ASSESSING BRAND-CONSUMER PERSONALITY CONGRUENCE ON TWITTER: A COMPUTATIONAL TEXTUAL ANALYSIS APPROACH

by

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ABSTRACT

Brands gain importance to consumers when the consumer supplies meaning or value to the brand (McCracken, 1993). BP allows consumers to use brands for self-expression (deChernatony, 1999; Johar & Sirgy; 1991; McCracken, 1986) and establish relationships with brands (Fournier, 1998; Keller, 2003; Meenaghan, 1995). Research shows that consumers are attracted to brands that align with their own personality traits (Escalas & Bettman, 2005; Johar et al., 2005; Landon, 1974). Brand personality has become an integral part of a brand's social media presence. However, the few researchers who are exploring the role of personality in a brand's social media communications are opting to use Aaker's (1997) BP questionnaire (Xu et al., 2016) or psychologist personality measures (Pentina, Zhang, & Basmanova, 2013; Yun et al., 2019). This study will utilize the computational textual analysis software Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & King, 2001) and a custom adapted adjective-based dictionary (Opoku, 2006) to examine BP in brand communication on Twitter. The primary goal of this study was to examine whether consumer engagement, either directly with specific highly social brands or just within a product type, moderates the effect of brand/consumer personality congruence. Towards these ends, we found that consumers who engage with brands identified as highly social are more likely to exhibit personality congruence than consumers who are engaging with a product type. The analysis revealed that the BP dimension has a direct impact on whether consumers engaging with the brand demonstrate congruence.

DEDICATION

This thesis is dedicated to all the master's students out there who don't think they will pull through. You will finish your thesis, don't give up.

LIST OF ABBREVIATIONS AND SYMBOLS

a	Cronbach's index of internal consistency
BP	Brand personality
CBR	Consumer-brand relationship
df	Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data
M	Mean: the sum of a set of measurements divided by the number of measurements in the set
r	Pearson product-moment correlation
Std. Error	Standard error of mean: how measurements for a group are spread out from the mean or expected value
t	Computed value of t test
<	Less than
=	Equal to

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INTRODUCTION

The presence of social media have radically altered communication between brands and consumers. While traditional media such as radio, television, and magazines require brands to broadcast unidirectional messages, social media allows brands to have a dialogue with their consumers (Berthon, Pitt, & Campbell, 2008). Sites like Twitter, Facebook, and Instagram provide consumers with the power to directly interact with other consumers and the brand itself (Kaplan & Haenlein, 2010). By equipping consumers with the opportunity for prompt discourse in the form of a tweet or a comment, companies are no longer the sole source of brand communication (Li, Bernoff, & Groot, 2011; Maslowska, Malthouse, & Collinger, 2016). Moreover, while traditional brand communication is a controlled and calculated message with the intent to get the customer to perform a specific task, the conversations occurring between brands and consumers on social media are forcing brand communication to feel more authentic and individualistic (Schivinski & Dabrowski, 2016). This forces companies to go beyond the consideration of the brand image in messaging to focus on attributes of the brand that will build relationships with consumers. Thus, when brands use social media as a vehicle to communicate directly with consumers, they need to imbue their branded content with human-like characteristics, such as brand personality (herein referred to as "BP"; Aaker, 1997). Taking on a specific BP in messages on social media is imperative because previous research has found that consumers tend to select – or in the case of social media, follow or engage with – brands that have a personality that is congruent with their self-concept (Belk, 1988; Sirgy, 1982).

Numerous studies have been conducted in the realm of applied psychology to conceptualize human personality. Psychologists have defined personality as a set of distinct patterns of behaviors (Huteau, 1985). Although several scales have been proposed and tested to measure personality, the "Big Five Model" is widely used because self-report ratings have been repeatedly validated with observer ratings (Costa & McCrae, 1987; Norman, 1963; Tupes & Christal, 1958). The original model relies on a psycho-lexical approach, which purports that personality-related terms have become encoded in natural language. However, in recent years, psychologists have started utilizing textual analysis software to validate personality expressed online through blogs and social media (Arnoux et al., 2017; Schwartz et al., 2013; Tausczik & Pennebaker, 2010; Yarkoni, 2010). A textual analysis approach to personality shifted the focus of research from analyzing how one describes themselves and others to how the words one uses in written text convey personality aspects.

In recent years, marketing and advertising scholars have become increasingly interested in understanding and measuring the symbolic meaning consumers attribute to brands (e.g., Aaker, 1997; Hogg, Cox, & Keeling, 2000; Payne et al., 1993). This interest has resulted in the measurement scales developed for human personality psychology to be transferred to the brands. Aaker (1997) developed a model of measurement for BP by identifying 42 features divided up among 15 facets and 5 factors of personality. While she drew heavily from psychology's "Big Five Personalities" when she developed the theoretical framework for BP, she included demographic characteristics such as age and socio-economic class because some product categories rely heavily on demographic appeal. However, psychologists argued that physical (e.g., feminine) and mental attributes (e.g., intelligence) should remain separated because they do not account for motives, habits, and attitudes (Costa, McCrae, & Kay, 1995). In the context of

BP, personality traits of the people associated with the brand are transferred directly to the brand making socio-demographic features a component of BP. Thus, while BP traits are similar to human personality traits, BP is imbued with elements of the typical user such as class and gender, which arguably makes the "Big Five Model" an inappropriate measure for personality expressed by brands.

Despite the disparities between the human and BP scales, researchers have established that consumers try to form a connection between their self-concept and a given product or brand (Brée, 1994). Sirgy (1982) suggests that an individual's assessment of self-concept is used as a cognitive referent in selecting products that symbolically represent how they perceive themselves. A consumer seeks to express his or her self-concept by choosing brands with the personality that appears to them close to their own personality, thus establishing self-congruence (Vernette, 2008). When a consumer compares their image to that of a brand, they often develop a bond with that brand. Psychologists have found that when individuals communicate online, they express their personalities through posts (e.g., Hirsh & Peterson, 2009; Pennebaker & King, 1999). Since social media allows for organic dialogue between brands and consumers, a relationship can develop between a brand and a customer. Consumer-brand relationship strength impacts the consumer's likeliness to engage with brand content (Sprott, Czellar, & Spangenberg, 2009). Furthermore, researchers have found that consumers are more likely to interact with posts from brands that use similar text language to convey a personality equivalent to their own (Cruz & Lee, 2014).

The few researchers who are exploring the role of personality in a brand's social media communications are opting to use Aaker's (1997) BP questionnaire (Xu et al., 2016) or psychologist personality measures (Pentina, Zhang, & Basmanova, 2013; Yun et al., 2019).

However, the issue with using a questionnaire to measure personality is it is not feasible for testing large samples for BP congruency. Psychologists have linked an individual's word choice in online written communications (such as blogs and twitter posts) to consistent personality (e.g., Arnoux et al., 2017; Schwartz et al., 2013; Tausczik & Pennebaker, 2010; Yarkoni, 2010). Yet, BP and human personality are distinct and separate theoretical constructs and cannot be identically measured.

Opoku (2006) developed an adjective-based personality dictionary from synonyms of Aaker's five brand dimensions and facets. This textual analysis approach has been successful in analyzing the personality found in online communications of brands (Abimbola, 2007; Pitt et al., 2007; Rutter et al., 2018) and consumer congruency (De Moya & Jain, 2013). However, Opoku's dictionary has not been utilized to test BP and BP congruence in a large-scale analysis of social media posts across different product categories like Yun et al. (2019) achieved using the Big Five personality dimensions.

This study will utilize the computational textual analysis software Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & King, 2001) and a custom adapted adjective-based dictionary (Opoku, 2006) to examine BP in brand communication on Twitter. Specifically, the analysis will aim to determine whether consumers' who engage with brands on Twitter, as opposed that those who do not, demonstrate personalities congruent to the brands they're tweeting by the language they use in the text. Additionally, this study will explore the effect product type has on brand engagement. The results of this study should contribute to the discussion on whether personality expressed by brand-consumer interactions on Twitter can be measured using a textual analysis approach based on Aaker's BP dimensions and whether personality congruence is evident in these social media communications.

In the succeeding sections of this thesis, we will review the literature surrounding BP, starting with its origins in psychology and how Aaker successfully adapted the concept to fit within the existing brand image and identity framework. However, because both of these measures were created before the emergence of social media, we will explain the new approaches of evaluating human and BP through textual analysis. The theory section will expound on how self-congruence theory impacts brand appeal, selection, and overall loyalty. Then, a hypothesis and research question will be offered based on the preceding background and framework. After that, a methodological approach will be explain followed by a description of analysis and results Finally, a discussion of the findings, implications, and limitations of the study will be explained.

LITERATURE

Brands gain importance to consumers when the consumer supplies meaning or value to the brand (McCracken, 1993). BP allows consumers to use brands for self-expression (deChernatony, 1999; Johar & Sirgy; 1991; McCracken, 1986) and establish relationships with brands (Fournier, 1998; Keller, 2003; Meenaghan, 1995). For instance, Facebook users follow brands in order to highlight individual characteristics that maintain the self-concept (Hollenback & Kaikati, 2012). BP also benefits companies by differentiating them from the competition and guiding communication efforts (Aaker 1996). Research shows that consumers are attracted to brands with overall strong personalities (Freling & Forbes, 2005; Haigood, 2001), but also brands that align with their self-concept (Escalas & Bettman, 2005; Johar et al., 2005; Landon, 1974). While the idea of BP is derived from existing psychology literature, there is a significant conceptual difference between human personality and BP. BP relies on brand managers to establish its personality and a consumer's perception of the typical brand user. In contrast, human personality is composed primarily of patterns of individual thinking, feeling, and behaving.

Since BP is created from the framework established by psychologists but varies significantly from psychologist's definition and methods, it is critical to first delve into the theory of personality and how the concept evolved to include a predictive model for measuring personality known as the Big Five. Then the discussion will transition into describing Aaker's model and what aspects of human personality she chose to incorporate and discard to create the theoretical framework for the five-dimension BP scale. A number of subsequent studies (e.g.,

Fournier, 1998; Freling et al., 2011; Grohmann, 2009; Kressman et al., 2006; Lui et al., 2012; Sung & Kim, 2010) have found that BP positively impacts brand-consumer relationships, brand attitude, brand loyalty, and purchase intention. However, the original measures for the Big Five personality traits and the five dimensions of BP utilized questionnaires to measure personality. Therefore, they are not applicable to quantifying personality expressed through online written entries. Finally, the literature review will cover how scholars transitioned into a computational textual analysis approach to measuring personality expressed in the social media posts of both consumers and brands.

I. Human Personality

Everyone has set patterns of behavior, thoughts, and emotions that encompass their identity and guide how they interact with the world around them (Cherry & Gans, 2019). When these characteristics persist over time and across circumstances, they become personality traits (Smith & Archer, 2014). Personality traits are distinctive features of a person and should be distinguishable by both the individual and others. In layman's terms, personality traits describe what people are like and how they act. They are reflected in many areas of an individual's life, such as their career choices and interactions with others (Costa & McCrae, 1995). An extensive body of psychology research on personality led to the development of a predictive five-factor model that uses natural language, self-report data, and observer ratings to describe core personality types – the Big Five Model (Costa & McCrae, 2008; Digman & Takemoto-Chock, 1981; Gosling, Rentfrow & Swann, 2011; Mount, Barrick, & Strauss, 1994; Saucier & Goldberg, 1996).

Personality theory and assessment began with researchers Allport and Odbert (1936) who used natural language to develop a shared classification for personality types. They proposed that

if words used to describe people (e.g., loyal, genuine, intelligent) are still relevant decades later, they are necessary for depicting behaviors essential for communication in a society's natural language. This concept, the lexical hypothesis, posits that most of the socially relevant and salient personality characteristics have become encoded in our natural language (Allport, 1937). Essentially, humans have organically created words that can be utilized to describe personality. Therefore, the vocabulary contained in dictionaries provides an extensive, yet finite, set of attributes that the people speaking that language have found necessary and useful for describing personality in their daily interactions (Goldberg, 1981).

Allport and Odbert (1936) used an unabridged English dictionary to pinpoint personality-relevant terms, resulting in an extensive list of 18,000 words. After compiling a list of personality-related adjectives, they organized all of them into four broad categories, which were deemed as having the potential to create a satisfactory taxonomy for human personality. The first category was made up of words that consistently determine behavioral tendencies such as friendly, aggressive, and introverted. The second category was an accumulation of temporary states of mind or mood with terms like frantic, rejoicing, abashed. The third category allowed for an evaluation of social or character assessments, included words such as insignificant, worthy, and acceptable. The final classification worked as a miscellaneous section that the researchers could put terms that relate to physical attributes or talents that might not fit into the other three categories.

Although the categories Allport and Odbert (1936) created overlapped and did not provide clear boundaries for taxonomy (John & Srivastava,1991), the classification supplied Cattell (1943) with a starting point for a multi-dimensional personality model. Cattell took 4,500 out of the 18,000 words Allport and Odbert (1936) established as linked to personality traits and

used semantic and empirical clustering procedures, which reduced the list to key 35 personality features. Utilizing these subset variables, Cattell conducted several oblique factor analyses and created a 16 personality factors model (Cattell, Eber, & Tatsuko, 1970). After developing the 16 personality factors model, he constructed a questionnaire with 164 statements thatindividuals rated for accuracy. While some researchers have challenged Cattell's research (e.g., Becker, 1960; Schaie, 1962), his study established the need to measure and validate personality scales across multiple methods, including observer ratings, self-reports, and objective tests. Cattell's personality system provided the groundwork for the Big Five, and his questionnaire approach to measuring personality remained the most common until Pennebaker & King (1999).

Researchers Tupes and Christal (1961) isolated significant and relatively independent personality trait factors through clarifying the factor structures as established by Cattell (1943). To provide relatively comprehensive dimensions of personality, they analyzed correlation matrices for eight different subject samples. This diverse sample included personality ratings by peers, supervisors, and experienced psychologists for participants from a wide variety of backgrounds. Tupes and Christal (1961) reported that the differences in sample, situations, raters, and length of a relationship had little effect on the factor structure of personality dimensions. Five strong and recurrent dimensions appeared consistently across the diverse samples and varied data collection techniques. However, it wasn't until the five-factor structure had been replicated by Norman (1963) that the labels psychologists use today were introduced to the field. The factors outlined in Table 1 would eventually become dubbed as the "Big Five" (Goldberg, 1981).

Table 1: Five-Factor Model Labels and Descriptions

I. Extraversion/ Surgency (e.g., talkative, assertive, energetic)	Extraversion refers to how outgoing and social a person is. Individuals who rank high on the extraversion scale are the life of the party, while individuals who score low on the scale are more comfortable by themselves.
II. Agreeableness (e.g., good-natured, cooperative, trustful)	Agreeableness determines how warm, friendly, or tactful a person is. Individuals who score high on the agreeableness scale are generally optimistic and get along well with others. Individuals who rank low on the agreeableness scale may be seen as more distant and uncooperative.
III. Conscientious (e.g., orderly, responsible, dependable)	Conscientiousness indicates how careful and reliable a person is. Individuals who score high on the conscientious scale prefer to follow a plan and take obligations to others seriously. Individuals who rank low on the conscientious scale tend to be more impulsive and less motivated towards tasks.
IV. Emotional Stability vs. Neuroticism (e.g., calm, not easily upset)	Emotional Stability/Neuroticism is the tendency to experience negative emotions, such as depression and anger. Individuals who have higher emotional stability are not easily upset and tend to be calm in emotionally charged situations. Individuals who have lower emotional stability are labeled neurotic and have a low tolerance for stress.
V. Intellectual/Openness (e.g., intellectual, imaginative, independent-minded).	Openness denotes how open-minded a person is. Individuals who score high on the openness scale are typically curious and enjoys trying new things. Individuals who score low on the openness scale tend to be pragmatic and prefer routines.

The Big Five model is not meant to imply that diverse personalities can be condensed into five dimensions; instead, these five traits are intended to characterize personality on a broad scale. Goldberg (1992) established each of the traits mentioned above exist on a bipolar scale instead of as dichotomous variables. For example, a person can either be more introverted or more extroverted. Goldberg conducted a series of factor-analytic studies with adjectives that uniquely described each end of the spectrum to develop his continuous scale. However, it was up to other researchers to create a practical self-assessment tool (in the form of an inventory or questionnaire) to give to participants.

Costa and McCrae (1976) set out to develop a personality inventory based on Cattell's early lexical work creating a scale to measure three broad personality dimensions called the NEO: Neuroticism, Extraversion, and Openness. Similar to Wiggins (1968), the two scholars' analyses illustrate that these personality traits are measurable through surveys. However, they failed to recognize similarities between their personality inventory and the Big Five factors excepting theirexclusion of the dimensions of agreeableness and conscientious in the NEO inventory. Later, Costa and McCrae (1992) set out to revise their research to validate the "Big Five" in the self-report questionnaire structure. The modified scale was composed of five bipolar dimensions with six detailed facets – also known as Goldberg's trait descriptive adjectives (see Table 2). To test the revised inventory (known as the NEO-P-IR), Costa and McCrae (1992) conducted both factor analytics and multi-method validation procedures. The results of these tests showed that the scale exhibited internal consistency, future permanency, and convergent and discriminant validity against peer ratings (McCrae & Costa, 2003; Costa & McCrae, 1992).

Table 2: Costa and McCrae's (1992) NEO-PI-R Facets

Abbreviation	Big Five Dimensions	Facet (and correlated trait adjective)
O	Openness to experience *(vs. Closedness)*	- Ideas (curious) - Fantasy (imaginative) - Aesthetic (artistic) - Actions (wide interests) - Feelings (excitable) - Values (unconventional)
C	Conscientiousness *(vs. Lack of direction)*	- Competence (efficient) - Order (organized) - Dutifulness (not careless) - Achievement striving (thorough) - Self-discipline (not lazy) - Deliberation (not impulsive)
E	Extraversion *(vs. Introversion)*	- Gregariousness (sociable) - Assertiveness (forceful) - Activity (energetic) - Excitement-seeking (adventurous) - Positive Emotions (enthusiastic) - Warmth (outgoing)
A	Agreeableness *(vs. Antagonism)*	- Trust (forgiving) - Straightforwardness (not demanding) - Altruism (warm) - Compliance (not stubborn) - Modesty (not show-off) - Tendermindedness (sympathetic)
N	Neuroticism *(vs Emotional stability)*	- Anxiety (tense) - Angry hostility (irritability) - Depression (not contented) - Self-consciousness (shy) - Impulsiveness (moody) - Vulnerability (not self-confident)

These traits from the Adjective Check List (listed in parentheses following each facet) *correlated substantially with scores on that facet in a study of self-ratings (Costa and McCrae, 1992)*

These series of scales, which refined the Big Five Personality types into the ones commonly used today, were fundamental to Aaker's (1997) research in BP. However, before diving into how personality is expressed through brands and can be measured similarly to personality within humans, it is worth pausing to review the aggregate evaluation of personality research. Personality research has been validated and substantiated in numerous empirical and qualitative studies by psychologists. Human personality is primarily measured using a mixed-methods approach, utilizing both self-reports (individuals evaluating their personality) and observer ratings (appraising another's personality) to identify personality traits. Additionally, researchers found that the same five traits appeared consistently across the distinct samples and varied data collection techniques. Costa and McCrae's (1992) labels for factors of personality (Openness, Conscientious, Extraversion, Agreeableness, Neuroticism, or OCEAN) have remained as the primary categories employed of the Big Five Personality types. Aaker (1997) also drew heavily from their research to establish her dimensions of BP.

