## A Study of Product Form Design Using the Theory of Archetypes

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**Abstract.** The objective of this paper is to design product forms by using the theory of archetypes. The investigation contains three topics and there are three main steps. The first step is to develop the personality adjectives for these twelve archetypes. The second step is to investigate the definition of twelve archetypes by professionals. Simplified descriptions were used to define the twelve archetypes. Riders who were familiar with these bicycles quantized the guestionnaire of the Blue Bicycle brand's triathlon bikes. Based on products' images, the Likert scale was used to evaluate the degree of conformity for each archetype so as to determine the primary archetype and the secondary archetype of this bicycle product series. Cluster analysis was then utilized to classify the bicycle models. In the third step, after several primary archetypes of this brand's triathlon series bikes were identified, the personality adjectives obtained in the first step and the archetypes obtained in the second step were used in the Likert scale experiments based on the images of this bicycle series. Factor analysis was used to reduce the dimension of personality adjectives of similar characteristics. Regression analysis was then used to calculate the weight of each factor and determine the relationship between consumers' degree of preference and the willingness to buy.

The final brand archetypes of the Blue Bicycle obtained by the analysis were the explorer, the ruler, and the hero. The adjectives of the three archetypes mentioned above were classified according to similar characteristics by factor analysis and three types of personality traits were formed. These personality traits were "optimistic and independent character", "daring to express character", and "brave explorer character" respectively. The results of the regression analysis of product preferences and the willingness to buy for the Blue Bicycle triathlon series bikes indicated the existence of significance.

**Keywords:** Archetype theory · Twelve archetypes · Product form design · Cluster analysis · Factor analysis · Regression analysis · Triathlon bike

#### 1 Introduction

During concept formation in the product development process, product designers consider the scenarios of using a product and a character image, which belongs to it is then built. Similarly, consumers buy a product depending on whether it complies with their own preference based on the appearance of this product. The "product personality" has become a medium for demonstrating the individual characteristics.

A product with a story makes people reminiscent of something [1]. The "archetype" term contains a range of a population, a type of culture, a type of characteristic, which is shared by people. It is provided with stories and no longer is limited to any specific personality trait. It can generate all-embracing story patterns accordingly. The archetype psychology is also known as the analytical psychology or Jungian psychology, which was proposed by Carl Gustav Jung, a famous Swiss psychologist. The archetype imagery is provided with a common essence and is embodied in different forms or images as the myth elements around the world. After that, based on the "archetype theory" of psychology, the "brand archetype" had been proposed [2].

Therefore, the theory of twelve archetypes was used to analyze the characteristics of the Blue Bicycle and to create an approach for applying the archetype theory so as to build the brand image exclusively for the Blue Bicycle brand. Just like a brand, a product also has a role and a story that belong to it [1]. This theory concluded these story implications and the archetype roles effectively and ingeniously.

### 2 Background

#### 2.1 Archetype

Jung proposed that the collective unconscious archetype language is expressed in the form of various types of imagery, illusion, and symbols [3]. He also proposed that an "archetype" represents the ideology of people's common viewpoint. Campbell presented the "archetypes" behind a plurality of myths in a book [4]. His research focus was on the adventure stories of the Hero in different cultures. He explained that these stories imply structures of an identical pattern behind the stories except for the Hero character. That is to say, although the contents of myths or legends in various cultures are different, they eventually lead to the identical archetype theme. "Archetype" is a type of tendency and it builds various types of meaning and imagery upon a population. The imagery can be of various patterns in details but the fundamental framework model remains unchanged. An archetype may remain unchanged and it can be used as the foundational framework, while every archetype has its own "symbol" which bears the concrete imagery in different environments [3]. For the imagery or meaning of a symbol archetype, Jung proposed that "We do not have our symbolic life; we need a symbolic life urgently and only have a symbolic life. We have demands for our soul every day and everything of life has already turned old. This is the reason why this type of person gets nervous temperament."

Scholars afterwards kept carrying out studies and analyses on Jung's doctrine. His concept was further classified in a more refined way. According the book authored by

Mark and Pearson, archetypes are classified into twelve types [2], and each one has its own personality trait, imagery, and shadow. The characteristics and personality of every archetype are described as follows.

**The Innocent:** Motto is "Be yourself by yourself". Happy-go-lucky and smile as much as you like! The consent is to follow your inclinations of being yourself and lives to your best value as long as you follow a few simple principles.

