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**The impact of brand image on purchasing  
decision**  
**(A field study on sporting stores in the great Cairo)**

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## 1- Introduction:

Brand image is the heart of the promotion of an organization (Michaelidou, 2015) for it capable to shape the consumers attitude towards the brand, product, and service and influence the user behavior, including the behavior toward the organization (Romaniuk, 2013).

Brand image is more than just a logo that identify business, or an organization service (Thimothy, 2016).

Consumer decision making has long been of great interest to researchers. Early decision making studies concentrated on the purchase action (Loudon, Bitta, 1993). It was only after the 1950's that modern concepts of marketing were incorporated into studies of consumer decision making, including a wider range of activities (Engel, Blackwell, Miniard, 1995). The contemporary research indicates that more activities are involved than the purchase itself. Many other factors influence the consumer decision making than the final outcome. Vast numbers of studies have investigated this issue and many models have been developed accordingly. Models aim to depict the purchase decision making process and its influential factors.

## 2- Literature Review:

A research paper for (Denise and Francisco, 2022) addressed as Evolving brand boundaries and expectations: looking back on brand equity, brand loyalty, and brand image research to move forward.

This paper aims to critically review the most cited literature published from 2000 to 2020 in 24 top-ranked marketing journals on the three most studied branding concepts of the 21st century – brand equity, brand loyalty and brand image – to explore how in these papers they have been defined, measured and examined, and propose how they should move forward in an era where brands are expected to be “socially and socio-politically conscious.”

The finding showed that the systematic literature reviews provide a “state-of-the-art” snapshot of each concept and collectively demonstrate there is no consensus on the independence and interdependence of these dynamic multidimensional concepts. Based on the recommended process in the measurement literature, an evolved definition of each concept is proposed. In addition to the corresponding research directions presented in the moving forward sections of each systematic literature review, common research avenues emerged.

While another research paper for (Yan-Kai Fu, 2022) addressed Airline brand image, passenger perceived value and loyalty towards full-service and low-cost carriers.

This study aims to examine the mediating and moderating processes that link airline brand image to passenger loyalty through perceived value.

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The research finds that both airline types, airline brand image had a significant and positive effect on passenger perceived value. Perceived value had a significant and positive effect on passenger loyalty, perceived value was a crucial mediator and airline type was not a key moderator in the model.

A research study for (Peter, Srdan, and Stanford, 2022) addressed A longitudinal analysis of country image and brand origin effects. The objective of this study is to offer a longitudinal examination of country image, consumers' brand origin recognition accuracy, and how their effects on brand evaluations have evolved over the last decade.

The findings indicate that country image can evolve over time and that its effect on brand evaluation persists even when inaccurate brand origin associations are made. The study offers meaningful insights for managers in understanding how brands' country associations affect corresponding brand attitudes.

A research study for (Razib, Salmi, Tofayel, 2022) addressed Factors influencing customers' green purchasing intention: evidence from developing country. The purpose of this study is to examine the contribution of environmental knowledge and environmental sensitivity on the green purchasing intention of Bangladeshi consumers by using an extended theory of planned behavior.

The findings of this study demonstrate that subjective norms, attitude toward green products and perceived behavioral control have a positive and significant relationship with green purchasing intention. Moreover, environmental knowledge has also a positive and significant relationship with environmental sensitivity. There is a positive and significant association between environmental sensitivity and attitude toward green products, while the relationship between environmental knowledge and attitude toward green products was found insignificant. Quality of green products does not moderate the relationship between attitude toward green products and green purchasing intention. The results further indicate that environmental sensitivity mediates the relationship between environmental knowledge and attitude toward green products.

Attitude toward green products also mediates the relationship between environmental sensitivity and green purchasing intention. At the same time, environmental sensitivity and attitude toward green products jointly mediate the relationship between environmental knowledge and green purchasing intention. However, attitude toward green products does not mediate the relationship between environmental knowledge and green purchasing intention.

A study for (Nadja, Amrullah, Bulkis, Heliawaty, Aprilianti, Abdullah, 2021) addressed excision making process to purchase brown rice at the traditional market. This study aims to describe the decision-making process of buying brown rice by consumers. The research object is the consumer who directly bought the brown rice in the appointed traditional market. The method to analyze the data is qualitative descriptive.