II. Brand Personality

As established above, psychologists define personality as set patterns of behaviors, feelings, and opinions. Marketing and advertising scholars believe that a person's personality impacts their interaction with a brand (Krishnan & Chakravarti, 1993). For this paper, we will use Kotler's (1991) definition of a brand, which is a "name, term, sign, symbol, or design, or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from competitors" (p. 232). The totality of these elements represents a brand and gives it a unique brand identity. In its early inception, BP was classified by the type of person who used the product and the situations in which one might use the product. Plummer (1985) found that brands could be ascribed with human characteristics like

“friendly,” “gentle,” and “honest” These personality associations occurred because of the underlying user’s image and typical product usage, as well as the emotions incited by seeing or utilizing the product. Further, researchers have proposed that BP is an essential element of a product’s image because it enables a consumer to use it as a symbol or expression of their own self (Belk, 1988), their ideal self - the person they would like to be - (Malhorta, 1988), or an extension of their own personality (Kleine, Kleine, & Kerman, 1993). These studies establish that the personality expressed by the brand – either through the type of people who typically use it or brand-specific communication – are taken into consideration when a consumer makes a purchase.

Among scholars, there was a lack of consensus on how BP should be defined and measured. Aaker (1997) created a comprehensive definition of BP and a reliable, valid, and generalizable scale to measure BP. Aaker argued that BP and human personality are distinct concepts and, therefore, cannot be identically evaluated. Assessment of human personality is derived from an individual's behavior, physical characteristics, and attitudes or beliefs (Park, 1986). On the other hand, BP is influenced by consumer interactions with the brand and their assessment of the brand (Plummer, 1985). BP is directly affected by the consumers who use the product; their overarching characteristics can become ingrained in the personality of the product. For example, Pendergrast (1993) noted that personality traits associated with Coca-Cola are cool, all-American, and real, whereas Pepsi users saw the product as young, exciting, and hip. These personality traits distinguish the two drinks from each other despite the fact they fill the same need for consumers. Customers see aspects of themselves in the symbolic use of the brand.

Therefore, Aaker (1997) defined BP as "the set of human characteristics associated with a brand" (p. 347), which includes elements such as inner values, physical traits, and depictions of

the typical user. This is a significant deviation from psychology's approach to personality. Costa, McCrae, & Kay (1995) believed it was essential to exclude elements such as gender and social class when measuring personality. However, Levy (1959) argued that BP should include demographic traits because it is impossible to separate gender and class from certain products. For example, Tampax is always going to be feminine, and Great Value is going to suggest a lower income user base. Since some product categories rely heavily on demographic appeal, and it is difficult to segregate aspects of the typical user from the product, Aaker decided to include these elements in how she measured and defined BP. Thus, the Big Five scale established by psychologists would miss these important distinctions of BP. Aaker (1997) set out to develop an acceptable, consistent, and broad scale to measure BP.

Before Aaker's (1997) study, marketing researchers employed either personality scales taken directly from psychology to measure personality or an ad-hoc method. For the first phase of her scale creation, Aaker used the same lexical approach as Allport and Odbert (1936)developing a list of 309 personality adjectives, which derived from the NEO PI-R (Costa & McCrae, 1989), the Big Five Prototypes (John, 1990), and the adjective checklist (Piedmont et al., 1991). An additional 133 personality traits were taken from scales used by academic scholars (Alt & Griggs, 1988; Levy, 1959; Malhotra, 1981; Plummer, 1985; Wells et al., 1957) and terms provided by advertising and marketing practitioners. Finally, sixteen participants were asked write down personality traits that they thought of when asked about two random brands from three types of product categories (symbolic, utilitarian, and symbolic and utilitarian). These subjects added 295 distinctive adjectives to the personality trait list. After removing redundant terms, Aaker's first generation of personality terms contained 309 items. To further reduce the list, twenty-five subjects were asked to rate if they felt each of the 309 personality traits could

describe brands in general. The participants rated personality items on a seven-point Likert-type scale ("1" being "not at all descriptive," 7 being "extremely descriptive") to determine whether they could be used to describe the personality of a brand. Only traits that ranked six or higher on the Likert-type scale remained on the list. This process resulted in a final list of 114 personality adjectives for Aaker to utilize in further studies.

To test the cogency and commonality of these personality adjectives, Aaker recruited participants that represented the same demographics of the 1992 US census. Subjects were organized into four brand groups and asked to evaluate the personality of ten brands. Brand selection criteria were based on three factors. (1) being nationally identifiable – or recognizable by a broad audience (2) representative of a wide range of BP types as described by the 114 personality traits, and (3) equitable representation of the three product categories (symbolic, utilitarian, and symbolic and utilitarian) to support the generalizability of the scale. One brand (Levi's Jeans) was included in each of the four groups to evaluate the reliability of personality ratings across brand groups. Thus, a total of 37 brands were analyzed in the study. Participants were tasked with rating the extent to which the 114 personality adjectives fit or described a particular brand on a five-point Likert scale. A 114 x 114 correlation matrix was factor-analyzed using principal components analysis and a varimax on the returned 631 questionnaires to determine how personality is perceived in brands by consumers. 97% of all traits had a high loading (> .60) on a single factor, but a low loading on the other four. Additionally, four traits (urban, proud, health, and flexible) were removed from the factor analysis because they did not meet Nunnally's (1978) purification measures. The results supported a five-factor solution for BP with commonalities for each of the traits. She identified and labeled the five factors of BP: Sincerity (e.g., Hallmark cards), Excitement (e.g., MTV channel), Competence (e.g., The Wall

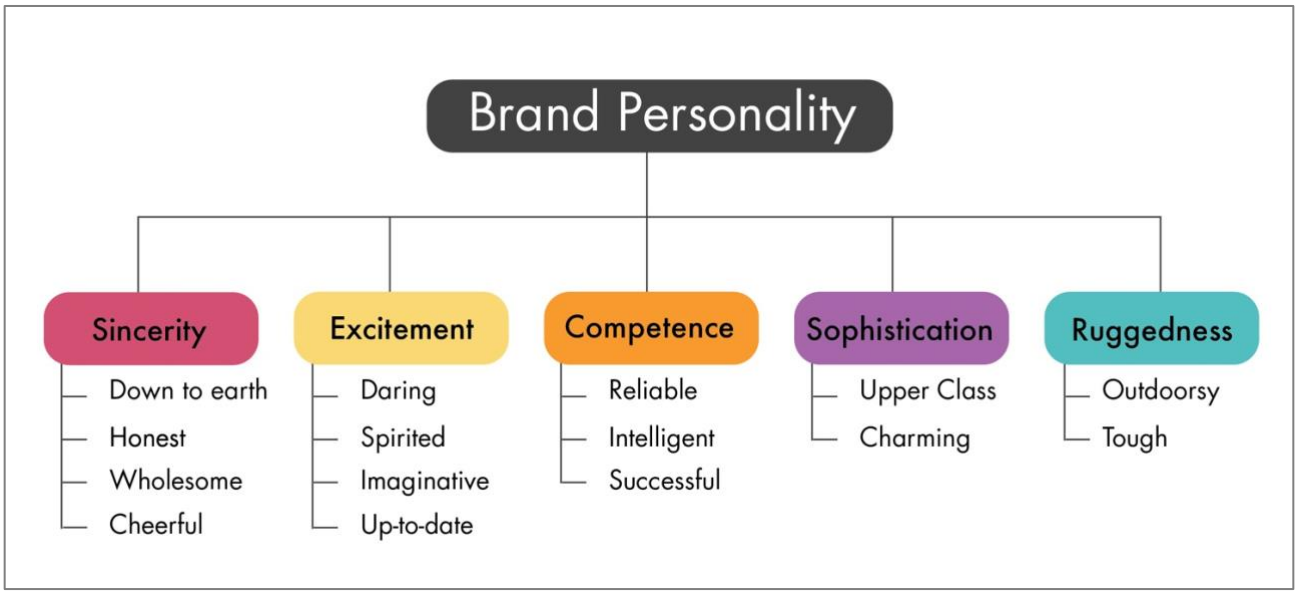
Street Journal newspapers), Sophistication (e.g., Guess jeans), and Ruggedness (e.g., Nike tennis shoes).

However, a correlation matrix approach to measuring BP only assesses the positive, cohesive adjectives and groups them into personality labels; variance created by individual consumer characteristics (e.g., demographics) needed to be accounted for in considering the generalizability of the personality types. Aaker separated the participants into four subpopulations (male, female, younger, and older) to test the generalization and extrapolation of BP across the subject groups. A separate principal component factor analysis with a varimax rotation was conducted, which allowed for limitless factors to emerge from the data. The data revealed that Osgood, Suci, and Tannenbaum's (1957) three criteria for the analogous factor structure were met. (1) the same number of factors obtained (five); (2) the same types or traits loaded on the same characteristics; and (3) among the four subsamples, the five factors received comparable weight (1957). The factor congruence correlation showed that the average factor correlations between the subgroups ranged from .92 to .95, which supports the stability of BP factors across different populations.

Once Aaker (1997) established what to label the five dimensions of BP, it was necessary to determine the adjectives or traits that best represent these factors. Drawing upon extant psychology literature (Costa & McCrae, 1989), she derived the idea of facets for personality. Facets are items or traits that act as the framework for defining the characteristics for each dimension of personality. It is essential to distinguish that facets are not the same as factors or dimensions. Facets are employed to refine and improve personality scales, not create new constructs (Church & Burke, 1994). Aaker established a total of fifteen facets for the five factors:

Sincerity and Excitement each had four facets, Competence had three, and Sophistication and Ruggedness each had two (Figure 1).

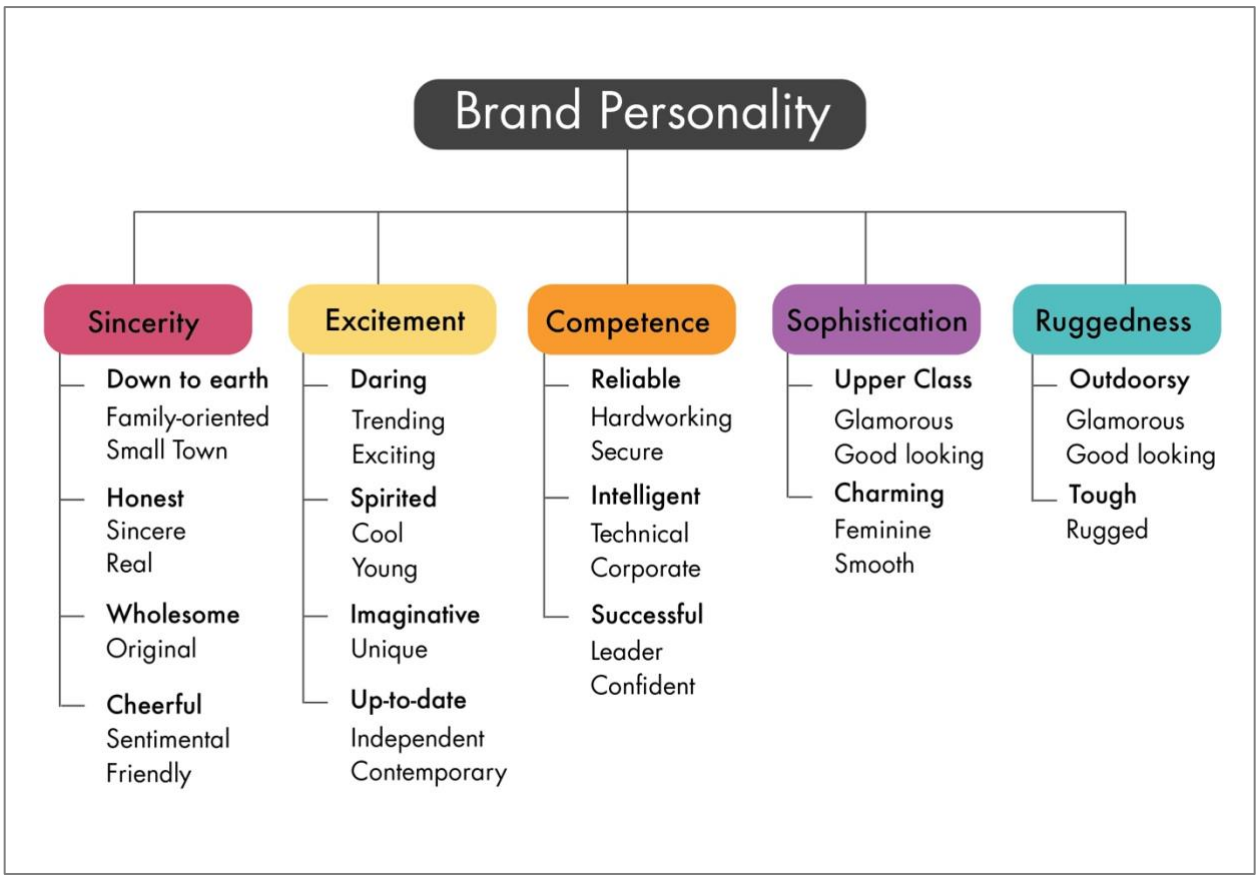
Figure 1: Aaker's Brand Personality Dimensions



Aaker's Brand Personality Dimensions, digital graph, Superskill, accessed 23 February 2020, http://www.superskill.com/aaker-brand-personality-dimension/

Aaker decided that each facet needed a list of traits that further describe or categorize that particular facet. Aaker's process for determining the traits used to outline the facet was by following Nunnally's (1979) clustering technique, whereby three clusters adjectives were formed for each facet. The adjectives with the highest item-to-total correlation were identified, establishing forty-five traits (3 adjectives for each of the fifteen facets) to define personality the final BP scale (Figure 2).

Figure 2: Brand Personality Dimensions and Facets



Aaker's Brand Personality Dimensions and Facets, digital graph, Superskill, accessed 23 February 2020, http://www.superskill.com/aaker-brand-personality-dimension/

One hundred eighty individuals matching the demographics of the first subject sample were surveyed to ensure reliability and validity. Participants were asked to follow the same instructions as on the first questionnaire, except for two changes that were made. Instead of the original 114 personality traits, only forty-five were provided for measurement, and different brands were used. The second group of brands was derived in the same way as the first. However, unlike the purification round, the brands were not selected based on the existing perceived personality. Thus, an independent random sample could provide a more stringent measure of the five-factor structure. Additionally, while the models were developed utilizing

correlation matrixes, a confirmatory factor analysis (Generalized Least Squares) was conducted. The results revealed the same number of factors (five). The same types of factors (Sincerity, Excitement, Competence, Sophistication, and Ruggedness) appeared, and similar weights for the traits used to define the five factors emerged. Thus, with this intensive study, Aaker developed a reliable, valid, and complete BP model.

Although Aaker's (1997) scale has been challenged (e.g., Azoulay & Kapferer, 2003; Geuens, Weijters, & De Wulf, 2009; Lau & Phau, 2000), the work remains the empirical foundation for BP research. Aaker's (1997) scale established the importance BP plays in attracting consumers to specific brands. Fournier (1998) suggested that BP allows brands to behave as an active and contributing member in a consumer-brand relationship. Brands that develop a distinct personality enable people to build emotional attachments similar to the relationships they form with other people. Brand-consumer connections are made up of affective, behavioral, and cognitive dimensions (Radler, 2018). These dimensions determine the strength of the relationship a brand and a consumer have. Typically, brands are used to express, affirm, or enhance a consumer's self-concept (Escalas & Bettman, 2005). The congruence between one's personality and BP can influence consumer-brand relationships. The consumer-brand relationship impacts brand attitudes, brand trust,brand affect, brand loyalty, and purchase intention (e.g., Fournier, 1998; Freling, Crosno, & Henard, 2011; Grohmann, 2009; Kressman et al.., 2006; Lui et al., 2012; Sung & Kim, 2010).

Once Aaker and Fournier provided the framework for measuring BP and the vital role it plays in consumer-brand relationships, subsequent researcher explored how they impact the consumer's decision journey. Grohmann (2009) examined the role that a consumer's gender identity has on a brand's affective, attitudinal, and behavioral responses. As established above,

demographic traits are exclusive to Aaker's BP scale; she argued that a consumer's demographic characteristics could directly or indirectly affect BP primarily because specific product categories must rely on demographic appeals. These results suggest that consumers select brands that depict the same gender as their own, which led to favorable brand attitudes, stronger brand preference for brands whose gender are congruent with their own compared to competing brands, and greater brand trust.

Sung and Kim (2010) examined how individual dimensions of Aaker's BP scale afffect brand trust and brand effect reporting that brands perceived as sincere or rugged garner higher levels of brand trust than other dimensions. On the other hand, consumers' perceptions of a brand's excitement and sophistication characteristics can positively impact brand affect; if a brand is seen as exciting or sophisticated, it will elicit a positive emotional response from users. The competence dimension similarly influences brand trust and brand affect. These results demonstrate that different dimensions of BP influence consumers' perception of a brand's function or cognitive-related aspects. In contrast, other factors of BP manipulate how consumers feel about a brand. The more consumers trust a brand and the more positive emotional experiences they have with, the more they will build the level of brand loyalty (Sung & Kim, 2010).

Lui et al. (2012) investigated the direct impact that BP has on brand loyalty; both Grohmann (2009) and Sung and Kim (2010) proposed a connection between brand loyalty and BP but did not provide empirical data to back up the assumption. Lui and colleagues tested the congruity between BP, brand user image, and brand usage image of luxury brands on brand attitude and brand loyalty. Brand user image congruence refers to the association between the buyer's self-concept and the image of the target user, whereas brand usage image congruence is

the situations in which a brand or product is typically used (Biel, 1993; Sirgy et al., 1997). Brand user image congruence and brand usage image congruence were noted as strong predictors of brand attitude and brand loyalty. However, BP congruence has an equally significant effect on brand loyalty but did not impact brand attitude.

