

## Four Thesaurus Brand Personality Dictionaries for Computer Content Analysis

### Abstract

The five-dimensional brand personality (BP) measure of Aaker (1997) has been perceived by academics as a significant tool for measuring brand intangible meanings. Pitt, Opoku, Hultman, Abratt, & Spyropoulou (2007) were the first to expand Aaker's (1997) five dimensions into 833 items dictionary known as the first BP dictionary. This dictionary assisted Pitt et al. (2007) in analysing the tourism countries' website BP from digital textual data, since then Pitt et al.'s (2007) BP lexical approach has been extended by other studies to analyse their brands from digital texts (Paschen, Pitt, Kietzmann, Dabirian, & Farshid, 2017; Ranfagni, Crawford Camiciottoli, & Faraoni, 2016). Even though Pitt et al.'s (2007) BP dictionary assisted in the analysis of BP from digital texts, academics explored that the 833 items did not allow prominent items to specific brands to be included in the analysis (Papania et al., 2008). Thus, in a study aimed to explore the BP of World Heritage Sites (WHSs), Four Thesaurus BP dictionaries were developed in order to aid in including items prominent to WHSs to be included (Hassan, Zerva, & Aulet, 2021).

The 5, 571 non-redundant items of these dictionaries are an expansion of Aaker's (1997) dimensions namely; Competence, Excitement, Ruggedness, Sincerity and Sophistication. In contrast to the construction of Pitt et al.'s (2007) dictionary established by using Encyclopedia Britannica's online Thesaurus, the Four Thesaurus Dictionaries are constructed by four online thesaurus dictionaries that categorize the word due to their similarity. The technique of categories allowed the construction of the Four Thesaurus BP dictionaries and assisted in categories of words under Aaker's five dimensions. These Four Thesaurus dictionaries were part of a method that assisted in identifying the BP dictionary of WHSs as a categories dictionary (Hassan et al., 2021). Furthermore, these Four Thesaurus Dictionaries items are validated as behavioural items by the use of available psychology dictionaries (Allport & Odbert, 1936), providing the Updated Four Thesaurus Dictionaries including 2, 643 unique items. Hence the use of these Four Thesaurus Dictionaries may be useful in defining the BP categories for brands or product categories (Hassan et al., 2021).

## **Introduction**

Since 1997, the Brand Personality measure of the five-dimensional scale presented by Aaker (1997), has been perceived as a prominent tool for enhancing a brand's overall competitive advantages (Aaker, 1997). More attention has been noted in several bibliometric literature analyses for brand personality, whereby BP can be discussed generally in terms of its antecedences and consequences (Radler, 2017; Saeed, Burki, Ali, Dahlstrom, & Zameer, 2021). Simply, the antecedence of BP is described in terms of the different methods that have been applied in the process of the formation of the BP categories. The consequences of BP are related to the implications of the BP categories in terms of their influences on customers' various variables such as customer loyalty and intention to purchase (Eisend and Stokburger-Sauer 2013a, 2013b; Zhang et al. 2019). In relation to the antecedents of BP, academics have demonstrated that even though Aaker's scale has several limitations, it is the most widely used. Taking advantage of the available textual data online, Pitt et al. (2007) expanded Aaker's (1997) five-dimensional scale into the first 833-item synonyms BP dictionary for Aaker's five scale dimensions. The study by Pitt et al. (2007) referred to the BP dictionary as the first simple and efficient BP lexical approach. The BP dictionary of Pitt et al. (2007) was used to analyse the intangible meanings of tourism websites of African countries, whereby several text-mining techniques were presented to the concept of BP.

Even though Pitt et al. (2007) dictionary assisted in measuring the intangible attributes of tourism websites of African countries, one prominent limitation was noted when Pitt et al. (2007) BP dictionary of five dimensions was used, it was explored that several items absent when it extended to different cultural or domain context (Hassan et al., 2021; Papania, Campbell, Opoku, Styven, & Berthon, 2008; Ranfagni et al., 2016). The present study thus aims to present a new BP dictionary that aids in capturing BP categories in different cultural contexts. Furthermore, the technique that will be used in the construction of the new BP dictionary ensures that the emerged items are relevant to Aaker's five dimensions and validated as behavioural items providing the Four Thesaurus Dictionaries and the Updated Four Thesaurus Dictionaries.

