Decision to use either Snapchat or Instagram for Most Powerful Celebrities

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Abstract

This article explores the use of Snapchat or Instagram for 100 most powerful celebrities of 2016 with the usage of multinomial logistic regression (MLR). As Snapchat and Instagram, identified as rapidly rising social networking apps, gain overnight popularity from businesses and marketers, celebrities seeking efficient tactics of public relations also use such apps to communicate with their loyal followers in pursuit of more wealth and fame. This article aimed toward examining predictors of their decision to use either Snapchat or Instagram formulates a MLR equation to analyze celebrity preferences. In this analysis, the results show that age and gender are important factors unlike income level and areas of profession for celebrities to use one of the apps or neither of them.

Executive Summary

Introduction
This article explores the use of Snapchat or Instagram for 100 most powerful celebrities of 2016 with the usage of multinomial logistic regression (MLR). As Snapchat and Instagram, identified as rapidly rising social networking apps, gain overnight popularity from businesses and marketers, celebrities seeking efficient tactics of public relations also use such apps to communicate with their loyal followers in pursuit of more wealth and fame.

Literature Review
There are two communication theories that provide this study with conceptual clarifications of the use of social media apps, especially Instagram and Snapchat.

Uses and Gratifications Theory (UGT)

Excellence Theory

Hypotheses
H1: Age serves as a significant factor to use either Snapchat or Instagram.
H2: Gender serves as a significant factor to use either Snapchat or Instagram.
H3: A different level of richness can affect the adoption of either Snapchat or Instagram.
H4: The different areas of professions function as a significant factor to use Snapchat or Instagram.

Method

For an efficient process of selecting celebrities in analysis, this study used the list of "The Celebrity 100," announced annually by is the *Forbes* magazine.

This article aimed toward examining predictors of their decision to use either Snapchat or Instagram formulates a Multinomial Logistic Regression equation to analyze celebrity preferences for their public relations purposes.

Results and Discussion
Using SPSSS, there will be some statistically significant factors.

Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	149.112			
Final	120.683	28.430	12	.005

1. Introduction

Instagram and Snapchat are considered two of the fastest growing social networking apps, and the millennial generation views them as most important apps for their communication and story sharing (Chew, 2016; Grifferty, 2016). The popularity of Snapchat and Instagram among young people over other prominent apps such as Facebook Messenger, Pinterest, and Twitter is adopted by other generations and studied by communication experts, especially for social media marketing purposes. Social media has had a remarkable impact on the entertainment industry, increasing awareness and visibility for television shows, movies, sports, and music. According to a survey from Harvard University's Institute of Politics (2016), about 36 percent of Americans ages 18-29 have a Snapchat account, and Instagram is at 46 percent behind Facebook. However, one major trend of using social media apps is that the two apps are the most engaging social networking platforms with 300 million daily active Instagram users and up to 150 million Snapchat ones (Kosoff, 2016). Kosoff argued that active users are one important measure of success for social media platforms (2006). In other words, Instagram and Snapchat have emerged as salient domains of effective online communication for engagement with audiences as many people and organizations try to capitalize on the advantages of the two rising apps (Morrison, 2016).

Celebrities are not strangers to Instagram or Snapchat whether their purpose of using them is solely marketing benefits or not. They personally use such apps to build interpersonal or public relationships with their fans and corporate sponsors. Celebrities post family photos, personal travel videos, concert schedules, and comments on social issues online by expecting their fans or the media to react to such postings. Instagram and Snapchat serve them as their easy and effective communication outlets. Singers like Beyoncé and Taylor Swift post photos from vacations or behind-the-scenes from tours on a daily basis on Instagram. Reality TV stars like Kendall and Kylie Jenner post short family videos, including behind-the-scenes peeks on Snapchat. More important, such celebrities have millions of followers on their Instagram or Snapchat accounts, which lead to the construction of celebrity culture that has a great influence on the general public, especially on young people.

