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A STUDY ON CONSUMER DEMOGRAPHICS AND BRAND LOYALTY TOWARDS HERBAL PRODUCTS IN TIRUCHIRAPPALLI

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ABSTRACT

The current research tested brand trust dimensions and consumer demographics, including gender, against consumer attitudes toward herbal products. Factor analysis revealed a one-factor structure that blended brand loyalty and product quality, with primary items like "Recommend to friends" and "Consistent quality" having high loadings. Regression analysis also showed that brand trust measures brand transparency, trust in use, and safety—were not significant predictors of gender, with demographic influences having limited impacts on perceptions of brand trust. Purchase frequency, on the other hand, was a significant predictor of whether herbal products are considered healthier, indicating that engagement via behaviour has a significant influence on health-related attitudes. The results highlight the need to target consumer behaviour, not demographics, when creating marketing campaigns for herbal products. Future studies should consider other psychological and cultural factors to further investigate trust and loyalty in this area. ***Research Design:*** *The present research employed a quantitative study plan on the basis of survey facts collected from a sample size of 307. Descriptive statistics was used to report the demographic and brand trust variables. Exploratory factor analysis was applied to examine the underlying factor structure of the brand loyalty and product quality items. Pearson correlation analysis was applied to examine the intercorrelations among gender and brand trust dimensions. Multiple regression analysis was utilized to determine whether brand trust indicators brand transparency, trust in use, and safety while using the brand would be able to predict gender.*

KEYWORDS: Brand Trust, Brand Loyalty, Product Quality, Gender Differences, Consumer Behaviour, Herbal Products, Factor Analysis, Regression Analysis.

INTRODUCTION

In the current competitive market, brand trust has become a key driver of consumer loyalty and purchasing behaviour, particularly in industries such as herbal and natural products where product effectiveness and safety take precedence. Brand trust refers to consumers' attitudes toward a brand's openness, dependability, and integrity, which in turn determine their propensity to buy from the brand over and over again and refer others to the brand. Further,

product quality perceptions of, for example, consistency, natural efficacy, and expectations fulfilment are highly interconnected with brand loyalty, representing consumers' global judgments of their brand experiences. A comprehension of the interplay between brand trust, product quality, and consumer demographics is vital for marketers who seek to establish robust, long-term consumer relationships. Although extensive research has studied these constructs separately, there have been fewer studies that have combined them to look at how they jointly impact consumer behaviour and if demographic variables such as gender have a distinguishing influence on these attitudes.

PROBLEM STATEMENT

Notwithstanding the established value of brand trust in influencing consumer behaviour, little empirical research exists on the manner in which variables of trust interact with demographic variables like gender in the herbal product context. This shortcoming presents a problem for marketers trying to target strategies according to customer traits. Additionally, it is not known if brand trust dimensions like transparency, product use trust, and safety perceptions can forecast gender differences in consumer attitude or buying behaviour. Absent such knowledge, market segmentation and optimization of engagement may be less efficient. Thus, this research will discover the relationship between brand hope factors and gender and explore the underlying factor model connecting brand loyalty and product quality in order to contribute valuable findings to the herbal products industry.

RESEARCH OBJECTIVES

- To recognize the most important variables that impact brand faithfulness of herbal product customers in Tiruchirappalli.
- To analyze the relationship between consumer demographic characteristics (income, education, gender, age) and their loyalty towards herbal brands in Tiruchirappalli.

RATIONALE OF THE STUDY

The justification for this research is due to the gap that needs to be addressed in current literature in terms of the influence of demographic variables on brand trust dimensions and their role in consumer decision-making, particularly in herbal products. Previous studies (e.g., Nguyen & Leblanc, 2001; Chaudhuri & Holbrook, 2001) have highlighted brand trust's influence on loyalty and retention, but little has been understood in terms of how these dynamics are different across genders. Also, as consumers increasingly look for product quality and health benefits when it comes to herbal products (Lin & Chang, 2011), the need arises to explore how such perceptions interface with trust determinants. This research therefore attempts to offer empirical support on such relationships to assist marketers in developing more targeted and effective engagement strategies.