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The result shows that consumers at those three traditional markets had completed the whole decision-making process.

A research paper for (Taghavi, Seyedsalehi, 2015) addressed The effect of packaging and brand on children's and parents' purchasing decisions and the moderating role of pester power. The purpose of this paper is to study the impact of chocolate packaging and brand on the purchasing decisions of a number of Iranian children and their parents. The paper also aims to investigate the role of pester power as a moderating variable in the relationship between children's purchasing decision and that of their parents.

The results show that packaging and brand have a positive effect on parents. However, children were only influenced by packaging, and not brand. Further, it was found that children influenced their parents during store visits. The study also confirms the moderating role of children's pester power in the relationship between children's purchasing decision and that of their parents.

### **3- Research Gap:**

That there are no studies describe the impact of brand image on purchasing decision with filed study on sports stores in the great Cairo.

### **4- Research problem:**

The major asset in any organization is the brand image and they play specific roles for the success of the organization. As the success and failure of any business depends on its brand image that sticks in the customers mind which affects their loyalty to the brand. Any organization must build a strong brand image.

Many researchers defined Brand image as the observations around a brand as reflected by the brand association held in consumer's memory. And also many researchers defined the purchasing decision as "behavior patterns of consumers that precede, determine and follow on the decision process for the acquisition of need satisfying products, ideas or services.

Research Problem can be defined by answering this question: **“What is the impact of brand image on the purchasing decision with empirical study on sports store sectors in the great Cairo?”**

## 5- Proposed Research Model and Research Hypotheses:

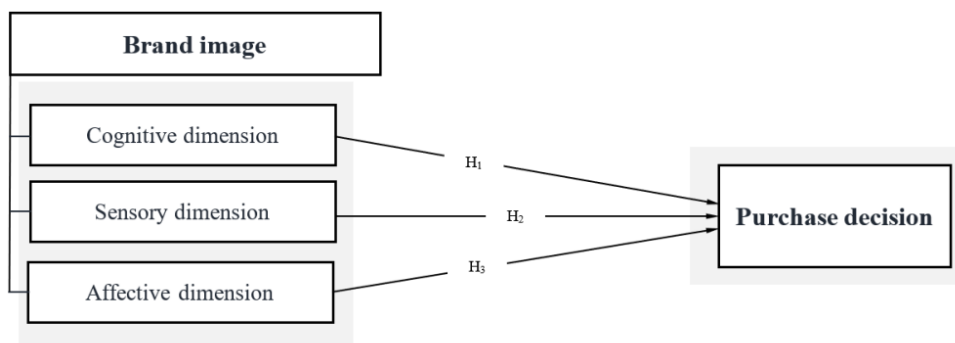
Based on the literature review, the current study aims to test the following main hypothesis:

**“Brand image has a significant positive impact on decision making.”**

**This hypothesis has been divided into the following three sub-hypotheses:**

H1: The cognitive dimension of the sports store brand image significantly impacts customers’ purchase decision.

H2: The sensory dimension of the sports store brand image significantly impacts customers’ purchase decision.



H3: The affective dimension of the sports store brand image significantly impacts

customers’ purchase decision.

## 6- Research Methodology:

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This section describes, in detail, the methodology followed in the current study regarding the sampling design process, research design, measurement of research variables, data collection procedures, and finally, statistical methods and techniques.

### **Data and Sample:**

The current study's target population consists of all customers of sports stores in the Greater Cairo Area. Therefore, the sampling unit of the current study represents the customer of sports stores in the Greater Cairo Area. Given the research population's large size and indefinite nature, a sample of 384 units (Sekaran & Bougie, 2016) was selected from sports stores' customers using the non-probability convenient sampling technique.

### **Research Design:**

The current study has relied on conclusive descriptive research based on a single cross-sectional design using a structured questionnaire-based survey. Such a design was conducted to empirically investigate the implications of brand image dimensions (i.e., cognitive, sensory and affective) on customers' purchase decision from sports stores in the Greater Cairo Area.

