

The Impact of Distribution Intensity on Brand Preference and Brand Loyalty

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Abstract

Several studies attempted to conceptualize and measure brand equity. Brand equity constructs identified include awareness, associations, perceived quality, and loyalty, among others. Further, brand performance has been operationalized in terms of market share, ability to charge price premium, and distribution coverage. While most studies focused on consumer-based constructs, few researchers tested the effect of distribution intensity on brand performance. This study advances a model that links distribution intensity with brand preference and loyalty, and empirically tests it on the fuel industry in Egypt. First, in-depth interviews with industry experts were conducted to validate research hypotheses. Then, online surveys were distributed to test model relationships on four leading brands. Results revealed that affect, satisfaction, perceived quality, as well as distribution intensity significantly affected brand preference; which in turn was the key driver to brand loyalty. It is recommended that firms consider the role of distribution while developing marketing strategies and brand-building activities.

Keywords: Brand preference, Brand loyalty, Distribution intensity, Country of origin, Fuel industry, Egypt

1. Introduction

Several studies attempted to conceptualize brand equity and determine its main constructs (Aaker, 1991; Keller, 1993). Firms are in a continuous need to assess their brand performance in order to develop effective marketing strategies. Keller (1993) posited that evaluating the brand in the minds of consumers is prerequisite to brand market performance. As a result, it is crucial for firms to measure brand equity constructs and identify the ones that significantly impact their performance in the marketplace. Despite several attempts to measure brand equity constructs, there is no one single agreed upon framework in the literature (Washburn and Plank, 2002; Tolba & Hassan, 2009).

Aaker (1991) posited that brand equity consists of five main constructs; awareness, associations, perceived quality, brand loyalty and other proprietary assets. Keller (1993) posited that customer-based brand equity could be measured through: brand knowledge, familiarity and consumers' response based on their perception, preferences and behavior towards the brand. Further, Erdem & Swait (2004) classified brand equity measurement models into: 1) component-based models (Aaker, 1991, 1996; Keller, 1993, Lassar et al., 1995; Keller & Lehmann, 2003); and 2) holistic models (Swait et al., 1993; Park & Srinivasan, 1994, Kamakura & Russell, 1993). Yoo and Donthu (1997) utilized four of Aaker's five brand equity components, and advanced a scale to measure "Overall Brand Equity".

Further, Aaker (1996) introduced the Brand Equity Ten model, which operationalized brand equity in terms of ten constructs, covering both consumer and market measures. Besides seven consumer-based constructs, the model recommends three market performance constructs: market share, price premium, and distribution coverage. While most brand equity studies focused on consumer-based constructs, few studies attempted to test the impact of distribution intensity on brand preference, loyalty, and performance.

2. Distribution Intensity

Despite its importance, distribution intensity has received little attention in academic research. Reibstein and Farris (1995) proposed that there is a convex relationship between distribution coverage and market share for consumer packaged goods. Empirical studies concluded that "distribution is one of the most potent marketing contributors to

sales and market share” (Hanssens et al., 2001; Bucklin et al., 2008). Further, Srinivasan et al. (2005) developed a brand equity model that incorporates brand availability as a key brand performance driver. Finally, Bucklin et al. (2008) introduced a model that relates distribution intensity to buyer choice among competing consumer durables; and further applied it on the automotive industry in the United States. It is clear that distribution intensity is an under-researched construct that needs further investigation, and this paper attempts to bridge this gap in the literature. This study utilizes analyzes the factors affecting brand preference and loyalty, including distribution intensity, and empirically tests them on the fuel industry in Egypt. The key constructs selected are driven from Aaker’s (1991) model, incorporating awareness, perceived quality, and adds the emotional dimension (affect), the experience dimension (satisfaction); along with distribution intensity (the focus of the study). The next sections detail the links between these five constructs and brand preference.

3. Brand Preference

This study utilizes brand preference as the primary factors affected by distribution intensity and other brand equity constructs. Several empirical studies in the literature supported the positive relationship between brand equity constructs and brand preference (Cobb-Walgren et al., 1995; Agarwal & Rao, 1996; Vakratsas & Ambler, 1999; Mackay, 2001b; Myers, 2003; Lavidge, 1961). Further, Agarwal & Rao (1996) developed a model that links brand equity to the hierarchy of effects model. Customer-based brand equity has been thought of as a prerequisite to brand preference, which in turn affects consumers’ intention to purchase. Brand equity models assessed the impact of individual measures on market share, and utilized several brand equity constructs: awareness, familiarity, weighted attributes, value for money, and overall quality of the brand (Mackay, 2001b). Therefore, brand equity constructs are expected to affect brand preference; and the challenge is to determine which constructs to prioritize in order to increase preference and improve brand performance.