## 1. Establishing of the Four Thesaurus Dictionaries

More attention is given BP lexical approach due to the huge amount of text data available online, and the development in the text-mining processing features encouraged academics to expand the BP to measure dimensions distributions from digital texts (Pitt et al., 2007; Rojas-Méndez & Hine, 2016). For example, Pitt, et al. (2007) were the first to use computerized context analysis to explore the official website personality of ten African countries and detected their personality distributions by the use of correspondence analysis (CA) in text mining. Pitt et al. (2007) provided the first BP dictionary; the pioneering idea of the dictionary is derived from the fact that Pitt et al. (2007) expanded Aaker's five personality dimensions within fifteen facets and 42 items to their relevant 833 synonyms by the use of Encyclopedia Britannica's online Thesaurus (Pitt et al., 2007). In the same ways, other academics grouped their traits together due to their relevant synonyms (De Moya & Jain, 2013; Kim & Lehto, 2013).

The BP dictionary of Pitt et al. (2007), and the methods of using dictionary categories as pre-defined categories for BP computer content analysis (Ranfagni et al., 2016; Rojas-Méndez, Papadopoulos, & Alwan, 2015) have been extended by several other studies; such as Opoku, Abratt, and Pitt (2006) explored corporate business school personality by analyzing their online vision and mission texts. Opoku, Pitt, and Abratt (2007) investigated the best seller of novels' personalities. Papania et al. (2008) studied the biotechnology firm websites' personalities. Haarhoff and Kleyn (2012) explored open sources of brands' online personalities. De Moya and Jain (2013) identified Mexico and Brazil countries' personalities from social media comments. Paschen et al. (2017) the personality of the brand community from digital resources by Pitt dictionary. Rutter, Nadeau, Aagerup, and Lettice, (2020) used Opoku, Abratt, and Pitt's (2006) dictionary as synonyms to Aaker's (1997) five dimensions to measure the personality of Sponsors of the Olympic Games. Masiello, Bonetti, and Izzo (2020) explored the festival event BP through the social media text on Facebook. Shi and Shan (2019) explored the cross-cultural difference influencing the BP of the financial company by using computer content analysis and Aaker's (1997) 42 items. Even though the BP lexical approach is inspired by these previous studies, it requires further development.

Even though the BP lexical approach was inspired by these previous studies, it requires further development specifically that the dictionary items are limited to capture other cultural contexts (Papania et al., 2008; Ranfagni et al., 2016). Papania et al. (2008) explored that items relevant to their domain context biotechnology firm were absent when using Pitt et al.'s (2007) synonyms dictionary. Furthermore, Ranfagni, Crawford Camiciottoli, and Faraoni (2016) explored that the use of Aaker items is not enough to grasp the personality of fashion brands as they explored that there are many adjectives related to fashion brands were absent. In contrast to these studies, Rojas-Méndez and Hine (2016) recognized the importance of text mining to enhance the context-based-customized personality dictionary and customized dictionary items relevant to South American countries' websites' personalities to measure their BP dimensions distributions. They stated that there has not been a well-agreed nation personality scale yet, and explored South American countries websites personality by a dictionary consisting of 533 traits have been taken from their previous exploratory study (2013), and grouped them under dimensions that correspond to NEO Five Factor Model (McCrae & Costa, 1989). To add, Hassan, Zerva, and Aulet (2021), when they analysed World Heritage sites attributions from digital textual data by the use of the Pitt et al.'s (2007) dictionary, explored that there are many items related to World Heritage sites are absent.

