rica*	-	-	-	-	-	-	-	-	-	-
Croatia	2	11.1%	16	88.9%	18	11	64.7%	6	35.3%	17
Czech Republic	23	41.1%	33	58.9%	56	27	54.0%	23	46.0%	50
Dominica	1	25.0%	3	75.0%	4	2	50.0%	2	50.0%	4
Dominican Rep.	5	19.2%	21	80.8%	26	9	34.6%	17	65.4%	26
Estonia	10	23.8%	32	76.2%	42	22	53.7%	19	46.3%	41
Finland	13	34.2%	25	65.8%	38	9	31.0%	20	69.0%	29
France	22	52.4%	20	47.6%	42	20	47.6%	22	52.4%	42
Great Britain	28	54.9%	23	45.1%	51	35	79.5%	9	20.5%	44
Honduras	14	63.6%	8	36.4%	22	7	31.8%	15	68.2%	22
Hungary	12	20.0%	48	80.0%	60	35	70.0%	15	30.0%	50
Ireland	21	39.6%	32	60.4%	53	24	51.1%	23	48.9%	47
Italy	19	42.2%	26	57.8%	45	26	57.8%	19	42.2%	45
Jamaica	3	21.4%	11	78.6%	14	9	64.3%	5	35.7%	14
Mexico	16	25.4%	47	74.6%	63	11	18.3%	49	81.7%	60
New Zealand	24	38.7%	38	61.3%	62	31	62.0%	19	38.0%	50
Norway	13	40.6%	19	59.4%	32	8	26.7%	22	73.3%	30
Portugal	15	30.0%	35	70.0%	50	26	53.1%	23	46.9%	49
South Africa	17	45.9%	20	54.1%	37	26	70.3%	11	29.1%	37
Sweden	21	43.8%	27	56.3%	48	22	46.8%	25	53.2%	47
Switzerland	4	21.1%	15	78.9%	19	11	61.1%	7	38.9%	18