Celebrities focus on inserting themselves into the online conversation to stay relevant with their performance, aiming to keep followers up to date of their day with contents of "performing on stage, touring, acting in television shows, prepping lines for a movie" (Rosenbaum, 2015, para.2). Rosenbaum indicated that celebrities were aware of such apps becoming big business (2015). Some of them hire professional social media experts to craft witty posts and eye-catching videos to engage with their followers. The act of engagement is the most crucial factor for social media activities of a celebrity because the followers tend to buy the product or service when the celebrity has a loyal engagement with them (2015). According to the *New York Times*, celebrities with three million to seven million followers can get paid around

"$75,000 for a post on Instagram or Snapchat" (2016). For example, the Kardashian sisters are famous for their sophisticated maneuver of praising everything "from fat-burning tea to gummy vitamins for healthier hair" to make profits on Instagram and Snapchat. The *Times* identified the two apps as online service for "loyal followings" (2016).

2. Review of literature
2.1. *Instagram*

As a free social photography app designed to run on a smartphone, Instagram allows users to post visual image-sharing. Launched in 2010, this app emerged as one of the most widely used social media platforms in 2015, due to its ability of connecting with a large number of followers who would feel culturally ahead in the online world (Hoing & MacDowall, 2016). Zappavigna argued that Instagram was an epicenter of online photo distribution with vivid images which would lead to a cultural creation of spreadable media, shared by users for their own purposes within participatory cultures (2016). The rapid growth of Instagram demonstrated that its spearheading creation of selfie or self-portrait functions appealed to ordinary users of social media. This app inspired such ordinary selfie photographers to become an artist of his or her own visual genre even without formal art education (Zappavigna, 2016). The combination of social boom of smartphone selfie and Instagram's swift adaptation to the selfie fad manufactured a new online engagement platform. In 2012, Instagram then with no revenue was acquired by Facebook for $1 billion, and the main reason for the acquisition was the Instagram's users who were seen as cool hipsters (Hill, 2012). Instagram has evolved into a mobile photo and video-sharing app that allows its users to share their visual content which can be linked to other popular social media platforms such as Facebook, Twitter, and YouTube.

Five factors that have created the popularity of Instagram can be summarized as: (1) an editing tool that allows users to edit their pictures before sharing on other social networks; (2) a satisfied psychological tool that helps ordinary users feel like celebrities with their own showy visual content; (3) a swift tool that allows users to post their photos and videos fast; (4) a continent tool that can be used anywhere and anytime on smartphones; and (5) an easy tool that encourages users to achieve simple tasks of taking a selfie, editing, and posting. In a nut shell, use of Instagram has quite appealing points of easiness, convenience, and simplicity.

2.2. *Snapchat*

Launched in 2011, Snapchat is the most popular app for online story sharing among young people, according to a survey from research firm Piper Jaffray (2016). Its ability to reach a young and mass audience due to the popular 10-second-self-destruct-view program has served as a main engine for the fastest growing app. This app allows users to share snaps of videos and pictures with text and drawings that disappear forever in a matter of 10 seconds. Snapchat users are attracted to such a function that leaves no trace of digital footprints in which they feel that they can be more personal with their closest friends by sharing the limited-time snaps because any Snapchat image/video is only shared with the friend, or a group of friends, selected by the sender (Piwek, 2016). Snapchat offers the function which allows users to decide who is going to receive and view the content. Piwek (2016) explained that Facebook tried to acquire this app in 2013 with a $3 billion offer, eventually turned down by Snapchat founders, and it was valued to be worth $19 billion in early 2015.

Snapchat created a new online culture of fast-paced visual communication with the only 10 seconds limit as well as the self-deleting nature of content. Vaterlaus et al. (2016) argued that the popularity of Snapchat could stem from psychological human desires to secure privacy, confined to intimate communication processes "to occur in the development and maintenance of interpersonal relationships" (p.595). Snapchat is created exclusively for smartphones, which means it is not possible to use it with computer browsers; this exclusiveness unlike Facebook or Twitter positively appeals to the millennial generation, less likely to share their private information with their parents or family members. The process of sharing on Snapchat is similar to Instagram, including editing filters, text captions, and drawings. Yahoo! Finance analyzed a recipe for success of Snapchat:

> "Snapchat has managed to take all the positive aspects of the big-name social media platforms and reduce them into one, single application – photos, videos, emojis, doodles, and texts all accessible without being permanently stuck in the webs of the Internet" (2016, para.13).