Freling, Crosno, & Henard (2011) introduced a new variable related toBP called BP appeal, which is purported to guide purchase intentions. Defined as the "ability to appeal to a consumer through a combination of human characteristics associated with it," BP appeal has three dimensions: favorability, originality, and clarity. A BP must be perceived as favorable or possess attributes and benefits that will satisfy the consumer's needs and wants, contributing to positive overall brand evaluation. A BP must be original or seen as novel or distinct from other brands in the same product category. Finally, BP must be recognizable and evident to consumers, thus providing a specific personality to consumers. The researchers found a significant three-way interaction between the BP appeal dimensions indicating that favorability, originality, and clarity impact purchase intentions. Thus, consumer purchase intentions are optimized when BP has high favorability, originality, and clarity.

These studies took Aaker's framework and instrument of BP and determined how it impacts consumers on their decision-making journey. Fournier (1998) established that BP is essential for the consumer-brand relationship. The relationship a consumer has with a brand impacts how they feel about the brand (brand attitude), how much they trust a brand (brand trust), how loyal they are to that brand, and how likely they are to purchase a distinct brand from another. However, the consumer-brand relationship has drastically changed as social media has transformed communication between brands and consumers.

III. Measuring Brand Personality in the Digital World

Over the past decade, researchers have observed a massive shift in consumers' daily media behaviors with the emergence of social media (Mangold & Faulds, 2009). In 2016, it was reported that the average US citizen spends 5.5 hours on social media a week, a 36% increase from the previous year (Casey, 2017). Since 2016, the number of social media platform users and the amount of time they spend on these platforms have only continued to increase. Facebook recently disclosed that 51% of its 222 million US users login several times a day; its competitor, Twitter, boasted that its number of daily users has consistently increased since 2016 (Cooper, 2019). It is unsurprising, then, that companies see social media as their golden ticket to market and advertise to consumers.

However, moving into the online sphere has drastically changed communication. Traditional media such as television, radio, newspapers required brands to broadcast their message to the consumer. In this case, the ad or brand communication is transferred from the sender (the brand) to the receiver (the consumer) without the opportunity for the consumer to respond or give feedback (Wang et al., 2002). In one-way communication, consumers passively consume media not necessarily actively seeking out the content. Social media allows users to have a more interactive experience with brands by choosing which brands they want to follow or see at a given point. The internet facilitates brand-consumer relationships through two-way communication, in which the consumer can respond to the messages or information the brand posts via social media. This is known as social media interaction, which refers to a consumer's motivated engagement with the brand on social media platforms such as following, replying, tweeting at/tagging the brand in posts, sharing/retweeting, liking, and participating (Hudson et al., 2016). When customers interact with a brand through social media, they develop a stronger

emotional attachment and brand relationship quality (Hudson et al., 2015). As consumers become attached to the brand and develop a relationship with it, they often nurture their sense of connection to the brand by joining the brand's social media community (Goh, Heng, & Lin, 2013). These online communities are important because they create shared meaning between the brand and its customers (McAlexander et al., 2002). This reiterates the significance of consumers' self-concept in line with the brand. Consumers will join brand communities with brands that share either personality or self-concept, and by doing so, they fortify the brand's identity or personality.

BP has become an integral part of a brand's social media presence. The best example of this is the viral success of "Twitter Beef" in which Wendy's established they are a "charming challenger," who roasts consumers and competitors on Twitter ("Nuggs for Carter," 2017). Consumers actively engage with the brand to experience their witty and sarcastic replies to their tweets. One customer's request for chicken nuggets for a year from Wendy's is the #1 most retweeted tweet in history with 3.5+ million (Roman, 2017). Nevertheless, it is not just fast food brands that have adopted a strong brand voice and personality in the social media space; brands across all product categories have adopted specific, unique personalities to attract followers and drive engagement.

While this research aims to fill the gap examining BP congruence in social media, psychologists have already bridged human personality studies into the social media frontier. As discussed in the preceding paragraphs, every day, millions of people express themselves by writing their thoughts down on social media. Social media posts provide a massive source of rich psychological data (Park et al., 2015). In fact, since the mid-2000s, over one hundred studies have been conducted on the relationship between language used online and psychological

correlates (Tausczik & Pennebaker, 2010). Some of the earliest work found that word choice displays individual differences of personality and can be reliably correlated with personality self-reports questionnaires (Pennebaker & King, 1999). Unlike previous research, where psychologists used words to categorize personality (as descriptors), Pennebaker & King's (1999) textual analysis approach found that individuals with certain personality types use particular expressions and words in their writing. For example, individuals scoring higher on neuroticism use first-person singulars (e.g., I, me, mine) more frequently, and individuals scoring high on extraversion use more positive emotion words (e.g., great, happy, amazing). Many of these earliest findings have since been replicated across multiple studies (e.g., Schwartz et al., 2013; Yarkoni, 2010). These have yielded evidence linking language and word choice to personality.

Additionally, psychologists are already utilizing social media to a measure personality. Park et al. (2015) provide three justifications on why social media is the best vehicle from which to appraise personality. First, social media are a natural part of individuals' lives; the language in posts/tweets is written in a natural social setting and captures communication among friends and acquaintances. Second, social media users disclose personal information at high rates (Naaman, Boase, & Lai, 2010). Third, social media users typically present their true selves and not just idealized versions (Back et al., 2010). These studies confirm that the Big Five Personality types are still valid and reliable in analyzing written words. Despite personality's origins being in the lexical approach, the scale was finalized using individual questionnaires and observer ratings, neither of which relied on evaluating text. However, the Likert scales used in Costa and McCrea's (1992) Big Five Personality survey can't be applied to social media or blog posts because it relies on self-evaluation. Thus, a new measurement emerged – Linguistic Inquiry and Word Count.

It is important to note that Pennebaker and King's (1999) approach to measuring personality online is not the same as the lexical hypothesis, which assumes that adjectives are used to describe elements of personality. Instead, they use a closed-vocabulary (word count) approach to personality, counting how frequently specific words or syntax occurs in a given text when analyzed by a selected dictionary or lexicon. Although LIWC allows researchers to create custom dictionaries, previous psychologists have used the pre-existing 66 LIWC categories, which relies on patterns such as personal processes, social processes, and affective processes rather than a dictionary with terms for each of the "Big Five Factors." There are two issues with utilizing preset categories in LIWC. First, there is no clear threshold within each category to designate personality. For example, we know that the use of negative emotions indicates neuroticism, but researchers have not established the frequency they must occur for the text to be considered neurotic. Nor is there a distinct description of which combination of the 66 preset LIWC categories results in each of the "Big Five" dimensions. These unclear measures make it difficult for future researchers to replicate LIWC personality studies. This is why Yun et al. (2019) opted to use IBM Watson, an AI software built to assess personality, instead of LIWC.

As established above, BP and human personality are separate theoretical concepts and cannot be measured the same way. Therefore, the 66 predetermined LIWC categories would not be appropriate for assessing BP since they were based on the psychologist framework. This left a gap in how to measure BP through a textual analysis approach. In 2006, Opoku noticed that organizations were turning to the internet to communicate and market through their websites. His objective was to develop a computer-assisted content analysis approach to measuring BP in an online environment. While psychologists typically use LIWC for analysis, Opoku opted for WordStat because it could perform univariate frequency analysis (keyword count and

occurrence) and bivariate comparison between textual fields and any nominal or ordinal variables (gender, sentiment, etc.). In his approach, he compared the body of texts collected from the websites 30 of the top 100 Financial Time's ranked MBA program using all the existing WordStat dictionaries and a custom dictionary created based on Aaker's (1997) five BP dimensions. Each time a word was identified it was tagged and counted toward a dimension or preset category. Once each website's content was analyzed, the MBA program was given a BP dimension based on the frequency of word count across the dictionaries.

WordStat, however, did not have a BP dictionary readily available. Opoku (2006) designed a comprehensive dictionary of synonyms based on Aaker's (1997) five BP dimensions and facets and the lexical approach. While the lexical hypothesis used adjectives to describe types of personality, when adjectives are written in a body of text, they act as an interpretive route between the communicated personality and the perceived personality (Ranfagni & Faraoni, 2020). Essentially, brands use adjectives within a text to convey the underlying attitudes and emotions of the BP. The goal of brand communication is to inform, persuade, and enlighten customers about the brand's, strengths, values, and offerings of products or services. Therefore, a brand is going to utilize adjectives to influence consumers to select their product because it aligns with their self-concept. Since adjectives convey personality when included in online posts,

Opoku (2006) decided to create an adjective-based lexicon rather than deviating for the lexical approach as psychologists have. The Encyclopedia Britannica's thesaurus was used to determine synonyms of the dimensions of Aaker's original model. Additionally, to enhance the validity of the scale, he collected an additional list of synonyms from two individuals with academic backgrounds in marketing and business and who were multi-lingual. The researchers believed that individuals who had different linguistic knowledge would find additional meanings

to words. After each coder created their list, they came together and had to argue and justify their choices. Finally, the merged list from the two coders was sent to an impartial third reviewer to provide further comments and suggestions to the proposed dictionary. The process resulted in a list of 1,625 adjectives distributed evenly across Aaker's five dimensions of BP. Once the final reviewer approved the terms, the custom dictionary was imported into WordStat for a round of pilot testing.

Two pilot studies were performed to validate the terms in their dictionary. In the first pre-test, content from Mercedes-Benz, Volvo, VW, and Ford manufacturing websites was analyzed. They had two objectives from this initial experiment. First, they wanted to determine whether they could achieve similar results in terms of personality. Second, it helped eliminate adjectives that were too ambiguous or too common such as “just,” “open,” “nice,” “usual,” “very,” and “well,” which might skew the results. The next test used African tourism websites for their content. Opoku describes these results as encouraging. Based on their dictionary results, they found that Kenya is personified as “rugged,” whereas Botswana is “exciting,” and South Africa is “sophisticated.” With a reliable and accepted scale to measure personality through word-use on websites, Opoku and his team were ready to conduct their study.

Out of the thirty websites they evaluated, twenty-eight schools’ websites fall within a different BP category. Only one university, Graziadio, did not express a distinct BP. On the other hand, Stanford communicates two BP dimensions – competence and sincerity; however, a dendrogram analysis showed competence that competence was a more robust personality type than sincerity. The brand dimension competence frequently occurred in website content and accounted for 58% of total personality adjectives. Although the figure below (Table 3) reveals that both Harvard and ESCP-EAP align with the same personality dimension, they differ in the

number of personality-related terms used in their content. Harvard has 5.3X more personality qualifying words in their website content (1,206) than ESCP-EAP (164). The researchers concluded that brands have varying degrees of BP strength. They found that the top 10 MBA program's websites contain more personality words in their text than the middle ten schools or the last ten schools.

Table 3: Summary of Associations between 30 Cases and the Brand Personality Dimensions in Opoku's 2006 Dissertation

Rank	Name of School	Competence	Excitement	Ruggedness	Sincerity	Sophistication	None
Top 10							
1	Harvard	X					
2	Wharton		X				
3	Columbia		X				
4	Stanford	(X)					
5	LBS	X					
6	Chicago GSB		X				
7	Dartmouth	X					
8	Insead			X			
9	NYU's Stern					X	
10	Yale			X			
Middle 10							
46	Manchester			X			
47	Rice University	X					
48	Illinois University	X					
49	BYU Marriot			X			
50	Weatherhead		X				
51	Michigan					X	
52	Carlson	X					
53	Tanaka					X	
54	Warwick				X		
55	Smeal		X				
Last 10							
91	Durham	X					
92	Graziadio						X
93	Birmingham	X					
94	Edinburgh	X					
95	Washington		X				
96	Bath University			X			
97	G. Washington					X	
98	Trinity		X				
99	Fisher		X				
100	ESCP-EAP	X					
Total		10	9	5	1	4	1

Opoku, Towards a methodological design for evaluating online brand positioning, 2006

Since Opoku's (2006) initial test using communications from MBA websites, his dictionary has been employed as a measure in succeeding studies. Abimbola et al. (2007) was the first to further test Opoku's (2006) dictionary. They repeated Opoku's process for analysis, including the use of Wordstat as their software package, but tested website content from five small-to-medium restaurant franchises (Blenz, Café Rouge, Jollibee, Nandos, and The Old Spaghetti Factory). While each brand used adjectives in their communication across the five brand dimensions, four of the five displayed a different dominant BP from the other brands in the sample. The researchers argued the results suggested that food franchisers create strong online BPs, which allow precise and distinct positioning over other brands in their product category. Pitt et al. (2007) replicated the process again but using African country tourism sites instead. They tested twice as many brands, which allowed for more overlapping of BP. For example, Kenya and Zimbabwe both communicate "ruggedness" as the primary BP of their online messaging, while South Africa and Angola tourism websites convey "competence." The duplication of BP across brands helps verify the reliability of Opoku's dictionary. More recently, Rutter et al. (2018) took Opoku's dictionary to the next level by comparing the BP of UK electricity companies' online dialogue with consumer switching behaviors. They determined that BP in brand-consumer communication does have an impact on customer retention. However, none of these studies explore the role of BP congruence.

THEORETICAL BACKGROUND

Researchers have found that BP attracts consumers with similar personalities (Ahmad & Thyagaraj, 2015). BP is built on the framework that brands allow consumers to express his or herself (Belk, 1988), their ideal self (1988), or dimensions of self (Kleine, Kleine, & Kernan, 1993) through their use of or interactions with the brand. Personality also allows brands to differentiate themselves from their competitors in a product category (Halliday, 1996), which, in turn, can influence consumer preference and usage (Ingenhoff & Fuhrer, 2010). This initial BP framework led to the self-congruence theory, which states that favorable brand attitudes and brands occur when a brand-user image matches the consumer's self-concept (Kressmann et al., 2006, Sirgy et al., 1997). To better understand the relationship between brand personality and consumer personality congruence, it is essential to define basic terms self-concept, self-concept, and the real and ideal self.

Self is an element of consciousness and something that an individual is actively aware of and is the source of consistency in behavior. The self is perceived to be an effect of social interaction in which one introjects or projects (Brunnel, 1990; Vernette, 2003). When an individual introjects, they replicate behaviors, attitudes, ideas, or other fragments of the environment around them; these copied behaviors become part of themselves (Brunnel, 1990). When an individual projects their sense of self, they share their belief of themselves onto the environment around them (Vernette, 2003). To have a self-concept or a self-concept, one needs to know oneself. Additionally, the self is a process; it is an instinctive phenomenon that

manifests through communications and is based on the social character of human language; for example, using words like "I" and "Me" in conversations (Lewis, 1979).

It is important to stop here and point out that that self and self-concept are different theoretical notions (Gecas, 1982). Self-concept is a product of this reflexive activity; it is the totality of an individual's thoughts and feelings about his or herself (Rosenberg, 1986). Self-concept is a multi-dimensional variable; individuals must evaluate cognitive, social, and emotional components when they establish their self-concept (Zouaghi & Darpey, 2003). The cognitive dimension is composed of the opinions and images the individual has of his or herself. The emotional dimension is primarily based on the feelings and impressions towards him or herself. Finally, they must also consider how others perceive them when communicating their self-concept (Oyserman, 2004). Since individuals must evaluate themselves through a cognitive, emotional, and social lens, researchers have determined four types of expressed self-concept: the real self, the ideal self, the real social self, and the ideal social self.

1. The real self is the way an individual sees himself or herself.
2. The ideal self is the way that an individual wishes or wants to be.
3. The real social self is the way that others perceive an individual.
4. The ideal social self is the way the individual would like others to see him or herself.

In the context of marketing, self-concept can predict future behaviors such as product purchases and brand interaction (Landon, 1974). Brands, products, and services act as an outlet in which consumers can express their self-concept (Escalas & Bettman, 2005; Johar et al., 2005). Personality self-congruence postulates that consumers purchase brands with personality traits that match their personalities (Abel & Buff, 2010). When evaluating a brand, whether implicitly or explicitly, the consumer will compare it to their personality. The more similar a brand's

personality is to the consumer's personality, the more favorably they will evaluate the brand (Graeff, 1996). Additionally, a brand's personality can enhance or improve the self-concept an individual has of themselves. Possessions or brand associations can become a part of the social image a consumer wants to depict to others in their community (Burris & Rempel, 2004). Therefore, a brand or product can reinforce the consumer's real self or help them achieve the identity of their ideal self. Additionally, while a product may be purchased for personal fulfillment or needs, it can also help place them in a social circle. Thus, self-congruence is able to draw on the same theoretical framework from self-concept and establish four components of self-congruence theory (Galan, 2007; Helgeson & Supphellen, 2004; Sirgy, 1982):

1. Congruence with real self is the extent to which the consumer's real self-concept and the typical purchaser of the given product or brand.
2. Congruence with the ideal self is the degree to which a consumer uses or purchases a product or brand to strive toward the person they want to be.
3. Congruence with social self is how similar their social self-concept matches that of the typical consumer of the given product or brand. In other words, does the product they purchase reflect their social group or is in line with brands other people would expect that individual to buy from.
4. Congruence with the ideal social self is the degree to which a consumer uses or purchases a product or brand to demonstrate how they want others to perceive them.

The relationship between self-concept and BP has been explored in numerous studies. Freling and Forbes (2005) noticed that overall, consumers prefer brands with strong personalities, but brand appeal often differs significantly from person to person. They argued that these findings enriched Aaker's original framework because "the appeal of particular BP traits is

contingent upon the user's schematic personality traits that are made salient by the purchase or consumption situation." Similarly, Maehle and Shneor's (2009) study observed that customers who are typically extraverted and value social connections are attracted to brands that express sincerity as their personality. Whereas, consumers who are driven and ambitious prefer brands with the dimension of excitement. Both of these studies demonstrate that consumers are attracted to brands that share elements of their personality and, in some cases, avoid or have low opinions of brands that do not match their self-concept.

Deviating slightly from the prior two researchers, Malär et al. (2011) explored how one's actual self-concept and their ideal self-concept impact BP and emotional attachment to the brand. They found that brands which align with the consumers actual personality generate higher levels of emotional product attachment. However, brands whose mission is to help customers convey their ideal self are less successful in increasing brand attachment. These results highlight the importance of authenticity in marketing BP to consumers. Since brands are often used as an extension of one's self-concept, consumers are typically drawn to brands whose personality reaffirms who they are right now. These are just a few of the experiments that have validated that congruence exists between consumer and BP and provides insights into why consumers pick one brand over another.

The self-congruence theory goes beyond providing context to why a consumer might select one brand over another; it has a direct impact on the consumer-brand relationship. Consumers show a strong attachment to products that allow them to be self-expressive, i.e., a brand that is congruent with their self-concept (Kleine, Kleine, & Allen, 1995). The closer consumer's personality is to the brand's, the stronger the emotional bond between the brand and consumer (Kim, Lee, & Ulgado, 2005; Perry, 1999). The more intense consumers' attachment to

the brand is, the more powerful their commitment to the brand is (Kim, Lee, & Ulgado, 2005). However, it takes more than just an emotional connection to a brand to maintain a long-term consumer-brand relationship (i.e., brand commitment). Trust and satisfaction become vital components in a consumer's willingness to stay in a relationship with a brand (Hess & Story, 2005). Since consumers are drawn to brands that reflect their personality, they expect the personality to remain consistent. Guèvremont and Grohmann (2013) found that brand trust decreases when brands with a sincere personality try to flatter the consumer. When a brand communicates or behaves contradictory to the perceived BP, the customer sees the action as disingenuous, and brand/product disappointment increases. The more a consumer trusts a brand, the more satisfied they are, and the more secure the brand-consumer relationship is (Hennig-Thurau, Gwinner, & Gremler, 2002). These studies support that the extent of BP congruence positively or negatively influences components of the consumer-brand relationship.