### **Measurement:**

To measure research constructs, the researcher drew on well-established scales extracted from relevant literature to ensure the content validity of the measures and adapted them to the research context. These scales were scored on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Brand image represents the independent variable that consists of three dimensions (i.e., cognitive dimension, sensory dimension and affective dimension). While the cognitive dimension was measured by six items, the sensory dimension and the affective dimension were measured by seven and nine items respectively (Cho et al., 2015). Finally, Purchase decision (i.e., the dependent variable) were measured by ten items based on the work of O'Cass (2000). Table (3.1) presents the operationalization of all research constructs.

## 7- Results:

A total of 390 customers of sports stores in the Greater Cairo Area participated in the survey. The dataset has no missing values because of using an online self-administered questionnaire that was restricted by complete answer submission. Moreover, data cleaning of suspicious response patterns (i.e., straight-lining) reduced the sample size to 327 observations (Hair et al., 2014). So, the researcher ran the statistical analysis using the 327 valid observations as a sample size.

### **Assessment of the internal consistency reliability:**

This section considers the internal consistency reliability of the three dimensions of brand image (i.e., cognitive dimension, sensory dimension, and affective dimension) in addition to the purchase decision. This form of reliability is used to judge the consistency of results across items on the same test. It determines whether the items measuring a construct are similar in their scores, i.e., if the correlations between them are large (Hair et al., 2014). The traditional criterion for internal consistency is Cronbach's alpha, which estimates the reliability based on the inter-correlations of the observed variables. Table (1) presents the evaluation results of the internal consistency reliability of the four research constructs.

Table (1): Assessment results of the internal consistency reliability



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<b>Constructs</b>	<b>Number of items</b>	<b>Cronbach's alpha</b>
<b>X Brand image</b>		
X1 Cognitive dimension	6	0.936
X2 Sensory dimension	7	0.958
X3 Affective dimension	9	0.944
<b>Y Purchase decision</b>	10	0.976

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Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

The corrected item-total correlations for all constructs' items were above 0.30, which means that each item is internally consistent with the others for each construct (Cohen, 1988).

The results shown in Table (1) support the internal consistency reliability of all measures, as Cronbach's alpha values are greater than 0.70 for all constructs (Nunnally & Bernstein, 1994).

While the cognitive dimension construct has the lowest level of internal consistency reliability with a Cronbach's alpha value of 0.936, the purchase decision construct has established the highest internal consistency reliability with a Cronbach's alpha value of 0.976.

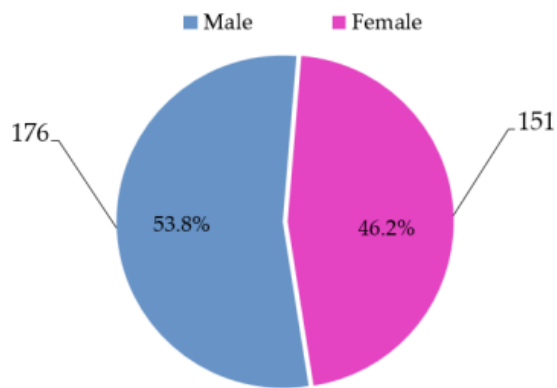
### **Descriptive statistics:**

This section describes the participants' demographic profile (i.e., gender, age, monthly income, and marital status). Then, this section proceeds with a description of the research sample's attitudes toward the constructs under study (i.e., cognitive dimension, sensory dimension, affective dimension, and purchase decision) and, finally, the correlations among all these constructs.

Table (2) and Figure (1) illustrate the participants' distribution according to gender.

