

Logistic Regression

Notes

Output Created		31-MAY-2024 11:54:52
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact region job marital education default housing loan Equal_balance Equal_Frequency Binned_age /CONTRAST (region) =Indicator /CONTRAST (job) =Indicator /CONTRAST (marital) =Indicator /CONTRAST (education) =Indicator /CONTRAST (default) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (Binned_age)=Indicator /CONTRAST (contact) =Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).	

Notes

Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.20

[DataSet1] D:\Marketing\individual\Campaign_Training.sav

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Job	admin	2753	1.000	.000	.000
	others	5169	.000	1.000	.000
	entrepreneur	789	.000	.000	1.000
	domestic worker	637	.000	.000	.000
	management	4915	.000	.000	.000
	retired	1178	.000	.000	.000
	self-employed	840	.000	.000	.000
	services	2153	.000	.000	.000
	student	519	.000	.000	.000
	technician	3964	.000	.000	.000
	unemployed	673	.000	.000	.000
	unknown	146	.000	.000	.000
Region_Cust	North East	110	1.000	.000	.000
	South West	732	.000	1.000	.000
	East of England	2646	.000	.000	1.000
	London	5090	.000	.000	.000
	South East	6560	.000	.000	.000
	North West	5158	.000	.000	.000
	West Midlands	2594	.000	.000	.000
	Yorkshire and the Humber	753	.000	.000	.000
	East Midlands	93	.000	.000	.000
Age (Binned)	<= 33	6874	1.000	.000	.000
	34 - 39	5384	.000	1.000	.000
	40 - 48	5615	.000	.000	1.000
	49+	5863	.000	.000	.000
Equal_Freq	<= 103	5917	1.000	.000	.000
	104 - 180	5945	.000	1.000	.000
	181 - 318	5920	.000	.000	1.000
	319+	5954	.000	.000	.000
Balance (Binned)	<= 83	5862	1.000	.000	.000
	84 - 520	5996	.000	1.000	.000
	521 - 1655	5935	.000	.000	1.000
	1656+	5943	.000	.000	.000
Education	primary	3583	1.000	.000	.000
	secondary	12232	.000	1.000	.000
	tertiary	6928	.000	.000	1.000
	unknown	993	.000	.000	.000

Categorical Variables Codings

		Parameter coding			
		(4)	(5)	(6)	(7)
Job	admin	.000	.000	.000	.000
	others	.000	.000	.000	.000
	entrepreneur	.000	.000	.000	.000
	domestic worker	1.000	.000	.000	.000
	management	.000	1.000	.000	.000
	retired	.000	.000	1.000	.000
	self-employed	.000	.000	.000	1.000
	services	.000	.000	.000	.000
	student	.000	.000	.000	.000
	technician	.000	.000	.000	.000
	unemployed	.000	.000	.000	.000
	unknown	.000	.000	.000	.000
Region_Cust	North East	.000	.000	.000	.000
	South West	.000	.000	.000	.000
	East of England	.000	.000	.000	.000
	London	1.000	.000	.000	.000
	South East	.000	1.000	.000	.000
	North West	.000	.000	1.000	.000
	West Midlands	.000	.000	.000	1.000
	Yorkshire and the Humber	.000	.000	.000	.000
	East Midlands	.000	.000	.000	.000
Age (Binned)	<= 33				
	34 - 39				
	40 - 48				
	49+				
Equal_Freq	<= 103				
	104 - 180				
	181 - 318				
	319+				
Balance (Binned)	<= 83				
	84 - 520				
	521 - 1655				
	1656+				
Education	primary				
	secondary				
	tertiary				
	unknown				

Categorical Variables Codings

		Parameter coding			
		(8)	(9)	(10)	(11)
Job	admin	.000	.000	.000	.000
	others	.000	.000	.000	.000
	entrepreneur	.000	.000	.000	.000
	domestic worker	.000	.000	.000	.000
	management	.000	.000	.000	.000
	retired	.000	.000	.000	.000
	self-employed	.000	.000	.000	.000
	services	1.000	.000	.000	.000
	student	.000	1.000	.000	.000
	technician	.000	.000	1.000	.000
	unemployed	.000	.000	.000	1.000
	unknown	.000	.000	.000	.000
Region_Cust	North East	.000			
	South West	.000			
	East of England	.000			
	London	.000			
	South East	.000			
	North West	.000			
	West Midlands	.000			
	Yorkshire and the Humber	1.000			
	East Midlands	.000			
Age (Binned)	<= 33				
	34 - 39				
	40 - 48				
	49+				
Equal_Freq	<= 103				
	104 - 180				
	181 - 318				
	319+				
Balance (Binned)	<= 83				
	84 - 520				
	521 - 1655				
	1656+				
Education	primary				
	secondary				
	tertiary				
	unknown				

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Marital_Status	others	2720	1.000	.000	
	married	14234	.000	1.000	
	single	6782	.000	.000	
Contact_Information	mobile	15470	1.000	.000	
	telephone	1515	.000	1.000	
	unknown	6751	.000	.000	
Personal_loan	no	19914	1.000		
	yes	3822	.000		
Housing_loan	no	10510	1.000		
	yes	13226	.000		
Default	no	23326	1.000		
	yes	410	.000		

Categorical Variables Codings

		Parameter coding			
		(4)	(5)	(6)	(7)
Marital_Status	others				
	married				
	single				
Contact_Information	mobile				
	telephone				
	unknown				
Personal_loan	no				
	yes				
Housing_loan	no				
	yes				
Default	no				
	yes				

Categorical Variables Codings

		Parameter coding			
		(8)	(9)	(10)	(11)
Marital_Status	others				
	married				
	single				
Contact_Information	mobile				
	telephone				
	unknown				
Personal_loan	no				
	yes				
Housing_loan	no				
	yes				
Default	no				
	yes				

Block 0: Beginning Block

Classification Table^{a,b}

			Predicted		Percentage Correct
Observed		Response	no	yes	
Step 0	Response	no	20959	0	100.0
		yes	2777	0	.0
	Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2	<.001
		Contact_Information(1)	433.312	1	<.001
		Contact_Information(2)	9.727	1	.002
		Region_Cust	9.068	8	.337
		Region_Cust(1)	2.096	1	.148
		Region_Cust(2)	.025	1	.874
		Region_Cust(3)	2.260	1	.133
		Region_Cust(4)	.267	1	.605
		Region_Cust(5)	.270	1	.603
		Region_Cust(6)	.908	1	.341
		Region_Cust(7)	.765	1	.382
		Region_Cust(8)	1.635	1	.201
		Job	429.112	11	<.001
		Job(1)	.391	1	.532
		Job(2)	109.379	1	<.001
		Job(3)	8.129	1	.004
		Job(4)	6.579	1	.010
		Job(5)	21.008	1	<.001
		Job(6)	151.063	1	<.001
		Job(7)	.006	1	.937
		Job(8)	16.003	1	<.001
		Job(9)	141.944	1	<.001
		Job(10)	3.544	1	.060
		Job(11)	12.675	1	<.001
		Marital_Status	123.200	2	<.001
		Marital_Status(1)	.002	1	.961
		Marital_Status(2)	99.742	1	<.001
		Education	110.622	3	<.001
		Education(1)	31.943	1	<.001
		Education(2)	28.057	1	<.001
		Education(3)	97.643	1	<.001
		Default(1)	7.756	1	.005
		Housing_loan(1)	473.771	1	<.001
		Personal_loan(1)	101.267	1	<.001
		Balance (Binned)	233.528	3	<.001
		Balance (Binned)(1)	158.472	1	<.001
		Balance (Binned)(2)	3.371	1	.066
		Balance (Binned)(3)	5.798	1	.016
		Equal_Freq	2703.392	3	<.001

Variables not in the Equation

		Score	df	Sig.
	Equal_Freq(1)	865.630	1	<.001
	Equal_Freq(2)	314.570	1	<.001
	Equal_Freq(3)	4.532	1	.033
	Age (Binned)	78.719	3	<.001
	Age (Binned)(1)	31.858	1	<.001
	Age (Binned)(2)	12.700	1	<.001
	Age (Binned)(3)	44.214	1	<.001
Overall Statistics		3971.625	38	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4166.712	38	<.001
	Block	4166.712	38	<.001
	Model	4166.712	38	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	12965.707 ^a	.161	.313