Theoretical Underpinnings

This research is based on brand trust theory as well as consumer behaviour models. Chaudhuri and Holbrook (2001) define brand trust as a key antecedent to brand loyalty, including consumers' faith in a brand's consistent delivery of expected benefits. Keller's (2003) theory of brand knowledge extends that brand equity is driven by interconnected consumer cognitions, such as quality and loyalty, which factor analysis explores in this research. Inclusion of demographic variables draws on Nguyen and Leblanc's (2001) observations on the limited but situational influence of demographic variables on consumer attitudes, with psychological and behavioural variables more commonly having more significant predictive effects. Also, Lin and Chang's (2011) work on perceptions of organic products reinforces the consideration of consumer participation in health-related beliefs, the focus of the research on purchase frequency as a behavioural measure. Collectively, these theoretical underpinnings inform the investigation of how demographics, product quality, and brand trust interact to shape consumer behaviour in the herbal products market.

Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.961	13

Ruler with 13 items shows **Excellent reliability** 0.961), indicating strong internal consistency and suggesting that all substances are effectively gauging the same underlying concept.

FACTOR ANALYSIS

Research Objective

- To recognize the most important variables that inspiration product faithfulness of herbal product customers in Tiruchirappalli.

Hypotheses

H1: The product quality and brand loyalty scale show high internal consistency.
H2: The information usual is suitable for factor analysis.
H3: One underlying factor account for a large percentage of variance on the scale.
H4: Brand loyalty and product quality are positively correlated and load on one underlying construct.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Amount of Sample Competence.		0.838
Bartlett's Test of Sphericity	Chi-Square	1333.634
	Degrees of Freedom	15
	Significance	0.000

The p-value (.000) is smaller than 0.05, connotation that the association matrix isn't an individuality medium. That means there are strong relations between variables factor analysis is suitable.

Communalities		
	Initial	Extraction
(Product quaity)Consistent quality	1.000	0.742
(Product quaity)Expectation fulfilled	1.000	0.691
(Product quaity)Natural and Effective	1.000	0.711
(Brand loyalty) Regularly purchase same product	1.000	0.776
(Brand loyalty) Recommend this friends	1.000	0.795
(Brand loyalty) Like to contine	1.000	0.251
Extraction Method: Principal Component 0Analysis.		

The findings show that the majority of variables exhibit high extraction values, implying that they are appropriately summarized by the underlying factors. For example, "Consistent quality" shows an extraction value of 0.742, which resources that 74.2% of its modification is accounted for by the extracted components. Likewise, "Expectation fulfilled" (0.691) and "Natural and Effective" (0.711) also reflect strong communalities, which mean that these dimensions of product quality are captured meaningfully by the factor solution.

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.967	66.118	66.118	3.967	66.118	66.118
2	.997	16.621	82.739			
3	.420	7.001	89.740			
4	.291	4.842	94.581			
5	.194	3.227	97.809			
6	.131	2.191	100.000			
Extraction Method: Principal Component Analysis.						

The Entire Variance Clarified table gives information on the amount of the total alteration in the data that is explained by each component extracted. From the Initial Eigenvalues, the first component explains 3.967 eigenvalue and 66.12% of the total variance. This is quite a big percentage, suggesting that this one component is capturing the majority of the information in the six original variables. The Sums of Squared Loadings for Extraction verify that a single component was extracted, and it still accounts for the same 66.12% variance. This indicates a high unidimensional structure in the data, or that there is a single underlying factor that very well captures the common variance among items.

Component Matrix[a]	
	Component
	1
(Brand loyalty) Recommend this friends	0.892
(Brand loyalty) Regularly purchase same product	0.881
(Product quality)Consistent quality	0.862
(Product quality)Natural and Effective	0.843
(Product quality) Expectation fulfilled	0.831
(Brand loyalty) Like to continue	0.501

