The Impact of Hiring Practices and Customer Service Training on Customer

Satisfaction in the Houseware Products Corporation.

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Results and Discussion

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Aug 10, 2023

1. Introduction

Houseware Products Corporation (HPC) is a leading producer of user-friendly kitchen appliances. Amidst growing concerns about product quality and customer service, HPC initiated a survey to assess the impact of new hire quality and training effectiveness on customer satisfaction. This dataset, generated through an online Qualtrics survey, aims to delve into the nuances of HPC's employee training and its effects on customer satisfaction. By employing statistical techniques in SPSS, this research will rigorously test three core hypotheses. Additionally, exploratory data analyses will be conducted to unearth further insights. The hypotheses include:

- Hypothsis 1:

H0: Gender will not affect employees' SAS scores.

H1: Genderwill affect employees' SAS and scores.

Statistical Test: Independent Samples t-test

Independent Variable (IV): Gender (nominal)

Dependent Variable (DV): SAS (interval/ratio)

- Hypothsis 2:

H0: SAS will not significantly predict CSR.

H1: SAS will significantly predict CSR.

Statistical Test: Simple Linear Regression

Independent Variable (IV): SAS (interval/ratio)

Dependent Variable (DV): CSR (Ordinal)

- Hypothsis 3:

H0: NHRI will not significantly predict CSTP

H1: NHRI will significantly predict CSTP.

Statistical Test: Simple Linear Regression

Independent Variable (IV): NHRI (interval/ratio)

Dependent Variable (DV): CSTP (Ordinal)

2. Data Description

Nominal Variables:

Gender(Records the gender of the respondents): Male = 1; Female = 2

Education(Denotes whether the respondent has completed a college degree in

Business/Marketing): Yes = 1; No = 2

Product Line(Specifies the product line an employee is associated with):

Toasters = 1; Griddles = 2; Blenders = 3

Territory Assignment(Indicates the territory to which an employee is assigned):

Mexico City (MC) = 1; Atlanta (AT) = 2;

Ordinal Variables:

Customer Service Rating (CSR): An average composite score derived from four key

principles of effective service.

Responsiveness: Rated on a scale from 1 (Minimal) to 4 (Outstanding)

Factual Accuracy: Rated on a scale from 1 to 4

Product Knowledge: Rated on a scale from 1 to 4

Follow-up: Rated on a scale from 1 to 4

1 (Minimal); 2 (Basic); 3 (Good); 4 (Outstanding)

Customer Service Training Program (CSTP): Participants rate the effectiveness of

the CSTP on various aspects, with scores ranging from 1 (Not at all) to 5

(Outstanding). This covers areas like:

Handling difficult client interactions

Strategies for managing product defects

Role-play scenarios aiding in understanding customer concerns

Insights from guest speakers on products and parts

Overall grasp of customer needs and firm responses.

1 (Not at all); 2 (Limited); 3 (Adequate); 4 (Successful); 5 (Outstanding)

Interval Variables:

Situational Ability Score (SAS): A score out of 100, gauging the respondent's ability to handle customer complaints effectively.

New Hire Responsiveness Inventory (NHRI): Scored out of 100, it evaluates the readiness of the new recruits post their training.

3. Methodology

Participants

Appendix 1 includes the relevant descriptive statistics of the sample. Participants included 40 customer service staff members. In terms of gender, the sample was skewed towards females (57.5%), compared to the male participants (42.5%). In terms of education, the majority of respondents (67.5%) had completed a college degree in Business or Marketing, while 32.5% had not. Participants were assigned to different territories, with 47.5% working in Mexico City, and 52.5% in Atlanta. Participants were almost equally distributed across the three product lines: Toasters (32.5%, n=13), Griddles (32.5%, n=13), and Blenders (35%, n=14).

The Situational Ability Score (SAS) of participants had a mean of 75.9, median of 76.5, and a standard deviation of 6.324. The New Hire Responsiveness

Inventory (NHRI) score of participants had a mean of 78.55, median of 79.5, and a standard deviation of 7.756. Participants were rated on their customer service skills using the Customer Service Rating (CSR) based on four key principles: Responsiveness, Factual Accuracy, Product Knowledge, and Follow-up. The mean of the CSR sum was 9.725, with a median of 10.5 and a standard deviation of 3.17. Lastly, participants were asked about their perception of the Customer Service Training Program (CSTP) through five statements. The CSTP sum had a mean of 15.9, median of 17, and a standard deviation of 4.69.