2.3. Theoretical framework

There are two communication theories that provide this study with conceptual clarifications of the use of social media apps, especially Instagram and Snapchat.

Uses and Gratifications Theory (UGT) explains that consumers are not passive in terms of spending their time watching television, reading print or listening to the radio (Katz, Blumler, & Gurevitch, 1973). Media consumers know why they watch or what they want to read or how they choose to listen to. The choices they make stem from personal goals to fulfill. With the rapid advances of communication technologies after World War II, such consumers expanded their media sources to the Internet world while being self-aware of what information they seek and need in pursuit of gratification in the 2000s. Personal decisions to use the Internet can be identified with McQuail's four motivations (1987). The motivations are: (1) entertainment: Internet users surf the Web to watch videos or do online shopping to relax and feel pleasant from daily stresses; (2) information: Internet users find answers to their questions online ranging from how to fix a leaking ceiling, what to say on a phone interview, where to travel for vacation, and to whom they talk for parental issues; (3) personal identity: Internet users join online communities whose members interact with invisible friends to reflect and reinforce their identity such as LGBT community and social justice community; and (4) personal relationships: Internet users visit particular social networking sites to build and maintain positive relationships, expecting an increase in human interaction. Departing from UGT, McQuail's four motivations of media usage offers a theoretical foundation to identify why people choose to use online communications, including social media.

Excellence Theory illustrates four models of public relations (Grunig & Hunt, 1984). The first model is publicity or press agent; the second is public relations information model; the third is asymmetric persuasion, and the fourth is the two-way symmetrical model. The first three models reflect an organizational practice of persuasion from message senders to receivers in one-way communication whereas the fourth focuses on exchanging opinions and thoughts from both parties in hopes of enhancing mutual interests.

Table 1. Four Models of Excellence Theory

Model	Type of Communication	Characteristics
1. Press agent or publicity	One-way Communication	Uses hyperbole to get the attention of target audiences; especially for show/entertainment businesses
2. Public information model	One-way communication	Uses press releases or conferences to distribute organizational information; especially for government and agencies
3. Two-way asymmetrical model	Two-way communication (imbalanced)	Uses mass media to spread messages to mass audiences with an expectation of little feedback; especially for corporations
4. Two-way symmetrical model	Two-way communication	Uses communication tools to exchange information to resolve conflicts and promote mutual understandings between the message sender and the message receiver

Grunig (2009) applied the fourth model to social media, arguing that social media had its full potential to provide an opportunity of forming interactive and global relationships to the public and organizations. In a similar way, Quiring suggested that interactivity would entail the exchange of two-way online communication where social media serves as the main vehicle for such a trendy phenomenon (2009). The two-way symmetrical model demonstrates a vital online flow of communication that promotes a swift and convenient information exchange for users of social media. Such an exchange through online communication helps organizations as well as individuals to develop their own interests or profits.

3. Research Questions and Hypotheses

This study aims to find predictable patterns of choosing either Snapchat or Instagram for online communication on smartphones. As mentioned, the two apps have emerged as most popular and fast growing photo/video-sharing apps among young people aged between 18 and 29 who leave Facebook for the two apps which offer the function of anonymity from family members (Lang, 2015). In lieu of the apps' surging popularity, businesses have made an attempt to capitalize on the trendy social networking hangouts, hoping to reach their target market with engaging visual content (DeMers, 2015). In addition, business people and marketers view the two apps as the promising unique ability to augment corporate or personal brand (2015).

Celebrities would not miss the opportunity to use such great apps to promote their brands while interacting with their fans directly without having to add every fan as a fried. They post pictures or videos of their fancy- and family-friendly lifestyles in the name of updates for their fans. Simply put, it can be assumed that celebrities would strategize their tactics to gain more popularity with popular and rising social media networking apps such as Instagram and Snapchat in pursuit of more fame and greater wealth. In response to the assumption, the following research questions were posed:

RQ1: Do celebrities use such trendy apps?
RQ1a: If so, what factors have made them mainly use the specific app either Instagram or Snapchat?

In order for this study to answer the questions, particular factors that inspired celebrities to engage in the activities of Snapchat or Instagram should be investigated. Based on the literature review, this study predicts that age could have an impact on the decision of using either of the apps. Hence, a hypothesis is proposed:

> H1: Age serves as a significant factor to use either Snapchat or Instagram.
> H1a: Younger celebrities might have a distinctive preference of Snapchat to Instagram or vice versa.

