

Workforce Diversity: Gender, Education, and Ethnicity Affecting Organizational Perceived Performance in Nepalese Banking Sector- A Binary Logistic Regression Modeling

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Received: May 21, 2023; Revised & Accepted: June 23, 2023

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Abstract

The organization performs well when its diverse workforce works properly. Inclusiveness of workforce diversity namely gender, education, and ethnicity are highly important for better organizational performance. The objective of this study is to measure the impact of workforce diversity on the organizational performance of the Nepalese Banking Sector of Newroad Branches. The strata of managerial level, officer level, and assistant level are developed and 128 samples are taken for the purpose of the study with the stratified random sampling method. Binary Logistic Regression is used as a major statistical tool to analyze the organization's performance against not performing. Through analysis, gender diversity, education diversity, and ethnicity have a positive impact and help to increase organization performance, who believe diversity helps to perform better in the organization. For an organization diversity among employees must be there for the well-being of the organization.

Keywords: Diversity, Logit, Performance, Workforce

Introduction

Organizational performance is the most important issue for any organization. Workforces are required to perform in an organization. Workforce diversity refers to employees with different backgrounds, such as gender, age, educational background, ethnicity, caste, race, seniority, and culture, forming the diversity of an organization. A combination of different factors is required in the workforce. According to Risberg and S oderberg (2008) diversity is defined as the

composition of differences, similarities, and fusions that exist between elements of the collective mix and composition. There were different layers and types of diversity which can be further extended to two dimensions: primary and secondary diversity (Hubbard, 2004). In workforce diversity, key dimensions of diversity include age, ethnicity and culture, gender, race, religion, sexual orientation, and ability (Schwind et al., 2007). Similarly, according to Sweetman (2004) secondary diversity primarily includes factors such as socioeconomic status, education, religion, geographic affiliation, and marital status. Diversity management is defined as a management philosophy that recognizes and respects the heterogeneity of an organization and aims to improve organizational performance (Özbilgin & Tatli, 2011). Workforce diversity helps in the enhancement of employees' performance like compensation management increases its employee's performance and job satisfaction too (Thapa, 2023; Thapa, 2020).

Objective

The main objective of the study was to identify the impact of gender, education, and ethnicity diversity on perceived organizational performance.

Literature Review

Several factors and drivers of diversities were responsible for the performance of an organization. Basic factors like gender, education, and ethnicity were identified in organizational performance. According to Jackson et al., (2003) gender differences in the organization are reinforced and justified by generalizations and preferences that account for positive traits, thus increasing the apparent quality of men (Cunningham, 2008). A positive relationship between the varying natures of sexual orientation within groups and cooperation within bundles, and precisely within more gender-diverse territories in the general (Jackson et al., 2003). Education is taken as the most important factor in any organization to performance. Companies typically lay off employees who are determined to lack skills, preparation, experience, or training (Watson et al., 2002). Education plays an important role in fitting in an organization's designated post. Without sufficient education, employees cannot find the right job and be productive (Rizwan et al., 2016). Further, different education levels and different educational credentials may require different flexible wage rates (Fleischmann et al., 2009). Employees from different ethnic groups worked together to enhance on organization's performance. Likely, Ethnicity is an alternative to social foundations and different qualities of ethnicity and can be relied upon to provide creative execution (Østergaard et al., 2011). Different ethnicity blends the mutual understanding of employees. Further, Ethnicity broadens the company's horizons and perceptions (Rothman et al., 2003). An organization's performance is the sum of all processes carried out by the organization where any failure is reflected in performance, which is the mirror of the organization's (Daft, 2001). Likely, organization performance is the output of all activities performed by employees. Further, Organizational performance is the result of coordination between organizational strategy and internal environmental factors (Beard & Dess, 1981). Organizational Performance was measured at

the individual level, group level, and the level of the whole organization (Bontis et al., 2002; Triguero-Sánchez et al., 2018).

Further, hypothesis were formulated as,

H₁: There was a significant positive relationship between gender diversity on organizational performance.

H₂: There was a significant positive relationship between education diversity on organizational performance.