Procedure

The Houseware Products Corporation (HPC) personnel were given the survey to complete in order to assess the effectiveness of the training and several customer service-related characteristics. The survey was sent to all new HPC hires via email in addition to being distributed through the company's internal communication channels. The first element of the survey was demographic, and to ensure uniqueness without compromising anonymity, the participant's ID number's last four digits were recorded. The participants' gender was noted, and questions about their educational background—specifically, whether they had earned a business or marketing degree from college—were also posed to them. The participants were then asked about their Situational Ability Score (SAS) and details about the product line they were associated with (Toasters, Griddles, or Blenders). The territory of assignment (either Mexico City or Atlanta) was noted. The subsequent section delved into performance metrics. Participants were asked about their score on the New Hire Responsiveness Inventory (NHRI). They were then presented with the Customer Service Rating (CSR) section where they rated their skills on responsiveness, factual accuracy, product knowledge, and follow-up on a scale ranging from Minimal (1) to Outstanding (4).

The final section of the survey was centered around the Customer Service Training Program (CSTP). Participants were asked to rate various statements about the CSTP on a scale of 1 (Not at all) to 5 (Outstanding). This aimed to gauge the perceived efficacy of the training program.

4. Results

Hypothesis 1(Appendix 1):

H0: Gender will not affect employees' SAS scores.

H1: Genderwill affect employees' SAS and scores.

Statistical Test: Independent Samples t-test

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An independent samples t-test was conducted to compare the
Situational Ability Score (SAS) in males and females. There was a
statistically significant difference in scores for females
(M=73.35,SD=6.485) and males (M=79.35,SD=4.197); t(38)=-3.331,
p=.002,two-tailed. The magnitude of the differences in the means
(mean difference = -6.005, 95% CI:[-9.654, -2.356]) was large
(Cohen's d=1.065, Hedges' correction =1.044, Glass's delta =1.431).
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Conclusion: A substantial difference between male and female employees' Situational Ability Scores (SAS) was found using the independent samples t-test. In particular, men employees outperformed female employees in terms of average SAS score (M=79.35, SD=4.197 vs. M=73.35, SD=6.485). With a p-value of.002, this difference was statistically significant. This difference is significant in a practical setting, as evidenced by the measured effect size, which quantifies the amount of the difference between the two groups.

- Hypothsis 2(Appendix 2):

H0: SAS will not significantly predict CSR.

H1: SAS will significantly predict CSR.

Statistical Test: Simple Linear Regression

The Situational Ability Score (SAS) was not a significant predictor of the Customer Service Rating Total, according to a simple linear regression analysis (CSRSUM). Just 3.6% of the variance in CSRSUM was explained by the model using SAS as a predictor, which was not statistically significant ($F(1, 38) = 1.430$, $p = .239$). SAS and CSRSUM had a weak yet positive ($r = .190$) association. The association between higher SAS scores and better customer service ratings may therefore be weak enough to not be statistically significant.

- Hypothsis 3(Appendix 3):

H0: NHRI will not significantly predict CSTP

H1: NHRI will significantly predict CSTP.

Statistical Test: Simple Linear Regression

The New Hire Responsiveness Inventory (NHRI) significantly predicted
the Customer Service Training Program Sum (CSTPSUM),
$F(1,38)=60.58, p<.001$, accounting for approximately 61.5% of the
variance in CSTPSUM (R square=.615, adjusted R square=.604). For every
unit increase in NHRI, there was a .475 increase in CSTPSUM.

Conclusion: The statistical significance of the regression model suggests that the NHRI is a useful predictor of CSTPSUM. The findings show a significant correlation between the New Hire Responsiveness Inventory (NHRI) scores and the Customer Service Training Program Sum scores (CSTPSUM). In particular, scores on the

CSTPSUM seem to rise in tandem with rising NHRI scores. The NHRI may account for 61.5% of the variability in CSTPSUM, according to the R square value of 0.615. This significant chunk shows that NHRI has a superior prediction ability to CSTPSUM in this situation. The coefficient for NHRI is 0.475, which suggests that, assuming no other changes, we can anticipate a 0.475-point increase in CSTPSUM for every one-point increase in NHRI. This underlines even more how well the two variables are related. Simply put, employees who had better new hire responsiveness scores (NHRI) also tended to have higher opinions of the customer service training programme (CSTPSUM). This could imply that the training programme is more advantageous or effective for individuals who are innately more receptive or adept at resolving customer complaints.

The regression equation (formula for a line) is:

$$CSTPSUM = -21.374 + 0.475 \times NHRI$$

This equation means that for every one-unit increase in NHRI, the CSTPSUM is expected to increase by 0.475 units, holding all else constant. The intercept of -21.374 is the expected value of CSTPSUM when NHRI is zero.