**The Explorer:** Motto is "Do not get me trapped". Curiosity and adventure are every individual's instinct. A plurality of fairy tale stories talk about the scenarios of looking for treasures, challenging the sea, and pursuing for dreams.

**The Sage:** Motto is "The truth will get you relieved". The Sage plays the role of a belief among the population and gives you advices for the positive direction when you get lost. It is inward-looking, calm, and sometimes a bit humorous.

**The Hero:** Motto is "Where there is a will there is a way". The Hero defeated the evil, overcame adverse conditions, crossed tough challenges, and triggered people's feeling of justice. Directors and writers in new approaches have continuously interpreted this kind of stories.

**The Outlaw:** Motto is "Rules are to be broken". The Outlaw owns the charm of the forbidden fruit. Sometimes the value embodied by the Outlaw is more impressive and real than the main character. This is just like modern young people who put tattoos with violent images or intentionally get hair dye with bright colors to make themselves stand out from the others.

**The Magician:** Motto is "Dream came true". The characteristic of the Magician is to make things turn magic. The Magician can be dated back to the ancient witch doctors and wizards in the villages. The other embodiments of the Magician include alchemists, Taoist priest, astronomers, and psychologists.

**The Regular Guy:** Motto is "All men are created equal". The characteristics of the Regular Guy are ordinary and mediocre, inconspicuous, and easily neglected.

**The Lover:** Motto is "You are the only one in my heart". The Lover often appears in our life. It is not limited to the love between couples but family love, friendship love, and romantic love are all included in this scope.

**The Jester:** Motto is "If I can't dance, I don't want to be part of your revolution." The Jester includes a clown, and anyone just like a kid who likes to joke or play a trick. They brings joys to the people around, enjoy the simply for enjoyment, enjoy life, or interact with people.

**The Caregiver:** Motto is "Love your neighbor as yourself". The Caregiver is an altruist, who is driven by generosity and passion, and desires to help others without asking for return.

**The Creator:** Motto is "Anything you can imagine can be created." The stereotype of the Creator is loving to explore and imagine expressed by the form of matter. The most

common examples of the Creator are artists, designers, writers, inventors, and entrepreneurs.

**The Ruler:** Motto is "The right is not everything but the only". The Ruler has commands and authority to put plans or actions into effect. When thinking about the Ruler, the most common opinion are emperor, queen, chief executive officer, and almighty mom.

#### 2.2 Brand Definitions

This is an era of an international village and entrepreneurs expand their business across the border and create their own commercial territory. Entrepreneurs collaborate and compete with each other. Therefore to stand out from the competitors on the market, the concept of brands gradually formed. Since the market place is constantly changing, merchants not only need to grab the business opportunities, but also to understand customers' mentality. The customer connections became rather important.

Kolter defined six levels for a brand as attributes, benefits, values, culture, personality, and user which are described as follows [5]. The brand value is an enterprise's commitment to its consumers. Sometimes consumers buy a product not for the product itself, but for the meaning behind the product. Therefore, the meaning endowed to a brand is very important since this determined a brand's consumer group [6, 7]. Along with the fierce competition due to internationalization, more complex markets and more picky consumers appeared [8–12]. People often discuss products which correspond to their personality or of similar characteristics [13, 14]. We obtain feedbacks and the sense of recognition from these types of products.

The twelve-archetype theory in mentality was used in this study so as to investigate the archetype personality positioning of the Blue Bicycle brand triathlon series bikes. This is to understand the primary archetype and the secondary archetype of this product series and to provide this brand with a definite character image.

#### 3 Research Process and Methods

The emphasis of this study is on the customers of the Blue Bicycle brand triathlon series bikes so as to understand this brand's archetype image and product form for the consumers. There are three stages as follows. In the first stage, since the twelve archetypes cannot embody their characteristics, the subjects were asked to describe the personalities based on the archetype characteristics and to screen out the adjective vocabularies for the twelve archetypes. To ensure the precision of these adjectives, forty people with design background were asked to carry out adjectives and imagery developments by the brainstorming method. After that, these adjectives were quantized to conduct a preliminary statistics so as to reduce the number of personality adjectives for each archetype between ten and fifteen. Three professionals were interviewed and they are respectively a mental consultant, a psychiatrist, and an industrial designer in the industry. They were asked to screen out the adjectives until only five adjectives were left for each archetype. Each of these adjectives is a symbol of the personality archetype and there is individual personality behind each of them.