Gender	Frequency	Percent
Male	176	53.8%
Female	151	46.2%
Total	327	100%

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26



Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

Table (3): Research sample attitudes toward variables under consideration

Research variables	One-Sample Statistics		One-Sample Test (Test value = 3)			
	Mean	Std. Deviation	Mean Difference	Std. Error	t-value	p-value
<b>Brand image</b>	3.345	0.747	0.345**	0.041	8.360	< 0.001
Cognitive dimension	3.507	0.875	0.507**	0.048	10.476	< 0.001
Sensory dimension	3.503	0.825	0.503**	0.046	11.038	< 0.001
Affective dimension	3.026	0.866	0.026	0.048	0.539	0.590
<b>Purchase decision</b>	2.691	0.983	-0.309**	0.054	-5.685	< 0.001

Note: \*\* Mean difference is significant at  $p < 0.001$

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

The results in Table (3) reveal that participants have positive attitudes toward the overall brand image as well as the cognitive and sensory dimensions, with mean values of 3.345, 3.507, and 3.503, respectively. Also, these results show the negative attitudes of the research sample toward the purchase decision, with a mean value of 2.691.

These mean values significantly differ from the neutral option of the 5-point Likert scale (i.e., 3) at  $P < 0.001$ .

Moreover, the results show unclear participants' attitudes toward the affective dimension of the brand image, with a mean value of 3.026. This mean value insignificantly differs from the neutral option of the 5-point Likert scale at the 5% level.

Table (4) describes the correlations among all constructs under study (i.e., cognitive dimension, sensory dimension, affective dimension, and purchase decision).

Research variables	Cognitive dimension	Sensory dimension	Affective dimension	Purchase decision
Cognitive dimension	1			
Sensory dimension	0.806**	1		
Affective dimension	0.466**	0.671**	1	
Purchase decision	0.356**	0.441**	0.768**	1

Note: \*\* Correlation coefficient is significant at  $p < 0.001$

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

Based on the correlation matrix shown in Table (4), the researcher identified a strong positive and significant relationship at  $p < 0.001$  between the affective dimension of the brand image and customer purchase decision,  $r > 0.49$ . Moreover, the correlation matrix reveals moderate positive and significant relationships at  $p < 0.001$  between the cognitive and sensory dimensions of the brand image on the one hand and customer purchase decision on the other hand,  $0.49 \geq r \geq 0.30$  (Cohen, 1988). These significant relationships provide a rough indication of the hypothesised impact of sports store brand image on customers' purchase decision.

In addition, it can also be seen that of all the independent variables, the "Affective dimension" of the brand image correlates best with customer purchase decision ( $r = 0.768$ ,  $p < 0.001$ ). Therefore, it is likely that this variable will best predict customers' purchase decision. Finally, regarding the independent variables, the highest correlation is between the "Cognitive dimension" and the "Sensory dimension," which is significant at a 0.01 level ( $r = 0.806$ ,  $p < 0.001$ ). Despite the significance of this correlation, the coefficient is not large (less than 0.90), so it looks as though research predictors (i.e., cognitive dimension, sensory dimension, and affective dimension) are measuring different things, and thus there is no collinearity (Field, 2013).

## Hypotheses Testing Results

To test the research hypotheses, the researcher has relied on an ordinary least squares (OLS) multiple regression analysis. Data requirements for such analysis have been considered concerning acceptable sample size, research variables variation, and finally, scale type of dependent variable.

The research conceptual model has three independent variables (i.e., cognitive dimension, sensory dimension, and affective dimension). Therefore, 107 observations are needed to run the analysis ( $104 + 3$  independent variables = 107 observations). Thus, the 327 observations in the dataset are considered well sufficient.

Regarding the research hypotheses: the regression model has been estimated; precisely, the researcher regressed customer purchase decision as a dependent variable on cognitive, sensory, and affective dimensions of the sports stores brand image as independent variables.

The researcher checked whether the regression model is biased by a small number of unusual cases (i.e., outliers and influential cases) by examining a set of casewise diagnostics measures such as standardised residuals, Cook's distance, and leverage or hat values, as shown in Table (5).

Case Number	Standardised Residual	Cook's Distance	Centred Leverage Value
4	-2.537	0.039	0.020
11	2.672	0.021	0.008
66	2.235	0.022	0.014
94	-2.054	0.012	0.008
126	-2.597	0.018	0.007
135	-2.375	0.027	0.016
144	-2.505	0.038	0.020
147	-2.228	0.007	0.002
150	-2.130	0.020	0.014
160	2.162	0.011	0.006
200	-3.414	0.051	0.014
204	2.201	0.008	0.004
207	2.207	0.014	0.008
224	2.018	0.006	0.003
256	2.588	0.012	0.004

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

It can be seen in Table (5) that 15 cases by 4.6% of the sample size (327 observations) have absolute standardised residuals exceeding the limit of about 2, which is below what is expected in an ordinary sample (5%) by 0.4%. Therefore, the research sample confirms what would be expected for a reasonably accurate model.