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

			Predicted		Percentage Correct
			Response		
Observed			no	yes	
Step 1	Response	no	20559	400	98.1
		yes	2332	445	16.0
	Overall Percentage				88.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			336.716	2	<.001	
	Contact_Information(1)	1.307	.072	334.155	1	<.001	3.697
	Contact_Information(2)	1.290	.110	138.543	1	<.001	3.634
	Region_Cust			7.902	8	.443	
	Region_Cust(1)	.024	.590	.002	1	.968	1.024
	Region_Cust(2)	.460	.440	1.095	1	.295	1.584
	Region_Cust(3)	.601	.426	1.995	1	.158	1.824
	Region_Cust(4)	.507	.423	1.436	1	.231	1.661
	Region_Cust(5)	.509	.423	1.452	1	.228	1.664
	Region_Cust(6)	.475	.423	1.261	1	.262	1.608
	Region_Cust(7)	.595	.426	1.951	1	.163	1.813
	Region_Cust(8)	.379	.441	.738	1	.390	1.461
	Job			118.111	11	<.001	
	Job(1)	.321	.293	1.197	1	.274	1.379
	Job(2)	-.010	.292	.001	1	.972	.990
	Job(3)	-.222	.318	.489	1	.484	.801
	Job(4)	-.200	.324	.378	1	.539	.819
	Job(5)	.079	.291	.074	1	.785	1.082
	Job(6)	.719	.297	5.869	1	.015	2.052
	Job(7)	-.010	.310	.001	1	.974	.990
	Job(8)	.022	.298	.005	1	.941	1.022
	Job(9)	.919	.308	8.915	1	.003	2.507
	Job(10)	.011	.291	.001	1	.970	1.011
	Job(11)	.179	.309	.334	1	.563	1.196
	Marital_Status			35.560	2	<.001	
	Marital_Status(1)	-.109	.085	1.646	1	.200	.896
	Marital_Status(2)	-.329	.058	31.949	1	<.001	.720
	Education			23.078	3	<.001	
	Education(1)	-.146	.132	1.215	1	.270	.864
	Education(2)	-.013	.117	.012	1	.912	.987
	Education(3)	.257	.124	4.319	1	.038	1.293
	Default(1)	-.028	.209	.018	1	.894	.973
	Housing_loan(1)	.657	.049	177.661	1	<.001	1.930
	Personal_loan(1)	.475	.074	41.632	1	<.001	1.608
	Balance (Binned)			98.360	3	<.001	
	Balance (Binned)(1)	-.687	.070	97.080	1	<.001	.503
	Balance (Binned)(2)	-.266	.062	18.521	1	<.001	.767
	Balance (Binned)(3)	-.191	.060	10.168	1	.001	.826
	Equal_Freq			1827.218	3	<.001	

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Equal_Freq(1)	-3.767	.132	812.493	1	<.001	.023
Equal_Freq(2)	-2.146	.067	1018.039	1	<.001	.117
Equal_Freq(3)	-1.311	.053	602.814	1	<.001	.270
Age (Binned)			2.729	3	.435	
Age (Binned)(1)	-.008	.076	.012	1	.912	.992
Age (Binned)(2)	-.060	.075	.636	1	.425	.942
Age (Binned)(3)	-.101	.073	1.921	1	.166	.904
Constant	-2.819	.564	25.033	1	<.001	.060

a. Variable(s) entered on step 1: Contact_Information, Region_Cust, Job, Marital_Status, Education, Default, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Age (Binned).

Logistic Regression

Notes

Output Created		31-MAY-2024 11:59:10
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing

Notes

Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact job marital education housing loan Equal_balance Equal_Frequency /CONTRAST (job) =Indicator /CONTRAST (marital) =Indicator /CONTRAST (education) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (contact) =Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).	
Resources	Processor Time	00:00:00.13
	Elapsed Time	00:00:00.14

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding			
		Frequency	(1)	(2)	(3)	(4)
Job	admin	2753	1.000	.000	.000	.000
	others	5169	.000	1.000	.000	.000
	entrepreneur	789	.000	.000	1.000	.000
	domestic worker	637	.000	.000	.000	1.000
	management	4915	.000	.000	.000	.000
	retired	1178	.000	.000	.000	.000
	self-employed	840	.000	.000	.000	.000
	services	2153	.000	.000	.000	.000
	student	519	.000	.000	.000	.000
	technician	3964	.000	.000	.000	.000
	unemployed	673	.000	.000	.000	.000
	unknown	146	.000	.000	.000	.000
Equal_Freq	<= 103	5917	1.000	.000	.000	
	104 - 180	5945	.000	1.000	.000	
	181 - 318	5920	.000	.000	1.000	
	319+	5954	.000	.000	.000	
Education	primary	3583	1.000	.000	.000	
	secondary	12232	.000	1.000	.000	
	tertiary	6928	.000	.000	1.000	
	unknown	993	.000	.000	.000	
Balance (Binned)	<= 83	5862	1.000	.000	.000	
	84 - 520	5996	.000	1.000	.000	
	521 - 1655	5935	.000	.000	1.000	
	1656+	5943	.000	.000	.000	
Marital_Status	others	2720	1.000	.000		
	married	14234	.000	1.000		
	single	6782	.000	.000		
Contact_Information	mobile	15470	1.000	.000		
	telephone	1515	.000	1.000		
	unknown	6751	.000	.000		
Personal_loan	no	19914	1.000			
	yes	3822	.000			
Housing_loan	no	10510	1.000			
	yes	13226	.000			

Categorical Variables Codings

		Parameter coding				
		(5)	(6)	(7)	(8)	(9)
Job	admin	.000	.000	.000	.000	.000
	others	.000	.000	.000	.000	.000
	entrepreneur	.000	.000	.000	.000	.000
	domestic worker	.000	.000	.000	.000	.000
	management	1.000	.000	.000	.000	.000
	retired	.000	1.000	.000	.000	.000
	self-employed	.000	.000	1.000	.000	.000
	services	.000	.000	.000	1.000	.000
	student	.000	.000	.000	.000	1.000
	technician	.000	.000	.000	.000	.000
	unemployed	.000	.000	.000	.000	.000
	unknown	.000	.000	.000	.000	.000
Equal_Freq	<= 103					
	104 - 180					
	181 - 318					
	319+					
Education	primary					
	secondary					
	tertiary					
	unknown					
Balance (Binned)	<= 83					
	84 - 520					
	521 - 1655					
	1656+					
Marital_Status	others					
	married					
	single					
Contact_Information	mobile					
	telephone					
	unknown					
Personal_loan	no					
	yes					
Housing_loan	no					
	yes					

Categorical Variables Codings

		Parameter coding	
		(10)	(11)
Job	admin	.000	.000
	others	.000	.000
	entrepreneur	.000	.000
	domestic worker	.000	.000
	management	.000	.000
	retired	.000	.000
	self-employed	.000	.000
	services	.000	.000
	student	.000	.000
	technician	1.000	.000
	unemployed	.000	1.000
	unknown	.000	.000
Equal_Freq	<= 103		
	104 - 180		
	181 - 318		
	319+		
Education	primary		
	secondary		
	tertiary		
	unknown		
Balance (Binned)	<= 83		
	84 - 520		
	521 - 1655		
	1656+		
Marital_Status	others		
	married		
	single		
Contact_Information	mobile		
	telephone		
	unknown		
Personal_loan	no		
	yes		
Housing_loan	no		
	yes		

Block 0: Beginning Block

Classification Table^{a,b}

Observed		Predicted		Percentage Correct
		no	yes	
Step 0	Response	no	20959	0
		yes	2777	0
Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

		Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2
		Contact_Information(1)	433.312	1
		Contact_Information(2)	9.727	1
		Job	429.112	11
		Job(1)	.391	1
		Job(2)	109.379	1
		Job(3)	8.129	1
		Job(4)	6.579	1
		Job(5)	21.008	1
		Job(6)	151.063	1
		Job(7)	.006	1
		Job(8)	16.003	1
		Job(9)	141.944	1
		Job(10)	3.544	1
		Job(11)	12.675	1
		Marital_Status	123.200	2
		Marital_Status(1)	.002	1
		Marital_Status(2)	99.742	1
		Education	110.622	3
		Education(1)	31.943	1
		Education(2)	28.057	1
		Education(3)	97.643	1
		Housing_loan(1)	473.771	1
		Personal_loan(1)	101.267	1

Variables not in the Equation

		Score	df	Sig.
	Balance (Binned)	233.528	3	<.001
	Balance (Binned)(1)	158.472	1	<.001
	Balance (Binned)(2)	3.371	1	.066
	Balance (Binned)(3)	5.798	1	.016
	Equal_Freq	2703.392	3	<.001
	Equal_Freq(1)	865.630	1	<.001
	Equal_Freq(2)	314.570	1	<.001
	Equal_Freq(3)	4.532	1	.033
	Overall Statistics	3963.178	26	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4155.932	26	<.001
	Block	4155.932	26	<.001
	Model	4155.932	26	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	12976.487 ^a	.161	.312

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

			Predicted		Percentage Correct
			Response		
	Observed		no	yes	
Step 1	Response	no	20551	408	98.1
		yes	2317	460	16.6
	Overall Percentage				88.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			338.561	2	<.001	
	Contact_Information(1)	1.309	.071	335.792	1	<.001	3.704
	Contact_Information(2)	1.299	.109	141.647	1	<.001	3.664
	Job			133.865	11	<.001	
	Job(1)	.316	.293	1.159	1	.282	1.371
	Job(2)	-.018	.291	.004	1	.951	.982
	Job(3)	-.225	.317	.504	1	.478	.798
	Job(4)	-.193	.324	.354	1	.552	.825
	Job(5)	.069	.291	.057	1	.812	1.072
	Job(6)	.748	.295	6.422	1	.011	2.113
	Job(7)	-.027	.309	.008	1	.929	.973
	Job(8)	.013	.297	.002	1	.965	1.013
	Job(9)	.931	.306	9.234	1	.002	2.537
	Job(10)	.004	.291	.000	1	.988	1.004
	Job(11)	.173	.309	.313	1	.576	1.189
	Marital_Status			44.295	2	<.001	
	Marital_Status(1)	-.125	.080	2.463	1	.117	.883
	Marital_Status(2)	-.343	.053	42.452	1	<.001	.710
	Education			23.573	3	<.001	
	Education(1)	-.145	.132	1.200	1	.273	.865
	Education(2)	-.012	.117	.010	1	.921	.988
	Education(3)	.260	.123	4.458	1	.035	1.296
	Housing_loan(1)	.663	.049	184.138	1	<.001	1.940
	Personal_loan(1)	.474	.073	41.755	1	<.001	1.607
	Balance (Binned)			101.234	3	<.001	
	Balance (Binned)(1)	-.686	.069	99.837	1	<.001	.503
	Balance (Binned)(2)	-.265	.061	18.537	1	<.001	.767
	Balance (Binned)(3)	-.190	.060	10.111	1	.001	.827
	Equal_Freq			1828.224	3	<.001	
	Equal_Freq(1)	-3.765	.132	812.301	1	<.001	.023
	Equal_Freq(2)	-2.145	.067	1018.706	1	<.001	.117
	Equal_Freq(3)	-1.310	.053	602.750	1	<.001	.270
	Constant	-2.364	.308	58.922	1	<.001	.094

a. Variable(s) entered on step 1: Contact_Information, Job, Marital_Status, Education, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq.

Logistic Regression

Notes

Output Created		31-MAY-2024 12:07:30
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact marital education housing loan Equal_balance Equal_Frequency Job_update /CONTRAST (marital) =Indicator /CONTRAST (education) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (contact) =Indicator /CONTRAST (Job_update)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.11

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Equal_Freq	<= 103	5917	1.000	.000	.000
	104 - 180	5945	.000	1.000	.000
	181 - 318	5920	.000	.000	1.000
	319+	5954	.000	.000	.000
Balance (Binned)	<= 83	5862	1.000	.000	.000
	84 - 520	5996	.000	1.000	.000
	521 - 1655	5935	.000	.000	1.000
	1656+	5943	.000	.000	.000
Education	primary	3583	1.000	.000	.000
	secondary	12232	.000	1.000	.000
	tertiary	6928	.000	.000	1.000
	unknown	993	.000	.000	.000
Job_update	6	1178	1.000	.000	
	9	519	.000	1.000	
	12	22039	.000	.000	
Marital_Status	others	2720	1.000	.000	
	married	14234	.000	1.000	
	single	6782	.000	.000	
Contact_Information	mobile	15470	1.000	.000	
	telephone	1515	.000	1.000	
	unknown	6751	.000	.000	

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Personal_loan	no	19914	1.000		
	yes	3822	.000		
Housing_loan	no	10510	1.000		
	yes	13226	.000		

Block 0: Beginning Block

Classification Table^{a,b}

			Predicted		Percentage Correct
Observed		Response	no	yes	
Step 0	Response	no	20959	0	100.0
		yes	2777	0	.0
	Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2	<.001
		Contact_Information(1)	433.312	1	<.001
		Contact_Information(2)	9.727	1	.002
		Marital_Status	123.200	2	<.001
		Marital_Status(1)	.002	1	.961
		Marital_Status(2)	99.742	1	<.001
		Education	110.622	3	<.001
		Education(1)	31.943	1	<.001
		Education(2)	28.057	1	<.001
		Education(3)	97.643	1	<.001
		Housing_loan(1)	473.771	1	<.001
		Personal_loan(1)	101.267	1	<.001
		Balance (Binned)	233.528	3	<.001
		Balance (Binned)(1)	158.472	1	<.001
		Balance (Binned)(2)	3.371	1	.066
		Balance (Binned)(3)	5.798	1	.016
		Equal_Freq	2703.392	3	<.001
		Equal_Freq(1)	865.630	1	<.001
		Equal_Freq(2)	314.570	1	<.001
		Equal_Freq(3)	4.532	1	.033
		Job_update	303.368	2	<.001
		Job_update(1)	151.063	1	<.001
		Job_update(2)	141.944	1	<.001
		Overall Statistics	3940.352	17	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4130.310	17	<.001
	Block	4130.310	17	<.001
	Model	4130.310	17	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13002.109 ^a	.160	.311

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		Percentage Correct
		Response no	Response yes	
Step 1	Response no	20567	392	98.1
	Response yes	2344	433	15.6
	Overall Percentage			88.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			341.002	2	<.001	
	Contact_Information(1)	1.311	.071	338.227	1	<.001	3.710
	Contact_Information(2)	1.301	.109	142.711	1	<.001	3.672
	Marital_Status			50.345	2	<.001	
	Marital_Status(1)	-.126	.079	2.531	1	.112	.882
	Marital_Status(2)	-.362	.052	48.005	1	<.001	.696
	Education			41.057	3	<.001	
	Education(1)	-.187	.128	2.134	1	.144	.829
	Education(2)	.008	.115	.004	1	.947	1.008
	Education(3)	.259	.117	4.911	1	.027	1.295
	Housing_loan(1)	.667	.048	193.159	1	<.001	1.948
	Personal_loan(1)	.482	.073	43.356	1	<.001	1.619
	Balance (Binned)			102.890	3	<.001	
	Balance (Binned)(1)	-.691	.069	101.495	1	<.001	.501
	Balance (Binned)(2)	-.265	.061	18.588	1	<.001	.768
	Balance (Binned)(3)	-.191	.060	10.238	1	.001	.826
	Equal_Freq			1827.107	3	<.001	
	Equal_Freq(1)	-3.759	.132	810.332	1	<.001	.023
	Equal_Freq(2)	-2.140	.067	1016.381	1	<.001	.118
	Equal_Freq(3)	-1.308	.053	602.896	1	<.001	.270
	Job_update			109.238	2	<.001	
	Job_update(1)	.712	.089	64.323	1	<.001	2.037
	Job_update(2)	.863	.123	49.237	1	<.001	2.370
	Constant	-2.319	.155	224.966	1	<.001	.098

a. Variable(s) entered on step 1: Contact_Information, Marital_Status, Education, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Job_update.