Departing from the age difference as a decisive factor, another hypothesis can be proposed:

> H2: Gender serves as a significant factor to use either Snapchat or Instagram.
> H2a: Male celebrities compared to female celebrities might have a distinctive preference of Snapchat to Instagram or vice versa.

This study also assumes that there is a difference of wealth among celebrities who tend to strategically use one of the trendy apps to eventually achieve greater wealth.

> H3: A different level of richness can affect the adoption of either Snapchat or Instagram.
> H3a: Wealthier celebrities compared to less wealthier ones might have a distinctive preference of Snapchat to Instagram or vice versa.

Finally, this study assumes that celebrities' special area of profession such as musicians and television personalities could influence the choice of the apps.

> H4: The different areas of professions function as a significant factor to use Snapchat or Instagram.
> H4a: Personalities compared to musicians or athletes or actors/actresses might have a distinctive preference of Snapchat to Instagram or vice versa.

4. Method

The purpose of this correlation study was to explore predictions among factors of celebrities who use either Snapchat or Instagram, and these factors were identified by a multinomial logistic regression analysis (MLR). As an extension of the binomial logistic regression model, MLR is used when the dependent variable has more than two nominal or unordered categories, in which dummy coding of independent variables is common. MLR approach would be highly recommended for the occasions: (1) when there is evidence of substantial departures from multivariate normality; (2) where there are some dichotomous or zero/one variables; or (3) where distributions are highly skewed or heavy-tailed especially in dynamic settings (Bayaga, 2010, p. 290). For this study, the MLR analysis -- with its robust violations of assumptions of multivariate normality and without the assumption of a linear relationship between the predictor and independent variables -- was used to predict the criterion or dependent variable (use of one of the apps or none) from the four predictor variables. Each individual predictor variable (PV) was assessed for its significant prediction to the dependent variable, and the combination of the PVs were evaluated as to how they would predicte the dependent variable. The statistical prediction model was written:

$$Y' = A + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$$

where Y' = predicted value on the dependent variable (use or no use of one of the apps)

A = intercept, the value of Y when all the X values are zero
B = regression coefficient assigned to each X value
X = measured value of the predictor variables

Independent variables for this study were variables of one of the apps or none: (1) Snapchat, (2) Instagram, and (3) none. The predictor variables were (1) gender, (2) age, (3) income, and (4) areas of profession. This prediction model resulted in both descriptive and inferential analyses.

4.1. Data collection

Analyzing the usage of Snapchat or Instagram for all celebrities in the United States or the world is beyond scope of this study. For an efficient process of selecting celebrities in analysis, this study used the list of "The Celebrity 100," announced annually by is the *Forbes* magazine. In order for *Forbes* to generate the list, the magazine evaluates "celebrity earnings, then factors in media metrics like Google hits, press mentions as compiled by Factiva, TV/radio mentions from Lexis/Nexis and the number of times an A-lister appears on the cover of more than 50 consumer magazines" (Miller, 2008, para. 7). In other words, "The Celebrity 100" is *Forbes'* list of the world's most powerful- and best-paid-celebrities (2008). This study used the 2016 list of "The Celebrity 100" during June 2015 to June 2016 scoring period to identify the world's most powerful 100 celebrities by *Forbes*. Musicians, movie actors/actresses, athletes, television/radio show hosts, authors, and reality TV stars consisted of the most powerful celebrity list of 2016. As the unit of analysis for this study was each celebrity's use of the apps, music bands such as One Direction and Rolling Stones were excluded from this study. This study analyzed 90 individual celebrities after all.