These diagnostics give no real cause for concern except case number 200, which has absolute standardised residuals higher than 3, which are probably large enough to represent potential outliers, as shown in Figure (4.6), and thus the need for further investigation (Field, 2013).

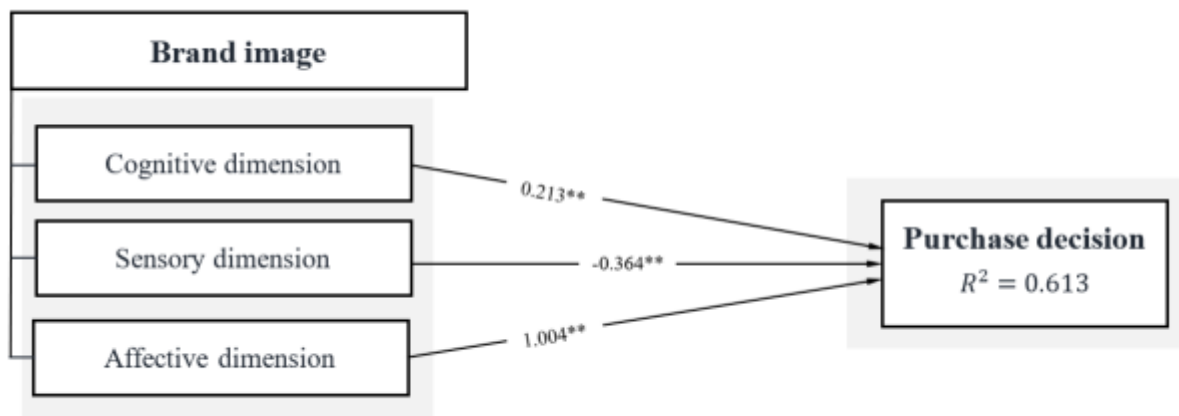
Also, none of the cases shown in Table (5) has a Cook's distance greater than 1 (case number 200 is well below this criterion), and so none of the cases has an undue influence on the regression model (Cook & Weisberg, 1983).

Moreover, with average leverage of 0.012 (i.e., the number of independent variables in the model "3" plus "1" divided by the number of observations "327"), it is clearly noticed that all cases shown in Table (4.8) are within the boundary of three times the average (i.e., 0.036) as a cut-off point for identifying cases having undue influence. This evidence does not suggest major problems, with no influential cases within the sample data ((Pituch & Stevens, 2015).

Based on previous results, the researcher has ensured that the regression model is not biased by unusual cases (i.e., outliers and influential cases).

Thus, the researcher proceeded to interpret the regression analysis results regarding the assessment of overall model fit and the interpretation of individual variables' effects.

Figure (2) illustrates the research conceptual model with unstandardized regression coefficients of sports stores' brand image dimensions impacts on customer purchase decision and the coefficient of determination value ( $R^2$ ) of the purchase decision. In addition, Table (6) presents the results of multiple regression analysis regarding research hypotheses.



Research conceptual model with unstandardised regression coefficients of sports store brand image dimensions impact on customers' purchase decision

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

Table (6): Results of multiple regression analysis

Dependent variable		Unstandardised coefficients		Standardised coefficients	t-value	p-value	Rank	Collinearity assessment (VIF)	Hypotheses testing results
		B	S.E.	Beta					
Purchase decision	(Y)								
Constant	$\alpha$	0.181	0.157		1.159	0.247			
Cognitive dimension	(X <sub>1</sub> )	0.213**	0.067	0.189	3.192	0.002	3	2.933	H <sub>1</sub> : Supported
Sensory dimension	(X <sub>2</sub> )	-0.364**	0.084	-0.305	-4.316	< 0.001	2	4.171	H <sub>2</sub> : Supported
Affective dimension	(X <sub>3</sub> )	1.004**	0.054	0.885	18.679	< 0.001	1	1.870	H <sub>3</sub> : Supported
R value		0.783							
R <sup>2</sup> value		0.613							
Adjusted R <sup>2</sup> value		0.609							
Stein's adjusted R <sup>2</sup> value		0.604							
F-test	F-value	170.244**							
	p-value	< 0.001							