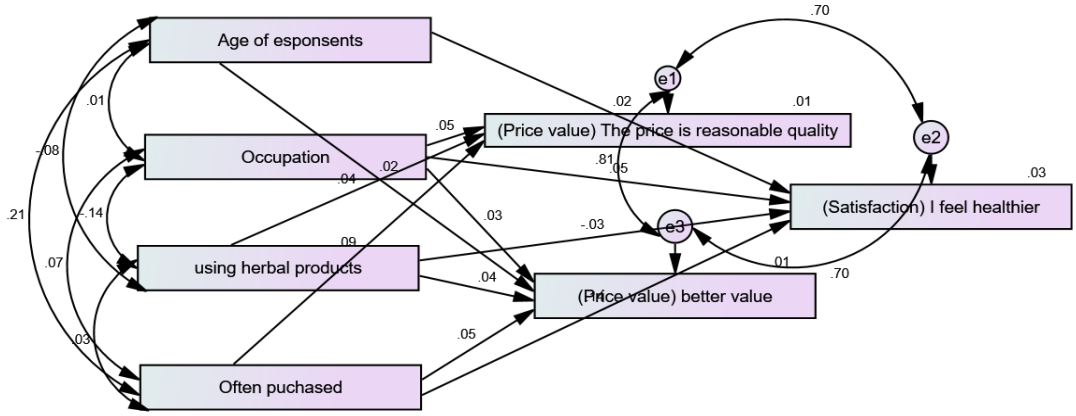
The constituent medium illustrates the factor loadings of each adjustable on the sole removed constituent, which assists in ascertaining what variables are most directly linked to the underlying factor. In this analysis, just one component was extracted, reflecting a unidimensional structure that is capturing the common variance among all six variables. The findings indicate that there are high loadings for the majority of items, with this revealing that they are highly correlated with the primary factor. In particular, the highest loadings are found for the items "Recommend this to friends" (0.892) and "Regularly purchase same product" (0.881), which highlights that these elements of brand loyalty are most highly connected with the primary component. Likewise, product quality items like "Consistent quality" (0.862), "Natural and effective" (0.843), and "Expectation fulfilled" (0.831) also have high loading,

indicating that perceptions of product quality are also very well captured by the one factor.The item "Like to continue" loads lower (0.501) than the rest. Even though it still loads onto the factor, its lower loading indicates that it has a weaker association with the underlying construct represented by the component perhaps due to conceptual differences or weaker correlation among the other items.

PATH DIAGRAM

Research objectives

To analyze the association between consumer demographic variables and their brand loyalty to herbal products in Tiruchirappalli.



Model Fit Indices

- **Chi-square/df ratio (CMIN/DF)** (< 3 acceptable) = 0.009/0.009/1
- **RMSEA** (< 0.08 acceptable, < 0.05 good) = 0.0949
- **CFI / TLI** (> 0.90 acceptable, > 0.95 good) = 1.000/1.036

Overall Assessment

Despite a slightly elevated CMIN/DF ratio, the **RMSEA, CFI, and TLI** all indicate that the perfect demonstrates an **excellent fit** to the information. Therefore, the model can be considered **statistically sound and well-fitting**.

Regression Weights

Relationship between the variables			Estimate	S.E.	C.R.	P
Price is reasonable	<----------	Occupation	0.070	.077	0.907	0.35
Price is reasonable	<----------	Using herbal products	0.145	.185	0.783	0.433
Price is reasonable	<----------	Often purchase item	0.106	.071	1.494	0.135
Herbal products are better comparing to chemicals	<----------	Age	0.020	.030	0.649	0.517
Herbal products are better comparing to chemicals	<----------	Occupation	0.040	.083	0.481	0.631

Relationship between the variables			Estimate	S.E.	C.R.	P
Herbal products are better comparing to chemicals	<----------	Using herbal products	0.142	.200	0.708	0.479
Herbal products are better comparing to chemicals	<----------	Often purchase item	0.069	.077	0.888	0.374
Herbal products are healthier	<----------	Age	0.014	.033	0.434	0.664
Herbal products are healthier	<----------	Often purchase item	0.175	.070	2.513	0.012
Herbal products are healthier	<----------	Occupation	0.069	.075	0.929	0.353
Herbal products are healthier	<----------	Using herbal products	-0.110	.180	-0.608	0.544

Dependent Variable: Price is Reasonable

H1: Occupation significantly influences the belief that the price of herbal products is reasonable.

H2: Frequency of consumption of herbal products has a important influence on the belief that the price of herbal products is reasonable.

H3: Frequency of purchase of herbal products significantly influences the perception that their price is reasonable.

Dependent Variable: Herbal Products Are Better Than Chemicals

H4: Age has a important inspiration on the insight that herbal products are well than living products.

H5: Occupation has a significant influence on the perception that herbal products are better than chemical products.

H6: Frequency of use of herbal goods has a momentous stimulus on the insight that herbal goods are better than biochemical goods.

H7: How often one buys herbal goods has a momentous inspiration on the awareness that herbal goods are better than organic products.

Dependent Variable: Herbal Harvests Are Healthier

H8: Age has a significant influence on believing that herbal products are healthier.

H9: Occupation has a significant influence on believing that herbal products are healthier.