The consumer-brand relationship is more important than ever as brands utilize social media channels to keep in constant contact with their audience. Social network sites allow brands and consumers to be social partners through interactions and engagement, which makes the entities interdependent (Fournier, 1998; Hayes, King, & Ramirez, 2016). Sprott, Czellar, and Spangenberg (2009) proposed that the strength of the self-brand connection (how closely a consumer's self-concept aligns with the brand identity) and the consumer-brand relationship impacts the consumer's likeliness to engage with brand content. Consumer engagement is an individual's involvement with an organization's promotions, communications, and activities (Vivek, Beatty, & Morgan, 2012). Hennig-Thurau et al. (2004) provide eight motives that prompt consumers to engage with brands online: (1) to express negative experience, (2) concern for other consumers, (3) improving self-esteem (also known as self-enhancement), (4) to seek

advice, (5) to receive social benefits, (6) to collect fiscal advantages, (7) to ask for assistance, and (8) to help the company. Concerning BP congruence, Cruz and Lee (2014) found that personality-oriented keywords expressing the dimensions of ruggedness, sincerity, and competence in brand tweets receive more likes, comments, and shares from consumers who share the personality traits. Consumers with the same personality as the brand are more likely to interact with the brand than those whose personality is non-congruent.

To the researcher's knowledge, only one study has attempted to use Opoku's dictionary to conduct a textual analysis of BP congruence in the social media sphere. De Moya & Jain (2013) explored how popular Mexico and Brazil's tourist department communicate their BP through Facebook posts, and which personality traits their Facebook "friends" associate with them. They used software called Dictionary 5.0, which is a computer-aided text analysis program similar to Wordstat or LIWC and utilized the customized dictionary function to import the five BP dictionaries. They found that Mexico and Brazil do indeed communicate distinctive brand personalities on each country's official Facebook page. However, the most frequently observed BP dimensions in the text were the same for both Mexico and Brazil: sincerity, followed by excitement. These results demonstrate the importance of testing multiple product categories. Since both brands analyzed provide the same function, the results mirror one another because their promotional messaging goals are to enhance their attractiveness to prospective and returning tourists. However, even though the two brands had the same primary and secondary BP, their Facebook follower's personalities only matched the BP for Mexico.

As established in preceding paragraphs, BP and human personality are distinct theoretical concepts. Therefore, McCosta and Mcrae's "Big Five" questionnaire and Pennebaker and King's textual analysis approach are not applicable for testing personality congruence. Consequently,

researchers have adapted BP dimensions into questions for focus groups/interviews (Freling & Forbes, 2005) and questionnaires (Malär et al., 2011) to determine consumer congruence. However, the benefit of a textual analysis approach to measuring BP and BP congruence is that it removes participant error and research bias. De Moya & Jain (2013) pulled 11,631 words from Mexico fan posts and 10,108 words from Brazil fan posts. They repeated the same process of running Opoku's dictionary in Dictionary 5.0 and recording word frequency for each of the BP dimensions. The BP traits, *excitement, and sincerity* were the two most frequently associated traits with Mexico in the promotional messages and the messages posted by its "friends." Thus, making the BP expressed in Mexico's friends' communication congruent with that of the brand. However, Brazil's "friends" did not communicate the same BP traits in their messages as the brand. In fact, Brazil's friends used personality-oriented terms sparingly in their online communications. These mixed results suggest further testing of Opoku's dictionary as a textual analysis approach to measuring BP, and BP congruence is necessary.

While De Moya & Jain (2013) demonstrated that Opoku's scale is applicable when analyzing BP and BP congruence in the social media space, Yun et al. (2019) established the importance of a textual analysis approach when examining personality congruence on social media. Researchers should use existing consumer behaviors (social media communication) for data rather than self-reports, as was previously employed in congruence research. Yun et al. (2019) defined existing consumer behaviors as consumers who followed McDonald's, Harley Davidson, or Tom's Shoes and also tweeted more than 3,500 words (25+ tweets) from July 13, 2009 – October 1, 2015. Their data consisted of a random, mutually exclusive sample of the brand's twitter posts, brand follower's twitter posts, and non-brand follower's twitter posts, resulting in 622,631 analyzed. They found that Twitter followers of Tom's and Harley Davidson

were more similar in personality type to the brands than accounts who do not follow the brand. Their results affirm that personality is evident in brand communications online and that social media users are following brands that share a similar personality to their own. Furthermore, they found that consumers are likely to follow brands with personalities similar to their own.

However, Yun et al. (2019) assumed that since human beings run social media accounts, personality should be measured using the "Big Five" personality dimensions. Most BP congruent studies use Aaker's (1997) BP scale to measure congruency since BP and human personality are separate theoretical concepts. Yun et al. employed IBM's Watson Personality Insights tool, a machine-learning API built off Psychology's Big-Five scale, even though De Moya & Jain (2013) established that a BP textual approach is possible in the social media space. Therefore, it is important to test whether BP scales are applicable for measuring personality in direct communications from brands on social media and whether those same personality dimensions are found in consumer posts to the brand across product categories. If congruency is found between brands and consumers using Opoku's (2006) adapted adjective-based dictionary of Aaker's BP scale, then the current BP framework remains relevant and appropriate for the digital era of advertising and marketing.

HYPOTHESIS AND RESEARCH QUESTION

While Yun et al. (2019) found that followers of brands on Twitter share similar human personality traits to that of the brand, they noticed that the three brands they analyzed scored low on the trait neuroticism while their followers scored higher on the trait. They rationalized that neuroticism would appear less frequently in brand communication than in organic tweets from consumers because social media managers carefully craft tweets to make the brand seem emotionally stable and somewhat neutral. Despite their justification for why neuroticism is not a prevalent personality trait in brand communication, they suggested that future researchers remove neuroticism from the personality scale together to gain more fruitful computational insights. However, as Yun et al. (2019) acknowledged, once you remove a trait from a set personality scale, you essentially create a hybrid measure. Before starting a new personality scale for measuring personality in the social media sphere, researchers need to test BP dimensions, which, as the literature establishes, deviate significantly from human personality origins.

Whereas human personality is derived from an individual's behavior, attitudes, and beliefs (Park, 1986), BP is influenced and established by consumer interactions with and assessment of the brand (Plummer, 1985). Therefore, since BP is developed by marketing and advertising teams to attract and build relationships with their target audience, there needs to be a congruence between consumer personality and BP. Scholars (e.g., Freling & Forbes, 2005; Maehle & Shneor, 2009; Malär et al., 2011) have been able to link brand preference to personality congruence further validating Aaker's (1997) BP scale as a reliable scale to measure personality in brand communications. Additionally, Opoku (2006) developed a textual analysis

approach to measure BP based on Aaker's (1997) five BP dimensions. Although Opoku created his BP dictionary to analyze websites, De Moya and Jain (2013) tested it on posts from the Mexico and Brazil tourism Facebook pages. They were able to draw out a primary and secondary BP dimension for the brand and had mixed results on whether the scale can measure congruence with page followers. However, Opoku's textual analysis approach to BP has yet to be tested across product categories, multiple brands, and consumer congruency.

This study will be analyzing three key components: the BP found in highly social brand's tweets and replies, tweets and replies of consumers engaging with the brand, and tweets of consumers engaging in the product type, but not with the brand. The term "engaging with" refers to brand mentions, including the brand's username in their post (Osman, 2017), or consumer replies to brand-owned Twitter content. Yun et al. (2019) decided to analyze the public tweets of followers of the brand, whether they are talking to the brand or not. Engaging with the brand is a more complex action than merely following the brand. A social media user might follow a brand for many reasons such as exclusive discounts and promotions, to stay informed, to show the company support, or get updates about new products (ExactTarget, 2010). PlayStation had one of the largest followings on Twitter in 2019, with 16.9 M followers (Ramakrishnan, 2019). Still, the median Twitter engagement rate across every industry is .046% (Kim, 2019), which means the average post would receive around 8,000 engagements (engagement on Twitter as defined by likes, replies, and retweets). Often, the more followers a brand has, the lower their engagement rate will be because they will be unable to motivate their millions of followers to interact consistently with posts. Therefore, measuring the congruence of individuals interested enough in the content to either tweet at the user handle or reply to an original post pose a better representation of social consumers than followers of a brand. Since Yun et al. (2019) found that

Twitter followers of Tom's and Harley Davidson were closer to the personality dimensions of the brand than non-followers, the following hypothesis is proposed:

H1: For highly social brands, engagement with the brand will affect personality congruence such that consumer's engaging with the brand will exhibit higher personality congruence with the brand than those engaging with the product type in general.

While Yun et al. (2019) stated that they selected brands from three different product categories, they did not identify and define those product types. Therefore, it is difficult to determine how product type affects the relationship between brand and follower's personality congruence. However, their research did reveal that McDonald's followers' personalities were the least similar to the brands compared to Tom Shoe's and Harley Davidson, this may be because the quick service restaurant fills a functional purchase motivation rather than a symbolic or experiential. Researchers have proposed that consumers might prefer brands with strong symbolic properties over brands that fulfill a practical need (e.g., Jamal & Goode, 2001; Leigh & Gabel, 1992; Mick, 1986). Bhat and Reddy (1998) suggested that symbolism and functionality are distinct concepts in the consumer's mind. Products such as toothpaste and soap are considered socially conspicuous products because we all need and use them. However, products like cigarettes and beer are deemed as private and personal (Bourne, 1963). Dolich observed conspicuous products showed less brand-consumer congruence and were less preferred than private consumption products (1969). Specifically, in the realm of BP congruence, Parker (2009) found that BP congruence for personal brands, like Sony, were better predictors of attitudes toward the brand. They proposed that BP may be more important for private brands and user-image congruence (what the typical user of a brand looks like) than in public brands.

Furthermore, Park and Lee (2009) found that product type influences electronic word of mouth. Consumers are more likely to spread the news about disappointments with experiential product types than functional product types. Although this study is looking specifically at brand-consumer interactions, Twitter is a channel that consumers use to generate electronic word of mouth and reach the brand's customer service. Many of the tweets sampled are likely consumers engaging with the brand to voice their dissatisfaction or lodge a complaint. Therefore, it stands to reason that product type might influence brand engagement.

Additionally, Ang and Lim (2006) suggest that product type affects consumer perception of BP dimensions. They observed that consumers often saw symbolic product types as more sophisticated and exciting. Whereas, utilitarian (functional) products were often regarded as having a competent or sincere BP. Although I will be using Park, Jaworski, and MacInnis (1986) definition of product types instead of the bi category that Ang and Lim (2006) analyzed, product type will likely influence which BP dimensions emerge the data. Thus, since I know that purchase motivation and product type have an impact on the level of congruence between the brand and consumer personality, electronic word of mouth (a kind of social media engagement), and BP dimensions, I want to explore:

RQ 1: How does product type influence the relationship between brand engagement and brand personality types on consumer personality?

METHODS

To examine these hypotheses, the present study used Twitter data collected from Crimson Hexagon from 12 brands distributed among three product categories. This study employed three sets of data: (1) Twitter posts from the selected brands, (2) Twitter posts from consumers engaging with (mentioning or replying to) the selected brands, and (3) Twitter posts from consumers engaging in conversations about the product categories but not-engaging directly with the chosen brands. The post contents for each variable (brand Tweets, consumer tweets at the brands, and consumers tweeting about the product type) were then analyzing via the computational textual analysis software LIWC using the custom dictionary setting.

Opoku's (2006) approach was adapted for the current study context in two keyways. First, while Opoku employed WordStat for computational textual analysis, this study employed LIWC. LIWC provides the same word count and occurrence capabilities as WordStat but is more widely used in communication literature (Tumasjan et al., 2010). Additionally, Opoku (2006) selected it for the ability to conduct a bivariate comparison between textual fields and any nominal or ordinal variables (gender, sentiment, etc.), which was not applicable for this analysis further making LIWC the best software for analysis.

Second, although other scholars (e.g., Abimbola, 2007; De Moya & Jain, 2013; Pitt et al., 2007; Rutter et al., 2018) have validated Opoku's dictionary as a reliable textual analysis approach to measuring BP, it was not designed with short text post in mind (e.g., tweets). Opoku (2006) created the dictionary by determining all the synonyms for the fifteen facets of Aaker's

BP dimensions. While this a valid approach to building a dictionary, it doesn't consider how people naturally talk. The dictionary contains sesquipedalian terms that people would not typically use with a 141 character limit. While words such as equipotent, edification, pachydermatous, and unfettered may appear on a company's website, most tweets test at a fourth-grade reading level (Johnson, 2014). As detailed later, I ascertained which adjectives frequently recurred in a sample of posts from the dataset and coded them into the five BP dimensions in Opoku's dictionary. This resulted in a modified version of Opoku's (2006) adjective-based BP dictionary, which was uploaded to LIWC for the textual analysis segment of the study. The results from LIWC were then added to the master dataset. ANOVA was then used to test the interaction effects of the brand, product type, and consumer engagement.

Four brands across three product types– symbolic, functional, and experiential, as outlined by researchers Park, Jaworski, and MacInnis (1986) were chosen for analysis. All selected brands had to be either listed either on Netbase's 2019 Brands Social Ranking Index or received a Whippie or Shorty award for their social presence. Whippie and Shorty awards are given to brands with outstanding social media content and social/digital campaigns. Additionally, the brand selected were required to meet the industry requirement of 3-5 posts a day, which allows brands to penetrate a consumer's Twitter feed (Kunesh, 2020) or 1,100 posts a year. Tom's Shoes was the only brand that did not meet this minimum threshold (with only 1,708 posts in two years) but was included to maintain consistency with Yun et al.'s (2019) research; McDonald's and Harley-Davidson were included for the same reason. This resulted in a random sample of twelve brands across three product categories, with 88,417 brand account posts to analyze (see Table 4).

Table 4: Brands Selected by Product Type

Symbolic	Victoria Secret	Mercedes	Toms*	Whole Foods
Functional	Amazon	Dove	McDonald's*	Oreo
Experiential	Xbox	Air BNB	Netflix	Harley Davidson*

*Three brands from Yun et al.'s (2019) study.

For each of the brands, Crimson Hexagon was used to collect the brand's Twitter posts or replies from January 1, 2018, to December 31, 2019. Crimson Hexagon is an AI-powered online data library with over 1 trillion posts from social media sites like Twitter, Facebook, and Instagram, as well as blogs, forums, and news sites. The software has access to all public Twitter posts dating back to 2009, and users can perform a keyword search to pull posts from specific authors, events, or topics. Some brands like McDonald's posted on Twitter more than 10,000 times during the period, in that case, a random sample of 10,000 tweets were retrieved. Retweets were excluded from the analysis as they are considered a rebroadcast of a message (Vargo, 2016). There are two primary reasons to remove them from the dataset: First, a retweet acts as a duplication of text. In a textual analysis where word frequency is a primary component, retweets can skew the data depending on how often a particular post was shared. Further, there is no research to suggest that retweets align with the BP of the brand. Since the social team has no control over the underlying personality or sentiment of retweets, it is more reliable to exclude them. Twitter was selected over other social platforms because it operates as more of an open platform, and 50% of Twitter users are likely to follow branded accounts (Hutchinson, 2015).For this project, Boolean logic was used to target posts from the brand accounts and exclude retweets and campaigns such as heart-to-remind that send thousands of posts with the same copies to consumers, which would skew the word-count in the analysis (see Table 5).

Table 5: Search Terms for Brand Posts

Symbolic	**Victoria's Secret**	**Mercedes Benz**	**Tom's Shoes**	**Whole Foods**
	author:@VictoriasSecret AND – RT	author@MercedesBenz AND – RT	author:@TOMS AND – RT	author:@WholeFoods AND – RT
Functional	**Amazon**	**Dove**	**McDonald's**	**Oreos**
	author:@amazon AND – RT OR @WholeFoods	author:@Dove AND – (RT OR "more inclusive vision")	author:@McDonalds AND – (RT OR unsubscribe* OR #HouseofHighlights OR "Trick. Treat. Win!" OR Reminder OR "Black Friday")	author:@Oreo AND – (RT OR "enter to win")
Experiential	**Xbox**	**Airbnb**	**Netflix**	**Harley Davidson**
	author:@Xbox AND – (RT OR "briefing is going live at 1pm" OR "You're officially looped in" OR "looped in" OR "now on Mixer" OR "Thank you")	author:@Airbnb AND – RT	author:@netflix AND – (RT OR snack*)	author @harleydavidson AND – RT

Similar Boolean logic was used to collect tweets from public accounts that reply to brand owned content or mention the twitter handle in a tweet to test the congruency of individuals who interact with the brand by directly engaging with them. Therefore, the data set criteria included customers who had to reply to owned brand content or tweet at (mention) the brand from January 1, 2018, to December 31, 2019. Additionally, similarly to brand owned posts and replies, Boolean logic was utilized to exclude engagement and mention oriented campaigns and public relations backlash as they would skew the standard relationship between brands and the consumers who talk to them (see Table 6). It is a common practice of social media analysts at corporations to disregard campaign-oriented content entirely when evaluating sentiment or conversation. This is because these social stunts skew day-to-day social interactions and do not accurately convey the typical brand-consumer relationship. Therefore, I also completely removed campaign-oriented tweets from the dataset instead of maintaining a small sample for analysis.

The search parameters were repeated a final time to pull tweets from consumers who are not engaging with the brand but are engaging with other brands within product type (see Table 7). I defined "not engaging with" as consumers who are talking to other brands within the product category rather than specific products. I chose to look at consumer engagement with competing brands because consumers carry their brand loyalty and exclusivity into the social media sphere (Yoshida et al., 2018; Erdoğmuş & Cicek, 2012). Solem (2016) and Zheng et al. (2015) found that consumer participation in social media is driven by brand loyalty. These findings propose that consumers will demonstrate brand loyalty by interacting with brands with a strong emotional attachment or brand-relationship and will not engage with brands that compete with their favorite brands on social.

These steps resulted in 328,625 for analysis.