Note: \*\* Significant at p < 0.01

Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

### Assessment of overall model fit

Assessing the overall model fit starts with interpreting the F-test as a determinant of the model significance. In other words, this test determines whether any of the independent variables affect the dependent variable. The test statistic's F-value is the result of the one-way ANOVA, which tests the null hypothesis that all the regression coefficients equal zero. That is, there is no relationship between the dependent variable and the independent variables. Accordingly, the results shown in Table (4.9) revealed that the regression model is significant at the 1% level (Fvalue =170.244, p< 0.001), which leads to rejecting the null hypothesis and, consequently, accepting the alternative hypothesis that at least one regression coefficient is likely significant.

Also, the results presented in Table (6) illustrate a strong correlation between the observed values of customer purchase decision as a dependent variable and the values of such variable predicted by the model with a multiple correlation coefficient (R) of 0.783. This correlation indicates the consistency of the observed and predicted values of the dependent variable by the regression model and then assuming the overall model fit (Field, 2013).

Moreover, the researcher has relied on the coefficient of determination value ( $R^2$ ) to interpret the model fit. The  $R^2$  indicates the degree to which the model, relative to the mean, explains the observed variation in the dependent variable (Sarstedt & Mooi, 2019); in other words, it represents the amount of variance in the dependent variable explained by all of the independent variables. This coefficient is a measure of the model's predictive accuracy. It also represents the independent variables' combined effects on the dependent variable (Hair et al., 2014), so a higher  $R^2$  indicates a better model fit and higher levels of predictive accuracy.

The  $R^2$  value of customer purchase decision (0.613) provided in Table (4.9) seems satisfactory and is above the recommended value of 0.10 (Falk & Miller, 1992). This value indicates that the three dimensions of the sports stores' brand image (i.e., cognitive dimension, sensory dimension, and affective dimension) explain 61.3% of the observed variation in customer purchase decision. Thus, it can be said that 38.7% of such variation is due to factors other than brand image. According to the rule of thumb suggested by Sarstedt and Mooi (2019), the  $R^2$  value of the customer purchase decision can be considered substantial.

### **Interpret the effects of individual variables:**

The results presented in Table (6) reveal that the cognitive dimension of the sports stores' brand image (unstandardized coef.= 0.213,  $t=3.192$ ,  $p<0.01$ ) has a significant positive impact on purchase decision. Likewise, the affective dimension (unstandardized coef.= 1.004,  $t=18.679$ ,  $p<0.001$ ) significantly and positively impacts customer purchase decision. In



contrast, the results show that the sensory dimension of the sports stores' brand image (unstandardized coef.= -0.364, t=- 4.316, p<0.001) has a significant negative effect on purchase decision. These results support H1, H2, and H3 respectively.

More specifically, the affective dimension of the sports stores' brand image has the strongest significant positive impact on customer purchase decision (standardised coef.= 0.885), followed by the sensory dimension (standardised coef.= -0.305). Moreover, the cognitive dimension of the sports stores' brand image exhibits the lowest impact on customer purchase decision (standardised coef.= 0.189).

Moreover, some assumptions for regression analysis are required to provide valid results and, thus, generalise the model outside the research sample. These assumptions are:

### **First Assumption: Linearity**

The first assumption is that the dependent variable (i.e., customer purchase decision) should have a linear relationship with independent variables (i.e., cognitive dimension, sensory dimension, and affective dimension). Accordingly, the regression model can be formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Where,

Y : The value of the dependent variable (i.e., customer purchase decision)

$\alpha$  : The constant of the regression model

$\beta_s$  : The regression coefficients of the independent variables  $X_s$

$X_s$  : The values of the independent variables (i.e., cognitive dimension, sensory dimension, and affective dimension)

The linearity assumption has been checked by plotting each of the three dimensions of the brand image (i.e., cognitive dimension, sensory dimension, and affective dimension) as independent variables against customer purchase decision as a dependent variable using a matrix scatterplot shown in Figure (3).