* *Data was not available for this country*

Table 4a
Photo Framing by Sport

Sport	Close-Up		Portrait		Half-bust		Half-figure		American Shot		Whole Figure		Body Part		Other	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Archery	1	25.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	25.0%	1	25.0%	1	25.0%
Badminton	0	0.0%	0	0.0%	3	16.7%	5	27.8%	3	16.7%	6	33.3%	0	0.0%	1	5.6%
Basketball	1	5.3%	0	0.0%	2	10.5%	8	42.1%	2	10.5%	6	33.3%	0	0.0%	1	5.6%
Boxing	0	0.0%	1	9.1%	2	18.2%	6	54.5%	1	9.1%	1	9.1%	0	0.0%	0	0.0%
Canoe	2	3.1%	1	1.6%	8	12.5%	24	37.5%	8	12.5%	13	20.3%	0	0.0%	8	12.5%
Cycling	4	13.3%	0	0.0%	8	26.7%	0	0.0%	1	3.3%	14	46.7%	0	0.0%	3	10.0%
Diving	4	9.3%	0	0.0%	7	16.3%	7	16.3%	1	2.3%	20	46.5%	0	0.0%	4	9.3%
Equestrian	1	7.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	30.8%	1	7.7%	7	53.8%
Fencing	4	10.3%	0	0.0%	8	20.5%	6	15.4%	1	2.6%	15	38.5%	2	5.1%	3	7.7%
Field Hockey	2	5.3%	0	0.0%	5	13.2%	10	26.3%	2	5.3%	18	47.4%	0	0.0%	1	2.6%
Golf	2	4.7%	0	0.0%	5	11.6%	8	18.6%	9	20.9%	21	50.0%	1	2.4%	5	11.9%
Gymnastics	0	0.0%	1	1.8%	6	10.9%	10	18.2%	4	7.3%	30	54.5%	1	1.8%	3	5.5%
Handball	2	4.7%	0	0.0%	5	11.6%	8	18.6%	9	20.9%	19	44.2%	0	0.0%	0	0.0%
Judo	4	18.2%	0	0.0%	2	9.1%	11	50.0%	2	9.1%	2	9.1%	0	0.0%	1	4.5%
Pentathlon	3	12.0%	0	0.0%	1	4.0%	5	20.0%	2	8.0%	7	28.0%	2	8.0%	5	20.0%
Rowing	2	4.9%	0	0.0%	6	14.6%	8	19.5%	2	4.9%	18	43.9%	2	4.9%	3	7.3%
Rugby	1	2.4%	0	0.0%	5	11.9%	10	23.8%	4	9.5%	20	47.6%	0	0.0%	2	4.8%
Sailing	1	2.8%	0	0.0%	3	8.3%	12	33.3%	2	5.6%	13	36.1%	0	0.0%	5	13.9%
Shooting	0	0.0%	0	0.0%	2	13.3%	6	40.0%	2	13.3%	5	33.3%	0	0.0%	0	0.0%
Soccer	4	4.8%	2	2.4%	7	8.3%	19	22.6%	2	2.4%	47	56.0%	0	0.0%	3	3.6%
Swimming	8	5.1%	0	0.0%	24	15.3%	48	30.6%	10	6.4%	53	33.8%	6	3.8%	8	5.1%
Table Tennis	0	0.0%	0	0.0%	1	8.3%	6	50.0%	0	0.0%	3	25.0%	0	0.0%	2	16.7%
Taekwondo*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tennis	2	15.4%	0	0.0%	1	7.7%	4	30.8%	0	0.0%	5	38.5%	0	0.0%	1	7.7%
Track & Field	7	3.2%	1	50.0%	40	18.5%	45	20.8%	15	6.9%	100	46.3%	2	0.9%	6	13.7%
Triathlon	2	7.7%	0	0.0%	2	7.7%	4	15.4%	2	7.7%	15	57.7%	0	0.0%	1	3.8%
Volleyball	6	16.7%	0	0.0%	6	16.7%	10	27.8%	6	16.7%	6	16.7%	2	5.6%	0	0.0%
Water Polo	1	8.3%	0	0.0%	0	0.0%	3	25.0%	1	8.3%	7	58.3%	0	0.0%	0	0.0%
Weightlifting	5	7.5%	0	0.0%	20	29.9%	10	14.9%	6	9.0%	25	37.3%	0	0.0%	1	1.5%
Wrestling	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	80.0%	0	0.0%	1	20.0%