As a result, this encouraged the present study to present a new BP dictionary that may aid in including most of the items that may be of prominent relevancy to various studies and still within the five personality categories of Aaker's (1997) five dimensions, namely the Four Thesaurus Dictionaries. This study established a new dictionary parallel and similar to Pitt's dictionary by the use of four online dictionaries: Power Thesaurus [www.powerthesaurus.org](http://www.powerthesaurus.org), OneLook Thesaurus [www.onelook.com/thesaurus](http://www.onelook.com/thesaurus), Thesaurus Dictionary, [www.thesaurus.com](http://www.thesaurus.com), and Merriam Webster [www.merriam-webster.com](http://www.merriam-webster.com); (accessed on 25 May 2021). The main idea here is that each dictionary may include more unique words, so using four sources aids in expanding the number of synonyms. The four online dictionaries were selected due to the fact that they arranged the synonyms of specific keywords based on their level of similarity, thus they are prominent in providing similarity rankings for the target keywords. This four-dictionary ranking of keywords was beneficial when extracting synonyms for Aaker's items as each synonym is colour-coded according to where is ranked in relation to a specific keyword. By colour-coding the keyword, it can then be placed in Aaker's five dimensions according to its relevance. These

dictionaries were coloured to show that the closer the similarity to one of the 42 traits in Aaker, the darker the colour. The colour code technique way is inspired by the way Thesaurus and OneLook dictionaries prioritize the degree of similarity between synonyms. An example can be found in the following URLs: therefore, this technique aided in constructing four dictionaries (hereafter: Four Thesaurus BP dictionaries), and their entire set of adjectives was classified according to the degree of relevance to one of the 42 traits within the five personality categories.

These dictionaries first help verify whether a new keyword has synonyms relevant to the Aaker's dimensions or not. If it does, the new adjective is then classified. Worth notifying that most of Aaker's items of Excitement and Competence are overlapped, this was also obvious that most of the dictionaries items can emerge into two categories. To ensure that a specific item is correctly related to specific dimensions of Aaker's five dimensions, this study recommends the use of the Power or One Thesaurus dictionaries as a source of classification under Aaker's five dimensions as they are most comprehensive in term of the size of items. Another technique that may improve the categories of specific item dimensions under Aaker's five dimensions is to compare the item categories in the four dictionaries. The four dictionaries were thus used as a parameter for classifying the adjectives and placing them in the appropriate dimension. For example, in all four dictionaries, the word "amazing" is classified as a synonym for Excitement dimension traits. Using these four dictionaries as parameters, therefore, enables us to classify the new adjectives under the five dimensions of Aaker's BP scale.

## **2. Establishing of The Updated Four Thesaurus Dictionaries**

In the most traditional empirical approaches, when defining the personality items academics consulted psychologists or languages experts to ensure that the scale items are personality items or behaviour items which was absent in the case of the use of the Pitt dictionary and the four thesaurus dictionary designed in this study as they depended on the level of word correlated meaning from thesaurus dictionaries. Therefore, this study presented a new technique to validate that the items of the Four Thesaurus Dictionary are behaviour items providing the Updated Four Thesaurus Dictionaries as follows;

**Validation of Personality Items:** Pitt et al.'s (2007) BP dictionary and the Four Thesaurus dictionaries relied on Aaker's 42-item, five dimension structure. The validity of the items of both dictionaries for personality traits relied on the fact that the items are highly synonymous with

Aaker's 42 items and depend on pair synonym similarity. Even though the synonym similarity approach is proven to be useful for grouping together similar items under unique dimensions in the study of Lieven (2017), the items emerging from the synonyms concept may still need further investigation regarding their suitability for personality items (Chen & Phou, 2013; Geuens, Weijters, & De Wulf, 2009; Ye, 2012). There are two common BP scale item construction techniques. The first falls within the traditional BP empirical studies and restricts items to those that describe human behaviour (Davies, Rojas-Méndez, Whelan, Mete, & Loo, 2018). Thus, items imported from psychology and marketing studies are perceived as valid as they have been previously investigated and agreed upon by language experts or psychologists. The second technique uses the lexical approach, wherein the process of validating items is missing as it depends on the synonyms' relevancy ( Hassan et al., 2021; Pitt et al., 2007) as explained. Thus, the current study introduces a new technique to extract and validate personality items from the digital text by building on existing personality trait dictionaries containing thousands of validated words. First, the items extracted from the match with the available psychology dictionary items previously studied for appropriateness within the field of psychology. This match ensures that the selected items are suitable to be personality items. Fischer et al. (2020) were the first to use this technique in psychology studies, when they used the following three studies' dictionaries; Goldberg (1982), Saucier (1997), and Allport and Odbert (1936). The current study extends this to marketing studies with further updates.