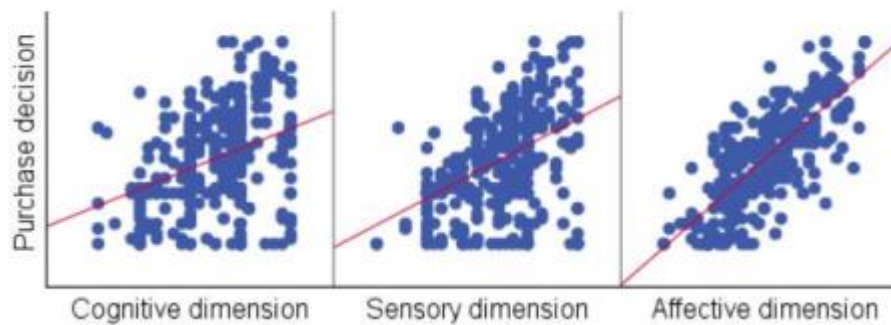


Figure (3): Matrix scatterplot of the relationships between sports store brand image dimensions as independent variables and customers' purchase decision as a dependent variable Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

It can be seen from Figure (3) that the three independent variables have reasonably linear relationships with the dependent variable (purchase decision), and there are no obvious outliers.

### **Second Assumption: Multicollinearity**

The second assumption is that no or little multicollinearity should be present. In other words, there should be no perfect linear relationship between two or more independent variables. Therefore, the independent variables should not be too highly correlated. The researcher has relied on calculating the Variance Inflation Factor (VIF) to assess the collinearity among the predictor variables. The results shown in Table (6) indicate that all VIF values are below the

threshold of 10. Therefore, collinearity among predictors is not an issue (Hair et al., 2019; Myers, 1990).

### Third Assumption: Homoscedasticity

The third assumption is that at each level of the independent variables, the variance of the residuals should be constant, meaning that the residuals at each level of the predictors should have the same variance. To check this assumption, the researcher plotted standardised residuals of the regression model as a dependent variable against the predicted values of customer purchase decision by this model as an independent variable. Figure (6) shows that the points' spread pattern looks like a random array indicating the homoscedasticity of residuals' variance.

### Fourth Assumption: Normally distributed errors

The fourth assumption is that the residuals in the model are random, normally distributed variables with a mean of zero. This assumption means that the differences between the model and the observed data are most frequently zero or very close to zero and that differences much greater than zero happen only occasionally. Figure (4) represents a histogram of standardised residuals of the regression model with a standard normal curve. As can be seen, the distribution of the standardised residuals looks normal, as the histogram is approximately symmetrical and bell-shaped.