Appendix

Appendix 1 - Independent Samples t-test

T-Test

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
SAS	Female	23	73.35	6.485	1.352
	Male	17	79.35	4.197	1.018

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
SAS	Equal variances assumed	3.047	.089	−3.331	38	<.001	.002	−6.005	1.803	−9.654	−2.356
	Equal variances not assumed			−3.548	37.459	<.001	.001	−6.005	1.693	−9.433	−2.577

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval	
				Lower	Upper
SAS	Cohen's d	5.636	−1.065	−1.730	−.389
	Hedges' correction	5.750	−1.044	−1.696	−.381
	Glass's delta	4.197	−1.431	−2.213	−.620

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Graph
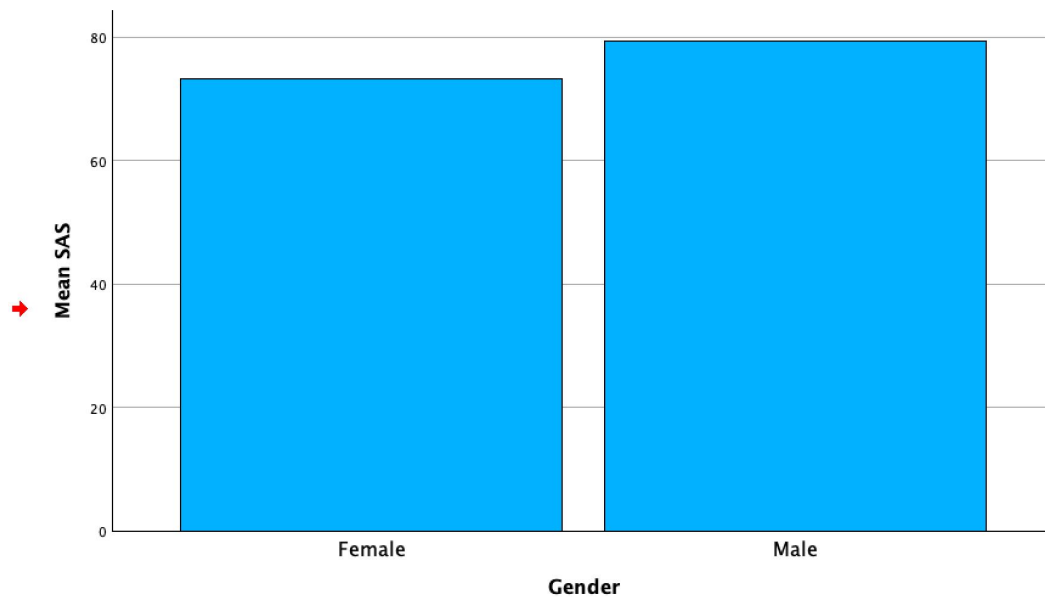
Appendix 2 - Simple Linear Regression

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
CSRSUM	9.7250	3.17027	40
SAS	75.90	6.324	40

Correlations

		CSRSUM	SAS
Pearson Correlation	CSRSUM	1.000	.190
	SAS	.190	1.000
Sig. (1–tailed)	CSRSUM	.	.120
	SAS	.120	.
N	CSRSUM	40	40
	SAS	40	40

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SAS[b]	.	Enter

a. Dependent Variable: CSRSUM
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.190[a]	.036	.011	3.15294	.036	1.430	1	38	.239

a. Predictors: (Constant), SAS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.216	1	14.216	1.430	.239[b]
	Residual	377.759	38	9.941		
	Total	391.975	39			

a. Dependent Variable: CSRSUM
b. Predictors: (Constant), SAS

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	2.479	6.080		.408	.686		
	SAS	.095	.080	.190	1.196	.239	1.000	1.000

a. Dependent Variable: CSRSUM

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions SAS
1	1	1.997	1.000	.00	.00
	2	.003	24.352	1.00	1.00

a. Dependent Variable: CSRSUM

Appendix 3 - Simple Linear Regression

- Hypothsis 3:

H0: NHRI will not significantly predict CSTP

H1: NHRI will significantly predict CSTP.

Statistical Test: Simple Linear Regression

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
CSTPSUM	15.9000	4.69479	40
NHRI	78.55	7.756	40

Correlations

		CSTPSUM	NHRI
Pearson Correlation	CSTPSUM	1.000	.784
	NHRI	.784	1.000
Sig. (1-tailed)	CSTPSUM	.	<.001
	NHRI	.000	.
N	CSTPSUM	40	40
	NHRI	40	40

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	NHRI[b]	.	Enter

a. Dependent Variable: CSTPSUM
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.784[a]	.615	.604	2.95293	.615	60.580	1	38	<.001

a. Predictors: (Constant), NHRI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	528.247	1	528.247	60.580	<.001[b]
	Residual	331.353	38	8.720		
	Total	859.600	39			

a. Dependent Variable: CSTPSUM
b. Predictors: (Constant), NHRI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	−21.374	4.812		−4.442	<.001		
	NHRI	.475	.061	.784	7.783	<.001	1.000	1.000

a. Dependent Variable: CSTPSUM

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	NHRI
1	1	1.995	1.000	.00	.00
	2	.005	20.563	1.00	1.00

a. Dependent Variable: CSTPSUM

R^2 Linear = 0.615

$y=-21.37+0.47*x$