

## Antecedents of Thai Consumer Bottled Water Brand Loyalty

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**Abstract:** Globally, consumers are now purchasing 100 billion gallons of bottled water each year, with bottled water the number one consumer beverage. Furthermore, Thailand is now ranked 7th in the world in bottled water consumption. Understanding the economic and health importance of this data, the authors selected the top six bottled water brands in Thailand to investigate the opinions of 489 consumers on what contributes to their brand loyalty (BL). From the use of LISREL 9.1 software, an SEM analysis determined that BL was most affected by corporate social responsibility (CSR), brand image (BI), customer satisfaction (CS), and brand trust (BT).

**Keywords:** Beverages, branding, CSR, drinking water, plastic waste, Thailand

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### Introduction

Water is just water. Right? However, this simple idea would be vigorously contested by the German-born Martin Riese, who has been labeled the world's foremost water drinking expert or 'water sommelier.' According to Riese (2018), all water is unique and has many different kinds of tastes. However, according to Jewell (2014), marketing bottled water's 'uniqueness' is "the marketing trick of the century." Both individuals, however, would most probably agree that bottled water is big business internationally, with recent data suggesting that bottled water overtook carbonated soft drinks as the top consumer beverage in the U.S. in 2016 (Rodwan, 2017). Also, in 2017 U.S. bottled water rose to 13.7 billion gallons, which represented \$18.556 billion in sales. Globally, bottled water consumption reached nearly 100 billion gallons in 2017, with China representing over 25% of the world's total consumption.

Furthermore, Thailand in 2017 reached the seventh position globally for bottled water consumption (3.966 billion gallons), which was one place above Germany's 3.131 billion gallons (Rodwan, 2017). Also, Thai consumers and foreign tourists in 2017 drank an average of 57.5 gallons each per year, making Thailand the second largest per-person consumer of bottled water in the world.

So what kind of bottled water do Thai consumers drink? A partial answer to this question can be found from Euromonitor's (2019) statistics in which Thai still bottled water was determined to be the number one choice for health-conscious consumers. This is consistent with other studies in which water's use of carbon dioxide gas is dissolved under pressure is the standard in world bottled water production. However, other types of bottled water are sold, including sparkling water (carbonated water) and mineral water (Chau & Tomaszewska, 2019). Also, in Thailand, the bottled waters' purification process plays a role in brand selection, including reverse osmosis, ultraviolet light, ozone, and tapping into mineral or spring water (Losito, 2019; WHO, 2017).

However, along with the significant amount of bottled water consumed in Thailand comes the never-ending environmental problem of disposing of plastic when the bottle is empty. Therefore, the authors added corporate social responsibility (CSR) as a critical item that needed to be investigated when a discussion about bottled water brand loyalty (BL) is underway.

This is consistent with Swedish CSR activities in which consumer organizations are expected to take up much of the responsibility for the collection and disposal of plastic waste (Van den Berg & Lidfors, 2012). Fortunately, some corporate management now sees CSR activities as a competitive advantage marketing tool, especially when tied directly to environmental activities focused on a company's surrounding community (World Economic Forum, 2015).

Furthermore, according to LeBlanc (2018) and Etale et al. (2018), recycling is an excellent way to start a CSR program, with the disposal of plastic bottles being a high priority to consumers. With this high consumer

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concern for CSR environmental activities, we added CSR as an essential item to our study's investigation. As such, we further determined that the study should examine three additional manifest variables, including how the CSR policies *help society* (x1), at what level these *environmental concerns* are essential to the consumer (x2), and finally, whether the actual CSR policies are *regulatory compliant* (x3) with existing regulations and laws (Nielsen, 2018).

Another essential element we identified for the study was the amount of brand trust (BT) that a consumer needs to purchase a product. This is because BT plays an essential role in the continued relationship between consumers and organizations (Morgan & Hunt, 1994). Delgado-Ballester (2004) also pointed out that consumers expect BT to include brand reliability and good intentions, while Coleman (1999) also added that BT requires exchanging information and resources. Therefore, the authors further determined that the study should examine consumer brand trust (BT) and the related observed variables of *value recognition* (y1), *brand value* (y2), and *reliability* (y3) (Delgado-Ballester, 2004).

Furthermore, a further review of the current literature suggests that customer satisfaction (CS) can play an essential role in consumer BL. Oliver (1999) has stated that both practitioners and academics understand that consumer loyalty and CS are linked inextricably and that CS leads towards BL, resulting in higher profits. Therefore, the authors further determined that the study should examine CS and the related observed variables of *quality satisfaction*(y4), *price satisfaction* (y5) (Pratiwi et al., 2019; Romaniuk& Dawes, 2005), and *decision satisfaction*(y6).