In psychology studies, the four English dictionaries perceived as being the most comprehensive for personality were used (Caprara, Barbaranelli, & Guido, 2001; Fischer et al., 2020), From psychology studies, 18,337 non-redundant personality items were collected from Goldberg (1982), Saucier (1997), Norman (1963), and Allport and Odbert (1936) hereafter called psychology dictionaries. Allport and Odbert (1936) are the first to hypothesise that personality inhabits natural language terms, and their dictionary figures prominently in the development of the Big Five (Caprara et al., 2001). To notify, in addition to the three studies' items used by Fischer et al. (2020), this study also used 2,800 items from Norman (1967), who refined and structured the Allport traits. Therefore, The use of these psychology dictionaries aided in filtering the Four Thesaurus dictionaries and keeping items that were agreed with psychology studies, which means that they were checked previously for their validation. This technique enables this study to provide the Updated Four Thesaurus Dictionaries.

### 3. Implications of Brand Personality Dictionaries

To conclude, this study provides new BP dictionaries where their construction emerged from the advances in information communication technologies and several new thesauri have become available online. These online dictionaries enabled this study to expand Aaker's five dimensions into a set of four dictionaries within the five categories of Aaker (1997). Worth mentioning that the construction of these dictionaries was inspired by the first BP dictionary established by Pitt et al. (2007), which were reported on its simplicity and efficiency to measure tourism counties websites BP from digital textual data, and extended furtherly in several studies (Paschen et al., 2017). The Four Thesaurus dictionaries expanded Aaker's items in order to allow items related to various other studies to be included when using the BP dictionaries as pre-defined dictionary categories for computer content analysis in BP lexical approaches. In addition, this study add more techniques that ensured that the items of the four dictionaries are validated as behavioural items whereas the previous items that were analysed in psychology studies were used to validate the Refined-4 Thesaurus dictionaries.

This study was first inspired by the pioneering methods introduced by Pitt et al. (2007) defining the first BP dictionary and constructing four new BP dictionaries (namely, the 4-Thesaurus BP dictionaries). In these Four Thesaurus BP dictionaries, the list of synonyms for the forty-two traits that are components of Aaker's 15 facets and five dimensions is expanded to 9460 items. These four dictionaries were created using a different technique than Pitt et al. (2007). The technique used more sources of dictionaries as advances in thesaurus dictionaries have been made several thesaurus dictionaries available online, to define the synonyms of Aaker's (1997) forty-two items. The four thesaurus dictionaries are categorized and arranged according to the correlated meanings of specific items. The use of these four BP dictionaries as one dictionary assists in identifying items that were absent from Pitt et al. (2007) and frequently attributed to WHSs. By using four different dictionaries, the 4-thesaurus dictionary allows us to categorize specific new items according to Aaker's five dimensions. By using these four dictionaries, synonyms for Aaker's items can be included and new items not included in the Pitt BP dictionary under Aaker's five dimensions of BP can be classified. The Four Thesaurus Dictionaries can be therefore used by other studies to define their BP dimensions, the technique used for establishing these four dictionaries can be examined to construct dictionaries of synonyms for other domains.

Despite the fact that these 4-dictionary items are constructed in a way to ensure that their items have correlated meaning to Aaker's five dimensions, this study validates that these 4-dictionary items, as well as the items in Pitt et al. (2007) as personality items, are dependent only on their correlated meaning. The process of validating items in the traditional empirical approach is conducted by consulting at least three language experts or psychologists to study whether these emerged items in the BP categories are personality items (Geuens et al., 2009). In contrast to the small items that can be identified using the traditional approach (Geuens et al., 2009) because the BP lexical approach depends on analyzing large amounts of digital textual data as in this thesis, initial items are composed of thousands of terms which may require huge efforts for language and lexical experts to verify and validate these lists. A new technique to validate items from digital textual data, Fischer et al. (2020) take advantage that Allport and Odbert (1936), Goldberg (1982), and Saucier (1997) scanned thousands of adjectives to choose the best stable personality traits that can describe a person, and validated their study's items. When extending this technique in this study, this study also used 2,800 items from Norman (1967) providing a more comprehensive list of 18,337 non-redundant personality items collected from these psychology studies. The use of psychology and specific-field of study previously examined items as sources to validate other study items may be further examined and developed to ease the process of item validation.