4. Brand Loyalty

This study suggests that brand loyalty is the final dependent variable in the model. Several studies emphasized the importance of brand loyalty to brand performance (Aaker, 1991; 1996; Lassar et al., 1995; Yoo & Donthu, 1997; Chaudhuri, 1999; Yoo, Donthu & Lee, 2000; Chaudhuri & Holbrook, 2001; Washburn & Plank, 2002; Balduf et al., 2003; Kim & Kim, 2004). Chaudhuri (1999) developed a model that supports the impact of brand attitudes and brand loyalty on brand equity outcomes (market share, price, and shelf spacing). Further, Chaudhuri & Holbrook (2001) analyzed the links between brand trust, brand affect, and brand loyalty with brand performance.

Additionally, several studies differentiated between “Attitudinal Loyalty” and “Purchase Loyalty”. (Morgan, 2000; Chaudhuri & Holbrook, 2001) Attitudinal Loyalty was defined as “the level of commitment of the average consumer toward the brand”. Purchase (Behavioral) Loyalty was described as “the willingness of the average consumer to repurchase the brand.” This study focuses on the effect of brand equity constructs and brand preference on attitudinal loyalty.

5. Country-of-Origin

According to Thakor and Lavack (2003), country-of-origin (COO) appears to have a powerful influence on consumers’ perception of brand’s quality; and therefore emphasizing COO information in marketing activities can help to improve the evaluations of brand image.

The COO concept has been divided into three components: country of assembly (COA); country of design (COD) (Ahmed and d’Astous, 1996; Chao, 1993) or COM (Chao, 1998; Insch, 1995; Insch and McBride, 2004); and country of manufacturing (COM) (Ulgado and Lee, 1993; Iyer and Kalita, 1997). This study utilizes the country of design, which the only relevant factor to the fuel industry.

6. Research Model

This study was conducted in two phases. First, in addition to the literature supporting the model, an industry expert was interviewed in order to understand the dynamics of the fuel market in Egypt. Then, in-depth interviews with three consumers were conducted to validate the proposed model relationships. Findings revealed that distribution intensity is expected to be a very critical factor affecting brand preference and brand loyalty in the Egyptian fuel market. Accordingly, it was added to the proposed model as an independent variable to be tested on a larger sample.

Accordingly, five constructs were utilized as independent variables affecting brand preference: 1) Awareness; 2) Perceived Quality; 3) Affect; 4) Satisfaction; and 5) Distribution Intensity. Some key variables, such as Value and Price Premium were not included in the model due to the subsidization of fuel in Egypt. Furthermore, having the price constant enhances the accuracy of the results, since price differences have been a major challenge that faced

Bucklin et al. (2008) during their research on distribution intensity and brand preference. **Figure 1** details the research model of the study.

7. Research Hypotheses

The research model involves eight hypotheses in order to measure the effect of brand equity constructs on brand preference and brand loyalty as well as test for the effect of country-of-origin as a moderating variable.

7.1 Awareness and Brand Preference

The importance of awareness was confirmed by the results of the interviews. It was clear that all consumers have limited knowledge of the brands available in the fuel market. They are only familiar of the limited brands they deal with (Aaker, 1991; 1996; Keller, 1993; Agarwal & Rao, 1996; Yoo & Donthu, 1997; Yoo et al., 2000; Mackay, 2001b; Washburn & Plank, 2002; Campbell and Keller, 2003; Keller & Lehmann, 2003; Balduf et al., 2003; Kim & Kim, 2004; Tolba & Hassan, 2009).

H1: There is a positive relationship between Awareness and Brand Preference.

7.2 Perceived Quality and Brand Preference

Perceived quality is defined as the consumer's subjective judgment about a product's overall excellence or superiority (Lin & Kao, 2004). Perceived quality is considered a key factor that drives brand preference (Aaker, 1991; 1996; Lassar et al., 1995; Agarwal & Rao, 1996; Yoo & Donthu, 1997; Yoo et al., 2000; Mackay, 2001b; Washburn & Plank, 2002; Balduf et al., 2003; Kim & Kim, 2004; Tolba & Hassan, 2009).

Despite the fact that all brands in the Egyptian market utilize the exact same fuel product, interviewed consumers perceived differences in product quality from one brand to another. One explanation supported by the expert's opinion, is that the quality of other services provided at the stations affects consumers' perception. Therefore, the model considered perceived quality of core-related products/services as well as non-core related ones.