Also, the study's review suggested that brand image (BI) plays an essential role in BL, with branding being one of the most critical aspects that create and defines a company's identity (Goodson, 2012). Brands outlive products and convey a uniform quality, credibility and experience. Brands are also very valuable, with many companies putting the value of their brand on their balance sheet. Sasmita and Suki (2015) have also reported that young consumers today get social media input and awareness of the particular product or brand. Also, they can recognize the particular product or brand compared to the competition and knows its characteristics from their use of social media. It has also been stated that bottled water is typically sold to consumers in the U.S. for 1,900 times the cost of tap water (Schuhmann, 2016). Therefore, the authors further determined that the study should examine BI and the related four observed variables of *known reputation* (y7), *excellent image* (y8), *success* (y9), and *reliability* (y10).

Finally, brand loyalty (BL) is hypothesized to play a significant role in a consumer's choice of bottled drinking water, with other studies supporting the study of bottled water BL in Thailand (Wichailert&Yousapornpaiboon, 2017), in Indonesia (Pratiwi et al., 2019), in Nigeria (Akabogu, 2014), in the U.S. (International Bottled Water Association, 2018;Schuhmann, 2016), and Europe (Etale et al., 2018). Also, according to Wichailert and Yousapornpaiboon (2017), when broken into details, brand association and brand perceived quality significantly affect a consumer's bottled water BL. From this research, the authors added the observed variables of *always loyal* (y11), *choose first* (y12), and *will not switch*(y13) to the analysis.

Therefore, the study investigates the significance of CSR, BI, CS, and BT on a consumer's BL of bottled water in Thailand. Additionally, the research hopes to identify critical elements essential to a consumer when choosing a particular brand and help companies better understand how to create a better competitive advantage within the bottled water sector. Additionally, the study details the survey results of consumers randomly selected from four regions and the metropolitan area of Bangkok.

## Objectives

1. With Thailand having risen to the seventh largest consumer of bottled water and with environmental concerns becoming greater concerning the plastic disposal, the authors used a SEM to examine which factors have the greatest impact on CS.
2. It was also determined that the data would be useful to both consumer and bottled water companies when each variable was compared with the other and how their relationships were impacted.

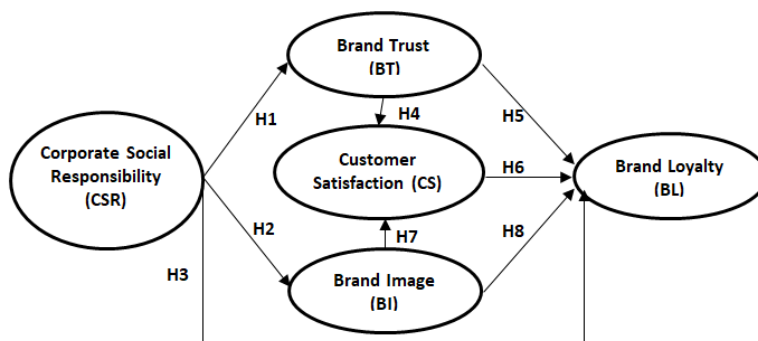
## Research hypotheses

From a review of the literature and theory, the authors developed eight hypotheses for the study and the conceptualized framework shown in Figure 1:

- H1: CSR directly influences BT.
- H2: CSR directly influences BI.
- H3: CSR directly influences BL.

- H4: BT directly influences CS.
- H5: BT directly influences BL.
- H6: CS directly influences BL.
- H7: BI directly influences CS.
- H8: BI directly influences BL.

Figure 1. Conceptualized SEM of the eight hypotheses and their proposed variables influencing BL



**Methods**

The study used quantitative methods for the primary data collection stage, which entailed a questionnaire survey for the theoretical model’s testing of the factors affecting a consumer’s BL for bottled drinking water.

**Population and sample**

The population for the study was bottled water drinkers in Thailand. The brands selected for the comparison were the top six readily available brands in convenience stores around Thailand. These brands included *Crystal, Nestlé, Namthip, Pepsi’s Aquafina, and Singha*,

Concerning the study’s sample size, multiple scholars’ ideas were examined. Kenny (2015) has stated that a sample size of 200 is seen as a goal for SEM research. Tanaka (1987) has suggested that a ratio of 20 to 1 should be used (questionnaires collected to observed variables). Therefore, due to time constraints and the inability to re-visit each province’s pre-selected convenience stores, a target of 600 was set for the initial target size sample (Table 1) due to the anticipated sampling and questionnaire non-response errors (Dillman et al., 2013).