*Information for this sport is unavailable

Table 4b
Photo framing by Country

Country	<u>Close-Up</u>		<u>Portrait</u>		<u>Half-bust</u>		<u>Half-figure</u>		<u>American Shot</u>		<u>Whole Figure</u>		<u>Body Part</u>		<u>Other</u>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Albania	3	7.7%	0	0.0%	12	30.8%	7	18.0%	2	5.1%	14	35.9%	0	0.0%	1	2.6%
Australia	1	1.5%	0	0.0%	6	9.0%	20	29.9%	11	16.4%	26	27.1%	0	0.0%	3	4.5%
Austria	4	10.3%	0	0.0%	8	20.5%	11	28.2%	1	2.6%	13	33.3%	1	2.6%	1	2.6%
Bahamas	2	8.7%	0	0.0%	2	8.7%	4	17.4%	1	2.6%	12	52.2%	0	0.0%	1	4.3%
Barbados	1	4.5%	0	0.0%	7	31.8%	8	36.4%	0	0.0%	6	27.3%	0	0.0%	0	0.0%
Belgium	5	9.3%	0	0.0%	7	13.0%	12	22.2%	3	5.6%	24	44.4%	1	1.9%	2	3.7%
Bermuda	1	8.3%	0	0.0%	2	16.7%	2	16.7%	0	0.0%	5	41.7%	0	0.0%	2	16.7%
Brazil	3	2.6%	2	1.7%	19	16.4%	39	33.6%	11	9.5%	38	32.8%	2	1.7%	2	1.7%
Canada	9	9.9%	0	0.0%	10	11.0%	21	23.1%	3	3.3%	34	37.4%	2	2.2%	12	13.2%
Cape Verde	1	7.7%	0	0.0%	3	23.1%	5	38.5%	0	0.0%	4	30.8%	0	0.0%	0	0.0%
Cayman Islands	1	20.0%	0	0.0%	1	20.0%	1	20.0%	1	20.0%	1	20.0%	0	0.0%	0	0.0%
Colombia	3	9.1%	0	0.0%	6	18.2%	3	9.1%	1	3.0%	16	48.5%	0	0.0%	4	12.1%
Costa Rica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	1	5.9%	0	0.0%	2	11.8%	6	35.3%	1	5.9%	6	35.3%	1	5.9%	0	0.0%
Czech Republic	2	4.0%	0	0.0%	7	14.0%	8	16.0%	3	6.0%	23	46.0%	1	2.0%	6	12.0%
Dominica	0	0.0%	0	0.0%	1	25.0%	1	25.0%	1	25.0%	1	25.0%	0	0.0%	0	0.0%
Dominican Republic	0	0.0%	1	4.0%	4	16.0%	1	4.0%	4	16.0%	15	60.0%	0	0.0%	0	0.0%
Estonia	2	4.9%	0	0.0%	4	9.8%	7	17.1%	2	4.9%	23	56.1%	1	2.4%	2	4.9%
Finland	1	3.4%	0	0.0%	5	17.2%	4	13.8%	3	10.3%	15	51.7%	1	3.4%	0	0.0%
France	2	4.8%	1	2.4%	12	28.6%	9	21.4%	4	9.5%	13	31.0%	0	0.0%	1	2.4%
Great Britain	1	2.3%	0	0.0%	5	11.4%	7	15.9%	5	11.4%	19	43.2%	1	2.3%	6	13.6%
Honduras	0	1.2%	0	0.0%	0	0.0%	7	31.8%	0	15.0%	68	0.0%	0	0.0%	0	0.0%
Hungary	3	6.0%	0	0.0%	8	16.0%	11	22.0%	3	6.0%	20	40.0%	1	2.0%	4	8.0%
Ireland	4	8.5%	1	2.1%	3	6.4%	6	12.8%	4	8.5%	20	42.6%	3	6.4%	6	12.8%
Italy	5	11.1%	0	0.0%	7	15.6%	13	28.9%	6	13.3%	4	8.9%	2	4.4%	8	17.8%
Jamaica	1	1.9%	0	0.0%	11	20.4%	9	16.7%	7	13.0%	4	28.6%	0	0.0%	1	7.1%
Mexico	1	1.9%	0	0.0%	11	20.4%	9	16.7%	7	13.0%	24	44.4%	1	1.9%	1	1.9%
New Zealand	0	0.0%	0	0.0%	5	10.0%	18	36.0%	3	6.0%	20	40.0%	1	2.0%	3	6.0%
Norway	1	3.3%	0	0.0%	4	13.3%	3	10.0%	2	6.7%	18	60.0%	0	0.0%	2	6.7%
Portugal	5	10.2%	0	0.0%	5	10.2%	18	36.7%	2	4.1%	13	26.5%	0	0.0%	6	12.2%
South Africa	0	0.0%	1	2.7%	2	5.4%	9	24.3%	3	8.1%	21	56.8%	0	0.0%	1	2.7%
Sweden	4	8.5%	0	0.0%	6	12.8%	10	21.3%	2	4.3%	22	46.8%	1	2.1%	2	4.3%
Switzerland	2	11.8%	0	0.0%	4	23.5%	4	23.5%	0	0.0%	7	41.2%	0	0.0%	0	0.0%

