# BRAND ANTHROPOMORPHISM: DEVELOPING AND VALIDATING THE MEASUREMENT SCALE FROM THE CUSTOMER PERSPECTIVE

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**Abstract -** The main purpose of this study is to build a relationship between customer and brand through brand anthropomorphism and create the customer's correlation to brands of brand companies. However, the related research did not have a systematic discussion about brand anthropomorphism. Therefore, this study tries to construct a reliable and valid brand anthropomorphism scale for researchers and practitioners. The sample used 338 students from technological and general universities. This study tested the manipulation check and exploratory factor analysis from the brand anthropomorphism scale by the brand logo. In additions, this study also examined the measurement invariance of the scale for the brand anthropomorphism types (brand product and mascot) by confirmatory factor analysis. The results showed that the brand anthropomorphism scale could be divided into four sub-scales and fitted to the second-order single factor model. The brand anthropomorphism scale is also a reliable and valid scale.

**Keywords**- Brand anthropomorphism, confirmatory factor analysis, scale development.

## I. INTRODUCTION

The explosive of information today facilitated the firms of becoming available to inform the products continually to the customers at any time; however, the information does not stay a long and easily disappear in the minds of the customer. Ries and Trout (1986) pointed out that the key factor in accomplishing modern marketing war is how to create the brand effectively. It was stated that not only the quality of products and the display of goods but also the crucial question of how to occupy the brand keep in the minds of the customer. Some scholars have proposed the concept of brand strategy such as brand image and brand positioning to build brand awareness retaining in the consumer thoughts. Therefore, the relationship between customer and brand seems too attractive to be explored for both marketing scholars as well as practitioners.

Some authors have suggested that brands can act the same as a human, hence, they perform alive and active (Aaker, 1997; Guido &Peluso, 2015;Hudson et al., 2016). Likewise, brand scholars have elucidated the issue of brand relations limited to the products perspectives and rarely concern on the anthropomorphic traits such as emotion, personality, and personification covered by the brand (Aggarwal & McGill, 2007, 2012; Fitzsimons et al., 2008; Guido &Peluso, 2015; Landwehr et al., 2011; Payne et al., 2013; Tuskej&Podnar, 2018). Practically, the firms have adopted anthropomorphic for promoting their brand; for instance, Microsoft Singapore launched "InoriAizawa" in 2013 and anthropomorphizing this brand by employing it as the spokesperson to attract online users. Moreover, the hospitality firms from Japan used Kumamoto Bear as the mascot to promote a sightseeing program, while Taiwan Life Insurance also employed Taiwan Aaron in 2004. All the anthropomorphisms above havesuccessfully nurtured the company growth and performance.

The most important thing has to be formulated is how the firm personalized its brand and make it alive to look like a person. Previous studies have informed when customers consider that the brand is living; they feel that the brand has its own motivations and intentions to perform an activity and this perception strongly triggers customer to have a better feeling about the brand (Puzakova, et al., 2013). Based on this thought, brand anthropomorphism is explained as the customer perception of the brand as a humanlike that has souls, emotions, consciousness, and behavior so that it can interact with others. As a humanlike, the brand has characteristics such as traits makes it more special in the mind of customer and leads to customer judgment against the brand (Puzakova et al., 2013).

Previous studies have discussed the attractiveness of brand anthropomorphism and customer behavior. Aggarwal & McGill (2007) described brand anthropomorphism affects customer evaluation related to the brand. Moreover, Delbaere et al. (2011) reported that brand anthropomorphism enhances customers' positive perceptions and emotions with the brand. Another study informed that brand

anthropomorphism increases customer attractiveness and preference of the products (Landwehr et al., 2011). In additions, Tuskej&Podnar (2018) pointed out that the anthropomorphism of brand would positively impact the consumer-brand identification.

However, some studies have explored the brand anthropomorphism but they failed to unify this construct and widely recognized its definitions. In addition, most of the existing studies focused on the field of sociology, anthropology, and information dissemination. They only discussed the effect of anthropomorphism based on experiment design and rarely identify the type of brand anthropomorphism. Therefore, this study contributes to the body of knowledge of brand relationship management in clarifying the definition and mechanism of brand anthropomorphism. In addition, this study verifies the validity and reliability by developing measurement scale of brand anthropomorphism that is beneficial for conducting the future empirical study.