Logistic Regression

Notes

Output Created		31-MAY-2024 12:13:13
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact marital housing loan Equal_balance Equal_Frequency Job_update Education_Update /CONTRAST (marital) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (contact) =Indicator /CONTRAST (Job_update)=Indicator /CONTRAST (Education_Update) =Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.10

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Equal_Freq	<= 103	5917	1.000	.000	.000
	104 - 180	5945	.000	1.000	.000
	181 - 318	5920	.000	.000	1.000
	319+	5954	.000	.000	.000
Balance (Binned)	<= 83	5862	1.000	.000	.000
	84 - 520	5996	.000	1.000	.000
	521 - 1655	5935	.000	.000	1.000
	1656+	5943	.000	.000	.000
Contact_Information	mobile	15470	1.000	.000	
	telephone	1515	.000	1.000	
	unknown	6751	.000	.000	
Updated_Job	6	1178	1.000	.000	
	9	519	.000	1.000	
	12	22039	.000	.000	
Marital_Status	others	2720	1.000	.000	
	married	14234	.000	1.000	
	single	6782	.000	.000	
Housing_loan	no	10510	1.000		
	yes	13226	.000		
Updated_Educ	3	6928	1.000		
	4	16808	.000		

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Personal_loan	no	19914	1.000		
	yes	3822	.000		

Block 0: Beginning Block

Classification Table^{a,b}

			Predicted		Percentage Correct
			Response	no	
Observed			no	yes	
Step 0	Response	no	20959	0	100.0
		yes	2777	0	.0
Overall Percentage					88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2	<.001
		Contact_Information(1)	433.312	1	<.001
		Contact_Information(2)	9.727	1	.002
		Marital_Status	123.200	2	<.001
		Marital_Status(1)	.002	1	.961
		Marital_Status(2)	99.742	1	<.001
		Housing_loan(1)	473.771	1	<.001
		Personal_loan(1)	101.267	1	<.001
		Balance (Binned)	233.528	3	<.001
		Balance (Binned)(1)	158.472	1	<.001
		Balance (Binned)(2)	3.371	1	.066
		Balance (Binned)(3)	5.798	1	.016
		Equal_Freq	2703.392	3	<.001
		Equal_Freq(1)	865.630	1	<.001
		Equal_Freq(2)	314.570	1	<.001
		Equal_Freq(3)	4.532	1	.033
		Updated_Job	303.368	2	<.001
		Updated_Job(1)	151.063	1	<.001
		Updated_Job(2)	141.944	1	<.001
		Updated_Educ(1)	97.643	1	<.001
		Overall Statistics	3936.166	15	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4123.249	15	<.001
	Block	4123.249	15	<.001
	Model	4123.249	15	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13009.170 ^a	.159	.310

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		Percentage Correct
		Response no	yes	
Step 1	Response			
	no	20577	382	98.2
	yes	2352	425	15.3
Overall Percentage				88.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			345.191	2	<.001	
	Contact_Information(1)	1.318	.071	342.868	1	<.001	3.736
	Contact_Information(2)	1.297	.109	142.089	1	<.001	3.659
	Marital_Status			55.015	2	<.001	
	Marital_Status(1)	-.136	.079	2.954	1	.086	.873
	Marital_Status(2)	-.377	.052	52.675	1	<.001	.686
	Housing_loan(1)	.665	.048	193.015	1	<.001	1.945
	Personal_loan(1)	.478	.073	42.771	1	<.001	1.613
	Balance (Binned)			102.655	3	<.001	
	Balance (Binned)(1)	-.689	.069	101.132	1	<.001	.502
	Balance (Binned)(2)	-.263	.061	18.357	1	<.001	.769
	Balance (Binned)(3)	-.187	.060	9.809	1	.002	.830
	Equal_Freq			1827.467	3	<.001	
	Equal_Freq(1)	-3.759	.132	810.345	1	<.001	.023
	Equal_Freq(2)	-2.140	.067	1016.310	1	<.001	.118
	Equal_Freq(3)	-1.308	.053	603.229	1	<.001	.270
	Updated_Job			106.252	2	<.001	
	Updated_Job(1)	.677	.088	59.616	1	<.001	1.969
	Updated_Job(2)	.873	.122	51.261	1	<.001	2.395
	Updated_Educ(1)	.286	.049	34.471	1	<.001	1.331
	Constant	-2.339	.110	452.352	1	<.001	.096

a. Variable(s) entered on step 1: Contact_Information, Marital_Status, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Updated_Job, Updated_Educ.

Logistic Regression

Notes

Output Created		31-MAY-2024 12:25:48
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact housing loan Equal_balance Equal_Frequency Job_update Education_Update Marital_Update /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (contact) =Indicator /CONTRAST (Job_update)=Indicator /CONTRAST (Education_Update) =Indicator /CONTRAST (Marital_Update)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).	
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.11

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Balance (Binned)	<= 83	5862	1.000	.000	.000
	84 - 520	5996	.000	1.000	.000
	521 - 1655	5935	.000	.000	1.000
	1656+	5943	.000	.000	.000
Equal_Freq	<= 103	5917	1.000	.000	.000
	104 - 180	5945	.000	1.000	.000
	181 - 318	5920	.000	.000	1.000
	319+	5954	.000	.000	.000
Contact_Information	mobile	15470	1.000	.000	
	telephone	1515	.000	1.000	
	unknown	6751	.000	.000	
Updated_Job	6	1178	1.000	.000	
	9	519	.000	1.000	
	12	22039	.000	.000	
Housing_loan	no	10510	1.000		
	yes	13226	.000		
Personal_loan	no	19914	1.000		
	yes	3822	.000		
Updated_Educ	3	6928	1.000		
	4	16808	.000		

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Marital_Update	2	14234	1.000		
	3	9502	.000		

Block 0: Beginning Block

Classification Table^{a,b}

			Predicted		Percentage Correct
Observed		Response	no	yes	
Step 0	Response	no	20959	0	100.0
		yes	2777	0	.0
	Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2	<.001
		Contact_Information(1)	433.312	1	<.001
		Contact_Information(2)	9.727	1	.002
		Housing_loan(1)	473.771	1	<.001
		Personal_loan(1)	101.267	1	<.001
		Balance (Binned)	233.528	3	<.001
		Balance (Binned)(1)	158.472	1	<.001
		Balance (Binned)(2)	3.371	1	.066
		Balance (Binned)(3)	5.798	1	.016
		Equal_Freq	2703.392	3	<.001
		Equal_Freq(1)	865.630	1	<.001
		Equal_Freq(2)	314.570	1	<.001
		Equal_Freq(3)	4.532	1	.033
		Updated_Job	303.368	2	<.001
		Updated_Job(1)	151.063	1	<.001
		Updated_Job(2)	141.944	1	<.001
		Updated_Educ(1)	97.643	1	<.001
		Marital_Update(1)	99.742	1	<.001
		Overall Statistics	3932.533	14	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4120.266	14	<.001
	Block	4120.266	14	<.001
	Model	4120.266	14	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13012.153 ^a	.159	.310

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		Percentage Correct
		Response no	Response yes	
Step 1	Response	no	yes	
		no	yes	
		no	yes	
	Overall Percentage			

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			347.079	2	<.001	
	Contact_Information(1)	1.321	.071	344.718	1	<.001	3.748
	Contact_Information(2)	1.301	.109	142.979	1	<.001	3.672
	Housing_loan(1)	.666	.048	193.790	1	<.001	1.947
	Personal_loan(1)	.481	.073	43.308	1	<.001	1.617
	Balance (Binned)			103.905	3	<.001	
	Balance (Binned)(1)	-.693	.069	102.362	1	<.001	.500
	Balance (Binned)(2)	-.263	.061	18.385	1	<.001	.769
	Balance (Binned)(3)	-.187	.060	9.844	1	.002	.830
	Equal_Freq			1829.012	3	<.001	
	Equal_Freq(1)	-3.760	.132	810.745	1	<.001	.023
	Equal_Freq(2)	-2.141	.067	1017.851	1	<.001	.118
	Equal_Freq(3)	-1.308	.053	603.157	1	<.001	.270
	Updated_Job			107.052	2	<.001	
	Updated_Job(1)	.658	.087	57.157	1	<.001	1.931
	Updated_Job(2)	.909	.120	57.024	1	<.001	2.481
	Updated_Educ(1)	.291	.049	35.925	1	<.001	1.338
	Marital_Update(1)	-.338	.047	51.853	1	<.001	.713
	Constant	-2.383	.107	494.172	1	<.001	.092

a. Variable(s) entered on step 1: Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Updated_Job, Updated_Educ, Marital_Update.