For example, the effectiveness of psychology dictionaries, whereby this study agreed with Fischer et al. (2020), and Azoulay and Kapferer (2003) that Allport and Odbert's list was described as the longest established and most comprehensive personality list in English (Fischer et al. 2020; Azoulay and Kapferer 2003). In addition, this study suggests the use of the psychology dictionaries as a fast and saving-cost tool to validate items. However, this study found that when using the Allport dictionary as Fischer et al. (2020) recommend, attention is required to its fourth category named "metaphorical and doubtful" which includes words that should be evaluated for their appropriateness. Therefore, the item appropriateness evaluation was crucial to ensure that the items in BP dictionaries related to various studies are appropriate to describe the overall meaning of brands (Ranfagni et al., 2016). Evaluating item appropriateness for constructing robust BP categories by eliminating words that do not contribute to the meaning of the brand is recommended by several studies (Ranfagni et al. 2016; Rauschnabel et al. 2016; Schade et al. 2014). Hence, this study encouraged future psychology and BP studies to refine Allport and Odbert's list's fourth category and examine the use of the four-Thesaurus dictionary when identifying their BP



categories dictionaries. In the example of practical implications of the BP dictionary, the BP dictionaries are used as predefined dictionary categories to measure WHSs, whereas Hassan et al., (2021) put into practice the WH BP dictionaries that were defined through the use of the Four Thesaurus Dictionary to measure WHSs.

## References

- Allport, G., & Odbert, H. (1936). psnTraitNames\_Allport.pdf. *Psychological Monographs*.
- Caprara, G. V., Barbaranelli, C., & Guido, G. (2001). Brand personality: How to make the metaphor fit? *Journal of Economic Psychology*, 22(3), 377–395.  
[https://doi.org/10.1016/S0167-4870\(01\)00039-3](https://doi.org/10.1016/S0167-4870(01)00039-3)
- Chen, C. F., & Phou, S. (2013). A closer look at destination: Image, personality, relationship and loyalty. *Tourism Management*, 36, 269–278. <https://doi.org/10.1016/j.tourman.2012.11.015>
- Davies, G., Rojas-Méndez, J. I., Whelan, S., Mete, M., & Loo, T. (2018). Brand personality: theory and dimensionality. *Journal of Product & Brand Management*, 27(2), 115–127.  
<https://doi.org/10.1108/JPBM-06-2017-1499>
- 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.  
<https://doi.org/10.1016/j.pubrev.2012.09.004>
- Fischer, R., Karl, J. A., Luczak-Roesch, M., Fetvadjeiev, V. H., & Grener, A. (2020). Tracing Personality Structure in Narratives: A Computational Bottom-Up Approach to Unpack Writers, Characters, and Personality in Historical Context. *European Journal of Personality*, 1–70. <https://doi.org/10.1002/per.2270>
- Geuens, M., Weijters, B., & De Wulf, K. (2009). A new measure of brand personality. *International Journal of Research in Marketing*, 26(2), 97–107.  
<https://doi.org/10.1016/j.ijresmar.2008.12.002>
- Goldberg, L. R. (1982). From Ace to Zombie: Some explorations in the language of personality. *Advances in Personality Assessment*.
- Haarhoff, G., & Kleyn, N. (2012). Open source brands and their online brand personality. *Journal of Brand Management*, 20(2), 104–114. <https://doi.org/10.1057/bm.2012.43>
- Hassan, M. A. E., Zerva, K., & Aulet, S. (2021). Brand personality traits of world heritage sites: Text mining approach. *Sustainability (Switzerland)*, 13(11).  
<https://doi.org/10.3390/su13116142>
- Kim, S., & Lehto, X. Y. (2013). Projected and Perceived Destination Brand Personalities: The Case of South Korea. *Journal of Travel Research*, 52(1), 117–130.  
<https://doi.org/10.1177/0047287512457259>
- Masiello, B., Bonetti, E., & Izzo, F. (2020). Multiple identities of a festival: Intended, communicated and perceived brand personality in the social media environment. *International Journal of Contemporary Hospitality Management*, 32(2), 749–768.  
<https://doi.org/10.1108/IJCHM-11-2018-0937>
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology*, 66(6), 574–583. <https://doi.org/10.1037/h0040291>
- Opoku, R. A., Pitt, L. F., & Abratt, R. (2007). Positioning in cyberspace: Evaluating bestselling