## II. LITERATURE REVIEW

### *Brand Anthropomorphism*

The term of anthropomorphism explained as the specific propensity of non-living things to act as humanlike objects, the act as humanlike performance may include bodily look (Guthrie, 1993), emotional circumstances (Leyens et al., 2003), or internal psychological conditions and motivations (Gray, Gray, & Wegner, 2007). Epley et al (2007) described anthropomorphism as several characteristics such as motivations or behavior that commonly owned by a human being to be adopted by other entities like products and brand. Other scholars have informed that brands have several identities such as emotions (Park, Jaworski, &MacInnis, 1986), characteristics and reputations (de Chernatony, 1999), images (Gummersson, 1998), personalities, (Aaker, 1997), personalities and relations with customers (Fournier, 1998). Moreover, Puzakova, Kwak, &Rocereto (2009) explained brand anthropomorphism refers to the conception of a brand that performs like a human; the brand is anthropomorphized related to its awareness, personality, feeling, and behavior landscapes.

Although several companies have implemented anthropomorphic to present their brands, existing studies focused on this topics still remains in the conceptual discussion and the empirical research is still lacking (Brown, 2010; Epley et al., 2007). Hence, past studies have not systematically described and validated the anthropomorphism comprehensively, they only discussed conceptually. Epley et al (2007) proposed the conceptual framework of anthropomorphism is about human-like such as traits, characteristics, or mental states. Furthermore, Guido and Peluso (2015) argued that brand anthropomorphism comprises three aspects namely human body lineaments, human facial physiognomy, and self-brand congruity. Landwehr et al. (2011) pointed out that customers tend to consume the products with anthropomorphism features such as human form or personality and Leyens et al. (2003) presented that anthropomorphism means the product having the same as humans such as emotional or behavioral characteristics. Other scholars, Di Salvo et al (2005) proposed the concept of anthropomorphism comprises four dimensions namely structural, gestural, character and aware inspired this study to validate and develop the measurement scale of brand anthropomorphism.

Moreover, past empirical studies have been conducted such as Delbaere et al (2011) stated that personification could describe anthropomorphism, the tendency to feature human attributes to entities. Using an experiment, this study described visual personification of advertising that performs products, as involved in such human behavior, can stimulate anthropomorphism. Regarding the characteristics of customer that improve sturdier to spoke characters, personification gives a beneficial alternative to enhancing anthropomorphism. Furthermore, Hart, Jones, and Royne (2013) investigated the effect customer perspective of product anthropomorphism on personal value. The result revealed that customer perception of product anthropomorphism positively impacts personal value and the level of product anthropomorphism affects product complexity. Hede and Watne (2013) elucidated the brand related to a sense of place. This framework described humanized brand employing myths, folklores, and imaginary heroes. The result contributed to the conception of brand humanization strategy using anthropomorphism, personification, and user image, furthermore, myths, folklores, and imaginary heroes enrich the creativity in anthropomorphizing the brand. Another study conducted by Kim and McGill (2011) examined the effect of anthropomorphism impacts on perceived risk moderated by personal emotions of social power. The construct of personal emotions of social power is revealing in moderating the relationship between anthropomorphism and perceived risk.

Based on the exploration of the previous literatures concerning brand anthropomorphism, only limited studies have developed and validated the measurement scale of brand anthropomorphism. Guido &Peluzo (2015) proposed a validated scale of brand anthropomorphism into multi-dimensions consist of three dimensions represents the brand that is anthropomorphized by human body lineaments, human facial physiognomy, and self-brand congruity. This study claimed as the first attempt in developing and validating the measurement scale related to brand anthropomorphism. This study looks at the different aspects of brand anthropomorphism and builds the validation and development of scale by extending the

concept of anthropomorphism from Di Salvo et al, (2005) consists of anthropomorphism ideology, characteristics, structure, and posture. Another different perspective that has not been explored by previous authors, this study improve the anthropomorphism type based on Puzakova et al. (2009) related to brand's product, names or logo, and mascot to create suitable measurement scale of the degree of brand anthropomorphism.

## III. RESEARCH METHODS

This study is divided into two steps comprises pretesting and testing. The purpose of this procedure is to form a formal measurement scale through the analysis of data collection. Moreover, the second step is performing a formal test. Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) is used to assess the quality construction of the brand anthropomorphism scale. Furthermore, structural equation modeling (SEM) is employed to identify the type of brand anthropomorphism. The pretest used 50 participants of university students from east part of Taiwan, while the formal test expands the respondents from other colleges totally 338 students have participated in this study. Based on the literatures related to brand anthropomorphism from Di Salvo et al (2005) and Puzakova et al (2009), this study prepared 35 items of pre-testing scale. The measurement scale is divided into four types of brand anthropomorphism: structure anthropomorphism, posture anthropomorphism, ideological anthropomorphism, and characteristics anthropomorphism. Afterward, the pre-testing scales were applied to 50 participants to determine whether the average of each item significantly deviates and to ascertain of the items lack of discrimination. Hence, it is conducted homogeneity test to evaluate the correlation between question tests with the total score of greater than .40 and reliability test to assess the scale of questionnaires. In addition, it is conducted a discussion with some experts and scholars to confirm the appropriateness of the scale topic of this study.