H2: There is a positive relationship between Perceived Quality and Brand Preference.

7.3 Affect and Brand Preference

Brand Affect is defined as a brand's potential to elicit a positive emotional response to the average consumer as a result of its use. This study attempts to capture the emotional effect of the brand on preference and loyalty (Percy & Rossitier, 1992; Chaudhuri & Holbrook, 2001).

H3: There is a positive relationship between Affect and Brand Preference.

7.4 Satisfaction and Brand Preference

Satisfaction was identified as a key customer-based brand equity construct (Aaker, 1996; Tolba & Hassan, 2009). Roman (2003) argued that customer satisfaction is a prerequisite to customer loyalty. Further, in several models of customer retention, satisfaction has been explored as a key determinant in customers' decisions to continue or terminate a business relationship (Anderson & Srinivasan, 2003).

H4: There is a positive relationship between Satisfaction and Brand Preference.

7.5 Distribution Intensity and Brand Preference

Based on expert's interview, a major factor that influences brand choice is the scale of its network (referred to as distribution intensity) as well as the appropriate location selection. This opinion was supported by interviewed consumers who see that the good location selection ensure that the customer will use the same brand at future purchases due to convenience thus leveraging brand equity (Reibstein & Farris, 1995; Yoo et al., 2000; Hanssens et al., 2001; Yoo & Donthu, 2002; Bucklin et al., 2008).

H5: There is a positive relationship between Distribution Intensity and Brand Preference.

7.6 Brand Preference and Brand Loyalty

Several studies supported the relationship between brand preference and attitudinal loyalty (Lavidge, 1961, Poczter 1987, Cobb-Walgren et al., 1995, Agarwal & Rao, 1996, Vakratsas & Ambler, 1999, Mackay, 2001a; b).

H6: There is a positive relationship between Brand Preference and Brand Loyalty.

7.7 Country-Of-Origin Effect

Lin and Kao (2004) developed a model that links COO effect to brand equity. Further, a study was conducted by Yassin et al (2007) stressed on the fact that the image of the brand's COO influences brand equity, either directly or indirectly, through the mediating effects of brand distinctiveness, brand loyalty or brand awareness/associations. Accordingly, COO is included as a moderator for model relationships.

H7: COO moderates the relationships between the independent variables and Brand Preference.

H8: COO moderates the relationships between Brand Preference and Brand Loyalty.

8. Data Collection and Sampling

An online survey was administered, targeting consumers in Egypt who own or use cars, using Zoomerang, an internet-based survey tool. All scales utilized to measure model constructs were driven from the literature. Table 1 highlights the sources of all study scales. All scales have been found reliable with Cronbach Alpha (α) ranging from 0.80 to 0.97. According to Nunnally (1994), a scale is considered reliable if Cronbach Alpha (α) is greater than 0.70. Respondents were requested to evaluate model constructs for four brands in the Egyptian market: 1) Mobil (a leading multinational brand); 2) Total (an average multinational brand), COOP (an established local state-owned brand), and Emarat (a new brand from the United Arab Emirates).

This study targets car owners from A & B+ social classes in Egypt. Filter questions were included at the beginning of the questionnaire to avoid having non-targeted respondents. A snowball sampling technique was adopted, using the author's extended network. While this is a non-probability technique, leading to a risk of having a non-representative sample, two factors render this risk minimal. First, the fact that the survey was conducted online ensures that only upper-class educated consumers answered the questionnaire. Second, the target market of car owners is not particularly unique. A total of 150 responses were collected, which is a relatively small sample. However, each respondent evaluated four brands; leading to a total number of 600 observations, which is an acceptable sample size (Sekaran, 1992).

The sample was found adequate to represent the intended target market. More than 70% of respondents were male, which represents the car users in Egypt. Age was fairly distributed, and most respondents were from upper and upper middle classes in terms of income.

9. Results

To test research hypotheses, two multiple regressions were conducted to identify the factors that significantly affect brand preference and brand loyalty. Additionally, mean comparison analysis is presented to compare the four brands and drive managerial conclusions.