Descriptives

Notes

Output Created		31-MAY-2024 21:11:01
Comments		
Input	Data	D:\Marketing\individual\all_campaign.sav
	Active Dataset	DataSet2
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=contact duration age region job marital education default balance housing loan custID /STATISTICS=MEAN STDDEV MIN MAX SKEWNESS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

[DataSet2] D:\Marketing\individual\all_campaign.sav

Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error
Contact_Information	33909	1	3	1.64	.896	.782	.013
Call_Duration	33909	0	4918	257.61	256.435	3.161	.013
Age	33909	18	95	40.97	10.628	.683	.013
Region_Cust	33909	0	8	4.00	1.418	-.009	.013
Job	33909	1	12	5.34	3.269	.262	.013
Marital_Status	33909	1	3	2.17	.607	-.100	.013
Education	33909	1	4	2.22	.748	.200	.013
Default	33909	1	2	1.02	.131	7.343	.013
Balance	33909	-7962	114438	1569.57	3420.725	7.848	.013
Housing_loan	33909	1	2	1.56	.497	-.232	.013
Personal_loan	33909	1	2	1.16	.367	1.847	.013
Customer_ID	33909	2	45211	22667.10	13040.886	-.006	.013
Valid N (listwise)	33909						

GGraph

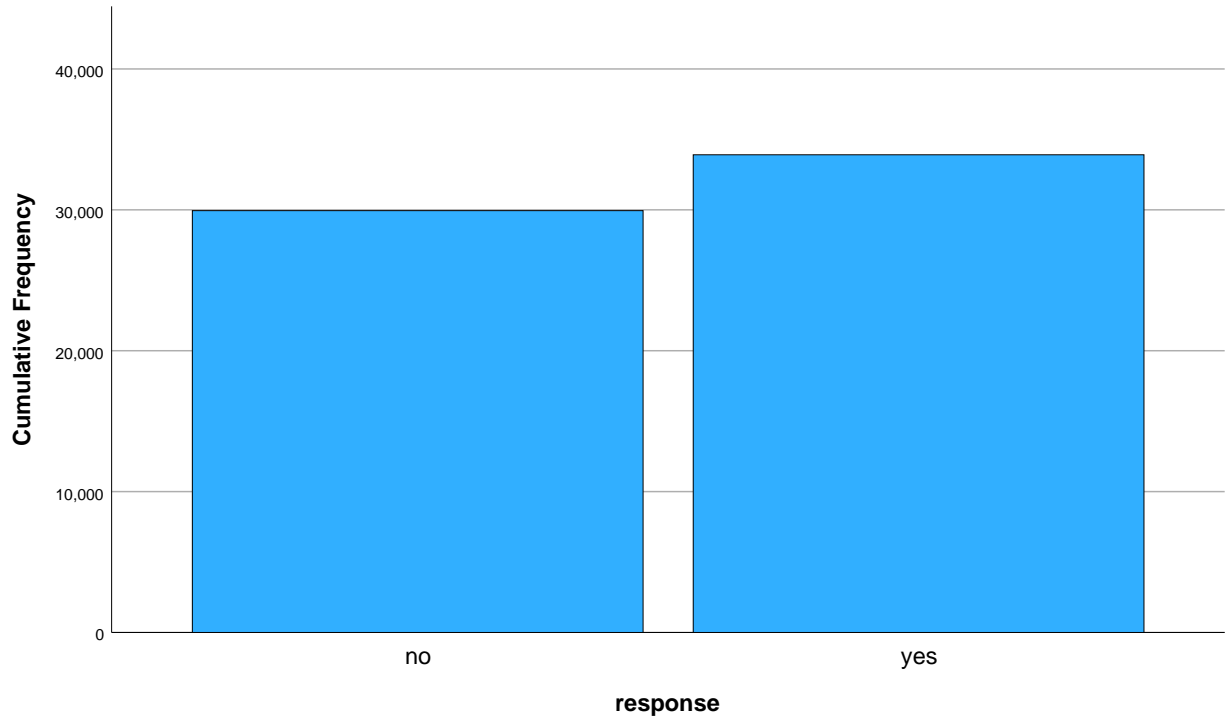
Notes

Output Created		31-MAY-2024 21:35:25
Comments		
Input	Data	C: \Users\prave\Downloads\all_campaign.sav
	Active Dataset	DataSet3
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=response COUNT()[name="COUNT"] MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL GUIDE: axis(dim(1), label ("response")) GUIDE: axis(dim(2), label ("Cumulative Frequency")) SCALE: cat(dim(1), include("0", "1")) SCALE: linear(dim(2), include(0)) ELEMENT: interval (position(summary.sum. cumulative (response*COUNT)), shape.interior(shape. square)) END GPL. </pre>				
Resources	<table> <tr> <td data-bbox="354 1003 672 1041">Processor Time</td><td data-bbox="672 1003 995 1041">00:00:00.78</td></tr> <tr> <td data-bbox="354 1041 672 1081">Elapsed Time</td><td data-bbox="672 1041 995 1081">00:00:00.46</td></tr> </table>	Processor Time	00:00:00.78	Elapsed Time	00:00:00.46
Processor Time	00:00:00.78				
Elapsed Time	00:00:00.46				