In the second stage, the above-mentioned three professionals were asked to include the symbol concepts described by the twelve archetypes into the questionnaire and there are a total of twelve questions. Subjects were asked to compare seven samples of the Blue Bicycle triathlon bikes and evaluate the degree of the twelve archetypes for these seven product samples. The highest score obtained by summing the acquired data up can serve as the primary image or the potential image to be referenced by product designs or marketing for future Blue Bicycle products. The products can be more abundant and highly changeable. At the same time, cluster analysis was also used to classify the seven samples by the archetype attribute groups.

In the third stage, the Blue Bicycle archetype images investigated in the previous stage were used to investigate consumers' assessment for the archetype adjectives of Blue Bicycle. The questionnaire involved the Likert scale experiments [15] for the evaluations. Factor analysis was used to understand which adjective is the primary factor so that personality adjectives of similar properties can be collected into a factor group. After that, regression analysis was used to understand the relationship and influence of factors, degree of preference, and the willingness to buy. This stage helps understand the relationship between Blue Bicycle archetypes, and the influence on consumers' degree of preference and the willingness to buy.

#### 3.1 Questionnaire for Statics the Twelve Archetype Adjectives

Seven bicycle models of the Blue Bicycle triathlon series bikes were analyzed and the product form designs and image positioning were discussed in this study with purposes as follows. The product forms and image styles of the Blue Bicycle brand were provided as a reference. The Blue Bicycle triathlon series bikes are listed in Table 1 as follows.



Table 1. Blue Bicycle brand's triathlon series bikes

This study aimed at archetype adjectives for carrying out quantization statistics. The number of valid/returned questionnaires is 63/82. There are 38 females and 25 males in the age of 15 to 25 years old. The constraint is that a person can select ten adjectives for each archetype, and the top fifteen adjectives were selected after statistics.

The top ten of The Innocent personality adjectives are naive, pure, optimistic, genuine, kind-hearted, childish, not artificial, carefree, content, and casual. The top ten of The Explorer personality adjectives are brave, dauntless, freedom-lover, passionate, curious, forthright, eccentric, steadfast, and eager to do well. The top ten of The Sage personality adjectives are sedate, smart, calm, intelligent, rational, profound, inward-looking, mellow, attentive, and rigorous. The top ten of The Hero personality adjectives are valiant, dauntless, hot-blooded, feeling of justice, heroic, leadership, decisive, self-confident, reliable, broad and level. The top ten of The Outlaw adjectives are traitorous, rebellious, aggressive, fanatic, high-handed, violence, arbitrary, fractious, assertive, stubborn. The top ten of The Magician personality adjectives are mysterious, intelligent, spiritual, smart, sensitive, smart, attentive, quick-witted, calm, and unworldly. The top ten of The Regular Guy personality adjectives are unostentatious, content, compliant, mean, veracious, lukewarm, amiable, honest, casual, and loyal. The top ten of The Lover personality adjectives are romantic, attractive, caring, gentle and soft, sentimental, charming, sweet, elegant, agreeable, and passionate. The top ten of The Jester personality adjectives are not artificial, bold aesthetic, casual, optimistic, pure, droll, humorous, genuine, straightforward, informal. The top ten of The Caregiver personality adjectives are humanitarian, altruistic, agreeable, patient, caring, attentive, kind-hearted, amicable, ardent, gentle and soft. The top ten of The Creator personality adjectives are perceptual, eccentric, self-confident,

Table 2. Investigating the definitions of twelve archetypes with professionals

No.	Archetype	Definition
1.	The Innocent	This world is pure and cute, let us take smile and blissful toward the future
2.	The Explorer	There is no dream that cannot be achieved! Challenge yourself and conquer extremity
3.	The Sage	Gold is tried in the fire. Gospel is not afraid of evil. No longer puzzled, all suffering is readily solved
4.	The Hero	My mission is to rescue the world. Brave and confident, sweep the barriers and march toward the target
5.	The Outlaw	Rules are exactly to be broken, reveals much as you like!
6.	The Magician	With brisk melody, the velocity transformed into magical power, surpass the distance between times
7.	The Regular Guy	Maybe I will lose in the crowd, but I am willing to become a star, which sets off the moon
8.	The Lover	Interpret the most moving emotion; release the elegant and attractive romance
9.	The Jester	Others laugh at I being too insane, I laugh at others for not understanding
10.	The Caregiver	Full of your love, bring the blissful to people!
11.	The Creator	An unfailing supply of inspiration, engrave a brilliant life at every moment
12.	The Ruler	Follow my footsteps; walk on the front end of the scratch line

spiritual, crazy, sensitive, unworldly, casual, quick-witted, and smart. The top ten of The Ruler personality adjectives are leadership, high-handed, decisive, steady, arbitrary, of outstanding talents, proud, heroic, lonely, and serious.