Table 6: Search Terms for Consumers Engaging with Brands

Symbolic	**Victoria's Secret**	**Mercedes Benz**	**Tom's Shoes**	**Whole Foods**
	engagingWith:@VictoriasSecret OR @VictoriasSecret) AND – (RT OR author:@VictoriasSecret OR engagingWith:@Aerie OR @Aerie OR Aerie OR engagingWith:@AdoreMe OR @AdoreMe OR "Adore Me" OR engagingWith:@ThirdLove OR @ThirdLove OR "Third Love" OR engagingWith:@Wearlively OR @Wearlively OR "Wear Lively")	engagingWith:@MercedesBenz OR @MercedesBenz) AND – (RT OR author:@MercedesBenz OR engagingWith:@BMW OR @BMW OR BMW OR engagingWith:@Audi OR @Audi OR Audi OR engagingWith:@VolvoCarUSA OR @VolvoCarUSA OR Volvo OR engagingWith:@fiat OR @fiat OR Fiat)	(engagingWith:@TOMS OR @TOMS) AND – (RT OR author:@TOMS OR gun* OR #endgunviolencetogether OR @FallonTonight OR postcard OR "post card" OR violence OR violent OR "background check" OR "background checks" OR law* OR legistlation* OR government OR engagingWith:@Keds OR @Keds OR Keds OR engagingWith:@VANS_66 OR @VANS_66 OR Vans OR engagingWith:@Allbirds OR @Allbirds OR Allbirds OR "All birds" OR engagingWith:@Converse OR @Converse OR Converse)	(engagingWith:@WholeFoods OR @WholeFoods) AND – (RT OR author:@WholeFoods OR @Amazon OR @McDonalds OR RETWEET OR retweet OR @WholeFoodsMag OR "Mitch McConnell" OR McConnell OR mag* OR engagingWith:@sproutsfm OR @sproutsfm OR Sprouts OR Sprout OR engagingWith:@TheFreshMarket OR @TheFreshMarket OR "Fresh Market" OR "The Fresh Market" OR engagingWith:@Wegmans OR @Wegmans OR Wegmans OR engagingWith:@kroger OR @kroger OR Kroger)
Functional	**Amazon**	**Dove**	**McDonald's**	**Oreo**
	(engagingWith:@amazon OR @amazon) AND – (RT OR author:@amazon OR @WholeFoods OR engagingWith:@Walmart OR @Walmart OR Walmart OR engagingWith:@e	engagingWith:@Dove OR @Dove) AND – (RT OR "more inclusive vision" OR author:@Dove OR engagingWith:@OlaySkin OR @OlaySkin OR Olay OR "Olay Skin" OR engagingWith:@NIVEAUSA OR @NIVEAUSA	(engagingWith:@McDonalds OR @McDonalds) AND – (RT OR author:@McDonalds OR unsubscribe* OR #HouseofHighlights OR "Trick. Treat. Win!" OR "Black Friday" OR engagingWith:@BurgerKing OR @BurgerKing OR "Burger King" OR BK OR engagingWith:@Wendys OR @Wendys	(engagingWith:@Oreo OR @Oreo) AND – (RT OR author:@Oreo OR engagingWith:@LittleDebbie OR @LittleDebbie OR "Little Debbie" OR engagingWith:@KeeblerElves OR @KeeblerElves OR Keebler

	Bay OR @eBay OR eBay OR engagingWith:@ Google OR @Google OR Google OR engagingWith:@ Apple OR @Apple OR Apple)	OR Nivea OR engagingWith:@Loreal OR @Loreal OR Loreal OR L'Oreal engagingWith:@Neutrogena OR @Neutrogena OR Neutrogena)	OR Wendys OR Wendy's OR engagingWith:@SUBWAY OR @SUBWAY OR Subway OR engagingWith:@tacobell OR @tacobell OR "Taco Bell")	OR engagingWith:@milanocookies OR @milanocookies OR Milano OR "Milano Cookies")
Experiential	**Xbox**	**Airbnb**	**Netflix**	**Harley Davidson**
	(engagingWith:@Xbox OR @Xbox) AND – (RT OR author:@Xbox engagingWith:@NintendoAmerica OR @NintendoAmerica OR engagingWith:@PlayStation OR @PlayStation OR engagingWith:@AppleArcade OR @AppleArcade)	(engagingWith:@Airbnb OR @Airbnb) AND – (RT OR author:@Airbnb OR #WestBank OR "West Bank" OR palestin* OR anti OR engagingWith:@Expedia OR @Expedia OR Expedia OR engagingWith:@homeaway OR @homeaway OR Homeaway OR "Home away" OR engagingWith:@vrbo OR @vrbo OR VBRO OR engagingWith:@TripAdvisor OR @TripAdvisor OR "Trip Advisor")	(engagingWith:@netflix OR @netflix) AND – (RT OR author:@netflix OR engagingWith:@disneyplus OR @disneyplus OR "Disney +" OR "Disney Plus" OR engagingWith:@hulu OR @hulu OR Hulu OR engagingWith:@PrimeVideo OR @PrimeVideo OR "Amazon Prime" OR "Amazon Studios" OR Amazon OR engagingWith:@AppleTV OR @AppleTV OR "Apple TV" OR #Save* OR "Renew" OR "Pick up" OR #pick*)	(engagingWith:@harleydavidson OR @harleydavidson) AND – (RT OR author:@harleydavidson OR @realDonaldTrump OR author:@realDonaldTrump OR Trump OR tariff* OR America* OR POTUS OR @POTUS OR USA OR "United States" OR engagingWith:@indianmotocycle OR @indianmotocycle OR "Indian Motorcycle" OR Indian OR engagingWith:@DucatiMotor OR @DucatiMotor OR Ducati OR "Ducati Motor" OR engagingWith:@YamahaMotorUSA OR @YamahaMotorUSA OR Yamaha OR "Yamaha Motor" OR engagingWith:@OfficialTriumph OR @OfficialTriumph OR Triumph)

Table 7: Search Terms for Brand Competitors

Symbolic	**Victoria Secret**	**Mercedes Benz**	**Tom's Shoes**	**Whole Foods**
	(engagingWith:@Aerie OR @Aerie OR engagingWith: @AdoreMe OR @AdoreMe OR engagingWith: @ThirdLove OR @ThirdLove OR engagingWith: @Wearlively OR @Wearlively) AND – (RT OR author: @Aerie OR author: @AdoreMe OR author:@ThirdLove OR author:@Wearlively author:@VictoriasSecret OR engagingWith:@VictoriaSecret OR @VictoriaSecret)	(engagingWith:@BMW OR @BMW OR engagingWith:@Audi OR @Audi OR engagingWith:@VolvoCarUSA OR @VolvoCarUSA OR engagingWith:@fiat OR @fiat) AND – (RT OR author:@BMW OR author:@Audi OR author:@VolvoCarUSA OR author:@fiat OR author:@MercedesBenz OR engagingWith:@MercedesBenz OR @MercedesBenz)	(engagingWith:@Keds OR @Keds OR engagingWith:@VANS_66 OR @VANS_66 OR engagingWith:@Allbirds OR @Allbirds OR engagingWith:@Converse OR @Converse) AND – (RT OR author:@Keds OR author:@Converse OR author:@VANS_66 OR author:@Allbirds OR author:@TOMS OR engagingWith:@TOMS OR @TOMS)	(engagingWith:@sproutsfm OR @sproutsfm OR engagingWith:@TheFreshMarket OR @TheFreshMarket OR engagingWith:@Wegmans OR @Wegmans OR engagingWith:@kroger OR @kroger) AND – (RT OR author:@sproutsfm OR author:@TheFreshMarket OR author:@Wegmans OR author:@kroger OR author:@WholeFoods OR engagingWith:@WholeFoods OR @WholeFoods)
Functional	**Amazon**	**Dove**	**McDonald's**	**Oreo**
	(engagingWith:@Walmart OR @Walmart OR engagingWith:@eBay OR @eBay OR engagingWith:@Google OR @Google OR engagingWith:@Apple OR @Apple) AND – (RT OR author:@Walmart OR	(engagingWith:@OlaySkin OR @OlaySkin OR engagingWith:@NIVEAUSA OR @NIVEAUSA OR engagingWith:@Loreal OR @Loreal OR engagingWith:@Neutrogena OR @Neutrogena) AND –	(engagingWith:@BurgerKing OR @BurgerKing OR engagingWith:@Wendys OR @Wendys OR engagingWith:@SUBWAY OR @SUBWAY OR engagingWith:@tacobell OR @tacobell) AND –	(engagingWith:@LittleDebbie OR @LittleDebbie OR engagingWith:@KeeblerElves OR @KeeblerElves OR engagingWith:@milanocookies OR @milanocookies) AND – (RT OR author:@LittleDebbie OR author:@KeeblerElves OR author:@milanocookies OR author:@Oreo OR

	author:@eBay OR author:@Google OR author:@Apple OR author:@amazon OR engagingWith:@amazon OR @amazon OR author:@WholeFoods OR engagingWith:@WholeFoods OR @WholeFoods)	(RT OR author:@OlaySkin OR author:@NIVEAUSA OR author:@Loreal OR author:@Neutrogena OR author:@Dove OR engagingWith:@Dove OR @Dove)	(RT OR author:@BurgerKing OR author:@Wendys OR author:@SUBWAY OR author:@tacobell OR author:@McDonalds OR engagingWith:@McDonalds OR @McDonalds)	engagingWith:@Oreo OR @Oreo)
Experiential	**Xbox**	**Air BnB**	**Neflix**	**Harley Davidson**
	(engagingWith:@Xbox OR @Xbox) AND - (RT OR author:@Xbox engagingWith:@NintendoAmerica OR @NintendoAmerica OR engagingWith:@PlayStation OR @PlayStation OR engagingWith:@AppleArcade OR @AppleArcade)	(engagingWith:@Airbnb OR @Airbnb) AND - (RT OR author:@Airbnb OR #WestBank OR “West Bank” OR palestin* OR anti OR engagingWith:@Expedia OR @Expedia OR Expedia OR engagingWith:@homeaway OR @homeaway OR Homeaway OR "Home away" OR engagingWith:@vrbo OR @vrbo OR VBRO OR engagingWith:@TripAdvisor OR @TripAdvisor OR "Trip Advisor")	(engagingWith:@netflix OR @netflix) AND - (RT OR author:@netflix OR engagingWith:@disneyplus OR @disneyplus OR "Disney +" OR "Disney Plus" OR engagingWith:@hulu OR @hulu OR Hulu OR engagingWith:@PrimeVideo OR @PrimeVideo OR "Amazon Prime" OR "Amazon Studios" OR Amazon OR engagingWith:@AppleTV OR @AppleTV OR "Apple TV" OR #Save* OR "Renew" OR "Pick up" OR #pick*)	(engagingWith:@harleydavidson OR @harleydavidson) AND - (RT OR author:@harleydavidson OR @realDonaldTrump OR author:@realDonaldTrump OR Trump OR tariff* OR America* OR POTUS OR @POTUS OR USA OR "United States" OR engagingWith:@indianmotocycle OR @indianmotocycle OR "Indian Motorcycle" OR Indian OR engagingWith:@DucatiMotor OR @DucatiMotor OR Ducati OR "Ducati Motor" OR engagingWith:@YamahaMotorUSA OR @YamahaMotorUSA OR Yamaha OR "Yamaha Motor" OR engagingWith:@OfficialTriumph OR @OfficialTriumph OR Triumph)

Textual Analysis of Brand Personality:

This study uses Aaker's (1997) five dimensions of BP as the basis of analysis rather than psychologist's Big Five human personality dimensions as used by Yun et al. (2019). While Aaker's initial scale is a questionnaire and relies on the consumers' perception to determine for BP, it is not directly applicable for this project. Instead, I will be using Opoku's (2006) adjective-based BP dictionary adapting it to test how frequently words associated with each dimension (sincerity, excitement, competence, sophistication, and ruggedness) occur within Tweets from the brands and consumers.

Noteworthy is that Opoku (2006) created the dictionary before Twitter had launched its social network site basing it on words commonly used in content on brand websites, which is much different from the terms used in Twitter posts. With the original 144-character word limit for Twitter posts, brands had to learn to shorten and simplify their messaging on social media. Additionally, Boukes et al. (2019) found that fixed textual analysis dictionary or term sets are unreliable unless adapted for the text researchers are examining. Therefore, it was necessary to expand Opoku's original adjective-based dictionary of 1,625 terms to include social media colloquialisms. 20% of each dataset (Twitter posts from the brands, Twitter posts from consumers engaging with the selected brands, and Twitter posts from consumers not-engaging with the chosen brands) were combined into a single file. A document term matrix was then generated in R for the purpose of identifying the most used terms in the dataset; 311 adjectives that appeared at least 50 times were extracted. Next, two coders were trained before independently analyzing and coding the 311 adjectives into the five dimensions of BP as defined by Aaker (1997); any adjectives not fitting a BP dimension were coded as "not applicable." Both researchers used the same instructions and criteria. Krippendorff's alpha was computed for all

variables using ReCal3 (Freelon 2010); all alphas were 0.92 or better, indicating acceptable intercoder reliability (Krippendorff 1980). This allowed the researchers to add 277 commonly used adjectives to Opoku's (2006) original dictionary of BP dimensions.

Opoku's 1,645 terms and the coded adjectives from the doc-term matrix were added to a custom LIWC dictionary. While Opoku's dictionary was created with WordStat in mind, LIWC has the same capabilities as Wordstat but is more frequently used in research. As established above, psychologists use pre-determined psychological variables such as social, cognitive, and emotional categories to obtain personality dimensions from the text. However, the software has a function where users can upload a custom dictionary to the user interface, and it will analyze the frequency of the adjectives listed in the custom dictionary (Pennebaker et al., 2015). The researchers ran the Twitter content of the brand's owned posts and replies, replies and brand mentions from consumers engaging with the brand, and posts from accounts engaging in the product type but not with the brand. LIWC breaks down text content to a word level, and then each word found in the custom dictionary is coded into the five categories corresponding with Aaker's (1997) BP dimensions.

Statistical Analysis:

Once LIWC determined the BP score for each tweet in the datasets, a master file was developed to test the relationship between variables in SPSS. All Twitter content from accounts engaging with the brand or engaging with the product type (not engaging) were copied and stacked in the data set. Next, each tweet was given a brand variable to identify the specific brand being tested (i.e., 1 = Victoria Secret, 2 = Mercedes Benz, 3 = Whole Foods, etc.). Whether a tweet was engaging with the brand or not was distinguished using a categorical variable brand engagement (1= engaging with the brand and 0 = not engaging with the brand). To test the

second hypothesis, the tweets needed to be labeled in the appropriate product type (i.e., 1= symbolic, 2= functional, 3= experiential). The brand's personality was determined by computing the mean for each of the five dimensions giving in the LIWC results. The highest aggregate score established the brand's primary BP dimension. A categorical BP Dimension variable was then created labelling each brand by its BP (1= Competence, 2= Excitement, 3= Ruggedness, 4=Sincerity, 5=Sophistication). The final variable in the analysis was consumer personality. The individual LIWC scores for all consumer tweets (both engaged with and not engaged with) of the corresponding BP dimension for the brand were copied into the data file to create the consumer personality variable. For example, Harley Davidson's primary BP was excitement, so the excitement scores for consumers engaging with and not engaging with Harley Davidson were selected. Additionally, LIWC's personality score refers to the number of personality relevant terms found for each BP dimension within a given text. For example, @JSnyder0306 tweeted, "I can?t be the only one who eats @Oreo?s by the sleeve right? 2 servings...ohh you meant individual cookies? My bad!" LIWC determined that four words in the sentence indicated excitement, giving it a score of 4. These LIWC scores were used to determine BP found in individual tweets, I only took the personality scores for the corresponding BP dimension for the consumer personality variable.

ANALYSIS AND RESULTS

A textual analysis approach was employed to assess BP communicated in Twitter posts from the brand to consumers, from consumers to the brand, and from consumers in the product type but not the brand being analyzed. Textual analysis is a research technique that objectively, systematically, and quantitatively describes the content of a brand's communication. LIWC was the software selected for the study due to the researcher's ability to upload custom dictionaries into the interface, and its notoriety and recognition within the research field. Opoku's (2006) 1,645 terms and the 311 adjectives from the doc-term matrix were added to a custom LIWC dictionary, which evaluates BP within Twitter posts to produce frequency counts for the number of BP words associated with each dimension. The first round of LIWC analysis determined what BP dimensions the selected brands' communication align with based on their messages. Table 8 shows the total number of terms associated with each BP dimension and the total number of words for the respective brands. For example, Victoria's Secret communicated 5,897 words related to competence in their Twitter posts and replies from January 1, 2018 to December 31, 2019. Table 9 shows the percentage of words that were counted by the modified Opoku (2006) dictionary. The highest aggregate score established the brand's primary BP dimension.

Table 8: Brand personality frequency counts and total number of words

Product Type	Brand	*Competence*	*Excitement*	*Ruggedness*	*Sincerity*	*Sophistication*	*Total Words*
Symbolic	Victoria's Secret	5,897	13,055	2,081	17,083	342	203,461
	Mercedes Benz	9,216	14,273	2,506	20,189	1,799	213,407
	Tom's Shoes	585	1,060	654	982	27	28,855
	Whole Foods	2,697	9,908	1,463	18,780	873	279,335
Functional	Amazon	3,384	9,289	1,641	14,089	777	93,263
	Dove	10,598	10,522	6,762	16,367	6,159	169,112
	McDonald's	4,299	20,151	3,675	17,914	228	163,842
	Oreo	6,589	9,302	2,253	16,753	701	162,538
Experiential	Xbox	7,762	24,422	5,371	31,698	829	126,968
	Airbnb	2,778	13,220	2,245	10,990	1,338	81.866
	Netflix	3,113	3,292	5,801	7,492	485	65,487
	Harley Davidson	1,595	4,119	1,339	3,391	74	64,183

Table 9: Mean Brand Personality Scores and percentage of identifiable dictionary words

		Competence Score	*Excitement Score*	*Ruggedness Score*	*Sincerity Score*	*Sophistication Score*	*% of Identifiable Words*
Symbolic	Victoria's Secret	0.59	1.31	0.21	1.71	0.03	19%
	Mercedes Benz	0.92	1.43	0.25	2.02	0.18	22%
	Tom's Shoes	0.54	0.98	0.61	0.91	0.03	11%
	Whole Foods	0.27	0.99	0.15	1.88	0.09	12%
Functional	Amazon	0.65	1.80	0.32	2.72	0.15	31%
	Dove	1.06	1.05	0.68	1.64	0.62	30%
	McDonald's	0.43	2.02	0.37	1.79	0.02	28%
	Oreo	0.75	1.06	0.26	1.90	0.08	22%
Experiential	Xbox	0.78	2.44	0.54	3.17	0.08	55%
	Airbnb	0.48	2.27	0.39	1.89	0.23	37%
	Netflix	0.59	0.62	1.10	1.42	0.09	31%
	Harley Davidson	0.60	1.54	0.50	1.27	0.03	16%

The hypothesis was tested using an ANOVA (Table 10), including the main effects of the product type, brand engagement, and BP dimension on personality congruence. The results showed a significant effect of BP dimension ($F(1, 239787)=193.536$, $p < .001$), product type ($F(2, 239787)=174.887$, $p < .001$), and brand engagement ($F(1, 239787)=12.724$, $p < .001$) on consumer personality. However, the difference between consumers engaging with the brand ($M=1.158$) and consumers not engaging with the brand ($M=1.104$) is relatively small without the interaction of the BP dimension. Therefore, H1 is supported.