9.1 Factors Affecting Brand Preference

The first regression was performed to measure the effect of the five independent variables: awareness, perceived quality, affect, satisfaction, and distribution intensity on brand preference. Below is the best-fitting regression equation:

$$BP = -1.105 - 0.094 (AW) + 0.364 (PQ) + 0.420 (AFF) + 0.146 (DI) + 0.411 (SAT) \quad [R^2=0.808]$$

It is concluded that all constructs under study significantly affect brand preference. Also, a very high coefficient of determination ($R^2=0.808$) indicates a very high level of predictability, whereby the four constructs explain 81% of the variability in brand preference. Affect and satisfaction were found as the strongest predictors of preference, followed by satisfaction and distribution intensity. As for awareness, surprisingly, it had a negative effect on brand preference, which contradicts with the original hypothesis. Therefore, a "per brand" analysis was conducted, and yielded the results in **Table 2**.

Results indicate that awareness had a negative effect on brand preference only in the case of Emarat, the newly introduced brand from the UAE, and is generally unknown to a large number of consumers. Once the level of awareness increases on average, the significant negative effect on brand preference disappears. Similarly, distribution intensity for COOP (the local brand) showed a negative relation with brand preference despite the fact that COOP does have one of the biggest distribution networks among competition, which contradicts with all supporting literature. This could be attributed to the fact that the targeted sample represents classes A to B+ which does not find COOP stations in their classy residential areas. Also, this means that the brand's quality is negative in the minds of consumers; and the more they are aware of COOP's stations, the more negative their perceptions are.

9.2 Factors Affecting Brand Loyalty

Another multiple regression was conducted to measure the effects of all independent variables as well as brand preference on brand loyalty. The regression analysis showed that Brand Preference, Satisfaction, Affect, and Perceived Quality have a positive and significant influence on Loyalty. Below is the regression equation:

$$LOY = -1.274 + 0.521(BP) + 0.122 (PQ) + 0.281 (AFF) + 0.387(SAT) \quad [R^2=0.899]$$

The above regression has a very high R^2 of 0.899, which indicates a very high level of predictability, whereby the four constructs explain 90% of the variability in Brand Loyalty. It is concluded that brand preference is the major

factor that significantly affects brand loyalty, followed by satisfaction, affect and perceived quality. The direct relationship between distribution intensity and brand loyalty was not supported. Therefore, it is concluded that distribution intensity has an indirect effect on brand loyalty through brand preference. **Figure 2** highlights the overall results of the research model.

A further step was taken to identify the Loyalty regression equation per brand; its results are shown in **Table 3**. It is concluded that direct relations between Awareness and Distribution Intensity with Brand Loyalty were not supported. In addition, it was noticed that Perceived Quality has no significant effect for each brand separately despite being a significant factor in the overall the regression equation. This could be attributed to the smaller sample size per brand as compared to the total observations.

The moderating role of country-of-origin at the consumer level has not been supported in this study. One reason could be the overwhelming differences in brand perceptions.

Independent samples T-Tests were conducted to assess the effect of other possible moderating factors on the proposed model. There has not been any significant difference between genders. However, results varied significantly across the four brands under study.

10. Conclusions and Managerial Implications

This study advances a model that measures the effect of distribution intensity and other brand equity constructs on brand preference and brand loyalty. It was concluded that distribution intensity is indeed a major factor that drives brand preference; and ultimately brand loyalty. While preference is affected by functional an emotional dimensions (perceived quality and affect), as well as consumers' experience with the brand (satisfaction), it is evident that developing a strong distribution network is an important factor that companies should not undermine. Not only does it provide convenience and availability to consumers, it also increases their brand preference and loyalty.

In order to analyze the fuel market in Egypt, all brands were ranked for each studied variables as shown in **Table 4**.

It has been concluded that Mobil significantly higher than any other brand in all variables. This puts Mobil in a more comfortable competitive zone. On the other hand, COOP has been rated lowest for all variables except awareness and distribution intensity; two factors that were diluted due to the significantly low quality and image. This could be very alarming to the management of COOP unless they are consciously not interested in this niche market under study.

Despite its short existence in the Egyptian market, Emarat shows great positioning especially if compared to Total, which possesses a multinational management that should be more experienced in this field. Further, Scheffe Post-Hoc analysis was conducted among brands out of which, it has been found that there is no significant difference between Total and Emarat for most variables, except awareness and distribution intensity; two factors that are projected to improve over time. This should put a lot of burden on Total, which has been in the market for a longer period of time; yet, it cannot distinguish its internationally-known brand from a new regional entrant brand like Emarat.

Furthermore, there is a significant difference in awareness among age groups, particularly age groups of 21-40 and greater than 40. This could be due to the fact that the older group is more resistant to change; accordingly, they do not accept to be acquainted to new brands like Total and Emarat.