#### 3.2 Definitions of Twelve Archetypes by Professionals

Based on the archetype theory proposed by Mark and Pearson, we carry out the assessment on the personality adjectives of archetypes. It is also required to define the attributes of the twelve archetypes for the quantitative survey in order to conduct the follow-up experiment in the second stage.

#### 3.3 Questionnaire for Statics the Primary Archetypes

By using the above-mentioned methods, this study includes three portions. The first portion deals with the "construction of twelve archetype adjectives". The second portion deals with "Blue Bicycle brand archetype positioning and the construction of classification model for bicycle models". The third portion deals with "the relationship and influence of the brand image of the Blue Bicycle brand's primary archetype on the degree of preference and the willingness to buy".

At the present stage, the bicycle images are provided for consumers, and then requests them to evaluate the characteristic of twelve-archetype in five levels (-2 to 2). After the summation of the scores of the seven bicycles, the series of the primary and secondary archetypes were obtained as shown in Table 4. The number of returned valid/questionnaire was 73/97, and the demography of these subjects is as Table 3.

No.	Item	Statics
1.	Gender	54 males, 19 females
2.	Age	23 between 15–25, 35 between 25–35, 11 between 35–45, and 4 between 45–55
3.	Place of residence	Northern region 13, central region 13, and southern Taiwan 47
4.	Money possibly to be spent on a bicycle	30000 below is 36, 30000–60000 is 6, 60000–100000 is 14, 100000–150000 is 14, 150000–200000 is 1, and 200000–250000 above is 2
5.	Taking bicycling exercises	Yes 40; no 33
6.	Classes attended	None: 13, Olympics standard: 19, Super ironman: 6, semi ironman: 5

Table 3. The demography of subjects

The types and descriptions of the Archetypes are indicated in Table 2 as A1  $\sim$  A12. It was thus known that the archetype ranking of the Blue Bicycle triathlon series bikes is The Explorer (A2), The Ruler (A12), and then The Hero (A4). The archetype personality

	Innocent	Explorer	Sage	Hero	Outlaw	Magician	Regular	Lover	Jester	Caregiver	Creator	Ruler
							guy					
	$A_1$	$A_2$	A <sub>3</sub>	$A_4$	A <sub>5</sub>	A <sub>6</sub>	A <sub>7</sub>	A <sub>8</sub>	A9	A <sub>10</sub>	A <sub>11</sub>	A <sub>12</sub>
S1	-5	72	16	72	31	17	-22	-37	-23	-13	30	52
S2	35	29	44	-1	-33	13	47	18	-28	19	8	16
S3	-21	76	30	62	67	22	-31	-3	-36	-18	27	49
S4	-36	55	50	44	63	44	-16	-26	-18	-33	10	70
S5	-9	35	26	12	-2	19	18	-33	0	-20	-6	15
S6	-5	26	22	23	24	5	-4	-31	-23	-13	15	38
S7	89	22	-14	-24	-16	37	15	69	3	37	28	-19
Total	48	315	174	188	134	157	7	-43	-125	-41	112	221

**Table 4.** Total scores obtained by the summation of personality scores for different archetypes

**Table 5.** Personality adjectives of primary archetype adjectives

No.	Primary archetype	Personality adjective
1.	The Explorer (A <sub>2</sub> )	Brave, dauntless, adventurous, freedom-lover, passionate
2.	The Ruler (A <sub>12</sub> )	Leadership, high-handed, arbitrary, of outstanding talents, proud
3.	The Hero (A <sub>4</sub> )	Valiant, feeling of justice of, hot-blooded, heroic, decisive

adjectives of the three primary archetypes are shown in Table 5. These personality adjectives are used to conduct the factor analysis in the next stage.