Table 5a
Facial Prominence by Sport

Sport	Facial Prominence								
	<u>Men</u>			<u>Women</u>			<u>Total</u>		
	μ	<i>SD</i>	<i>n</i>	μ	<i>SD</i>	<i>n</i>	μ	<i>SD</i>	<i>n</i>
Archery	-	-	-	0.038	0.079	4	0.038	0.079	4
Badminton	0.262	0.148	14	0.25	0.191	0	0.26	0.152	18
Basketball	0.185	0.187	13	0.168	0.163	6	0.18	0.175	19
Boxing	0.349	0.240	10	0.382	-	1	0.352	0.228	11
Canoe	0.227	0.231	18	0.226	0.178	46	0.226	0.192	64
Cycling	0.309	0.314	20	0.278	0.356	10	0.299	0.323	30
Diving	0.231	0.188	20	0.307	0.229	23	0.272	0.213	43
Equestrian	0.071	0.049	4	0.082	0.247	9	0.079	0.203	13
Fencing	0.293	0.299	28	0.193	0.173	10	0.267	0.273	0
Field Hockey	0.192	0.227	38	-	-	-	0.192	0.227	38
Golf	0.287	0.393	5	0.169	0.250	37	0.183	0.267	42
Gymnastics	0.16	0.127	24	0.201	0.169	31	0.183	0.152	55
Handball	0.177	0.193	16	0.242	0.229	27	0.218	0.216	43
Judo	0.236	0.136	21	0.617	0.541	2	0.269	0.205	23
Pentathlon	0.205	0.292	10	0.139	0.193	15	0.166	0.234	25
Rowing	0.228	0.279	25	0.227	0.135	16	0.226	0.231	41
Rugby	0.207	0.226	8	0.146	0.207	4	0.187	0.213	12
Sailing	0.143	0.231	16	0.229	0.202	20	0.191	0.217	36
Shooting	0.268	0.113	5	0.203	0.181	10	0.225	0.197	84
Soccer	0.206	0.212	37	0.24	0.185	47	0.225	0.197	84
Swimming	0.224	0.217	40	0.247	0.265	117	0.241	0.254	157
Table Tennis	0.207	0.226	8	0.146	0.207	4	0.187	0.213	12
Taekwondo*	-	-	-	-	-	-	-	-	-
Tennis	-	-	-	0.228	0.265	13	0.228	0.265	13
Track & Field	0.255	0.219	102	0.259	0.199	115	2.57	0.208	217
Triathlon	0.121	0.156	10	0.207	0.163	16	0.173	0.162	26
Volleyball	0.312	0.253	34	0.542	0.094	2	0.342	0.252	12
Waterpolo	0.078	0.086	6	0.368	0.250	6	0.223	0.234	12
Weightlifting	0.378	0.346	35	0.304	0.201	32	0.343	0.227	67
Wrestling	-	-	-	0.164	0.470	4	0.164	0.470	4

*Information for this sport is unavailable

Table 5b
Facial Prominence by Country

Country	Facial Prominence								
	<u>Men</u>			<u>Women</u>			<u>Total</u>		
	μ	<i>SD</i>	<i>n</i>	μ	<i>SD</i>	<i>n</i>	μ	<i>SD</i>	<i>n</i>
Albania	0.344	0.242	39	-	-	-	0.344	0.242	39
Australia	0.179	0.162	29	0.180	0.169	39	0.180	0.165	68
Austria	0.237	0.212	10	0.309	0.277	29	0.290	0.261	39
Bahamas	0.156	0.034	6	0.307	0.288	17	0.267	0.256	23
Barbados	-	-	-	0.262	0.170	22	0.262	0.170	22
Belgium	0.209	0.236	43	0.317	0.348	10	0.229	0.260	53
Bermuda	0.157	0.252	7	0.106	0.085	5	0.136	0.195	12
Brazil	0.210	0.215	51	0.249	0.199	65	0.232	0.206	116
Canada	0.249	0.224	44	0.226	0.237	47	0.237	0.230	91
Cape Verde	0.300	0.190	13	-	-	-	0.300	0.190	13
Cayman Islands	-	-	-	0.325	0.352	5	0.325	0.352	5
Colombia	0.219	0.279	17	0.241	0.250	16	0.230	0.261	33
Costa Rica	-	-	-	-	-	-	-	-	-
Croatia	-	-	-	0.204	0.204	17	0.204	0.204	17
Czech Republic	0.190	0.203	23	0.156	0.235	27	0.171	0.220	50
Dominica	-	-	-	0.333	0.181	4	0.333	0.181	4
Dominican Rep.	0.245	0.180	25	-	-	-	0.245	0.180	25
Estonia	0.306	0.351	15	0.180	0.118	26	0.226	0.236	41
Finland	0.250	0.192	21	0.209	0.216	8	0.239	0.196	29
France	0.373	0.256	18	0.290	0.171	24	0.326	0.213	42
Great Britain	0.177	0.238	27	0.165	0.159	17	0.172	0.209	44
Honduras	0.141	0.123	22	-	-	-	0.141	0.123	22
Hungary	0.203	0.230	12	0.285	0.303	39	0.266	0.288	51
Ireland	0.207	0.264	14	0.169	0.173	33	0.180	0.202	47
Italy	0.392	0.232	22	0.207	0.241	23	0.297	0.252	45
Jamaica	-	-	-	0.327	0.224	14	0.327	0.224	14
Mexico	0.163	0.206	6	0.279	0.184	48	0.266	0.188	54
New Zealand	0.201	0.206	20	0.161	0.139	30	0.177	0.168	50
Norway	0.224	0.335	16	0.243	0.215	13	0.232	0.283	29
Portugal	0.237	0.211	35	0.322	0.236	14	0.261	0.219	49
South Africa	0.213	0.146	8	0.200	0.150	29	0.203	0.147	37
Sweden	0.227	0.190	18	0.228	0.256	29	0.228	0.231	47
Switzerland	0.398	0.296	10	0.298	0.250	7	0.357	0.274	17
Total	0.240	0.230	571	0.235	0.218	657	0.237	0.224	1228