Based on the above procedure, a total of 15 items from 35 items have prepared as the formal scale measurement. To fill the questionnaire of brand anthropomorphism scale, this study adopted 7 points of Likert's scale from strongly disagree until strongly agree. To examine the validity of the measurement scale, this study employs exploratory factor analysis by extracting the principal component, analyzing the factor and conducting confirmatory factor analysis.

## IV. RESULTS

The result of the analysis of the measurement scale of brand anthropomorphism and its application display as follows:

1. Exploratory factor analysis

Based on the EFA with the principal component analysis of the pre-test shows that brand anthropomorphism is extracted into four factors namely structure anthropomorphism, posture anthropomorphism, ideological anthropomorphism, and characteristics anthropomorphism. Therefore, a total of 108 valid questionnaires were retrieved. The Cronbach's alpha coefficient of all factors were exceeds .7 consists of .950, .963, .918, and .807 which indicated a good internal consistency reliability.

2. Manipulated Test

This analysis is used to identify the degree of brand anthropomorphism scale. Employing experiment design, this study manipulated brand anthropomorphism with brand logo to determine the brand logo that having a high anthropomorphism and a low anthropomorphism respectively. The results demonstrated the successful of experiment manipulation as shown in the following table.

**Table1 the score of t value of Brand LOGO Anthropomorphism**

| Face | Number | Mean | Standard Deviation | t Value | Significance |
|---|---|---|---|---|---|
| High structure anthropomorphic | 51 | 5.196 | 1.239 | 16.708 | 0.000*** |
| Low structure anthropomorphism | 57 | 1.708 | 0.878 | | |
| High posture anthropomorphism<br>Low profile anthropomorphism | 51 | 4.820 | 1.291 | 13.581 | 0.000*** |
| | 57 | 1.930 | 0.905 | | |
| High ideology anthropomorphism | 51 | 4.240 | 1.185 | 8.472 | 0.000*** |
| Low ideology anthropomorphism | 57 | 2.373 | 1.105 | | |
| High characteristics anthropomorphic | 51 | 4.604 | 1.127 | 5.221 | 0.000*** |
| Low characteristics anthropomorphism | 57 | 3.526 | 1.017 | | |

***$p$ <0.001

3. Confirmatory factor analysis

Based on the result of exploratory factor analysis, brand anthropomorphism has been explored into four factors. To verify the adequate scale of brand anthropomorphism, this study employs these four dimensions into a single factor model and a second

order model. Moreover, this study uses structural equation model to test the competition model of the measurement scale. The single factor model assumes that brand anthropomorphism scale consists of 15 observations and these items are used to measure only one common factor. Moreover, the second level model assumes that the four dimensions of brand anthropomorphism scale can be explained by a higher order factor. Table 2 shows that the measurement scale of brand anthropomorphism is appropriate to be divided into four factors. This study has attempted to put the scale of brand anthropomorphism into a multi-factor model by assuming that the four elements are separate and distinct constructs. However, this study failed to provide a statistical result due to the inadequate of the degree of freedom so that it cannot be implemented. Hence, this study discusses the result of the multi-factor model.

**Table 2 Competition Model of Overall Fitness Evaluation**

| Fitness Assessment Index | Single-Factor Model | Second-Level Model |
|---|---|---|
| $\chi^2$ | 424.834 | 198.384 |
| df | 90 | 84 |
| GFI | 0.624 | 0.802 |
| AGFI | 0.500 | 0.717 |
| SRMR | 0.064 | 0.053 |
| TLI | 0.624 | 0.934 |
| CFI | 0.846 | 0.947 |
| PNFI | 0.697 | 0.730 |
| PCFI | 0.725 | 0.758 |

$^{***}p < 0.001$

4. Convergence validity test

This study selected the second-order factor model of the brand anthropomorphism scale and then carried out relevant validity tests. In terms of convergent validity, the factor load of observation variables of the brand anthropomorphism scale of this study was significant and greater than 0.5. In addition, this analysis calculates the value of composite reliability (CR) and average variance extracted (AVE) of the four potential constructs and second-order constructs. The result shows that both all the four factors accomplishing CR and AVE value exceeds .50. The CR of the structure anthropomorphism constructs was .961 and AVE achieved .892, posture anthropomorphism was .964 of CR and the AVE achieved .843, the CR of ideology anthropomorphism was .926 and the AVE reached .759; and the remains construct of anthropomorphic characteristics reaching the CR of .795 and AVE of .577. All observed constructs not only represents the underlying traits of the common variables but also that four first-order latent constructs fully represents the second-order which showing a convergence validity.