# 3.4 Cluster Analysis of the Twelve Archetypes and the Primary Archetypes

Cluster analysis of product samples S1  $\sim$  S7 was carried out by using the twelve archetypes A1  $\sim$  A12 as variables based on the ranking of the archetype images for this product series. The status, after grouping the samples of Blue Bicycle triathlon series bikes, is shown in Fig. 1 and all samples can be classified into 3 groups, wherein S5, S6, and S2 formed the first group and the style of S7 differs very much from the other six bicycles. Therefore, S7 was independent from the others while S1, S3, and S4 are the third group.

Archetypes of Blue Bicycle are The Explorer  $(A_2)$ , The Ruler  $(A_{12})$  and The Hero  $(A_4)$ . These three types of archetype served as variables and the seven samples were classified into three groups (Fig. 2). The first group includes  $S_1$ ,  $S_3$ , and  $S_4$ . The second group includes  $S_2$ ,  $S_5$ , and  $S_6$  while  $S_7$  was independent from others. It is important to note that the result, which contains three variable groups is similar to the result obtained in the previous section.

#### 3.5 Questionnaire of the Main Personality Adjectives

Via the experiments in the second stage, it is known that the Blue Bicycle triathlon vehicle image archetypes include The Explorer  $(A_2)$ , The Ruler  $(A_{12})$  and The Hero

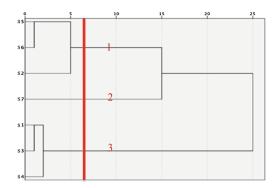


Fig. 1. Cluster analysis of the twelve archetypes for the product samples

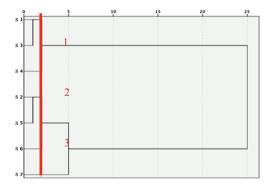


Fig. 2. Cluster analysis of three types of archetypes

(A<sub>4</sub>) based on each sample's archetype classification. Nevertheless, the ranking of Blue Bicycle triathlon series bikes images requires the analyses of the character charm for each archetype image. Therefore, a questionnaire survey on the three types of archetype adjectives with a total of fifteen personality adjectives was conducted. By means of factor analysis, we analyzed three types of personality adjectives for the archetypes' universality. A regression analysis of the factor analysis results was carried out so as to understand the degree of each factor's influence on the degree of consumers' preference and their willingness to buy. In the investigation of this stage, the number of questionnaires valid/returned was 59/92. The demography of these 73 people is as follows (Table 6).

#### 3.6 Factor Analysis for the Types of Personality Adjectives

It is required to understand the weighted deviation so as to examine the results' consistency and reliability based on the theory of variance. The inspection criterion of the reliability is Cronbach's  $\alpha$  coefficient, which is a nonnegative number.  $0.35 < \alpha < 0.7$  is medium reliability, and  $\alpha > 0.7$  indicates a high reliability. In typical and actual

No.	Item	Statics
1	Gender	45 males, 14 females
2	Age	13 between 15–25, 20 between 25–35, 22 between 35–45, 2 between 45–55, and 2 between 55–65
3	Place of residence	Northern region 27, central region 12, Southern region 18, and Eastern Region 2
4	Money possibly to be spent on a bicycle	30000 below is 15, 30000–60000 is 19, 60000–100000 is 11, 100000–150000 is 7, 150000–200000 is 4, 200000–250000 above is 3
5	Bicycling frequency	Once or many times per week is 33, once two weeks 7, once three weeks 1, once a month or above 12, and none 6
6	Classes attended	Never attend: 20, other bicycle racing 11, Olympics standard 12, super ironman 9, semi ironman 7

**Table 6.** The demography of subjects

practices,  $\alpha \geq 0.6$  can claim that the questionnaire reliability is acceptable. The Cronbach's  $\alpha$  of this analysis is 0.946, which means the reliability is acceptable. Factor analysis at the same time carries out the validity verification, taking eigenvalue as 1 to determine factor standard. KMO Value closer to 1 represents the sample interval common factor of the effect is the best. This questionnaire's cumulative of this case is 73.439 %, KMO > 0.9, significance P < 0.001 (Table 7). This indicated that its finding is valid and the credibility is high.