Table 6
Facial Prominence by Sport & Phototype

Sport	Facial Prominence			Experience		
	μ	<i>SD</i>	<i>n</i>	μ	<i>SD</i>	<i>n</i>
Archery	-	-	-	0.039286	0.079	4
Badminton	0.15625	0.221	2	0.272705	0.146	16
Basketball	0.27529	0.182	8	0.109862	0.141	11
Boxing	0.40079	0.271	5	0.311408	0.202	6
Canoe	0.180868	0.166	21	0.249013	0.202	43
Cycling	0.207847	0.232	17	0.418049	0.391	13
Diving	0.191354	0.151	10	0.296138	0.223	33
Equestrian	0.096096	0.021	2	0.075605	0.222	11
Fencing	0.039855	0.080	8	0.327436	0.275	30
Field Hockey	0.074297	0.159	20	0.323096	0.223	18
Golf	0.053651	0.104	20	0.299984	0.315	22
Gymnastics	0.19391	0.141	23	0.175881	0.162	32
Handball	0.203056	0.191	22	0.233357	0.244	21
Judo	0.181341	0.060	3	0.296958	0.212	19
Pentathlon	0.166047	0.276	9	0.165511	0.217	16
Rowing	0.121183	0.125	15	0.285747	0.258	26
Rugby	0.195753	0.152	20	0.195276	0.192	22
Sailing	0.097248	0.157	15	0.257925	0.232	21
Shooting	0.375	-	1	0.214111	0.160	14
Soccer	0.186354	0.154	48	0.275686	0.235	36
Swimming	0.197841	0.260	47	0.259952	0.250	110
Table Tennis	0.232743	0.226	9	0.048387	0.084	3
Taekwondo*	-	-	-	-	-	-
Tennis	0.18352	0.159	4	0.248465	0.307	9
Track & Field	0.19182	0.155	61	0.285093	0.220	155
Triathlon	0.147784	0.178	16	0.214979	0.132	10
Volleyball	0.19182	0.155	61	0.395794	0.246	18
Waterpolo	0	-	1	0.243155	0.234	11
Weightlifting	0.235823	0.070	14	0.370802	0.246	53
Wrestling	0.230769	-	1	0.141103	0.017	3