With this sample size in mind, teams of Thai graduate students were sent to the selected convenience stores over four months from February 2019 to May 2019. Every fifth shopper was selected during three separate periods in the morning, lunch, and evening hours. From this process, there were 489 returned and audited questionnaires.

Table 1. Proposed regional sampling sizes

Region	Thai bottled water brands						Total
	Singha	Crystal	Nestlé	Namthip	Chang	Aquafina (Pepsi)	
Northern Thailand	20	20	20	20	20	20	120
Central Thailand	20	20	20	20	20	20	120
Northeast Thailand	20	20	20	20	20	20	120
Southern Thailand	20	20	20	20	20	20	120
Bangkok	20	20	20	20	20	20	120
Totals	100	100	100	100	100	100	600

**Research tools**

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The tools used to collect data in this research consisted of a structured interview and the analysis and synthesis of research from the theoretical and conceptual framework.

Part 1 of the questionnaire contained seven items about the respondents' gender, age, education, relationship status, profession, and monthly income. It also asked each respondent, "Which bottled water brand do you drink regularly?" and offered a pictorial choice for each brand (Figure 2).

**Figure 2.**Bottled water brand survey choices



1) Singha brand 2) Crystal brand 3) Nestle brand 4) Namthip brand 5) Chang brand 6) Aquafina brand

With this sample size in mind, teams of Thai graduate students were sent to the selected convenience stores over four months from February 2019 to May 2019. Every fifth shopper was selected during three separate periods in the morning, lunch, and evening hours. From this process, there were 489 returned and audited questionnaires.

Part 2 through part 6 of the questionnaire used a seven-level Likert scale to access the guest's opinion on each of the various items. The scale rated '7' as 'strongly agreement = 6.50-7.00,' '4' indicated 'moderate agreement = 3.50-4.49,' and '1' indicated 'strong disagreement = 1.00-1.49.'

Part 2 also had seven items about a company's corporate social responsibility (CSR), part 3 had six items concerned with brand trust (BT), part 4 contained seven items concerned with customer satisfaction (CS), part 5 contained nine items concerned with the brand image (BI), and finally, part 6 had eight items concerned with brand loyalty (BL).

Questionnaire and item reliability was assessed using Cronbach's  $\alpha$ . Scores for each latent variable's section was CSR = 0.89, BT = 0.86, CS = 0.89, BI = 0.93, and BL = 0.92 (Table 3). All values were deemed acceptable as they were  $\geq 0.70$  (Tavakol & Dennick, 2011).

**Results from the study**

The research findings are as follows:

**Consumer respondent characteristics**

Survey results from the 489 participants were quite revealing in that most Thai bottled water drinkers are young (21-30 years old = 49.69%), educated (Bachelor degree = 56.85%), and single (64.62%) (Table 2). Furthermore, Thai bottled water consumers preferred Singha's brand (31.29%) over Crystal's (26.18%). Nestlé's brand was third in consumer preference with 20.25%.

**Table 2.**Thai bottled water consumers' characteristics (n=489)

	Number	% (rounded)
<b>Gender</b>		
Male	207	42
Female	282	58
<b>Total</b>	489	100
<b>Age</b>		

21-30 years old	243	50
31-40 years old	125	26
41-50 years old	90	18
51-60 years old	20	4
Over60 years of age	11	2
<b>Total</b>	<b>489</b>	<b>100</b>
<b>Education</b>		
Lower than primary school	10	2
Primary school	20	4
Junior high school	22	4
Senior high school	52	11
Vocational Certificate/High Vocational Certificate/Diploma	93	19
Bachelor degree	278	57
Graduate degree	14	3
<b>Total</b>	<b>489</b>	<b>100</b>
<b>Relationship status</b>		
Single	316	65
Married	153	31
Divorced/widowed	20	4
<b>Total</b>	<b>489</b>	<b>100</b>
<b>Profession</b>		
Government	39	8
State enterprise	30	6
Private company	92	19
General employee	154	31
Private business	128	26
Other	46	9
<b>Total</b>	<b>489</b>	<b>100</b>
<b>Monthly income</b>		
Less than 10,000 baht (\$324)	130	27
10,001-20,000 baht	196	40
20,001-30,000 baht	110	22
30,001-40,000 baht	38	8
40,001-50,000 baht	10	2
Over 50,000 baht	5	1
<b>Total</b>	<b>489</b>	<b>100</b>
<b>Which bottled water brand do you drink regularly?</b>		
Singha	153	31
Crystal	128	26
Nestlé	99	20
Namthip	65	13
Chang	19	4
Aquafina (Pepsi)	25	5
<b>Total</b>	<b>489</b>	<b>100</b>