4.2. Coding Variables

The 90 most powerful celebrities of 2016 were divided into the predictors of continuous variables and categorical variables. Age and income were in the former whereas gender and areas of profession were in the latter. The youngest celebrity was Justin Bieber of 22, and the oldest was Paul McCartney of 74. The biggest income was earned by Taylor Swift of $170 million while Britney Spears earned $30.5 million as the least rich celebrity of the list. The predictor variable of profession was classified into four subcategories: (1) "Actor" which included actress; (2) "Athlete" which included all kind of sports players; (3) Musicians; and (4) "Personality" which included television/radio hosts, book authors, super models, and reality TV stars. For the independent variable, this study traced each celebrity's Snapchat and Instagram activities during July to August 2016, categorizing the use as "Snapchat," "Instagram," or "None." One concern for the categorization was celebrities who held both accounts of Snapchat and Instagram, so this study placed them into the category of "Snapchat." The reason was all Snapchat users among the 90 celebrities had their Instagram accounts in contrast to all Instagram users who did not have Snapchat accounts. More important, ten of them used neither of apps. In short, this study aimed to determine predictors of powerful celebrities' Snapchat or Instagram adoption.

During the data collection period, this study examined all of the 90 celebrities' Instagram and Snapchat activities on a daily basis. Because of the Snapchat's smartphone only exclusiveness, each of their Snapchat accounts could be only found through the users' Snapchat

names. Celebritysnapz.com and Snapchatcelebrity.net were most effective sites offering celebrities' Snapchat names. Without knowing celebrities' Snapchat names, it was impossible to find them on smartphones. For example, Jennifer Lopez could not be found on Snapchat with her full name, but only with her Snapchat name: JLobts. Among the 90 celebrities, 19 celebrities turned out to have Snapchat names and active users of the app. The author of this study began to follow the 19 Snapchat celebrities on the smartphone during the research period, finding them strongly engaged in their snaps on a daily basis. In contrast, celebrities using Instagram were easily found through Google search. Most of the celebrities' Instagram accounts matched their names, and all of them were active users, except TV celebrity judge Judy Sheindlin, better known as Judge Judy, who set her Instagram account "Private." After the procedures of data collection and categorization, this study calculated: Snapchat users (n=19); Instagram Users (n=61); and none users (n=10).

5. Results
5.1.Descriptive Data

The majority celebrities were using Instagram (67.8%), followed by Snapchat users (21.1%) and non-users (11.1%). There were 75 male celebrities (83.3%) and 15 female ones (16.7%). Based on the profession category, athletes (n=36) accounted for 40 percent of the 90 celebrities, and musicians (n=27) represented 30 percent, followed by actors/actresses (n=16, 17.8%) and personalities (n=11, 12.2%). None users were such as Howard Stern, Johnny Depp, and Jackie Chan although their fans or agencies were running Instagram fan accounts. This study only counted personal accounts of celebrity Instagram or Snapchat apps as valid data.

This study began by an examination of the data for multicollinearity. Bayaga (2010) pointed out that smaller correlation between the predictors tend to increase the usefulness of this study's MLR equation while a high correlation between the independent and dependent variables have a positive effect on the equation. The values of correlation coefficients of this study were patterned correctly, except for a correlation of -.350 between the independent variables "income" and "area of professions" (see Table 2). The author made the decision to leave the equation as was and proceeded with the MLR analysis as the effect would be minimal.

Table 2. Spearman's Correlation Coefficients for Multicollinearity Check

			male/female	age	income	Act/Ath/Mus /Per	Insta/Snap/ None
Spearman's rho	male/female	Correlation Coefficient	1.000	-.042	-.057	.255[*]	.310[**]
		Sig. (2-tailed)	.	.697	.595	.015	.003
		N	90	90	90	90	90
	age	Correlation Coefficient	-.042	1.000	-.213[*]	.158	-.115
		Sig. (2-tailed)	.697	.	.044	.138	.280
		N	90	90	90	90	90

income	Correlation Coefficient	-.057	-.213[*]	1.000	-.350[**]	.007
	Sig. (2-tailed)	.595	.044	.	.001	.947
	N	90	90	90	90	90
Act/Ath/Mus/Per	Correlation Coefficient	.255[*]	.158	-.350[**]	1.000	.149
	Sig. (2-tailed)	.015	.138	.001	.	.161
	N	90	90	90	90	90
Insta/Snap/None	Correlation Coefficient	.310[**]	-.115	.007	.149	1.000
	Sig. (2-tailed)	.003	.280	.947	.161	.
	N	90	90	90	90	90

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

5.2. Inferential data

The presence of a relationship between the dependent and combination of predictor variables is based on the statistical significance of the final model chi-square (see Table 3). In this analysis, the distribution revealed that the probability of the model chi-square (28.430) was 0.005, less than the level of significance of 0.05 (i.e. $p < 0.05$). The null hypothesis that there was no difference between the model without predictor variables and the model with independent variables was rejected.