**Information for this sport is unavailable*

Table 7
Facial Prominence by Sport

Sport	Facial Prominence																				
	Close-Up			Portrait			Half-bust			Half-figure			American Shot			Whole Figure			Body Part		
	μ	SD	n	μ	SD	n	μ	SD	n	μ	SD	n	μ	SD	n	μ	SD	n	μ	SD	n
Archery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	-	-	-	-	-
Badminton	-	-	-	-	-	-	0.39	0.20	3	-	-	-	0.38	0.08	3	0.14	0.09	6	-	-	-
Basketball	-	-	-	-	-	-	0.23	0.33	2	0.27	0.18	8	0.20	0.04	2	0.09	0.06	4	-	-	-
Boxing	-	-	-	0.87	.	1	0.49	0.03	2	0.26	0.16	6	0.24	.	1	0.19	-	1	-	-	-
Canoe	0.68	0.01	2	0.45	.	1	0.51	0.12	8	0.24	0.14	24	0.17	0.08	8	0.11	0.09	13	-	-	-
Cycling	0.89	0.09	4	-	-	-	0.53	0.10	8	-	-	-	0.29	.	1	0.06	0.07	14	-	-	-
Diving	0.68	0.15	4	-	-	-	0.48	0.11	7	0.31	0.16	7	0.33	.	1	0.13	0.05	20	-	-	-
Equestrian	0.74	.	1	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.05	4	-	-	-
Fencing	0.74	0.20	4	-	-	-	0.57	0.09	8	0.24	0.07	6	0.10	.	1	0.06	0.06	15	0.08	0.11	2
Field Hockey	0.62	0.35	2	-	-	-	0.45	0.16	5	0.22	0.20	10	0.09	0.13	2	0.08	0.14	18	-	-	-
Golf	0.90	0.15	2	-	-	-	0.53	0.12	6	0.27	0.29	5	0.15	0.01	2	0.05	0.09	21	0	.	1
Gymnastics	-	-	-	0.45	.	1	0.45	.	1	0.31	0.14	10	0.16	0.07	4	0.11	0.08	30	0	.	1
Handball	0.50	0.71	2	-	-	-	0.49	0.11	5	0.24	0.26	8	0.17	0.12	9	0.13	0.07	19	-	-	-
Judo	0.49	0.34	4	-	-	-	0.48	0.00	2	0.25	0.08	11	0.17	0.03	2	0.09	0.04	2	-	-	-
Pentathlon	0.69	0.13	3	-	-	-	0.44	.	1	0.20	0.12	5	0.19	0.01	2	0.04	0.06	7	0	-	2
Rowing	0.88	0.06	2	-	-	-	0.50	0.11	6	0.21	0.16	8	0.21	0.09	2	0.13	0.10	18	0	-	2
Rugby	0.75	.	1	-	-	-	0.41	0.10	5	0.31	0.06	10	0.12	0.08	4	0.09	0.09	20	-	-	-
Sailing	0.83	.	1	-	-	-	0.52	0.24	3	0.24	0.18	12	0.17	0.25	2	0.08	0.07	13	-	-	-
Shooting	-	-	-	-	-	-	0.43	0.08	2	0.31	0.11	6	0.18	0.02	2	0.06	0.08	5	-	-	-
Soccer	0.73	0.15	4	0.57	0.08	2	0.51	0.06	7	0.51	0.06	7	0.23	0.05	2	0.12	0.08	47	-	-	-
Swimming	0.81	0.20	8	-	-	-	0.52	0.27	24	0.26	0.13	48	0.24	0.08	10	0.07	0.10	53	0	-	6
Table Tennis	0.38	.	1	-	-	-	-	-	-	0.31	0.20	6	-	-	-	0.00	-	3	-	-	-
Tennis	0.66	0.22	2	-	-	-	0.55	.	1	0.15	0.18	4	-	-	-	0.10	0.12	5	-	-	-
Track & Field	0.74	0.19	7	0.64	.	1	0.51	0.14	40	0.32	0.11	45	0.21	0.09	15	0.12	0.09	100	0	-	2
Triathlon	0.27	0.38	2	-	-	-	0.52	0.01	2	0.27	0.10	4	0.17	0.04	2	0.10	0.07	15	-	-	-
Volleyball	0.69	0.15	6	-	-	-	0.54	0.03	6	0.29	0.13	10	0.22	0.08	6	0.02	0.06	6	0	-	2
Waterpolo	0.83	.	1	-	-	-	0.33	0.13	3	-	-	-	0.17	.	1	0.10	0.10	7	-	-	-
Weightlifting	0.72	0.09	5	-	-	-	0.56	0.10	20	0.26	0.11	10	0.32	0.18	6	0.14	0.07	25	-	-	-
Wrestling	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	0.05	4	-	-	-