### Goodness-of-fit (GOF) analysis

The LISREL 9.10 software program was used to conduct the study's CFA analysis and subsequent SEM. All statistics are absolute fit measures and indicate the fit between the model and the data. If the chi-square ( $\chi^2$ ) statistic is non-significant ( $p \geq 0.05$ ), the model fits the data (Rasch, 1980). Suggested approximate fit indexes also include the  $GFI \geq 0.90$  (Jöreskog et al., 2016),  $AGFI \geq 0.90$  (Hooper et al., 2008),  $NFI \geq 0.90$ , and the  $CFI \geq 0.90$  (Schumacker & Lomax, 2010), with each having values  $\geq 0.90$  to indicate a good model fit. Furthermore,

authors have suggested using both the RMSEA and GFI as two other absolute fit indices, with RMSEA values  $\leq 0.05$  indicating a good fit (Hu & Bentler, 1999). Additionally, Ratner (2008) has stated that the smaller the RMSEA value is, the better the model and the more precise the predictions. Also, the RMR and SRMR should have  $\leq 0.05$ , which suggests an acceptable model (Byrne, 1998; Kenny, 2015). Results showed that  $\chi^2 = 0.79$ , which was non-significant. Therefore, from the GOF analysis,  $\chi^2/df = 0.79$ , RMSEA = 0.00, GFI = 0.99, AGFI = 0.97, RMR = 0.01, SRMR = 0.01, NFI = 0.99, and CFI = 1.00 all passed. Finally, the values for  $\alpha = 0.86-0.93$  (Table 3).

**CFA results**

Table 3 details the results of the CFA analysis for the study’s latent variables. According to Ratner (2008), the correlation coefficient is indicated as  $R^2$ . Also, as  $R^2$  nears a value of ‘1’, a strong positive (negative) linear relationship is determined through a firm, linear rule. Therefore, CSR's x2 and x3 observed variables have a strong relationship with CSR, while x3 is moderate. Thai bottled water consumers are also concerned about the environment and what a company does to offset the negative impact of selling plastic bottles ( $x2 = 0.75$ ).

**Table 3.**CFA results for the external and internal latent variables

Latent variables	$\alpha$	AVE	t-value	Observed variables	loading	$R^2$
Corporate Social Responsibility (CSR)	0.89	0.59	0.81	helping society (x1)	0.77	.59
				environmental concern (x2)	0.87	.75
				regularity compliance (x3)	0.65	.41
Brand Trust (BT)	0.86	0.45	0.71	value recognition (y1)	0.51	.25
				brand value (y2)	0.68	.46
				reliability (y3)	0.80	.64
Customer Satisfaction (CS)	0.89	0.51	0.76	quality satisfaction (y4)	0.71	.51
				price satisfaction (y5)	0.70	.48
				decision satisfaction (y6)	0.74	.54
Brand Image (BI)	0.93	0.73	0.92	known reputation (y7)	0.84	.71
				excellent image (y8)	0.86	.74
				success (y9)	0.80	.64
				reliability (y10)	0.92	.84
Brand Loyalty (BL)	0.92	0.66	0.85	always loyal (y11)	0.76	.57
				choose first (y12)	0.87	.74
				will not switch (y13)	0.81	.66

**Correlation coefficient results**

Table 4 shows the values of the correlation coefficient, as well as the variables' direct effects (DE), indirect effects (IE), and the total effects (TE) analysis (Ladhari, 2009). The larger the absolute value of the coefficient, the stronger the relationship between the variables (Ratner, 2009). Ranked in importance, factors influencing BL were CSR (TE=0.92), BI (TE=0.63), CS (TE=0.31), and BT (TE=0.05), respectively.