- authors' online communicated brand personalities using computer-aided content analysis. *South African Journal of Business Management*, 38(4), 21–32.  
<https://doi.org/10.4102/sajbm.v38i4.591>
- Opoku, R., Abratt, R., & Pitt, L. (2006). Communicating brand personality: Are the websites doing the talking for the top South African Business Schools? *Journal of Brand Management*, 14(1–2), 20–39. <https://doi.org/10.1057/palgrave.bm.2550052>
- Papania, L., Campbell, C., Opoku, R. A., Styven, M., & Berthon, J. P. (2008). Using brand personality to assess whether biotechnology firms are saying the right things to their network. *Journal of Commercial Biotechnology*, 14(3), 247–255.  
<https://doi.org/10.1057/jcb.2008.14>
- Paschen, J., Pitt, L., Kietzmann, J., Dabirian, A., & Farshid, M. (2017). The brand personalities of brand communities: An analysis of online communication. *Online Information Review*, 41(7), 1064–1075. <https://doi.org/10.1108/OIR-08-2016-0235>
- Pitt, L. F., Opoku, R., 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. <https://doi.org/10.1016/j.tourman.2006.06.003>
- Radler, V. M. (2017). 20 Years of brand personality: a bibliometric review and research agenda. *Journal of Brand Management*, 1–14. <https://doi.org/10.1057/s41262-017-0083-z>
- Ranfagni, S., Crawford Camiciottoli, B., & Faraoni, M. (2016). How to Measure Alignment in Perceptions of Brand Personality Within Online Communities: Interdisciplinary Insights. *Journal of Interactive Marketing*, 35, 70–85. <https://doi.org/10.1016/j.intmar.2015.12.004>
- Rojas-Méndez, J. I., & Hine, M. J. (2016). Countries' positioning on personality traits. *Journal of Vacation Marketing*, 23(3), 233–247. <https://doi.org/10.1177/1356766716649227>
- Rojas-Méndez, J. I., Papadopoulos, N., & Alwan, M. (2015). Testing self-congruity theory in the context of nation brand personality. *Journal of Product and Brand Management*, 24(1), 18–27. <https://doi.org/10.1108/JPBM-05-2014-0618>
- Rutter, R., Nadeau, J., Agerup, U., & Lettice, F. (2020). The Olympic Games and associative sponsorship: Brand personality identity creation, communication and congruence. *Internet Research*, 30(1), 85–107. <https://doi.org/10.1108/INTR-07-2018-0324>
- Saeed, M. R., Burki, U., Ali, R., Dahlstrom, R., & Zameer, H. (2021). The antecedents and consequences of brand personality: a systematic review. *EuroMed Journal of Business*.  
<https://doi.org/10.1108/EMJB-12-2020-0136>
- Saucier, G. (1997). Effects of variable selection on the factor structure of person descriptors. *Journal of Personality and Social Psychology*, 73(6), 1296–1312.  
<https://doi.org/10.1037/0022-3514.73.6.1296>
- Shi, X., & Shan, X. (2019). Cross-cultural impact on financial companies' online brand personality. *Marketing Intelligence and Planning*, 37(5), 482–496.  
<https://doi.org/10.1108/MIP-06-2018-0233>
- Ye, S. (2012). The impact of destination personality dimensions on destination brand awareness

and attractiveness: Australia as a case study. *Tourism*, 60(4), 397–409.