MID-TERM: Logistic Regression Model Output

Logistic Regression Model

HR Works (HRW) is a talent acquisition company that assists firms in India with talent acquisition. One of their solutions is the "Post offer Follow up" (PoFu) process in which they provide early warning to their clients whether a job offer will be accepted by the candidate or not. After a job offer is made regular follow up with the candidate is carried out to predict whether the candidate is likely to accept the offer or not. Past data of 3533 candidates is used to develop a binary logistic regression model that can be used for predicting whether a candidate will accept the offer or not. The data dictionary used is provided in the following table.

S.No	Variable	Variable Type	Code in SPSS output
1	Job Offer Acceptance (Y)	Categorical	1 = Accept the offer 0 = Reject the offer
2	Type of evaluation	Categorical with 3 levels	1 = Face to Face Interview (FF) 2 = Online Test (OT) 3 = Telephone Interview (TI)
3	Date of Joining Extended	Categorical	1 = Date of joining extended 0 = Date of joining not extended
4	Current Cost to Company (CTC)	Numerical	C-CTC
5	Percentage hike offered in CTC	Numerical	Per Hike
6	Willingness to work in shift	Categorical	Shift 1 – Willing to work in shifts 0 – No
7	Willingness to Relocate	Categorical	Relocate 1 = Willing to relocate

			0 = No
8	Gender	Categorical	1 = Female 0 = Male
9	Work Experience in months	Numerical	WE

A logistic regression model was developed using variables gender and willingness to work in shift. The SPSS model output is shown in tables 1 and 2.

Table 1. Classification Table[a]

Observed			Predicted		
			Accept		Percentage Correct
			0	1	
Step 1	Accept	0	242	802	23.2
		1	437	2052	82.4
	Overall Percentage				64.9

a. The cut value is .700

Table 2. Variables in the equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	SHIFT	.370	.104	12.664	1	.000	1.448
	Gender	.128	.048	6.566	1	.010	1.136
	Constant	.557	.093	35.736	1	.000	1.746

A stepwise logistic regression model output is shown in Table 3.

Table 3. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 5[e]	FF	.367	.095	14.811	1	.000	1.443
	PerHike	.245	.069	12.605	1	.000	1.278
	SHIFT	.365	.095	14.695	1	.000	1.440
	WE	-.004	.001	12.239	1	.000	.996
	Constant	.737	.145	25.685	1	.000	2.090