H₃: There was a significant positive relationship between ethnicity diversity on organizational performance.

Methodology

The research was empirically designed followed by descriptive and analytical research design using binary logistic regression. Among all the branches and head offices of commercial banks at New Road, four banks were selected as samples purposively (Gautam, 2015) for the study. The sample size was calculated as follows used by (Daniel, 1995),

$$n = \frac{NZ^2P(1-p)}{d^2(N-1)+Z^2P(1-P)}$$

Z-Statistic (Z): For the level of confidence of 95%, which is conventional, Z value is 1.96. In this study, the researcher presented the results with 95% confidence intervals (CI). Expected proportion (P): was 0.5 and the precision (d) was 0.05. Now by using the stated formula, the sample size was 128.

The organizational performance was a dichotomous variable, namely not performed and performed. Likely, the mean of the Likert scale of gender diversity, education diversity, and ethnicity diversity were identified as potential covariates in this study. The Chi-square test of independence assessed the association of each potential covariate with the response variable. The binary logistic regression analysis included only the covariates significantly associated (at a 5% significance level) with the response variable. The model was estimated with the aid of a JMV package in R-Studio.

$$\text{Logit}(p(x)) = \beta_0 + \beta_1 + \dots + \beta_k X_k$$

The model adequacy was assessed by Pseudo R² McFadden (1974) Omnibus test, and Wald χ^2 test. The goodness-of-fit test was carried out by the Hosmer and Lemeshow (H-L) χ^2 test (Acharya et al., 2022).

Results and Findings

Table 1: Model Fit

Measures

Deviance	AIC	BIC	R ² -McF	R ² -CS	R ² -N	Overall Model Test		
						χ^2	df	p
93.000	101.000	112.408	0.321	0.291	0.443	43.983	3.000	<0.001

Table 1: Model Fit Measures reflects the estimated binary logistic regression. The estimated model is statistically significant, as the Omnibus Chi-square test ($\chi^2(3) = 43.983, p < .001$). Further, each predictor was significant at level <0.001 as shown in Table 2: Omnibus Likelihood Ratio Tests.

Table 2: Omnibus Likelihood Ratio Tests

Predictor	χ^2	df	p
Gender	10.5078	1	0.0012
Education	15.2384	1	0.0001
Ethnicity	8.3949	1	0.0038

Hosmer-Lemeshow Chi-square test was performed to assess the significance of the model and was found to fit well ($\chi^2(8) = 6.9016, p = 0.5473$). The assumptions check of collinearity was performed and shown in Table 3: Assumption Checks: Collinearity Statistics.

Table 3: Assumption Checks: Collinearity

Statistics		
Predictor	VIF	Tolerance
Gender	1.0094	0.9906
Education	1.1648	0.8585
Ethnicity	1.1729	0.8526

It was found that no severe problem of multicollinearity was assessed through Variance Inflation Factor (VIF) as it varies from 1.0094 to 1.1729 which was less than 3.3 (Kock & Lynn, 2012). While comparing the Pseudo R^2 , Nagelkerke's R^2 (0.443) was higher than McFadden's R^2 (0.321), and Cox and Snell's R^2 (0.291), 44.3% of the variation of the outcome variable has been explained by the variations of predictors in terms of log-likelihood as shown in Table 1.

Further, the results of estimations were presented in Table 4: Model coefficients of estimated binary logistic regression

Table 4: Model Coefficients of estimated binary logistic regression

Predictor	Estimate	SE	Z	p	Odds ratio	Lower	Upper
Intercept	-12.9485	2.9511	-4.3877	0.0000	0.0000	0.0000	0.0008
Gender	0.9640	0.3505	2.7504	0.0060	2.6222	1.3192	5.2122
Education	1.1008	0.2946	3.7365	0.0002	3.0064	1.6877	5.3557
Ethnicity	1.3388	0.4794	2.7928	0.0052	3.8145	1.4907	9.7605

Note: Estimates represent the log odds of "performance = 1" vs. "performance = 0"

The estimated model, $\text{logit}(x) = -12.9485 + 0.9640 \text{ Gender} + 1.1008 \text{ Education} + 1.3388 \text{ Ethnicity}$, was statistically significant as shown by the Omnibus test. The coefficients of the three covariates were statistically significant as the p-value is less than 0.05. The signs of all coefficients of three covariates are positive imply that each covariate has a positive impact on the non-performed organization, which means an increase in one unit in each covariate, while

keeping all other predictors fixed, increases the likelihood of organizations' being not performed.