Table 3. Model fitting information

Model Fitting Information

	Model Fitting Criteria	Likelihood Ratio Tests		
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	149.112			
Final	120.683	28.430	12	.005

To strengthen the reliability of the results, this study tested evidence of a good fit, and failed to reject the null hypothesis of consistent data distribution $\chi^2 (164) = 163.339$, $p > .05$. (see Table 4).

Table 4. Model Fit Indicator Test (> .05 Desired)

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	163.339	164	.500
Deviance	119.296	164	.997

In order for this study to assess the strength of MLR relationship, *Cox & Snell R Square* and the *Nagelkerke R square* values were evaluated. Known as Pseudo R-Square, they provided the test values of .271 and .333, suggesting that between 27.1 percent and 33.3 percent of the variability in the dependent variable is explained by the predictor variables.

Table 5. Pseudo R-Square

Pseudo R-Square	
Cox and Snell	.271
Nagelkerke	.333

As the above sections were clarified, this study moved to the likelihood ratio test, which evaluated the overall relationship between the independent variable and predictor variables. The likelihood ratio test, shown in Table 6, demonstrated that there was a statistically significant relationship between the independent variable and the predictor variables of age (p=.02) and gender (p= 0.008). Income (p=0.465) and areas of profession (p=0.881) turned out to be statistically insignificant.

Table 6. Likelihood Ratio Tests

	Model Fitting Criteria	Likelihood Ratio Tests		
Effect	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	120.683[a]	.000	0	.
Age	128.472	7.789	2	.020
Income	122.215	1.532	2	.465
Sex	130.332	9.649	2	.008
Area	123.073	2.390	6	.881

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

6. Discussion

Multinomial logistic regression analysis showed evidence of influential variables for powerful celebrities to choose a social networking app (either Snapchat or Instagram or none) for online communication with their followers. The final MLR output is shown in Table 7,

explaining how each of the predictor variables contributed to the equation. MLR model features an estimate of k-1 models, where k is the number of levels of the outcome variable, treating "Snapchat" as the reference group. Therefore, the outcome of a model for "Instagram" relative to "Snapchat" and a model for "None" relative to "Snapchat" was shown. The outcome interpretation of the multinomial logit was that the logit of outcome such as "Instagram" and "None" relative to "Snapchat" was expected to change by its respective log-odds units while other variables were held constant. Hence, this study presented the findings in separate units of references as follows:

6.1. Instagram relative to Snapchat

Intercept (-5.085): This is the multinomial logit estimate for "Instagram" relative to "Snapchat" when the predictor variables in the model are evaluated at zero.

Male celebrity: This is the multinomial logit estimate comparing males to females for "Instagram" relative to "Snapchat" given the other variables in the model are held constant. The multinomial logit for males relative to females is 2.304 unit higher for preferring "Instagram" to "Snapcash" given all other predictor variables in the model are held constant. In other words, male celebrities are more likely than female celebrities to use "Instagram" over "Snapchat."

Age: This is the multinomial logit estimate for a one unit increase in age for "Instagram" relative to "Snapshot" given the other variables in the model are held constant. If a celebrity were one year older, the multinomial log-odds of preferring "Instagram" to "Snapshot" are expected to increase by 0.091 unit. In other words, older celebrities prefer Instagram.

Income: This is the multinomial logit estimate for a one unit increase in income score for "Instagram" relative to "Snapshot" given the other variables in the model are held constant. If a celebrity were to increase his or her income score by one million dollars, the multinomial log-odds of preferring "Instagram" to "Snapchat" would be expected to increase by 0.018 unit.

Personality: This is the multinomial logit estimate comparing personalities to actors/actresses or athletes or musicians for "Instagram" relative to "Snapchat" given the other variables in the model are held constant. The multinomial logit for actors/actresses relative to personalities is 0.057 unit lower for preferring "Instagram" relative to "Snapcash"; for athletes relative to personalities is 0.597 unit higher preferring "Instagram" relative to "Snapcash"; and for musicians relative to personalities is 0.097 unit lower preferring "Instagram" relative to "Snapchat."