[DataSet3] C:\Users\prave\Downloads\all_campaign.sav



GGraph

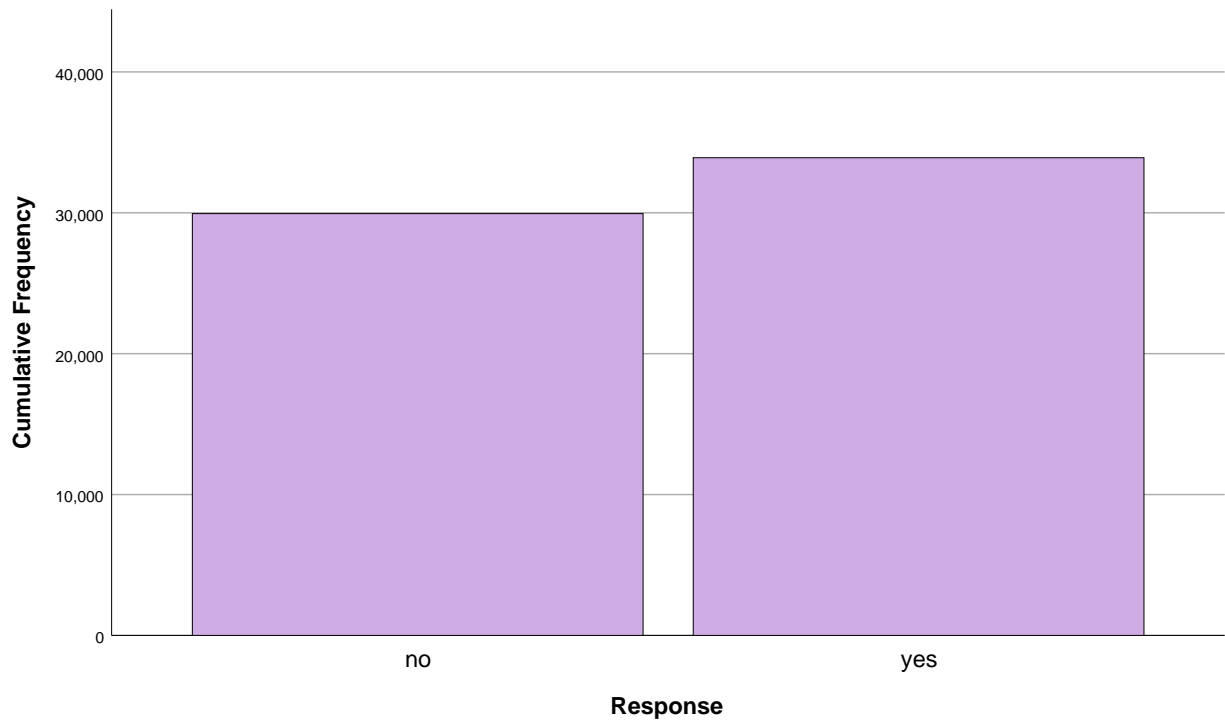
Notes

Output Created		31-MAY-2024 21:36:53
Comments		
Input	Data	D:\Marketing\individual\all_campaign.sav
	Active Dataset	DataSet2
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=response COUNT()[name="COUNT"] MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE /COLORCYCLE COLOR1 (207,172,227), COLOR2 (161,24,80), COLOR3 (33,213,210), COLOR4 (79,33,150), COLOR5(0,158,154), COLOR6(0,114,195), COLOR7(208,176,255), COLOR8(0,97,97), COLOR9(250,117,166), COLOR10(0,60,115), COLOR11(169,112,255), COLOR12(209,39,101), COLOR13(108,202,255), COLOR14(110,50,201), COLOR15(1,186,182), COLOR16(118,11,57), COLOR17(17,147,232), COLOR18(0,125,121), COLOR19(255,160,194), COLOR20(137,63,252) /FRAME OUTER=NO INNER=NO /GRIDLINES XAXIS=NO YAXIS=YES /STYLE GRADIENT=NO. BEGIN GPL GUIDE: axis(dim(1), label ("Response")) GUIDE: axis(dim(2), label ("Cumulative Frequency")) SCALE: cat(dim(1), include("0", "1")) SCALE: linear(dim(2), include(0)) ELEMENT: interval (position(summary.sum. cumulative (response*COUNT)), shape.interior(shape. square)) END GPL. </pre>				
Resources	<table> <tr> <td>Processor Time</td><td>00:00:00.06</td></tr> <tr> <td>Elapsed Time</td><td>00:00:00.14</td></tr> </table>	Processor Time	00:00:00.06	Elapsed Time	00:00:00.14
Processor Time	00:00:00.06				
Elapsed Time	00:00:00.14				

[DataSet2] D:\Marketing\individual\all_campaign.sav



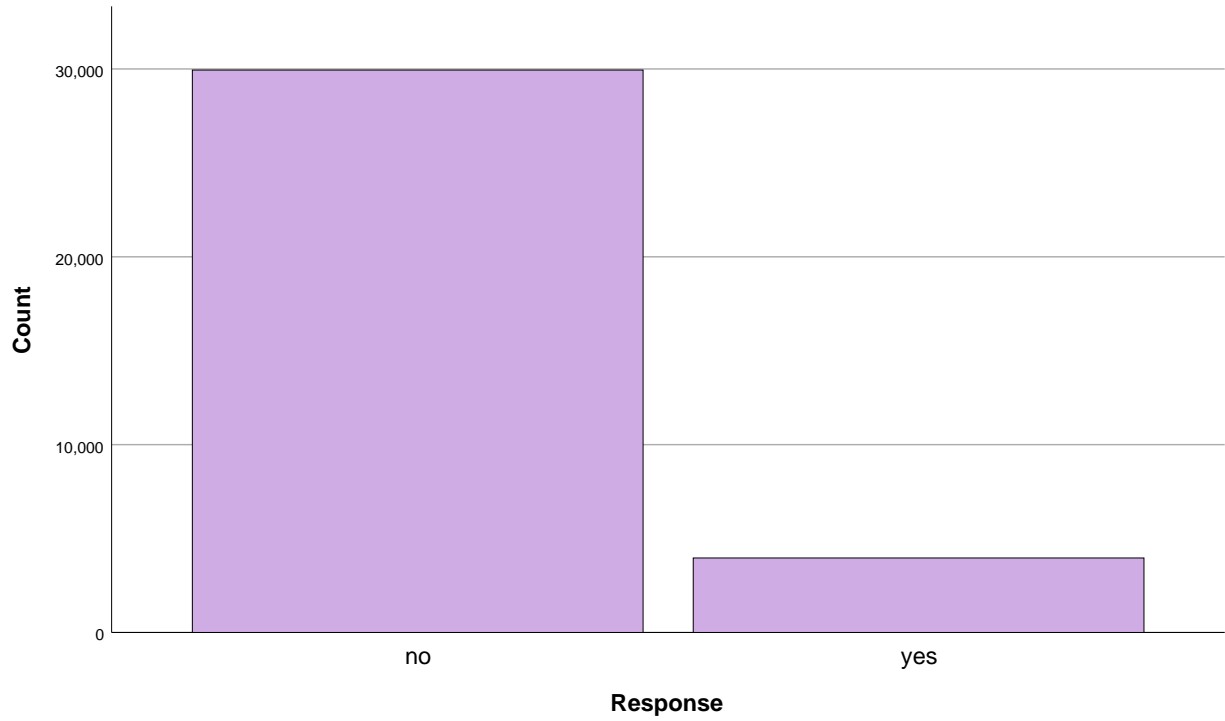
GGraph

Notes

Output Created		31-MAY-2024 21:37:26
Comments		
Input	Data	D: Marketing\individual\all_campaign.sav
	Active Dataset	DataSet2
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=response COUNT()[name="COUNT"] MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE /COLORCYCLE COLOR1 (207,172,227), COLOR2 (161,24,80), COLOR3 (33,213,210), COLOR4 (79,33,150), COLOR5(0,158,154), COLOR6(0,114,195), COLOR7(208,176,255), COLOR8(0,97,97), COLOR9(250,117,166), COLOR10(0,60,115), COLOR11(169,112,255), COLOR12(209,39,101), COLOR13(108,202,255), COLOR14(110,50,201), COLOR15(1,186,182), COLOR16(118,11,57), COLOR17(17,147,232), COLOR18(0,125,121), COLOR19(255,160,194), COLOR20(137,63,252) /FRAME OUTER=NO INNER=NO /GRIDLINES XAXIS=NO YAXIS=YES /STYLE GRADIENT=NO. BEGIN GPL GUIDE: axis(dim(1), label ("Response")) GUIDE: axis(dim(2), label ("Count")) SCALE: cat(dim(1), include("0", "1")) SCALE: linear(dim(2), include(0)) ELEMENT: interval (position (response*COUNT), shape. interior(shape.square)) END GPL. </pre>				
Resources	<table> <tr> <td data-bbox="347 1749 672 1791">Processor Time</td><td data-bbox="672 1749 992 1791">00:00:00.09</td></tr> <tr> <td data-bbox="347 1791 672 1827">Elapsed Time</td><td data-bbox="672 1791 992 1827">00:00:00.17</td></tr> </table>	Processor Time	00:00:00.09	Elapsed Time	00:00:00.17
Processor Time	00:00:00.09				
Elapsed Time	00:00:00.17				