**Table 4.**DE, IE, and TE results

Dependent variables	$R^2$	Effect	Independent variables			
			CSR	BT	CS	BI
Brand trust (BT)	.75	DE	0.87**			
		IE	-			
		TE	0.87**			
Customer satisfaction (CS)	.90	DE	-	0.16*		0.95**
		IE	0.95**	-		-
		TE	0.95**	0.16*		0.95**
Brand image (BI)	.73	DE	0.86**			

		IE	-		
		TE	0.86**		
Brand loyalty (BL)	.85	DE	0.33*	0.01	0.31*
		IE	0.59**	0.04	-
		TE	0.92**	0.05	0.31*
					0.34*

Note: \*Sig. ≤ .05, \*\*Sig. ≤ .01

**SEM results**

Results from the SEM also determined that all the causal variables had a positive effect on bottled drinking water brand loyalty (BL), which can be combined to explain the shared variance of the factors affecting BL (R<sup>2</sup>) by 85% (Table 4). Also, Table 5 and Table 6 further detail the reliability of the SEM's results for BL.

**Table 5.**Standard coefficients of influences in the SEM of variables that influence BL

Latent variables	CSR	BT	CS	BI	BL
Corporate Social Responsibility (CSR)	1.00				
Brand Trust (BT)	.66**	1.00			
Customer Satisfaction (CS)	.72**	.63**	1.00		
Brand Image (BI)	.74**	.59**	.83**	1.00	
Brand Loyalty (BL)	.73**	.60**	.79**	.85**	1.00
ρ <sub>v</sub> (AVE)	0.56	0.45	0.51	0.71	0.65
ρ <sub>c</sub> (composite reliability)	0.79	0.70	0.76	0.91	0.84
square-root value of AVE	0.75	0.67	0.71	0.84	0.81

Note: \*\*Sig. ≤ .01

**Table 6.**Descriptive analysis

Latent variable	Mean	S.D.	Skewness	Kurtosis	Agreement level
Corporate Social Responsibility (CSR)	4.48	.80	.03	1.19	moderate agreement
Brand Trust (BT)	4.41	.83	-.25	1.56	moderate agreement
Customer Satisfaction (CS)	4.47	.87	-.03	.39	moderate agreement
Brand Image (BI)	4.49	.88	-.24	.81	moderate agreement
Brand Loyalty (BL)	4.58	.84	-.15	1.10	quite a lot

Note: S.D. = standard deviation

**Hypotheses testing results**

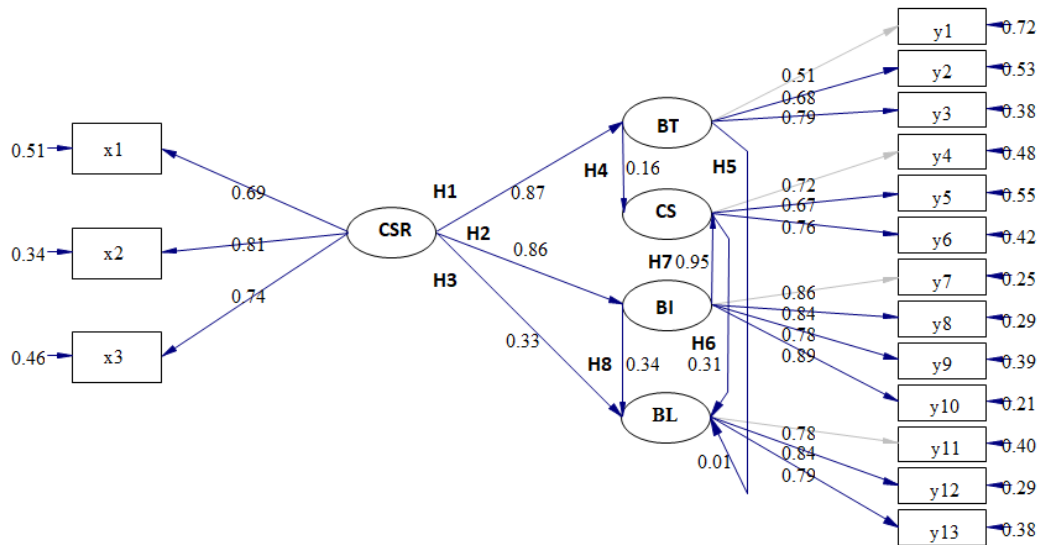
In Table 7 the hypotheses testing results are shown from which seven of the eight hypotheses were determined to be supported. In Figure 3 are the details from the final SEM.