6.2. None relative to Snapchat

Intercept (-23.605): This is the multinomial logit estimate for "None" relative to "Snapchat" when the predictor variables in the model are evaluated at zero.

Male celebrity: This is the multinomial logit estimate comparing males to females for "None" relative to "Snapchat" given the other variables in the model are held constant. The multinomial logit for males relative to females is 19.084 unit higher for preferring "None" relative to "Snapcash." This result indicates male celebrities are more likely than female celebrities to use no apps rather than "Snapchat."

Age: This is the multinomial logit estimate for a one unit increase in age for "None" relative to "Snapchat" given the other variables in the model are held constant. If a celebrity were one year older, the multinomial log-odds of preferring "None" to "Snapshot" would be

expected to increase by 0.093 unit. This result indicates older celebrities relative to younger celebrities prefer using no apps.

Income: This is the multinomial logit estimate for a one unit increase in income score for "None" relative to "Snapshot" given the other variables in the model are held constant. If a celebrity were to increase his or her income score by one million dollars, the multinomial log-odds of preferring "None" to "Snapchat" would be expected to increase by 0.016 unit.

Personality: This is the multinomial logit estimate comparing personalities to actors/actresses or athletes or musicians for "None" relative to "Snapchat" given the other variables in the model are held constant. The multinomial logit for actors/actresses relative to personalities is 0.05 unit higher for preferring "None" relative to "Snapcash"; for athletes relative to personalities is 0.967unit higher preferring "None" relative to "Snapcash"; and for musicians relative to personalities is 1.085 unit lower preferring "None" relative to "Snapchat."

Table 7. Variables in the Equation for Multinomial Logistic Regression

Parameter Estimates

Insta/Snap/None[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound
0	Intercept	-23.605	3.855	37.484	1	.000			
	Age	.093	.057	2.704	1	.100	1.097	.982	1.226
	Income	.016	.027	.336	1	.562	1.016	.963	1.072
	[Sex=1]	19.084	.000	.	1	.	194204502.118	194204502.118	194204502.118
	[Sex=2]	0[b]	.	.	0	.	.	.	.
	[Area=1]	.050	2.031	.001	1	.981	1.051	.020	56.243
	[Area=2]	.967	2.268	.182	1	.670	2.630	.031	223.980
	[Area=3]	-1.085	2.075	.274	1	.601	.338	.006	19.702
	[Area=4]	0[b]	.	.	0	.	.	.	.
Instagram	Intercept	-5.085	2.289	4.933	1	.026			
	Age	.091	.037	5.885	1	.015	1.095	1.018	1.178
	Income	.018	.014	1.519	1	.218	1.018	.990	1.047
	[Sex=1]	2.304	.889	6.708	1	.010	10.010	1.751	57.221
	[Sex=2]	0[b]	.	.	0	.	.	.	.
	[Area=1]	-.057	1.431	.002	1	.968	.944	.057	15.617
	[Area=2]	.597	1.523	.153	1	.695	1.816	.092	35.918
	[Area=3]	-.097	1.352	.005	1	.943	.908	.064	12.842
	[Area=4]	0[b]	.	.	0	.	.	.	.

a. The reference category is: Snapchat.

b. This parameter is set to zero because it is redundant.

6.3. Wald Test and Odds Ratios for "Instagram" relative to "Snapchat" and "None" to "Snapchat"

For "Instagram" relative to "Snapchat," the Wald test statistic for the predictor age is 5.885 with an associated p-value of 0.015. With this result, the odds ratios of 1.095 concludes that if a celebrity grew one year older, the odds ratios of preferring "Instagram" to "Snapshot" would increase 1.095 times. In a similar way, the Wald test statistic for the predictor male of 6.708 with an associated p-value of 0.01 was found significant. With this result, the odds ratios of 10.01 concludes that a male celebrity compared to a female celebrity is 10 times more likely to use Instagram over Snapchat. In contrast, for "None" relative to "Snapchat," the Wald test statistic found nothing statistically significant at the alpha level of 0.05.