A subset of the ANCOVA was also utilized to test RQ1. Although, there was not an interaction between product type x brand engagement ($F(2, 239787)=1.155$, $p = .311$) or BP dimension x product type was also a significant interaction ($F(2, 239787)=3.865$, $p = .021$). We used the Bonferroni-corrected p-values for pairwise comparisons, which adjusted p-value for determining significance to < .017. Yet, a significant three-way interaction between BP dimension x brand engagement x product type ($F(2, 239787)=48.274$, $p < .001$) on consumer personality. The model shows that consumers engaging with brands in the experiential product type, but not the specific brands selected for the analysis, have the highest congruence with the BP dimension excitement ($M=1.227$, Table Figure 3a). Yet, consumers engaging with chosen brands demonstrate stronger congruence with exciting brands in the symbolic product type ($M=1.201$, Figure 3a). Interestingly, the data reveals the reverse phenomenon when analyzing brands with the BP dimension sincerity. Consumer personality congruence is more likely to occur when consumers are engaging with selected brands with sincere BP in the experiential product type ($M=1.423$, Figure 3b). However, consumers engaging within the symbolic product type but not with a chosen brand are more likely to demonstrate sincerity personality congruence ($M=1.335$, Figure 3b). Therefore, RQ 1 is supported.

The significance of the three-way interaction is likely due to the two-way interaction between brand engagement x BP dimension ($F(1, 239787)=85.355$, $p < .001$). Consumers engaging with a specific brand with the BP dimension of sincerity (M=1.334) are more likely to exhibit congruence to consumer personality than those who are not engaging directly with the brand (M=1.139). However, the opposite phenomenon occurred with brands with the BP dimension excitement. Consumers not engaging with the selected brand (M=1.069) demonstrate higher levels of excitement than those who are engaging with the brand whose BP is excitement (M=.983).

Table 10: One-Way ANOVA of Brand Engagement, BP Dimension, and Product Type on Consumer Personality

Variable	Sum of Squares	*df*	Mean Square	*F*	*p*
Brand Engagement	128.920	1	128.920	12.724	.000
BP Dimension	1960.937	1	1960.937	193.536	.000
Product Type	3543.961	2	1771.981	174.887	.000
Brand Engagement * BP Dimension	864.827	1	864.827	85.355	.000
Brand Engagement * Product Type	23.404	2	11.702	1.155	.315
BP Dimension * Product Type	78.317	2	39.158	3.865	.021
Brand Engagement * BP Dimension * Product Type	978.246	2	489.123	48.274	.000

a. R Squared = .004 (Adjusted R Squared = .004)

b. Computed using alpha = .05

Table 11: Three-way of Brand Engagement x BP Dimension x Product Type on Consumer Personality

Brand Engagement	Brand Personality Dimension	Product Type	Mean	Std. Error
No	Excitement	Symbolic	1.055	.032
		Functional	.924	.032
		Experiential	1.227	.023
	Sincerity	Symbolic	1.335	.016
		Functional	.906	.018
		Experiential	1.177	.032
Yes	Excitement	Symbolic	1.201	.032
		Functional	.682	.032
		Experiential	1.065	.023
	Sincerity	Symbolic	1.360	.016
		Functional	1.218	.018
		Experiential	1.423	.032

Figure 3a: Two-way perceived BP Dimension by Product Type of Consumer's Not-Engaging with the Brand

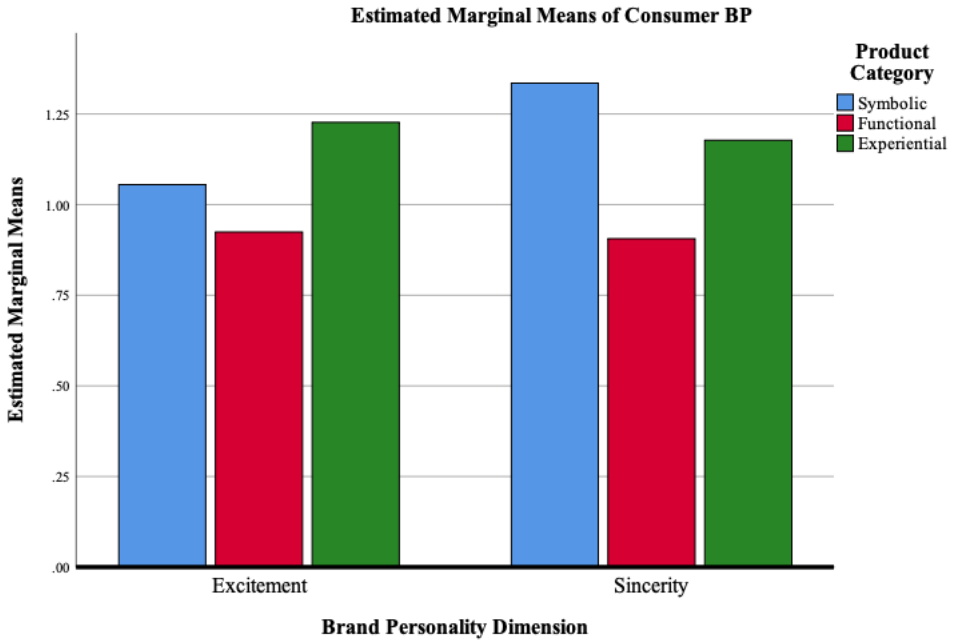
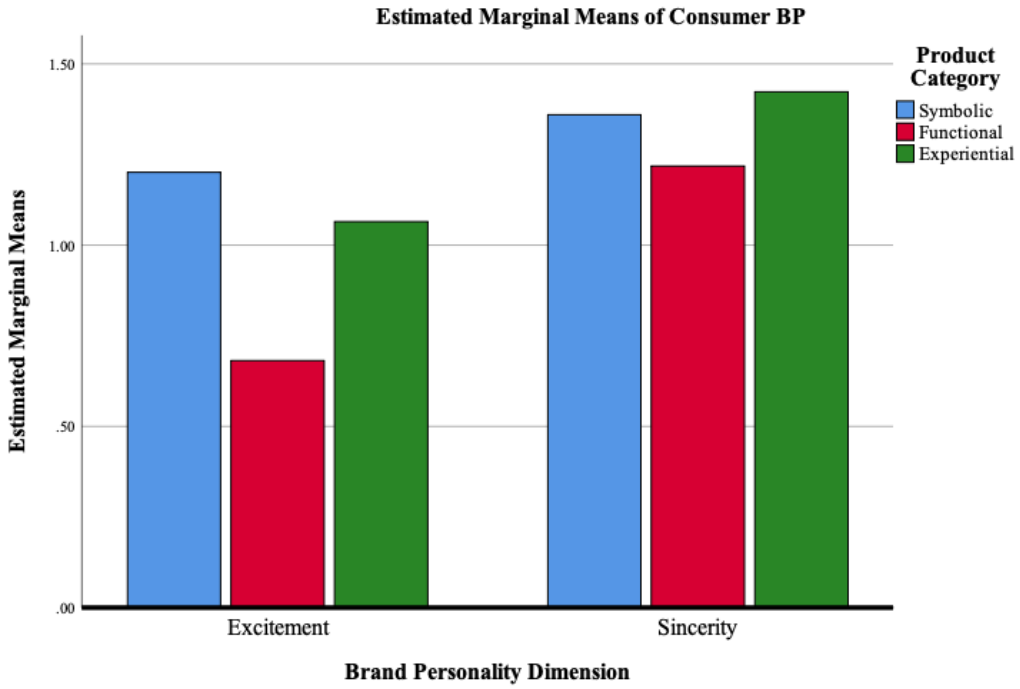


Figure 3b: Two-way perceived BP Dimension by Product Type of Consumer's Engaging with the Brand



DISCUSSION

The primary goal of this study was to examine whether consumer engagement, either directly with specific highly social brands or just within a product type, effect brand/consumer personality congruence. Towards these ends, I found that consumers who engage with brands identified as highly social are more likely to exhibit personality congruence than consumers who are engaging with a product type. The analysis revealed that the BP dimension has a direct impact on whether consumers engaging with the brand demonstrate congruence. The ANOVA model also showed that the three-way interaction between brand engagement x BP dimension x product type had a significant effect on consumer congruence. These findings supported H1.

De Moya and Jain (2013) and Yun et al. (2019) studied personality congruence between brands and consumers on social media platforms. However, both authors could only partially verify the claim that personality congruence occurs between consumers and brands. Within the tourism field, De Moya and Jain (2013) found that the personality language found in the text of people who commented on Travel Mexico's Facebook posts aligned with the BP dimensions (sincerity and excitement) computed from the brand's posts. However, consumers commenting on Travel Brazil's Facebook posts did not communicate the brand's dominant traits (sophistication, sincerity, and excitement) in their messages. Additionally, although Yun et al. (2019) analyzed human personality traits based on "The Big Five," they reported similar results that the personality of McDonald's followers showed stronger personality congruence for Tom's personality than McDonald's. However, in both cases, the researchers analyzed a small sample, which can affect the validity of the results.

While testing 12 brands, I found that brand engagement does have a significant impact on consumer personality. However, the difference between consumers engaging with the brand and consumers engaging with the product type is relatively small without the interaction of the BP dimension or BP dimension x product type. This insight has three critical implications: first, having a larger sample of brands is necessary for drawing more significant conclusions towards congruence. Second, if a brand is considered highly social, it is more likely to exhibit more significant personality congruence than those who are not considered highly social. Third, other variables influence and interact with brand engagement, which impacts congruence.

This study contributes to the body of literature because it investigates how interactions between variables impact personality congruence. As I've reported, product type, BP dimension, and brand engagement all have a significant effect on consumer congruence. When all three variables are present, I observed that different levels of personality congruency occur, and the strength of congruence depends on the combination of variables. However, antithetical results occur in each section of the three-way interaction in the model. Consumers are more likely to show personality congruence when they are engaging with sincere brands that's product type is experiential. On the other hand, consumers who are engaging with symbolic products, but not specific symbolic brands, are more likely to show BP congruence with a sincere personality. This phenomenon is likely due to the fact when consumers tweet at a brand, whether their product provides symbolic, functional, or experiential functions, they are sharing the great experiences they had or thanking the brand for the experience. Thus, the language used in these tweets would be identified as sincere by the dictionary. Therefore, RQ1 is supported.

Dolich (1969) and Parker (2009) found that brands that provide personal meaning - which typically fall in the symbolic type - show higher levels of BP congruence than with

products that fulfill a functional need. Our study found that product type does influence consumer personality, but it does not moderate the role of engagement. However, the three-way interaction conducted does denote that symbolic and experiential product categories have consistently higher means for both BP dimensions (sincerity and excitement) than brands considered functional. These results follow the same pattern as Dolich (1969) and Parker (2009) that product categories that allow for more self-expression demonstrate stronger personality congruence.

It is likely that product type by consumer engagement interaction was unsupported due to the brand-consumer relationship that social media helps shape. Coelho, Rita, and Santos (2018) argued that social media allows brands even in low-involvement product categories (labeled as functional in this study) to earn high engagement with their followers. They found that consumers interact with low-involvement brands on social media because they like the products, think highly of the brand and its products, and want to have feelings of community connection. A consumer interacts with a brand to build a relationship or strength of the self-brand connection (Sprott, Czellar, & Spangenberg, 2009). The product(s) the brand sells, which determines its product type, has less of an impact on social media interactions as long as the consumer uses the brand for self-expression or feels develops a relationship with the brand.

The two-way interaction was between product type x BP dimension was also determined to be insignificant when using the Bonferroni-corrected p-values. This finding contradicts Ang and Lee's (2006) observation that product type impacts the BP dimension. They noticed that consumers often saw symbolic product types as more sophisticated and exciting. Whereas, utilitarian (functional) products were often regarded as having a competent or sincere BP. However, we discovered that on Twitter, symbolic product type brands are just as likely to be

categorized as sincere as functional brands. In both product categories, three of the four brands were labeled as sincere, while Tom's Shoes (symbolic product type) and McDonald's (functional product type) acted as outliers by having excitement as their dominant BP. Additionally, brands with experimental product types fell evenly between the BP excitement and sincerity.

Despite the more extensive brand sampling than earlier studies, only two BP dimensions emerged from the dataset. Previous researchers have reported that sincerity, followed by excitement, is the most frequently recurring brand personality type in studies (De Moya & Jain; Ekinci & Hosany, 2006; Jain & Chan-Olmsted, 2009). With a more extensive sample, we expected more diverse results, with most of the BP dimensions being present within the data set. When Opoku (2006) tested thirty MBA websites, all five brand personality dimensions emerged at least once, and Pitt et al. (2007) reported that four of the five brand personality dimensions appeared in ten African country tourism websites. Yet, LIWC showed that the brands we analyzed only fell under the categories sincere or exciting.

The public nature of Twitter gives consumers the power to share their positive and negative brand experiences electronically (Guercini et al., 2014; Jansen, 2008). Xia (2013) proposed that BP moderates the expectation of how consumers think a brand should react to criticism on social media. She further suggested that while all brands should respond with vulnerability to demonstrate their sincerity, consumers will lower their standard and hold a less stringent expectation for brands that have a dominant BP dimension other than sincerity. This study only gathered brand messages from Twitter, including replies to consumers. Since Twitter is a channel to facilitate customer service and manage electronic word of mouth, most brands have likely adopted a sincere BP to meet consumers' expectations.Another important outcome of this study was that using a modified version of Opoku's (2006) dictionary allowed for a higher

identifiable word rate. I reported an average of 26% of words for each brand to be identified by LIWC for analysis. This is significantly higher when compared to previous research, which all reported an average occurrence of BP terms in Opoku's dictionary of less than 5% (e.g., Abimbola et al., 2007; De Moya & Jain, 2013; Pitt et al., 2007; Rutter et al., 2018). These findings align with Boukes et al. (2019) assertation that fixed textual analysis dictionaries or term sets are unreliable. Although 26% is still relatively low, it is important to note that author handles, URLs, and emojis were not removed from the text before analysis. Therefore, LIWC included them in the total word count, which likely skews the identifiable words lower than if just the body of text was being analyzed. The increased percentage of identifiable terms in our study provides further evidence that when conducting textual analysis, the dictionary parameters need to be specific to the text you are examining, which in turn leads to higher accuracy rates.

Theoretical and Practical Implications

Present findings contribute to the literature on BP. I tested a textual analysis approach to measuring BP congruence through brand and consumer engagement on Twitter. Existing research has primarily focused on testing Opoku's (2006) textual analysis approach of measuring BP on website posts, which did not allow for consumer personality to be evaluated for congruence. While De Moya and Jain (2013) did venture into this space, they only examined the personality congruence of two tourism Facebook pages (Brazil and Mexico) and their followers, which is not a representative sample. This is the only published study that uses Opoku's (2006) textual analysis approach to measure BP on social media and test consumer personality congruence to the researcher's knowledge. Additionally, Yun et al. (2019) conducted a similar study. Still, they only sampled the Twitter communications of three brands. They used "The Big Five," a human personality scale, to determine the personality of the brands they analyzed

instead of relying on Aaker's (1997) BP framework. Therefore, a more substantial and diversified sample of social media posts needed to be investigated to determine whether a textual analysis approach to measuring BP and consumer congruence is applicable.

Specifically, this research found that brands do communicate distinct brand personalities on Twitter. A textual analysis approach based on Aaker's five BP dimensions yielded significant results, with an average of 26% of words falling into one of BP categories. The traditional BP measurement in the form of a questionnaire relied entirely on consumer perception of a brand's personality. Participants often bring in bias and pre-existing attitudes towards the brand into their evaluation and do not objectively determine what the brand is trying to communicate as it's personality. However, a textual analysis approach allows for direct analysis of brand messaging to determine what the brand is conveying as its personality.

In terms of self-congruence, I determined that consumers engaging with brands on Twitter are more likely to exhibit corresponding personality language than those who are not engaging with the brand. Although further studies would need to test whether consumers' personalities are consistent across multiple brand interactions, it suggests that when they are talking directly to a brand, they adopt the BP language. This learning has practical applications for social media managers and marketing teams. If they craft social media posts to contain distinct BP language (which they can do using terms found in Opoku's dictionary), they are more likely to drive consumer engagement.

Limitations and Future Research

As with any study, this study has limitations. First, all the terms original Opoku (2006) dictionary and all entries from the doc-term matrix are adjectives. The current approach does not categorize nouns, verbs, or words with negative connotations. Psychologists' approach to textual

analysis is much more in-depth and provides additional cognitive and social behavior breakdowns. This means an apples-to-apples comparison of Aaker's BP framework and Costa and McCrae's (1992) "Big Five" personality types is impossible under the current methods approach. A logical next step in BP research is to answer whether BP, human personality, or a hybrid scale should be used to measure personality congruence on social media (Yun et al., 2019). Future scholars can do this by making Aaker's BP measurable through the pre-set LIWC categories as psychologists do or develop a "Big Five" dictionary similar to Opoku's (2006) BP dictionary.

Second, the researchers took the highest BP score and assigned that to the brand as the BP. All other BP dimensions and scores were left out of the analysis. However, in doing so, it was ignored that brands often show high scores for other BP dimensions as well and can be multi-dimensional. Future research should account for this by statistically considering all personality scores present or looking at mixed brand personalities.

Third, human error could have occurred during the coding phase. The two coders were working with only adjectives. The meaning of a word is often affected by how it is used in a sentence, which may change which type would be the best fit. A machine-learning approach like a latent Dirichlet allocation would improve the validity of the dictionary. Since Opoku's (2006) dictionary was created with website text in mind, many of the terms are not appropriate for a social media analysis. Future researchers could do an extensive LDA analysis with posts from a variety of highly social brands and rebuild the BP dictionary specifically for social media.

Fourth, the researchers randomly selected highly social brands for the analysis, which was determined by Netbase's 2019 Brands Social Ranking Index or received an accolade for a social media campaign in the last five years. However, highly social brands who post

consistently are more likely to convey BP elements in a textual analysis approach because there is more text to analyze. To further validate this study, researchers would want to create a sample that includes posts from brands that are considered highly social and brands that post less frequently. Additionally, including a high/low social brand variable could provide supplementary insight into whether brands consistently convey BP over large bodies of posts.