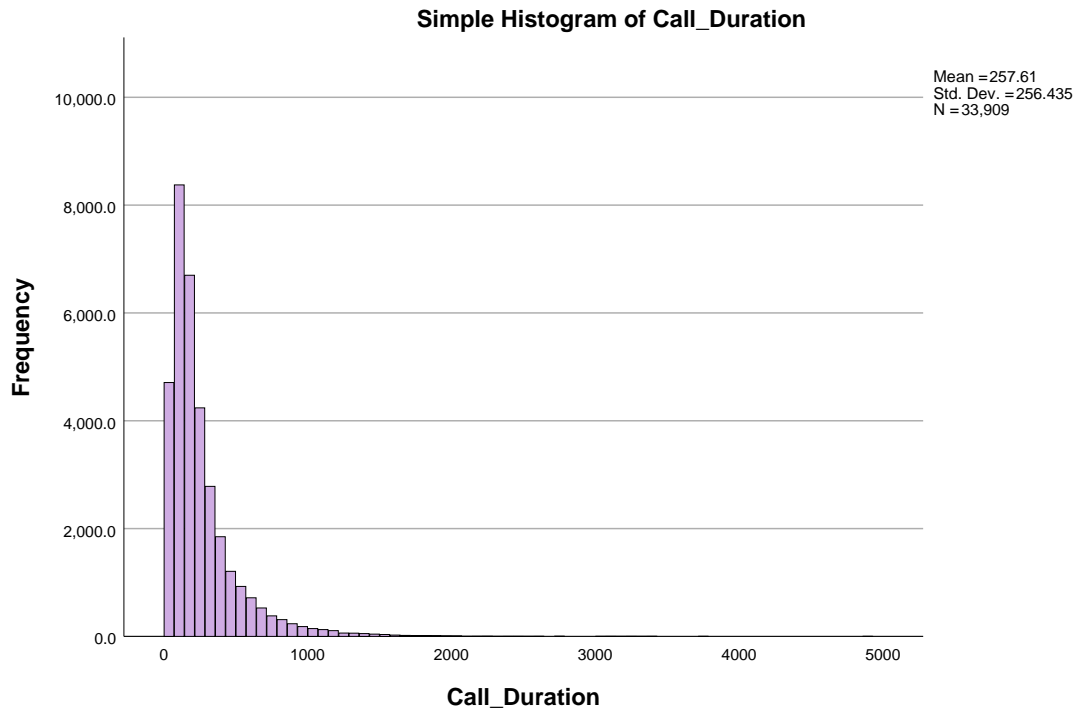
GGraph

Notes

Output Created		31-MAY-2024 21:42:37
Comments		
Input	Data	D:\Marketing\individual\all_campaign.sav
	Active Dataset	DataSet2
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=duration MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE /COLORCYCLE COLOR1 (207,172,227), COLOR2 (161,24,80), COLOR3 (33,213,210), COLOR4 (79,33,150), COLOR5(0,158,154), COLOR6(0,114,195), COLOR7(208,176,255), COLOR8(0,97,97), COLOR9(250,117,166), COLOR10(0,60,115), COLOR11(169,112,255), COLOR12(209,39,101), COLOR13(108,202,255), COLOR14(110,50,201), COLOR15(1,186,182), COLOR16(118,11,57), COLOR17(17,147,232), COLOR18(0,125,121), COLOR19(255,160,194), COLOR20(137,63,252) /FRAME OUTER=NO INNER=NO /GRIDLINES XAXIS=NO YAXIS=YES /STYLE GRADIENT=NO. BEGIN GPL GUIDE: axis(dim(1), label ("Call_Duration")) GUIDE: axis(dim(2), label ("Frequency")) GUIDE: text.title(label ("Simple Histogram of Call_Duration")) ELEMENT: interval (position(summary.count (bin.rect(duration))), shape. interior(shape.square)) END GPL. </pre>				
Resources	<table> <tr> <td>Processor Time</td><td>00:00:00.05</td></tr> <tr> <td>Elapsed Time</td><td>00:00:00.18</td></tr> </table>	Processor Time	00:00:00.05	Elapsed Time	00:00:00.18
Processor Time	00:00:00.05				
Elapsed Time	00:00:00.18				



Frequencies

Notes		
Output Created		31-MAY-2024 21:52:33
Comments		
Input	Data	D: \Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet5
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=Binned_age /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

[DataSet5] D:\Marketing\individual\all_campaign_1.sav

Statistics

Age (Binned)

N	Valid	33909
	Missing	0

Age (Binned)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 33	9776	28.8	28.8	28.8
	34 - 39	7740	22.8	22.8	51.7
	40 - 48	7935	23.4	23.4	75.1
	49+	8458	24.9	24.9	100.0
	Total	33909	100.0	100.0	

MVA

Notes

Output Created		01-JUN-2024 00:45:22
Comments		
Input	Data	C: \Users\prave\Downloads\all_campaign.sav
	Active Dataset	DataSet3
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909
Syntax		MVA VARIABLES=custID duration contact response /MAXCAT=25 /CATEGORICAL=contact response.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.12

[DataSet3] C:\Users\prave\Downloads\all_campaign.sav

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes ^a	
				Count	Percent	Low	High
custID	33909	22667.10	13040.886	0	.0	0	0
duration	33909	257.61	256.435	0	.0	0	1568
contact	33909			0	.0		
response	33909			0	.0		

a. Number of cases outside the range (Mean - 2*SD, Mean + 2*SD).

GGraph

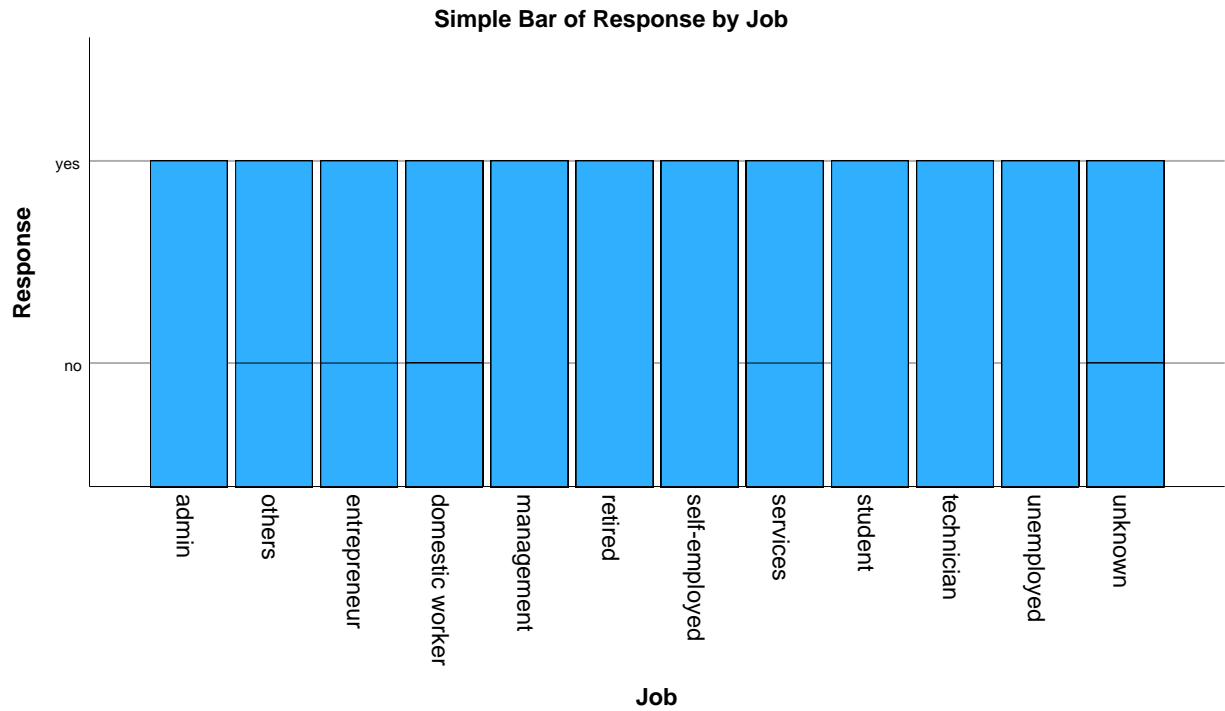
Notes

Output Created		01-JUN-2024 01:10:40
Comments		
Input	Data	D: Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet5
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=job response MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL GUIDE: axis(dim(1), label ("Job")) GUIDE: axis(dim(2), label ("Response")) GUIDE: text.title(label ("Simple Bar of Response by Job")) SCALE: cat(dim(1), include("1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12")) SCALE: cat(dim(2), include("0", "1")) ELEMENT: interval (position(job*response), shape.interior(shape. square)) END GPL. </pre>	
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.18