6.4. Hypotheses testing

As Table 6 showed, there was a statistically significant relationship between the independent variable and the predictor variables of age (p=.02) and gender (p= 0.008). Income (p=0.465) and areas of profession (p=0.881) turned out to be statistically insignificant.
H1a predicted that younger celebrities might have a distinctive preference of Snapchat to Instagram or vice versa. The analysis found younger celebrities are more likely to prefer "Snapchat" to "Instagram," and older celebrities prefer using no apps relative to younger celebrities. H1a was supported (p < 0.05).
H2a predicted female celebrities compared to male celebrities might have a distinctive preference of Snapchat to Instagram or vice versa. The analysis found female celebrities are more likely to use "Snapchat" over "Instagram," and male celebrities are more likely than female celebrities to use no apps rather than "Snapchat." H2a was supported (p < 0.05).
H3a predicted that wealthier celebrities compared to less wealthier ones might have a distinctive preference of Snapchat to Instagram or vice versa. This analysis found wealthier celebrities preferred "Instagram" to "Snapchat," and they would rather use none of apps than "Snapchat." However, H3a was not statistically supported (p > 0.05).
H4a predicted that personalities compared to musicians or athletes or actors/actresses might have a distinctive preference of Snapchat to Instagram or vice versa. This study found that personalities relative to "Instagram" use less "Snapchat" than actors/actresses and musicians whereas athletes relative to personalities prefer "Instagram" to "Snapchat." However, H4a was not statistically supported (p > 0.05).

7. Conclusion and limitations
Using multinomial logistic regression to examine the celebrities' preference to choose one of the two popular social networking apps, this study found that age and gender served as important predictors of choosing the use of Snapchat or Instagram or neither of them. Male celebrities compared to female celebrities prefer Instagram to Snapchat. The average age of the 90 celebrities was 41.07 years old, and Snapchat user celebrities' average age was 27.26 years old (n=19) as opposed to that of Instagram celebrities' 43.59 years old (n=61), and that of none

user celebrities was 40.1 years old (n=10). They were Howard Stern, Jackie Chan, Justin Bieber, Johnny Depp, Eli Manning, Joe Flacco, Tom Brady, Sebastian Vettel, Peyton Manning, and Clayton Kershaw. One important notice is that Justine Bieber who shut down his social media apps after his followers had left some vicious comments on his girlfriend, Sofia Richie, a 17-year-old model during this research period.

The predictors showed that *Forbes'* most powerful celebrities of 2016 had their own social media preferences among Snapchat and Instagram and none. Female celebrities are more likely to have Snapchat account than male celebrities, and the younger they are, the more likely to use Snapchat over Instagram. Although no statistical significance was found, musicians and actors/actresses compared to personalities were in fond of using Snapchat over Instagram; athletes compared to personalities preferred Instagram to Snapchat. Many celebrities aiming to streamline their public relations tactics seek to use such apps in hopes of enhancing a number of their online "loyal followings," which eventually lead to more wealth and fame.

This study had three random response variables, taking the values of "Snapchat," "Instagram," and "None" in the MLR equation using the method of maximum likelihood. In order to predict the use of apps for celebrities, the study used the likelihood ratio test and the Wald test after exploring other statistical tests, including Spearman's Correlation Coefficients for Multicollinearity Check and Pseudo R-Square. The findings also revealed that the probability of the model chi-square (28.43) was 0.005, less than the level of significance of 0.05, suggesting a statistically significant relationship between the independent variable and the predictor variable. Therefore, the statistical prediction model was formulated in significance:

Y' (either Snapchat or Instagram or None) = $A + B_1(age) + B_2(gender) + B_3(income) + B_4(areas\ of\ profession)$

As with all research, this study has several limitations. First, it categorized celebrities who used both Snapchat and Instagram into the only user of Snapchat for a clear difference of either Snapchat or Instagram. Second, the short research period of three months left room for different research outcomes if the period were longer. For example, this study found only 19 celebrities using Snapchat during the period, but it can be expected that more celebrities would use Snapchat within a year. Future research should examine if more powerful celebrities choose Snapchat or Instagram as their main social networking source over Facebook and Twitter. In addition, other predictor variables can be added such as nationality (U.S citizen vs. Foreigner) and marriage status.

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