The interpretations of the estimated odds ratios: An increase of one unit in gender diversity, while keeping all other predictors fixed, multiplied the odds of organizational performance by the factor of 2.6222. there must be heterogeneity in gender for better performance in the organization. The proper mixture of gender could perform in an organization. The impact of gender is positive on organization (Rogelberg & Rumery, 1996; Ali et al., 2011; Rizwan et al., 2016). This shows that an increase in the perceived belief in gender diversity will increase in organizational performance. An increase of one unit in education diversity, while keeping all other predictors fixed, multiplied the odds of organizational performance by the factor of 3.0064. Education is a must in the banking industry. For organizational development educated employees must be there. Likely, the impact of education is positive on the organization (Combs, 2002; Rizwan et al., 2016). It implies that the role of educated employees and their mixture were important. An increase of one unit in ethnicity diversity, while keeping all other predictors fixed, multiplied the odds of organizational performance by the factor of 0.0052. Different ethnic group and a mixture of ethnicity in the organization has a positive impact (Rizwan et al., 2016). People from different ethnic groups will create a bond and help to perform better in the organization.

Table 5 presents the predictive measure of the model which includes accuracy, specificity, sensitivity, and area under the curve (AUC).

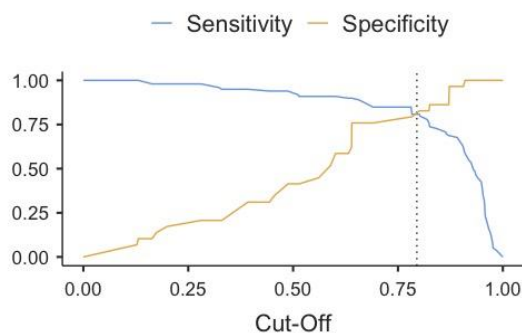
Table 5: Predictive Measures

Cut-off	Accuracy	Specificity	Sensitivity	AUC
0.5	0.8047	0.4138	0.9192	0.8866
0.795	0.8125	0.8276	0.8081	0.8866

The percentage of not performed correctly predicted by the model was 91.92% when the cut-off value is set to 0.5 reduces to 80.81 % when the cut-off value is set to 0.795. The overall correct classification i.e., the accuracy of the model was 80.47% when the cut-off value is set to 0.5 and was increased to 81.25 percent when the cut-off value is set to 0.795 presented in figure 1.

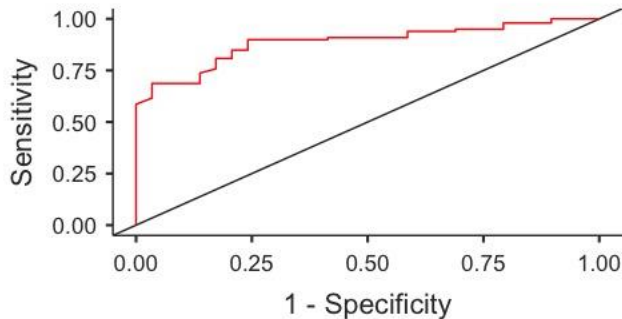
Figure 1:

Cut-Off



Further, figure1: ROC shows the area under curve was 88.66 % which can be considered acceptable discrimination of the developed model (Hosmer & Lemeshow, 2000).

Figure 2: ROC



Conclusion

The study identified three major diversities factors affecting organizational performances by developing the binary logistic regression model in banking sectors. The developed logistic regression model with these three covariates has satisfied the test of goodness of fit of the model and reasonably satisfied the regression diagnostics. The study concludes that one unit increase in the perceived feeling of diversity in the organization will increase the performance of the organization.

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