5. Identity test

Based on the results of confirmatory factor analysis, the internal structure of the second-order factor model of the brand anthropomorphism scale is stable, however further verification to identify the different type of brand anthropomorphism scale is needed. The analysis used the brand logo, brand products, and brand mascot to estimate the same parameter among different samples. Table 3 shows that the CFA results of the three types of brand anthropomorphism, all of them perform a degree of freedom with a similar score, representing that the model setting and the factor structure are the same. Moreover, it demonstrated that the three type of brand anthropomorphism has no significant difference in the model adaptation indicators. The result of the analysis shows that some indicators such as GFI, TLI, and CFI performing less than .05. This result represented that the scale model of brand anthropomorphism type was invariance between groups based on the factor loading, showing that all the estimates parameters have no significantly different.

**Table 3 Overall of Fitness Assessment of Different Brand Anthropomorphic Types**

| MODEL | $\chi^2$ | df | GFI | AGFI | SRMR | TLI | CFI | PNFI | PCFI |
|---|---|---|---|---|---|---|---|---|---|
| Brand LOGO | 198.384 | 84 | 0.802 | 0.717 | 0.053 | 0.934 | 0.947 | 0.730 | 0.758 |
| Brand Product | f | 84 | 0.798 | 0.711 | 0.054 | 0.928 | 0.942 | 0.729 | 0.754 |
| Brand Mascot | 202.529 | 84 | 0.813 | 0.733 | 0.044 | 0.930 | 0.944 | 0.727 | 0.755 |

## V. DISCUSSION AND SUGGESTION

### *Discussion*

The implementation of brand type at different levels has become the major trending topic in brand marketing. It is crucial to elucidate the brands' intention of brand marketing development in order to comprehend the impact of branding. Furthermore, how to select the strategy of adequate branding anthropomorphism is the key factor in accomplishing marketing success. Accordingly, this study develops brand anthropomorphism measurement scale from an anthropomorphic perspective. This finding presented a clear factor structure of brand anthropomorphismand strengthens the feasibility of the implementation of brand marketing. Comparing with previous studies, this measurement tool also measures consumer perspective of the brand anthropomorphism type implemented by domestic business operators to access the degree of brand anthropomorphism. It can provide more relevant measurement scale for practitioners and recommends for future academic studies to enrich information relates to brand anthropomorphism.

This study has succeeded in improving a brand anthropomorphism scale by conducting an empirical research. It was confirmed that brand anthropomorphism scale could be measured from the perspective of the customer; furthermore, the firms can adopt this scale to perform their strategy. This finding judges and lays the foundation for future research focusing on the brand anthropomorphism. Second, prior studies have explained the different definition of brand anthropomorphism and majority explore the conceptual discussion related to this topic, consequently, more empirical studies are needed. Mostly, previous authors validated the brand anthropomorphism scale by experiment design and rarely explore in-depth discussion. This study improves the brand anthropomorphism scale, and examines the structure of brand anthropomorphism through experimental design and completed the research framework. Third, this study displays the measurement scale of brand anthropomorphism that differs from previous studies. It verifies the different type of brand anthropomorphism and validates the implementation of the brand anthropomorphism scale through statistical analysis that can help post study to conduct more in-depth exploration.

### *Suggestions*

a) Implementation of the measurement scale

The scale development of the brand anthropomorphism provided by this study is an effective tool with a good reliability and validity. This measurement scale not only provides an appropriate assessment tool for evaluating the effectiveness of brand anthropomorphism but also available to personize the brand. The firm can consider more thought and discussion of brand anthropomorphism.

b) Future study

This development of measurement scale is not a single study; it is needed to conduct continuous improvement research with other evidence. Marsh, Ellis, Parada, Richards, &Heubeck (2005) stated that both the actual use of experience and empirical data of the scale can be evaluated, improved, and redeveloped, therefore, this study provides several recommendations for future research:

1. Continuing to test the scale validity of the constructs

It better for future study to employ a multitrait-multimethod matrix (MTMM) to examine the construct validity and to provide different methods for measuring the same traits, or to measure the agglomeration or discriminant validity of different traits in the same way.

2. Conducting researches with another background

The respondents to measure this scale is limited to college students so that it cannot be generalized. Moreover, this study cannot take into account another context of traits include in this sample due to the limitation of the funding and time. It is recommended for further studies to discuss the degree of brand anthropomorphism among customers in different settings to clarify whether this scale still have inter-group invariance or not.

3. Longitudinal survey

It recommended for future studies to explore longitudinal data to compare customer perception on brand anthropomorphism across different years. In fact, many factors affecting the strategy of the firm that adopting brand personification may change due to the time and social environment. Therefore, comparing the data from various years will provide a better theoretical value and application level of the model.

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