The model proposes that distribution intensity significantly influences brand preference. It explains why Mobil and COOP brands are leading since they are among the early entrants in the market. However, the selection of the service station location, even for the new entrants, is of high importance as it will attract more of the targeted customers as much as the network is convenient to those customers. Therefore, it is recommended that newly entrants equally distribute their network in cities and suburbs in order to capture as much of their target population in different areas.

11. Agenda for Future Research

As an attempt to complement and enrich this study, it is recommended that future research would apply the same model targeting different target segments, mainly lower classes. Also, a future research could be conducted to study the effect of sequence of entrance in the market on brand preference and brand loyalty. This will help companies that consider entering this market in identifying the challenges that might hinder their growth, and finding the appropriate tools to overcome them.

This study could be replicated on other industries to identify industry-specific factors. In particular fast-moving consumer goods could be significantly affected by distribution intensity, which could play a major role in

strengthening their brands. Finally, replicating this study in other countries would be useful in verifying model relationships and comparing results across borders.

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Table 1. Study Scales

Construct	Scale Description	Source
Knowledge Equity	Three seven-point semantic differentials intended to measure a person's familiarity with a specified brand name.	Simonin & Ruth (1998)
Perceived Quality	Three seven-point semantic differentials measuring a person's attitude toward the quality of a specific brand.	Keller & Aaker (1992)
Affect	Three seven-point Likert-type statements measuring the degree of positive affect a consumer has toward a brand.	Chaudhuri and Holbrook (2001)
Satisfaction	Three seven-point Likert-type items measuring the level of satisfaction a consumer experiences with a product's performance.	Tsiros & Mittal (2000)
Distribution Intensity	Four seven-point Likert-type items measuring the Distribution Intensity	Smith, Daniel C. (1992)
Brand Preference	Three seven-point Likert-type statements measuring the degree to which a person views a focal brand as preferable to a referent brand.	Sirgy et al. (1997)
Behavioral Loyalty	Three nine-point Likert-type scale, measuring the likelihood that a person will use some object again.	Cronin, Brady and Hult (2000)

Table 2. Regression Coefficients per Brand for Brand Preference

Brand	R^2	Constant	AW	PQ	AFF	DI	SAT
Mobil	0.404	0.320		0.443	0.298		0.283
Total	0.572	-0.857			0.441	0.291	0.471
COOP	0.581	-0.611		0.551	0.328	-0.116	0.315
Emarat	0.670	-0.348	-0.175	0.322	0.410	0.198	0.306

Table 3. Regression Coefficients per Brand for Brand Loyalty

Brand	R^2	Constant	BP	AW	PQ	AFF	DI	SAT
Mobil	0.648	3.010	0.343			0.235		
Total	0.789	-1.476	0.490			0.364		0.495
COOP	0.681	-0.989	0.471			0.273		0.448
Emarat	0.818	-1.185	0.573			0.294		0.455

Table 4. ANOVA/Scheffe

Variables	Rank 1	Rank 2	Rank 3	Rank 4
Awareness	Mobil	Total	COOP	Emarat
PQ	Mobil	Emarat	Total	COOP
AFF	Mobil	Emarat	Total	COOP
DI	Mobil	COOP	Total	Emarat
SAT	Mobil	Emarat	Total	COOP
BP	Mobil	Total	Emarat	COOP
LOY	Mobil	Emarat	Total	COOP