Fifth, researchers chose to test consumer-brand personality congruency by analyzing consumer tweets with competitors of the specific brand being analyzed. However, Yun et al. (2019) operationalized congruence as consumers who are followers of the brand or non-followers. Instead of testing consumers' direct communication with brands, they tested the language followers and non-followers use in their everyday social media posts. However, they tested congruency using the human personality textual analysis approach instead of brand personality. Therefore, while I felt it was more appropriate to measure congruency based on direct communication to the brands from consumers, future research should measure the personality congruence of consumer tweets when they are not talking to brands.

Lastly, the random sample led to only two BP emerging from the dataset - sincerity and excitement. The results, which suggest the presence of personality congruence, are not as significant without all the BP dimension present in the data. The next step in the research would be to identify brands whose primary BP is evenly distributed across the dimensions and then replicate the steps of the analysis. This would determine if consumer personality congruence is present across all BP dimensions.

Despite these limitations, the study provides support for a textual analysis approach to measuring BP and consumer congruence within the realm of social media. Further, the results of this research show that consumers who engage with highly social brands are more likely to show

personality congruence than those who do not engage with the brand. Brands that include BP language in their social media messages are more likely to attract consumers whose personality is congruent. BP congruency can incite a positive consumer-brand relationship, which with future testing, could reveal correlations with brand loyalty and purchase intention.

REFERENCES

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing Research*, *34*(3), 347-356.

Aaker, J. L. (1999). The malleable self: The role of self-expression in persuasion. *Journal of Marketing Research*, *36*(1), 45-57.

Abimbola, T., Vallaster, C., Opoku, R. A., Abratt, R., Bendixen, M., & Pitt, L. (2007). Communicating brand personality: Are the web sites doing the talking for food SMEs?. *Qualitative Market Research: An International Journal*, *10*(4), 362-374.

Ahmad, A., & Thyagaraj, K. (2015). Understanding the Influence of Brand Personality on Consumer Behavior. *Journal of Advanced Management Science*, *3*(1).

Allport, G.W., & Odbert, H.S. (1936). Trait-names: A psycho-lexical study. *Psychological Monographs, 47*(1).

Allport, G.W. (1937). Personality: A psychological interpretation. New York: Holt.

Alt, M., & Griggs, S. (1988). Can a brand be cheeky?. *Marketing Intelligence & Planning*.

Ang, S. H., & Lim, E. A. C. (2006). The influence of metaphors and product type on brand personality perceptions and attitudes. *Journal of advertising*, *35*(2), 39-53.

Arnoux, P. H., Xu, A., Boyette, N., Mahmud, J., Akkiraju, R., & Sinha, V. (2017, May). 25 tweets to know you: A new model to predict personality with social media. In *Eleventh International AAAI Conference on Web and Social Media*.

Azoulay, A., & Kapferer, J. N. (2003). Do brand personality scales really measure brand personality? *Journal of Brand Management*, *11*(2), 143-155.

Singh, D. (2013). The brand personality component of brand goodwill: some antecedents and consequences. *Brand equity & advertising: Advertising's role in building strong brands*, *83*.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological Science*, *21*(3), 372-374.

Becker, W. C. (1960). The matching of behavior rating and questionnaire personality factors. *Psychological Bulletin*, *57*(3), 201.

Belk, R.W. (1988). Possessions and the extended self, *Journal of Consumer Research, 15*(1), 139-168.

Berthon, P., Pitt, L., & Campbell, C. (2008). Ad lib: When customers create the ad. *California Management Review, 50*(4), 6-30.

Bhat, S. & Reddy S. K. (1998). Symbolic and functional positioning of brands. *Journal of Consumer Marketing*, *15*(1), 32-43.

Biel, A. (1993). Converting image into equity, brand equity. *Brand equity and advertising: Advertising's role in building strong brands, 26*(10), 67-81.

Bourne, F. S. (1963). Different kinds of decisions and reference-group influence. *Marketing and the Behavioral Sciences*, 247-255.

Brée, J. (1994). *Le comportement du consommateur*. Presses universitaires de France.

Casey, Sean. (2017, January 17). 2016 Nielsen Social Media Report. Nielsen. https://www.nielsen.com/us/en/insights/report/2017/2016-nielsen-social-media-report/

Cattell, R.B. (1943). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology, 38*, 476-506.

Cattell, R.B., Eber, H.W., & Tatsuoka, M.M. (1970). *Handbook for the sixteen-personality factor questionnaire (16PF)*. Champaign, IL: IPAT.

Cherry, K. & Gans, S. (2019, October 6). Personality psychology. Verywell Mind. https://www.verywellmind.com/personality-psychology-4157179

Cooper, Paige. (2019, October 30). 25 Twitter stats all marketers need to know in 2020. Hootsuit. https://blog.hootsuite.com/twitter-statistics/

Church, A. T., & Burke, P. J. (1994). Exploratory and confirmatory tests of the big five and Tellegen's three-and four-dimensional models. *Journal of Personality and Social Psychology*, *66*(1), 93.

Coelho, P. S., Rita, P., & Santos, Z. R. (2018). On the relationship between consumer-brand identification, brand community, and brand loyalty. *Journal of Retailing and Consumer Services*, *43*, 101-110.

Costa, P. T., McCrae, R. R., & Kay, G. G. (1995). Persons, places, and personality: Career assessment using the Revised NEO Personality Inventory. *Journal of Career Assessment*, *3*(2), 123-139.

Costa, P. T., & McCrae, R. R. (1992). *Neo personality inventory-revised (NEO PI-R)*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (2008). *The Revised NEO Personality Inventory (NEO-PI-R)*. Sage Publications, Inc.

Cruz, R. A. B., & Lee, H. J. (2014). The brand personality effect: Communicating brand personality on Twitter and its influence on online community engagement. *Journal of Intelligence and Information Systems*, *20*(1), 67-101.

Dees, W., Bennett, G., & Ferreira, M. (2010). Congruence and its impact on sponsorship effectiveness outcomes. *Sport Marketing Quarterly*, *19*(1), 25-35.

De Chernatony, L. (1999). Brand management through narrowing the gap between brand identity and brand reputation. *Journal of Marketing Management*, *15*(1-3), 157-179.

De Moya, M., & Jain, R. (2013). When tourists are your "friends": Exploring the brand personality of Mexico and Brazil on Facebook. *Public Relations Review*, *39*(1), 23-29.

Digman, J. M., & Takemoto-Chock, N. K. (1981). Factors in the natural language of personality: Re-analysis, comparison, and interpretation of six major studies. *Multivariate Behavioral Research*, *16*(2), 149-170.

Dolich, I. J. (1969). Congruence relationships between self images and product brands. *Journal of Marketing Research*, *6*(1), 80-84.

Escalas, J. E., & Bettman, J. R. (2005). Self-construal, reference groups, and brand meaning. *Journal of consumer research*, *32*(3), 378-389.

Erdoğmuş, İ. E., & Cicek, M. (2012). The impact of social media marketing on brand loyalty. *Procedia-Social and Behavioral Sciences*, *58*, 1353-1360.

ExactTarget. (2010). *Subscribers, fans, and followers: Twitter x-factors*. Retrieved from https://www.marketingcharts.com/industries/media-and-entertainment-13770

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research*, *24*(4), 343-373.

Freling, T. H., & Forbes, L. P. (2005). An examination of brand personality through methodological triangulation. *Journal of Brand Management*, 13, 148–162.

Freling, T. H., Crosno, J. L., & Henard, D. H. (2011). Brand personality appeal: conceptualization and empirical validation. *Journal of the Academy of Marketing Science*, *39*(3), 392-406.

Fuggetta, R. (2012). *Brand advocates: Turning enthusiastic customers into a powerful marketing*

force. John Wiley & Sons, Inc.

Galan, J. P. (2007). Proposition d'une échelle de mesure de la congruence entre la musique et le concept de soi. *Actes du XXIIIème Congrès International de l'AFM, Aix-les-Bains*.

Gecas, V. (1982). The self-concept. *Annual review of sociology*, *8*(1), 1-33.

Geuens, M., Weijters, B., & De Wulf, K. (2009). A new measure of brand personality. *International Journal of Research in Marketing, 26*(2), 97-107.

Goh, K. Y., Heng, C. S., & Lin, Z. (2013). Social media brand community and consumer behavior: Quantifying the relative impact of user-and marketer-generated content. *Information Systems Research*, *24*(1), 88-107.

Golbeck, J., Robles, C., Edmondson, M., & Turner, K. (2011). Predicting personality from Twitter. *In 2011 IEEE Third International Conference: On Privacy, Security, Risk and Trust* (pp. 149–156). IEEE.

Goldberg, L.R. (1981). Language and individual differences: The search for universals in personality lexicons. *Review of Personality and Social Psychology, 1*, 141-165.

Goldberg, L.R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4,* 26-42.

Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, *37*(6), 504-528.

Govers, P. C., & Schoormans, J. P. (2005). Product personality and its influence on consumer preference. *Journal of Consumer Marketing, 22*(4), 189-197.

Grohmann, B. 2009. Gender dimensions of brand personality. *Journal of Marketing Research*, *46*(1): 105–119.

Guercini, S., Misopoulos, F., Mitic, M., Kapoulas, A., & Karapiperis, C. (2014). Uncovering customer service experiences with Twitter: the case of airline industry. *Management Decision*.

Guèvremont, A., & Grohmann, B. (2013). The impact of brand personality on consumer responses to persuasion attempts. *Journal of Brand Management*, *20*(6), 518-530.

Haigood, T. L. (2001). Deconstructing brand personality. In *American Marketing Association. Conference Proceedings* (pp. 327). Chicago: American Marketing Association.

Halliday, J. (1996). Chrysler brings out brand personalities with '97 ads. *Advertising Age*, *67*(40), 3-4.

Hayes, J. L., King, K. W., & Ramirez Jr, A. (2016). Brands, friends, & viral advertising: A social exchange perspective on the ad referral processes. *Journal of Interactive Marketing*, *36*, 31-45.

Helgeson, J. G., & Supphellen, M. (2004). A conceptual and measurement comparison of self-congruity and brand personality: The impact of socially desirable responding. *International Journal of Market Research*, *46*(2), 205-233.

Hennig-Thurau, T., Gwinner, K. P., & Gremler, D. D. (2002). Understanding relationship marketing outcomes: an integration of relational benefits and relationship quality. *Journal of Service Research*, *4*(3), 230-247.

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet?. *Journal of Interactive Marketing*, *18*(1), 38-52.

Hirsh, J. B., & Peterson, J. B. (2009). Personality and language use in self-narratives. *Journal of Research in Personality*, *43*(3), 524-527.

Hogg, M.K., Cox, A.J., Keeling, K. (2000). The impact of self-monitoring on image congruence and product/brand evaluation. *European journal of marketing, 34(*5/6). 641-667.

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, *28*(2), 149-165.

Hollenbeck, C. R., & Kaikati, A. M. (2012). Consumers' use of brands to reflect their actual and ideal selves on Facebook. *International Journal of Research in Marketing*, *29*(4), 395-405.

Hudson, S., Roth, M. S., Madden, T. J., & Hudson, R. (2015). The effects of social media on emotions, brand relationship quality, and word of mouth: An empirical study of music festival attendees. *Tourism Management*, *47*, 68-76.

Hudson, S., Huang, L., Roth, M. S., & Madden, T. J. (2016). The influence of social media interactions on consumer–brand relationships: A three-country study of brand perceptions and marketing behaviors. *International Journal of Research in Marketing*, *33*(1), 27-41.

Hutchinson, A. (2015, October 3). How many social media users follow brand pages? Social Media Today. https://www.socialmediatoday.com/social-business/adhutchinson/2015-10-03/how-many-social-media-users-follow-brand-pages-infographic

Huteau, M. (1985). *Les conceptions cognitive de la personnalité*. FeniXX.

Ingenhoff, D., & Fuhrer, T. (2010). Positioning and differentiation by using brand personality attributes. *Corporate Communications: An International Journal*, *15*(1), 83-101.

Jamal, A., & Goode, M. M. (2001). Consumers and brands: a study of the impact of self-image congruence on brand preference and satisfaction. *Marketing Intelligence & Planning, 19*(7), 482-492.

Jansen, B. J., Zhang, M., Sobel, K., & Chowdury, A. (2009). Twitter power: Tweets as electronic word of mouth. *Journal of the American society for information science and technology*, *60*(11), 2169-2188.

Johar, G. V., Sengupta, J., & Aaker, J. L. (2005). Two roads to updating brand personality impressions: Trait versus evaluative inferencing. *Journal of Marketing research*, *42*(4), 458-469.

Johar, J. S., & Sirgy, M. J. (1991). Value-expressive versus utilitarian advertising appeals: When and why to use which appeal. *Journal of advertising*, *20*(3), 23-33.

John, O. P. (1990). The" Big Five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. *Handbook of Personality: Theory and Research*.

Johnson, D. (2014, July 8). How smart are your tweets?. Time. https://time.com/2958650/twitter-reading-level/

Kabadayi, S., & Price, K. (2014). Consumer–brand engagement on Facebook: liking and commenting behaviors. *Journal of Research in Interactive Marketing*, *8*(3), 203-223.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59-68.

Keller, K. L. (2003). Strategic brand management: Building, measuring and managing brand equity, (2nd ed.). New York: Prentice Hall.

Khoros Staff. (2017, June 14). Nuggs for Carter: Why Wendy's personality is perfect for social media. Khoros. https://khoros.com/blog/nuggs-carter-why-wendys-personality-perfect-social-media

Kim, L. (2019, January 22). The straightforward guide to Twitter analytics. HubSpot. https://blog.hubspot.com/marketing/twitter-analytics

Kim, H. R., Lee, M., & Ulgado, F. M. (2005). Brand personality, self-congruity and the consumer-brand relationship. *ACR Asia-Pacific Advances*.

Kleine, R.E., Kleine, S.S., & Kernan, J.B. 1993. Mundane consumption and the self: A social-identity perspective. *Journal of Consumer Psychology 2*(3), 209–235.

Kleine, S. S., Kleine, R. E., & Allen, C. T. (1995). How is a possession 'me' or 'not me'? Characterizing types and an antecedent of material possession attachment. *Journal of Consumer Research*, *22*(3), 327-343.

Kotler, P. (1991). Marketing management: Analysis, planning, implementation, and

control. Seventh Ed. Englewood, NJ: Prentice-Hall.

Kressmann, F., Sirgy, M.J., Herrmann, A., Huber, F., Huber, S., & Lee, D.J. (2006). Direct and i indirect effects of self-image congruence on brand loyalty. *Journal of Business Research, 59*(9): 955–964.

Krishnan, H. S., & Chakravarti, D. (1993). Varieties of brand memory induced by advertising: Determinants, measures, and relationships. *Brand equity and advertising: Advertising's role in building strong brands*, *1*.

Kunesh, A. (2020, March 1). How often should you post on social media. Traject. https://bytraject.com/social/how-often-to-post-on-social-media/

Landon Jr, E. L. (1974). Self concept, ideal self concept, and consumer purchase intentions. *Journal of consumer research*, *1*(2), 44-51.

Laroche, M., Habibi, M. R., & Richard, M. O. (2013). To be or not to be in social media: How brand loyalty is affected by social media?. *International Journal of Information Management*, *33*(1), 76-82.

Leigh, J.H. and Gabel, T.G. (1992). Symbolic interactionism: Its effects on consumer behaviour and implications for marketing strategy. *The Journal of Services Marketing*, 6(3), 5-16.

Levy, S.J. (1959). Symbols for sale. *Harvard Business Review, 37*(4), 117-124.

Lewis, J.D. (1979). A social behaviorists interpretation of the meadian "I". *American Journal of Sociology (85)*2, 261-287.

Li, C., Bernoff, J., & Groot, M. (2011). *groundswell*. Thema.

Liu, F., Li, J., Mizerski, D., & Soh, H. (2012). Self-congruity, brand attitude, and brand loyalty: A study on luxury brands. *European Journal of Marketing 46*(7/8), 922–937.

Logan, K. (2014). Why isn't everyone doing it? A comparison of antecedents to following brands on Twitter and Facebook. *Journal of Interactive Advertising*, *14*(2), 60–72.

Mæhle, N., & Shneor, R. (2009). On congruence between brand and human personalities. *Journal of Product and Brand Management*, 19(1), 44-53.

Malär, L., Krohmer, H., Hoyer, W. D., & Nyffenegger, B. (2011). Emotional brand attachment and brand personality: The relative importance of the actual and the ideal self. *Journal of Marketing*, *75*(4), 35-52.

Malhotra, N.K. (1988). Self-concept and product choice: An integrated perspective. *Journal of Economic Psychology*, *9*(1), 1-28.

Mangold, W. G., & Faulds, D. J. (2009). Social media: The new hybrid element of the promotion mix. *Business Horizons*, *52*(4), 357-365.

Maslowska, E., Malthouse, E. C., & Collinger, T. (2016). The customer engagement ecosystem. *Journal of Marketing Management*, *32*(5-6), 469-501.

McAlexander, J. H., Schouten, J. W., & Koenig, H. F. (2002). Building brand community. *Journal of Marketing*, *66*(1), 38-54.

McCracken, G. (1986). Culture and consumption: A theoretical account of the structure and movement of the cultural meaning of consumer goods. *Journal of Consumer Research*, *13*(1), 71-84.

McCrae, R.R., & Costa, P.T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*(1), 81.

McCrae, R.R. & Costa, P.T (1989). The structure of interpersonal traits: Wiggin's circumplex and five-factor model. *Journal of Personality and Social Psychology, 56*(4), 586-595.

McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective*. Guilford Press.

Meenaghan, T. (1995). The role of advertising in brand image development. *Journal of Product & Brand Management*.

Mick, D.G. (1986). Consumer research and semiotics: Exploring the morphology of signs, symbols, and significance. *Journal of Consumer Research*, *13*(2), 196-213.

Mount, M. K., Barrick, M. R., & Strauss, J. P. (1994). Validity of observer ratings of the big five personality factors. *Journal of Applied Psychology*, *79*(2), 272.

Naaman, M., Boase, J., & Lai, C.H. (2010). Is it really about me?: Message content in social awareness streams. In *Proceedings of the 2010 ACM conference on Computer supported cooperative work* (pp. 189-192).

Norman, W.T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *The journal of abnormal and social psychology, 66*(6), 574.

Opoku, R. (2006). *Towards a methodological design for evaluating online brand positioning* (Doctoral dissertation, Luleå tekniska universitet).

Osgood, C., Suci, G. J., & Tannenbaum, S. G. (1957). The study of meaning. *Urbana: Univ. Ill. Press*.

Osman, M. (2017, August 14). *Twitter mentions: How to find, track, & get more*. Sprout Social. https://sproutsocial.com/insights/twitter-mentions/

Oyserman, D. (2004). Self-concept and identity. In A. Tesser & N. Schwarts, *The Blackwell Handbook of Social Psychology (*pp. 499 – 517). Malden, MA: Blackwell.