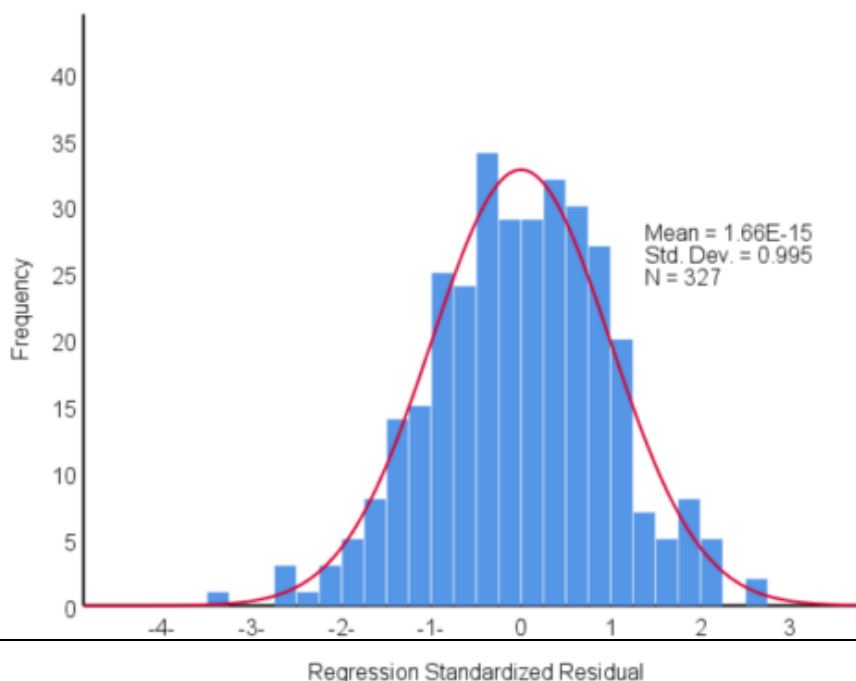


Figure (4): Histogram of standardised residuals of the first regression model with a standard normal curve Source: By the researcher, based on the results of IBM SPSS Statistics software, version 26

The researcher has relied on another way to check whether the distribution of standardised residuals deviates from a comparable normal distribution. That is by conducting the one-sample Kolmogorov–Smirnov test, as the sample size exceeds 50 units. The test’s null hypothesis is that standardised residuals of the estimated regression model follow the normal distribution. Since this approach is known to yield biased results, it was corrected through the Lilliefors correction. Such correction considers that the population’s true mean and standard deviation values are unknown. The results led to accepting the null hypothesis.

Thus, the researcher concluded that the standardised residuals of the regression model follow the normal distribution at the 5% level (test statistic = 0.024,  $p > 0.05$ ).

**Use the regression model to predict firms’ responsiveness:**

Having established the overall model fit and ensuring that it satisfies the regression analysis's assumptions, the regression model can be used to predict customer purchase decision. Therefore, based on the unstandardised regression coefficients shown in Table (4.9), the expectation of customer purchase decision would be as follows:

$$\hat{Y} = 0.213X_1 - 0.364X_2 + 1.004X_3$$

Where,

$\hat{Y}$  : The expected value of the dependent variable (i.e., purchase decision)

$X_1$  : The value of the cognitive dimension of the sports stores' brand image

$X_2$  : The value of the sensory dimension of the sports stores' brand image

$X_3$  : The value of the affective dimension of the sports stores' brand image

### **Cross-validation of the regression model**

To assess how well the regression model can predict customer purchase decision in a different sample (assessing the accuracy of the regression model across different samples) and thus the generalisability of such model outside of the sample, the researcher has relied on both adjusted R<sup>2</sup> and Stein's adjusted R<sup>2</sup>

The adjusted R<sup>2</sup> value of 0.609 shown in Table (6) indicates that 60.9% of the variance in purchase decision is accounted for by the regression model derived from the population.

This shrinkage means that if the regression model were derived from the population rather than a sample, it would account for approximately 0.4% less variance in customer purchase decision ( $0.613 - 0.609 = 0.004$  or 0.4%). Since there is no severe drop in the regression model's predictive power, it can be generalized outside the sample (Field, 2013).

Moreover, Stein's adjusted R<sup>2</sup> value of 0.604, as shown in Table (4.9), is close to the observed value of R<sup>2</sup> (0.613), indicating that the cross-validity of the regression model is

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good. Stein's adjusted R<sup>2</sup> was calculated using the following formula (Pituch & Stevens, 2015):

**Based on the previous results, the main research hypothesis, which states that “Sports store brand image significantly impacts customers’ purchase decision”, was totally supported regarding the three dimensions of brand image (i.e., cognitive dimension, sensory dimension, and affective dimension)**

## **8- Limitations and Future Researches:**

The study has some limitations that may provide future research opportunities. First, cross-sectional data was used for the study. So testing the proposed model using a longitudinal study design may be required.

Second, the proposed model was not intended to test all of antecedents and consequences of brand image. Therefore, other factors contribute to the development of brand image and discount making should be included in future research.

Third, similar studies could be conducted that include other regions of Egypt with different subcultures, social classes and lifestyles.

A further recommendation would be to conduct a qualitative study which would use interviews to gain an understanding of the degree to which brand orientation can affect brand equity. Finally, other suggested point is to study different dimensions of brand orientation and its effect on brand equity.

## 9- References:

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