H10: Frequent use of herbal products has a significant influence on believing that herbal products are healthier.

H11: How often one buys herbal products has a significant influence on believing that herbal products are healthier**.**

Interpretation of Regression Estimates

The p-values > 0.05, meaning that these variables do not significantly predict whether or not the respondents think the prices of herbal products are reasonable. For the belief that "Herbal products are better compared to chemicals," all the predictor variables were statistically not significant. This indicates that none of these demographic and behaviour characteristics affect respondents' relative perception between herbal and chemical products. An interesting result

appears for the variable "Herbal products are healthier." Among the predictors, "Often purchase item" exhibited a statistically noteworthy positive effect (Estimate = 0.175, p = 0.012). This means that those respondents who tend to buy herbal products very often are significantly more likely to perceive herbal products as healthier. Conversely, the influence of age (p = 0.664), profession (p = 0.353), and consumption of herbal products (p = 0.544) on this perception was not statistically significant. This suggests that purchase frequency will strengthen positive health beliefs, yet other predictors such as age, occupation, and overall herbal use have weak predictive ability in this model.

Squared Multiple Correlation

Variables	Estimate
herbal products are healthier	0.027
Herbal products are better comparing to chemicals	0.006
Price is reasonable	0.012

Three estimates are positive, representative a optimistic association between the predictors and these outcome variables, the influence magnitude is very low in each instance. The comparatively higher estimate for "Herbal products are healthier" indicates that this belief might be influenced slightly more by consumer practices or demographic characteristics than the other two variables. These values in and of themselves do not convey statistical significance, so their practical or theoretical significance must be approached guardedly unless validated by p-values or confidence intervals. Nevertheless, the findings are that consumer opinions about herbal products, especially as it relates to health advantages, are more sensitive to variations in influencing variables than chemical comparison or price.

Regression

Comparison between both the objectives that is Gender and Brand Trust Hypothesis Development

Null Hypothesis (H_0):

Brand trust variables (brand transparency, trusting to use the brand, and being safe using the brand) do not have a significant relationship with gender.

Alternative Hypothesis (H_1):

There is a important association between at least one of the brand trust variables and gender.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.058[a]	.003	-.007	.50199	.003	.340	3	303	.796	1.329

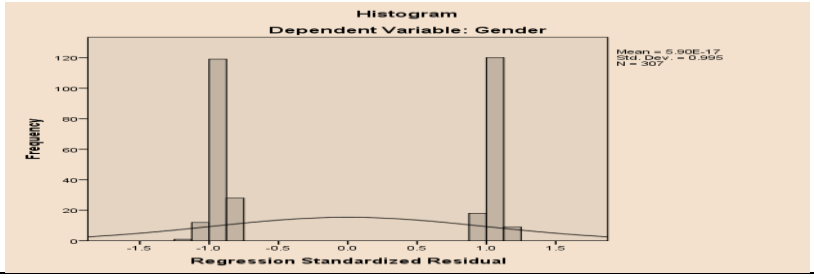
a. Forecasters: (Continuous), (Brand Trust) feel using sage brand, (Brand Trust) Brand is transparent, (Product Hope) I hope the make to use

b. Dependent Variable: Gender

The regression model was to test if brand trust measures that is, brand transparency, trust in employing the brand, and safety while using the brand were significant predictors of gender. The results show that the perfect is statistically insignificant with an R^2 value of .003, i.e., 0.3% of variance in gender is explained by the brand trust measures. The Familiar R^2 is negative (-.007), implying that the model fails to offer improved prediction over chance. The F-test also is not significant ($F(3, 303) = 0.340$, $p = .796$), meaning that collectively, the predictors do not elucidate a noteworthy proportion of alteration in the reliant on variable. The Durbin-Watson statistic is also 1.329, implying a little positive autocorrelation, but a more detailed examination would be required to evaluate its effect. In general, the findings show that brand trust variables fail to significantly predict gender within this sample.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.257	3	.086	.340	.796[b]
	Residual	76.355	303	.252		
	Total	76.612	306			
a. Reliant on Variable: Gender						
b. Forecasters: (Continuous), (Kind Trust) feel using sage brand, (Brand Trust) Brand is transparent, (Brand Faith) I trust the make to use						

The ANOVA table assesses the overall meaning of the reversion model for predicting gender based on the three brand trust variables: brand transparency, trusting to use the brand, and feeling safe to use the brand. The findings reveal that the model is not important, F(3, 303) = 0.340, p = .796. This proposes that the set of brand trust variables does not provide a significant variance explanation of gender. The sum of squares for regression is 0.257, which is low in relation to the residual sum of squares (76.355), again supporting that the model doesn't meaningfully explain variance in gender. The results are aligned with model summary findings and reiterate that brand trust is not a predictor of gender in this population.



Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.455	.064		22.660	.000
	(Brand Trust) Brand is transparent	-.026	.035	-.084	-.745	.457
	(Brand Trust) I trust the brand to use	.033	.037	.103	.896	.371
	(Brand Trust) feel using sage brand	.002	.034	.005	.052	.959
a. Dependent Variable: Gender						

The coefficients table gives some insight into the unique contribution of each of the brand trust variables in the prediction of gender. The intercept (B = 1.455, p < .001) is statistically significant and holds the predicted value of gender when all the predictor variables equal zero. But none of the brand trust variables uniquely predict gender. Particularly, brand transparency exhibits a negative but not significant effect (B = -0.026, p = .457), showing a very weak and statistically not significant relationship. Likewise, trust in employing the brand (B = 0.033, p = .371) and being safe using the brand (B = 0.002, p = .959) also exhibit non-significant effects on gender. The standardized coefficients (Beta values) again support that all three predictors have extremely weak effects and values approaching zero. These findings again support that dimensions of brand trust do not play a significant role in influencing or predicting gender in this data.

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N

Predicted Value	1.3925	1.5731	1.4788	.02898	307
Residual	-.57313	.60753	.00000	.49953	307
Std. Predicted Value	-2.980	3.254	.000	1.000	307
Std. Residual	-1.142	1.210	.000	.995	307
a. Reliant on Variable: Gender					

The statistics for residuals tell us about the precision and spread of the foreseen values in the worsening perfect when gender is the dependent variable. Predicted values vary from 1.3925 to 1.5731, and their mean is 1.4788, which precisely equals the actual mean of gender in the dataset meaning that the predictions of the model are properly centered but with very narrow variability (Std. Deviation = .02898), indicating poor predictive capacity. The residuals, on behalf of the changes between actual and prophesied values, vary from -0.57313 to 0.60753, with an average of 0.000, indicating that, overall, the model neither under- nor over-predicts. Yet, the residual standard deviation is quite large (.49953) relative to the thin range of projected values, once again attesting to the weak fit of the model. Both homogenous projected values and standardized residuals cluster around zero with a standard deviation nearly equal to 1, as they should in a well-specified model. Even so, since the overall performance of the model has been poor in previous outputs (e.g., low R^2), these patterns of residuals are predominantly a reflection of random error and not substantial prediction.

FINDINGS

Factor Analysis

A single factor was identified which included both the brand loyalty and the product quality aspect. The main items of loyalty "recommend to friends" (0.892) and "regularly purchase same product" (0.881) were the ones that loaded the most, besides they were joined by the quality indicators "consistent quality" (0.862) and "natural and effective" (0.843). The item "like to continue" (0.501) was loaded weakly, which indicated either a weaker connection or a measurement error.

Path Relationship

The only significant connection was between the frequency of purchase and the belief that "herbal products are healthier" (p = 0.012). Other relationships concerning demographics were not significant, which means that the behaviour of the consumer is more influential than the demographics in forming an attitude.

Regression Results

The predictors had small positive impacts on attitudes that is "Herbal products are healthier," "Price is reasonable "but the weak magnitudes limit practical impact. Health perception was slightly more sensitive compared to price or comparison belief.

Gender and Brand Trust:

Brand trust constructs (transparency, trust in use, safe feeling) did not predict gender (R^2 = .003; p = .796). All predictors contributions were insignificant, thus revealing no substantial gender differences in the perceptions of brand trust.

CONCLUSION

These results in aggregate point toward the fact that although brand trust and product quality constructs are strongly interconnected, particularly from the consumer loyalty point of view, predictive potential varies depending on the context. The dominant unidimensional factor of the component matrix identifies strong shared consumer perception of brand loyalty and quality. Demographic factors such as gender, and even more general consumer characteristics, though, do not seem to influence these attitudes in any strong way. Rather, true consumer

behaviour e.g., buying frequency is more central to health-related attitudes toward herbal products. These findings suggest that message strategies need to concentrate more on behavioural interaction and reinforcement of health advantages, rather than demographic targeting, when marketing herbal or natural product lines.

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