Payne, J.W., Bettman, J.R., & Johnson, E.J. (1993). *The adaptive decision maker.* Cambridge university press.

Park, B. (1986). A method for studying the development of impressions of real people. *Journal of Personality and Social Psychology*, *51*(5), 907.

Park, G., Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Kosinski, M., Stillwell, D. J., & Seligman, M. E. (2015). Automatic personality assessment through social media language. *Journal of Personality and Social Psychology*, *108*(6), 934.

Perry, B. D. (1999). *Maltreated children: Experience, brain development and the next generation*. Norton.

Phau, I., & Lau, K. C. (2000). Conceptualising brand personality: A review and research propositions. *Journal of Targeting, Measurement and Analysis for Marketing*, *9*(1), 52-69.

Pendergrast, M. (1993). *For God, Country and Coca-Cola.* New York: Charles Scribner's Son.

Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2001). Linguistic inquiry and word count: LIWC 2001. *Mahway: Lawrence Erlbaum Associates*, *71*(2001), 2001.

Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual Difference. *Journal of personality and social psychology*, *77*(6), 1296.

Pennebaker, J.W., Booth, R.J., Boyd, R.L., & Francis, M.E. (2015). Linguistic Inquiry and Word Count: LIWC2015. Austin, TX: Pennebaker Conglomerates (www.LIWC.net).

Pennington, J., Socher, R., & Manning, C. D. (2014, October). Glove: Global vectors for word representation. In *Proceedings of the 2014 conference on empirical methods in natural language processing (EMNLP)* (pp. 1532-1543).

Pentina, I., Zhang, L., & Basmanova, O. (2013). Antecedents and consequences of trust in a social media brand: A cross-cultural study of Twitter. *Computers in Human Behavior*, *29*(4), 1546-1555.

Pitt, L., Opoku, R. A., Hultman, M., Abratt, R., & Spyropoulou, S. (2007). What I say about myself: Communication of brand personality by African countries. Tourism Management, 28(3), 835–844.

Plummer, J.T. (1985). How personality makes a difference. *Journal of Advertising Research, 24,* 27-31.

Plummer, J.T. (2000). How personality makes a difference. *Journal of advertising research, 40*(6), 79-83.

Ramakrishnan, Veena. (2019, September 10). *25 most followed brands on Twitter in 2019*. Unmetric. https://blog.unmetric.com/most-followed-brands-on-twitter

Ranfagni, S., & Faraoni, M. (2020). How to drive brand communication in virtual settings: An analytical approach based on digital data (consumer brand alignment and social engagement). In Management Association, Information Resources (Eds.), *Global branding: Breakthrough in research and practices* (pp. 212-226). IGI Global.

Roman, Laura. (2017, May 9). Quest for free chicken nuggets inspires Twitter's most retweeted tweet. NPR. https://www.npr.org/sections/thetwo-way/2017/05/09/527597422/quest-for-free-chicken-nuggets-inspires-twitters-most-retweeted-tweet

Rosenberg, M. (1986). *Conceiving the self*. RE Krieger.

Rutter, R., Chalvatzis, K. J., Roper, S., & Lettice, F. (2018). Branding instead of product innovation: a study on the brand personalities of the UK's electricity market. *European Management Review*, *15*(2), 255-272.

Saucier, G., & Goldberg, L. R. (1996). Evidence for the Big Five in analyses of familiar English personality adjectives. *European Journal of Personality*, *10*(1), 61-77.

Schaie, K. W. (1962). On the equivalence of questionnaire and rating data. *Psychological Reports*, *10*(2), 521-522.

Schivinski, B., & Dabrowski, D. (2016). The effect of social media communication on consumer perceptions of brands. *Journal of Marketing Communications*, *22*(2), 189-214.

Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Dziurzynski, L., Ramones, S. M., Agrawal, M., ... & Ungar, L. H. (2013). Personality, gender, and age in the language of social media: The open-vocabulary approach. *PloS one*, *8*(9), 737-791.

Sirgy, M. J. (1982). Self-concept in consumer behavior: A critical review. *Journal of Consumer Research,* Vol. 9**,** pp. 287-300.

Sirgy, M. J., Grewal, D., Mangleburg, T. F., Park, J. O., Chon, K. S., Claiborne, C. B., & Berkman, H. (1997). Assessing the predictive validity of two methods of measuring self-image congruence. *Journal of the academy of marketing science*, *25*(3), 229.

Smith, S.R., & Archer, R.P. (2014). *Personality Assessment.* Vol. Second edition. Routledge.

Solem, B. A. A. (2016). Influences of customer participation and customer brand engagement on brand loyalty. *Journal of Consumer Marketing*, *35*(5).

Sprott, D., Czellar, S., & Spangenberg, E. (2009). The importance of a general measure of brand engagement on market behavior: Development and validation of a scale. *Journal of Marketing Research*, *46*(1), 92-104.

Sung, Y.J., and Kim, J. (2010). Effects of brand personality on brand trust and brand affect. *Psychology & Marketing, 27*(7), 639–661.

Tsimonis, G., & Dimitriadis, S. (2014). Brand strategies in social media. *Marketing Intelligence & Planning*, *32*(3), 328-344.

Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, *29*(1), 24-54.

Tumasjan, A., Sprenger, T. O., Sandner, P. G., & Welpe, I. M. (2010). Predicting elections with twitter: What 140 characters reveal about political sentiment. In *Fourth international AAAI conference on weblogs and social media*.

Tupes, E.C. & Christal, R.C. (1961). Extension of the interpersonal adjective scales to include the Big Five dimensions of personality. *Journal of Personality and Social Psychology, 59*, 781-790.

Vargo, C.J. (2016). Toward a tweet typology: Contributory consumer engagement with brand messages by content type. *Journal of Interactive Advertising, 16*(2), 157-168.

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice*, *20*(2), 122-146.

Vernette, E. (2003, November). Personnalité de marque et image de soi. In *Proceedings of 3rd International Congress, Marketing Trends*.

Vernette, E. (2008). Les atouts et les pièges de la personnalité de la marque. *Décisions Marketing,* 19-31.

Wang, C., Zhang, P., Choi, R., & D'Eredita, M. (2002). Understanding consumers attitude toward advertising. *AMCIS 2002 Proceedings*, 158.

Wells, W. D., Andriuli, F. J., Goi, F. J., & Seader, S. (1957). An adjective check list for the study of "product personality". *Journal of Applied Psychology*, *41*(5), 317.

Xia, L. (2013). Effects of companies' responses to consumer criticism in social media. *International Journal of Electronic Commerce*, *17*(4), 73-100.

Xu, A., Liu, H., Gou, L., Akkiraju, R., Mahmud, J., Sinha, V., Hu, Y., & Qiao, M. (2016). Predicting perceived brand personality with social media. In *Tenth International AAAI Conference on Web and Social Media*.

Yarkoni, T. (2010). Personality in 100,000 words: A large-scale analysis of personality and word use among bloggers. *Journal of Research in Personality*, *44*(3), 363-373.

Yoshida, M., Gordon, B. S., Nakazawa, M., Shibuya, S., & Fujiwara, N. (2018). Bridging the gap between social media and behavioral brand loyalty. *Electronic Commerce Research and Applications*, *28*, 208-218.

Yun, J. T., Pamuksuz, U., & Duff, B. R. (2019). Are we who we follow? Computationally analyzing human personality and brand following on Twitter. *International Journal of Advertising*, *38*(5), 776-795.

Zheng, X., Cheung, C.M., Lee, M.K., & Liang, L. (2015). Building brand loyalty through user engagement in online brand communities in social networking sites. *Information Technology & People, 28*(1), 90-106.

Zouaghi, S., & Darpy, D. (2003). Du soi au groupe: naissance du concept du nous et exploration d'une échelle de mesure du nous idéal. *Recherche et Applications en Marketing (French Edition)*, *18*(4), 3-22.

APPENDIX

COMPETENCE	EXCITEMENT	RUGGEDNESS	SINCERITY	SOPHISTICATION
`	active	al-fresco	Above-board	a-la-mode
Able-bodied	aggressive	alfresco	above board	adult
able bodied	amazing	American	accommodating	advanced
absolute	artistic	animal	accurate	alluring
accomplished	arty	animals	actual	amiable
adept	audacious	arduous	affable	angelic
adroit	audacity	basic	affordable	appealing
annual	autonomous	beefy	appreciative	aristocracy
apparent	avant-garde	better	approachable	aristocratic
assiduous	avant garde	big	approaching	Aristocratical
assured	away	boisterous	appropriate	attractive
astute	awe-inspiring	brutal	attentive	baronial
attackable	awe inspiring	bumpy	authentic	blue blood
available	awesome	callous	believable	brush up
award-winning	beyond	challenge	beneficial	brush-up
award winning	bold	challenging	benevolent	captivating
aware	boldness	coarse	benign	celebrated
blooming	boost	competitive	blessed	charismatic
booming	bracing	confrontation	blunt	charm
brainy	brand new	conservative	bonafide	charming
brief	brand-new	cowboy	bright	cherubic
brilliant	brave	cragged	buoyant	classic
broken	bravery	craggy	calm	classy
budget	breathtaking	crimson	candid	controlling
careful	brisk	crudeness	charitable	corporate
celebratory	colorful	crudity	cheerful	cosmopolitan
certified	colorful	cruel	civil	courtier
clean	cool	dangerous	civilised	couture
clear	courage	daunting	civility	cultivated
competence	courageness	daybreak	civilized	cultural
competent	courant	dayspring	clean-cut	cultured
complete	crazy	deep	clear-cut	cute
comprehensive	creative	demanding	comforting	dandyish
concern	creativity	desert	comfy	dark
	crisp	deserving	committed	decorated

COMPETENCE	EXCITEMENT	RUGGEDNESS	SINCERITY	SOPHISTICATION
conclusive	crisp	deserving	committed	decorated
confident	cross	difficult	common	delicate
confined	current	durable	commonplace	deluxe
conglomerate	custom	effortful	companionable	dignified
conquering	daring	endeavor	compassionate	discriminatory
conscientious	dazzling	endeavor	complimentary	disgusting
consistent	descriptive	endless	concerned	distinction
constant	designer	endure	confused	distinguished
craftiness	determined	external	congenial	downy
crafty	developing	extinct	content	dressy
cunning	different	extreme	conventional	dulcet
daily	digital	extremum	convivial	edification
defensive	dramatic	ferocious	cooperative	elegant
definite	eager	fierce	cordial	elite
dependable	early	folk	correct	eloquent
dexterous	electric	forcible	courteous	else
diligence	electrifying	free	cozy	enchant
diligent	elevate	fresco	customary	enchanting
doing well	emancipate	fresh air	dear	endearing
dominant	emancipated	frontier	decent	engaging
easy	energized	furrow	defensible	ennobling
economic	energizing	giant	delicious	enrapture
educational	energy	godforsaken	delightful	enthral
effective	enliven	granite like	direct	enthrall
enough	enlivening	graniate-like	disappoint	enthralling
enterprise	enterprisingness	granitic	distinctive	enticing
enterprisingness	entertaining	grating	down-to-earth	entitled
entire	enthusiastic	gravel	down to earth	entrancing
equipotent	exalt	grueling	earnest	epic
essential	exalting	grueling	ebullient	epicurean
establishment	excitation	hard	embarrassing	esteemed
even	excite	hard-boiled	emotional	esthetic
everlasting	excited	hard boiled	encouraging	excellent
exhaustive	excitement	hard-hitting	ethical	exclusive
experienced	exciting	hard hiting	everyday	exclusivity
exultant	exhilarate	hardened	existent	expensive
fail-safe	exhilarating	harsh	existing	exquisite
fail safe	exuberant	hazardous	fact-based	exquisitely
final	fantastic	heavy	factual	extravagant
fine	fantasy	heavy-duty	fair	eye catching
firm	far	historical	faithful	eye-catching
			favorite	

first-place first place fit flourishing focused foolproof for-certain for certain forefront forever gainful general genius get-ahead get ahead gifted glorious governance guarantee guaranteed hard-working hardworking hard working hi-tech high tech hi tech illustrious immediate imperishable in-charge in charg in-front in front in-no-doubt in no doubt industrial industrialize industrialized industrious industriousness industry	fast feisty festive forceful forward fresh freshness front fun future gutsy happening heroic heroism high-spirited high spirited hip imaginative improving in-vogue incredible independent individual innovative inspiring interesting intrepid inventive invigorating juvenile latest liberated lifting liven-up lone magical missing modern modern-day modern day modernistic	huge hunt hunting huskiness inconvenient inhumane insensitive irregular jagged jeans jerking jerky jolting jolty jungle laborious large leathery longer macho manfully manly mannish masculine massive maverick metal mountainous mountains native nerve-racking nerve rackign nerve-wracking nerve wracking old open-air out-of-door out-of-doors out of door out of doors outdoor	forthcoming forthright frank friendly frustrated full funny generous genial genuine genuine glad good good-hearted good hearted good-humored good humored gracious gregarious guileless hale and hearty happy healthful heartfelt hearty helpful home honest honestness honesty honorable honorableness honourable honourableness hopeful humane humble hurt inclusive indisputable inimitable inspired	fabulous famous fascinating fashionable female feminine first class first rate first-rate flatter flavorful flossy fluent foreign formal fragile fragrant fulgid genteel gentle gentlemanlike gentlemanly gentlewoman gilded glamorous glamour glamourous glib glib-tongued glittering global glossy golden good-looking good-natured gorgeous graceful grand great handsome haute_cotoure

inside	modernness	outdoors	inviting	healthier
insightful	modish	outdoorsy	irreplaceable	high
intellectual	moving	outer	jovial	high-born
intelligent	musical	outside	joyful	high-brow
involved	nerve	pachydermatous	kin	high-class
jubilant	new	perdurable	kin	high-profile
knowing	newly-arisen	perilous	kind	high-status
knowledgeable	next	physical	kindly	highbrowed
knowledgeable about	nifty	pointy	kinship	hot
lasting	obsessive	potholed	least	iconic
leader	opportunistic	prairie	legitimate	impressive
license	passionate	precarious	legitimatize	in-style
logical	photographic	prohibited	legitimize	in-vogue
long-lasting	plucky	punishing	legitmise	indulgent
long lasting	possible	rampageous	less	interior
long-lived	present	raw	local	lady
long lived	present-day	remote	lucky	leading
long-suffering	prevailing	resilient	married	legendary
long suffering	pristine	rigorous	matchless	lord
loyal	progressing	robust	maudlin	lustrous
lucrative	progressive	rocklike	merciful	luxurious
main	recent	rocky	merry	magnanimousness
major	refreshed	rough	modest	magnificent
manufacture	refreshed	rough-textured	moral	master
marketable	refreshful	rough textured	natural	mellifluous
mechanical	refreshing	roughened	nice	Mellisonant
mental	represent	roughish	normal	modern
mercantile	resolute	rugged	nourishing	mysterious
methodological	resourceful	ruggedness	novel	nice-looking
meticulous	rewarding	ruthless	nutritious	nobility
mini	risky rousing	rutted	obliging	noble
model	secret	safari	obvious	noble-minded
money-making	shakeup	saloon	old-fashioned	nobleman
moneymaking	smashing	savanna	open	nobleness
money making	social	savannah	openhearted	noblesse
mutual	sole	scraggy	ordinary	noblewoman
never	solitary	scratchedy	original	ornamental
official	solo	serrated	originality	own
outstanding	soon	sever	parental	particular
painstaking	sovereign	Spartan	patient	patrician
partnership	specific	stony	perfect	petite
perhaps	spicy	straining	perky	photogenic
			plainspoken	

perpetual	spine-tingling	strapping	pleasant	picturesque
persistent	spine tingling	strenuous	plentiful	pleasing
plenty	spirited	strong-arm	plus	polished
poised	state-of-the-art	strong arm	polite	political
potent	state of the art	struggle	politeness	popular
practical	stimulating	sturdy	positive	posh
preserving	stirring	sunrise	positive	powerful
prize-winning	stout	sunset	practical	precious
prize winning	strange	survivor	pragmatic	preeminence
procedural	strong-willed	testing	proper	premier
production	surprising	thick-skinned	properness	premium
profit	technological	thick skinned	protective	prestigious
profit-making	temporary	timberland	pure	pretty
profit making	thrilling	timeless	quiet	prime
profitable	tonic	toothed	real	princely
promising	trendy	touch-and-go	realistic	private
prosper	turn-on	touch and go	relation	professional
prospering	unauthorized	tough	relations	profligate
prosperous	unconstrained	toughened	relationship	prominent
protected	undeveloped	toughness	relaxing	quality
proud	unfettered	traditional	reliable	queenlike
public	unique	treacherous	remarkable	queenly
punctilious	unmarked	trek	resolved	rare
quick	unmatched	trekking	respectable	refined
ready	up-to-date	tricky	responsive	renowned
regular	up to date	uncharitable	sad	rich
required	up-to-the-minute	uncivilized	satisfied	righteous
reserved	up to the minute	uncivilized	scrupulous	royal
responsible	updated	uncomfortable	self-effacing	satin
routine	urban	uncovered	self effacing	satiny
safe	valiant	undomesticated	sensitive	scintillant
salable	venturesome	uneven	sentimental	scintillating
saleable	vibrant	unforgiving	serious	seductive
scientific	vibrate	unkind	similar	selfish
second	vital	unmerciful	simple	sensational
secure	vogue	unpadded	simple-minded	seraphic
self-assured	weird	unpleasant	simple minded	sexual
self-confident	young	unpolished	sincere	sexy
self confident	youthful	unrefined	single	shining
self-possessed		unrelenting	small	shiny
self possessed		unrestrained	small-town	silk
sellable		unsmooth	small town	silky
		unsteady	smiling	

sheltered significant skillful smart solid staunch steadfast steady strong successful sufficient suitable superior sustainable systematic talented technical thorough thoroughgoing thriving tight tireless top place trade transnational triumphal triumphant trusting trusty unbeatable unbeaten unbendable undeviating unfailing unfaltering unflagging unfluctuating unshakeable unswerving unwavering up-and-coming up and coming		untamed venturous vintage violent weather-beaten weather beaten weathered weatherworn westerly western wild wildlife woodland	sociable soft soulful sprightliness standard still straight straightforward straightness supportive sweet sympathetic tasty the right way thoughtful tired together true true-life trustworthy truthful typical unadulterated unassuming unchanging understanding unfortunate unglamorous uninterested united unostentatious unpretentious unquestionable unspoilt up-front valid veritable verity vigorous virtuous vivacious warm welcoming	silver-tongued snobbish sophisticate sophisticated sophistication spacious special spectacular splendid sporty star striking stunning stylish suave sugariness superfine top top-notch ultimate upmarket upper-class upper-class valuable velvet velvety voguish voluptuary voluptuous well-bred wonderful worst yummy

usual vendible vendible venture victorious wily winning Witty			well well-founded well founded well-mannered well mannered wholesome	