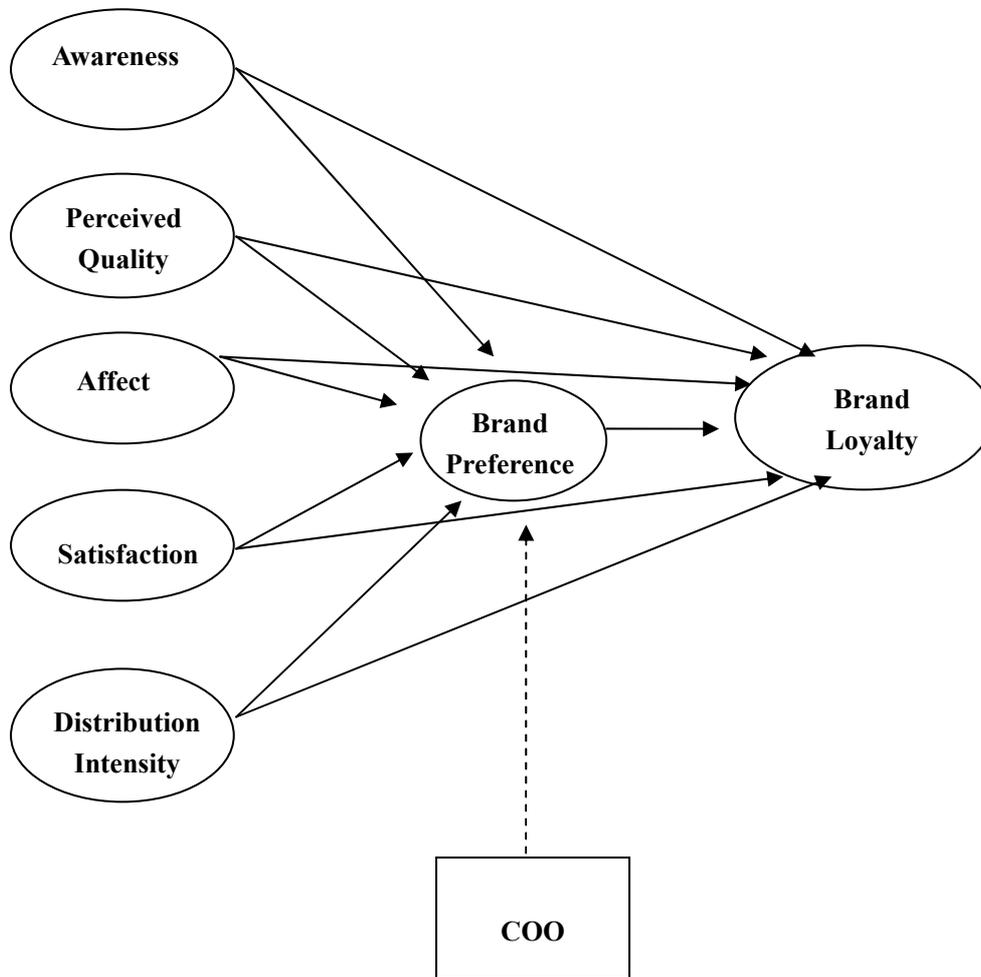


Figure 1. Research Model

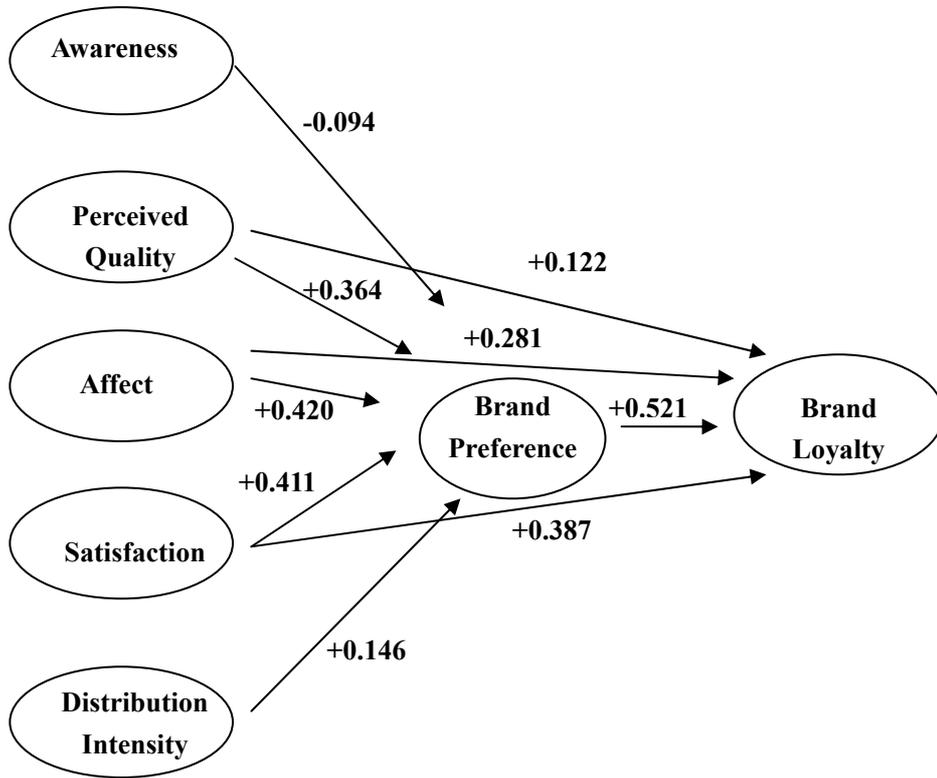


Figure 2. Overall Model Results