The ingredient matrix after transformation can be used to observe the personality adjectives of the archetypes, which can be concluded as three types of personality traits. While the three types of archetype's personality adjectives are distributed to each component, which are shown in Table 7. The factors of the first group contain the personality adjectives of three archetypes. And the factors of the second group contain the personality adjectives of two types of archetypes. The first factor's (C1) personality adjectives are mostly provided with independence, optimistic upward of right side characteristic, which belong to extraversion personality trait. Thus, this factor was named "optimistic and independent" type. The second factor's (C2) personality adjectives, as compared to C1 and C3, are provided with power, explicit. It was named "dare-to-express" type. The third factor's (C3) personality adjectives are all personality factors of The Explorer. So it was named "brave explorer" type.

A regression analysis was conducted on these three types of factors so as to understand which factor has the influence at the consumer degree of preference and the degree of willingness to buy. The final results of the factor analysis indicated that the Blue Bicycle images cannot be represented by a single archetype. However, these archetypes have common personality traits, which are "optimistic and independent", "dare-to-express", and "brave explorer" types.

	Element			
	$C_1$	C <sub>2</sub>	C <sub>3</sub>	
Proud	.887 A <sub>12</sub>	.070	.143	
Outstanding talents	.858 A <sub>12</sub>	.176	.208	
Arbitrary	.732 A <sub>12</sub>	.336	.270	
Valiant	.719 A <sub>4</sub>	.357	.202	
Hot-blooded	.701 A <sub>4</sub>	.457	.207	
Freedom-lover	.644 A <sub>2</sub>	.428	.268	
Feeling of justice	.621 A <sub>4</sub>	.499	.161	
Adventurous	.595 A <sub>2</sub>	.428	.373	
Heroic	.564 A <sub>4</sub>	.441	.214	
High-handed	.198	.819 A <sub>12</sub>	.107	
Leadership	.141	.795 A <sub>12</sub>	.307	
Passionate	.384	.729 A <sub>2</sub>	.180	
Decisive	.445	.679 A <sub>4</sub>	.130	
Dauntless	.234	.192	.903 A <sub>2</sub>	
Brave	.310	.248	.869 A <sub>2</sub>	
Eigenvalues	5.097	3.690	2.229	
Variance (%)	33.982	24.599	14.858	
Cumulative variance (%)	33.982	58.581	73.439	
Cronbach's α value	.946			
Kaiser-meyer-olkin value	.916			
Significance	.000			

Table 7. Matrix after transformation

# 3.7 Linear Regression Analysis of Triathlon Series Bikes' Personality Trait Factors

After the factor analysis, a linear regression analysis was performed so as to determine the relationship between the three personality traits and the degree of user's preferences about the Triathlon series bikes. This study emphasizes on the product form design with consumer's perception while the price, service attitude, other factors are excluded. The result of this product series' personality styles with the consumer mentality motivation relationship is shown as following regression model, and P < 0.01 (with significance).

Stoichiometric regression model : Y = 3.370 + 0.593 \* C1 + 0.457 \* C2 + 0.281 \* C3

This regression equation was used to estimate the degree of preference answered by each subject so as to calculate the standard deviation between the actual value and the predicted value. The average value of the degree of preference is 0.404. Next, another linear regression analysis was performed so as to investigate the relationship between the three personality traits and the consumer's willingness to buy the Triathlon series bikes. The result is shown as following regression model, and P < 0.01 (with significance).

Stoichiometric regression model: Y = 3.245 + 0.693 \* C1 + 0.307 \* C2 + 0.178 \* C3

By means of this regression equation, users can estimate and calculate the actual/predicted values and the standard deviation of subject's willingness to buy. The average value is 0.419 in this study.

#### 4 Conclusions

A product form design approach, which utilizes the theory of archetypes was investigated in this study. Cluster analysis was applied so as to classify the bicycle models. The final archetypes of the Blue Bicycle obtained by this study were The Explorer  $(A_2)$ , The Ruler  $(A_{12})$  and The Hero  $(A_4)$ . Factor analysis was used to reduce the dimension of personality adjectives with similar characteristics. Three personality traits were obtained, which are "optimistic and independent", "daring to express", and "brave explorer" types respectively. Regression analysis was then used to determine the relationship between consumers' degree of preference for these three personality traits and their willingness to buy due to these personality traits. The results of the regression analysis indicated the existence of significance with regard to consumers' product preferences for these three personality traits as well as the willingness to buy the Blue Bicycle triathlon series bikes due to these personality traits. The theory of archetypes can also be applied to analyses related to Kansei engineering for any future research.

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