**Table 7.**Final hypotheses testing results

Hypotheses	correlation coefficient	t-values	Results
H1: CSR directly influences BT	0.87	10.15**	Consistent
H2: CSR directly influences BI	0.86	17.77**	Consistent
H3: CSR directly influences BL	0.33	1.98*	Consistent
H4: BT directly influences CS	0.16	2.08*	Consistent
H5: BT directly influences BL	0.01	0.06	Inconsistent
H6: CS directly influences BL	0.31	2.40*	Consistent
H7: BI directly influences CS	0.95	10.71**	Consistent
H8: BI directly influences BL	0.34	2.63*	Consistent

Note: \*Sig. ≤ .05, \*\*Sig. ≤ .01

Figure 3. Final SEM model



Note: Chi-Square = 27.08, df = 34, p-value = 0.79418, RMSEA = 0.000

**Discussion**

As both western and Asian countries age, there is a growing concern among individuals about obesity, diabetes, heart disease, and other health matters (International Bottled Water Association, 2018). As such, bottled water’s lack of calories and artificial ingredients, convenience, and refreshing taste attracts health-conscious consumers everywhere. Therefore, the importance of understanding consumer brand loyalty (BL) of Thai bottled water is of significant importance.

From the study's analysis, CSR was determined to be important when considering which bottle to choose in a convenience store cooler. The brand image (BI) was also important, with 31.29% of the 489 surveyed choosing Singha brand bottled water. However, the customer service (CS) and brand trust (BT) were of minor importance. The major takeaway from these results suggests that companies need to focus their corporate and marketing resources on telling consumers about their CSR activities, especially regarding how their plastic is collected and disposed of.

**Corporate social responsibility (CSR) hypotheses results**

The SEM analysis showed that H1 had a strong and positive correlation between CSR and BT, as  $r = 0.87$ ,  $t\text{-value} = 10.15$ , and  $p \leq 0.01$  (Table 8). The analysis also determined that H2 had a strong and positive correlation between CSR and BI as  $r = 0.86$ ,  $t\text{-value} = 17.77$ , and  $p \leq 0.01$ . However, the relationship between CSR and BL examined in H3 was positive but weak as  $r = 0.33$ ,  $t\text{-value} = 1.98$ , and  $p \leq 0.05$ .

Furthermore, this passion for CSR is shared across gender lines and generations. These findings are in agreement with a Nielsen (2018) global survey in which 81% strongly indicated that organizations should be focused on helping the environment. As in Norway, where 97% of all used plastic bottled containers are recycled (Hickman, 2018), Thailand can learn from this. Unfortunately, with Thailand's rise in international tourism and bottled water consumption, it has also been reported to be world's sixth-largest ocean waste contributor (Styllis, 2018).

**Brand trust (BT) hypotheses results**

Brand trust (BT) hypotheses testing resulted in H4 having a weak but positive correlation between BT and CS as  $r = 0.16$ ,  $t\text{-value} = 2.08$ , and  $p \leq 0.05$ . Also, H5’s relationship between BT and BL was inconsistent and unsupported. Sung and Kim (2010) have also suggested that sincerity and ruggedness are critical aspects of a consumer's brand trust level. This is consistent with Delgado-Ballester (2004), who also suggested that BT is a consumer’s expectation of brand reliability and good intentions.



### Customer satisfaction (CS) hypothesis results

The SEM analysis also showed that H6 had a moderate and positive correlation between CS and BL, as  $r = 0.31$ ,  $t$ -value = 2.40, and  $p \leq 0.05$ . This is consistent with Pratiwi et al. (2019), who investigated Indonesian mineral water customer loyalty and determined that CS significantly influences customer loyalty.

### Brand image (BI) hypotheses results

Testing results for H7 determined a very strong and positive correlation between BI and CS, as  $r = 0.95$ ,  $t$ -value = 10.71, and  $p \leq 0.01$  (Table 8). The analysis also determined that H8 had a moderate and positive correlation between BI and BL as  $r = 0.34$ ,  $t$ -value = 2.63, and  $p \leq 0.05$ .

### Brand loyalty (BL) results

Oliver (1999) stated that ultimate loyalty emerges as a combination of perceived product superiority, personal fortitude, social bonding, and synergistic effects. IBM (2017), on the other hand, in a study about Gen Z relationships, states that when brands assess loyalty, they look only at repeat purchases. Bottled water consumers in Thailand also feel BL is important as the survey's mean = 4.58, indicating a 'quite a lot' of importance.

### Conclusion

The authors examined how corporate social responsibility, brand image, customer satisfaction, and brand trust affected Thai consumer bottled water brand loyalty. From the use of CFA, a GOF, and a final SEM, it was determined that all the factors influenced brand loyalty ( $R^2$ ) at 85%. Moreover, it was established that there were very strong relationships between CSR and BT, CSR and BI, and BI and CS.

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