[DataSet5] D:\Marketing\individual\all_campaign_1.sav



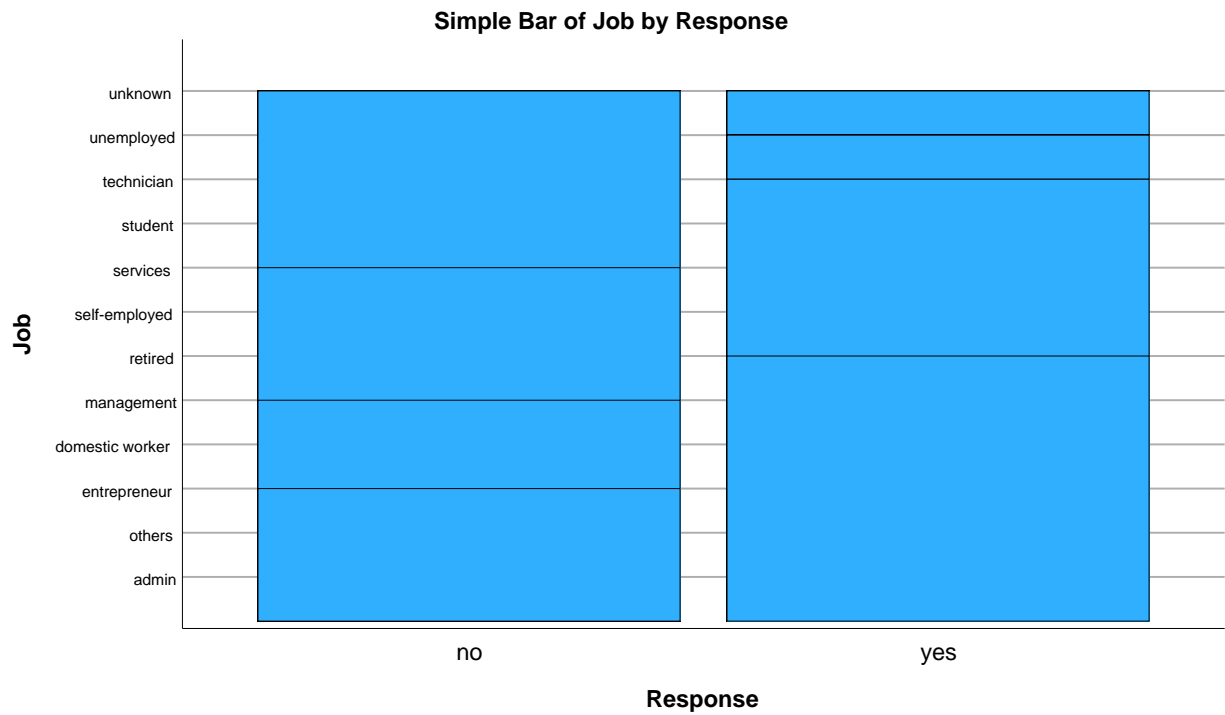
GGraph

Notes

Output Created		01-JUN-2024 01:13:09
Comments		
Input	Data	D:\Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet5
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=response job MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL GUIDE: axis(dim(1), label ("Response")) GUIDE: axis(dim(2), label ("Job")) GUIDE: text.title(label ("Simple Bar of Job by Response")) SCALE: cat(dim(1), include("0", "1")) SCALE: cat(dim(2), include("1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12")) ELEMENT: interval (position(response*job), shape.interior(shape. square)) END GPL. </pre>				
Resources	<table> <tr> <td data-bbox="354 1062 672 1104">Processor Time</td><td data-bbox="672 1062 995 1104">00:00:00.06</td></tr> <tr> <td data-bbox="354 1104 672 1142">Elapsed Time</td><td data-bbox="672 1104 995 1142">00:00:00.14</td></tr> </table>	Processor Time	00:00:00.06	Elapsed Time	00:00:00.14
Processor Time	00:00:00.06				
Elapsed Time	00:00:00.14				



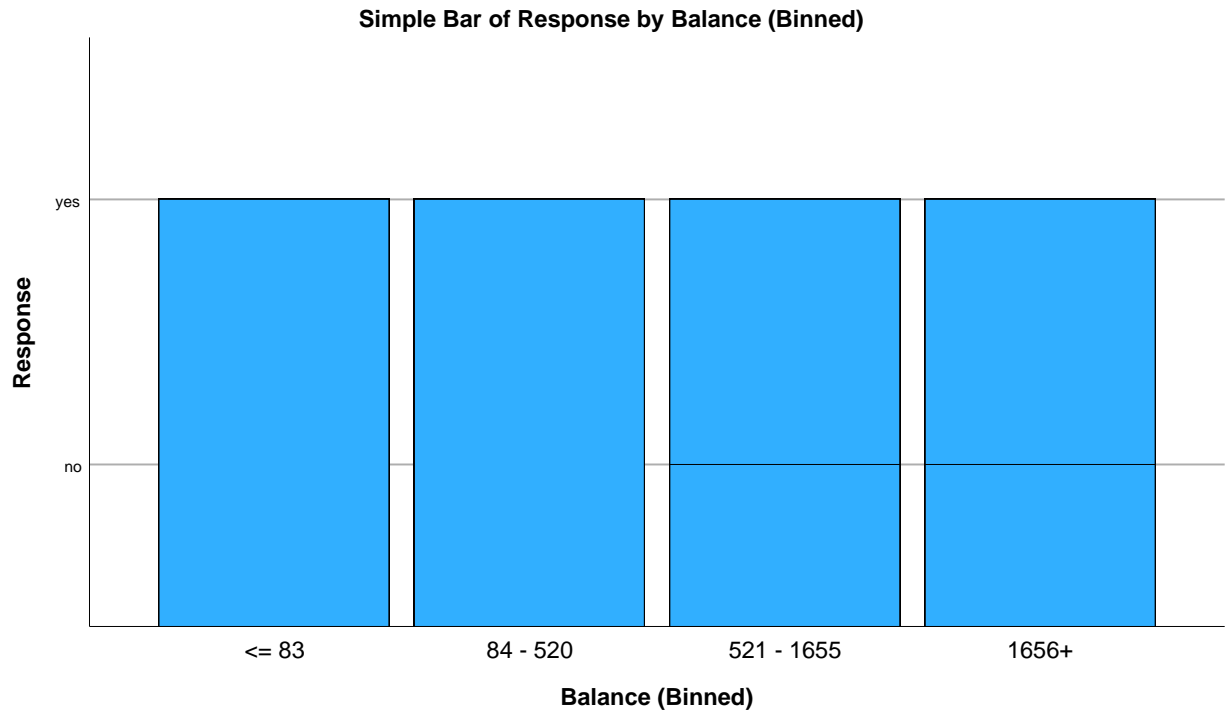
GGraph

Notes

Output Created		01-JUN-2024 01:14:31
Comments		
Input	Data	D:\Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet5
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=Equal_balanc e response MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL GUIDE: axis(dim(1), label ("Balance (Binned)")) GUIDE: axis(dim(2), label ("Response")) GUIDE: text.title(label ("Simple Bar of Response by Balance (Binned)")) SCALE: cat(dim(1), include("1", "2", "3", "4")) SCALE: cat(dim(2), include("0", "1")) ELEMENT: interval (position (Equal_balance*response), shape.interior(shape. square)) END GPL. </pre>				
Resources	<table> <tr> <td data-bbox="354 1062 672 1104">Processor Time</td><td data-bbox="672 1062 995 1104">00:00:00.03</td></tr> <tr> <td data-bbox="354 1104 672 1142">Elapsed Time</td><td data-bbox="672 1104 995 1142">00:00:00.16</td></tr> </table>	Processor Time	00:00:00.03	Elapsed Time	00:00:00.16
Processor Time	00:00:00.03				
Elapsed Time	00:00:00.16				



ROC Analysis

Notes

Output Created		01-JUN-2024 18:57:39
Comments		
Input	Data	D: \Marketing\individual\Camp aign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.
Weight Handling		not applicable

Notes

Syntax		ROC ANALYSIS contact housing loan Equal_balance Equal_Frequency Job_update Education_Update Marital_Update BY response (1) /MISSING USERMISSING=EXCLUDE /CRITERIA CUTOFF=INCLUDE TESTPOS=LARGE DISTRIBUTION=FREE CI=95 /DESIGN PAIR=FALSE /PLOT CURVE=ROC PR PR_INTERPOLATE=TP MODELQUALITY=FALSE /PRINT SE=FALSE CLASSIFIER=FALSE.
Resources	Processor Time	00:00:00.08
	Elapsed Time	00:00:00.38

[DataSet1] D:\Marketing\individual\Campaign_Training.sav

Warnings

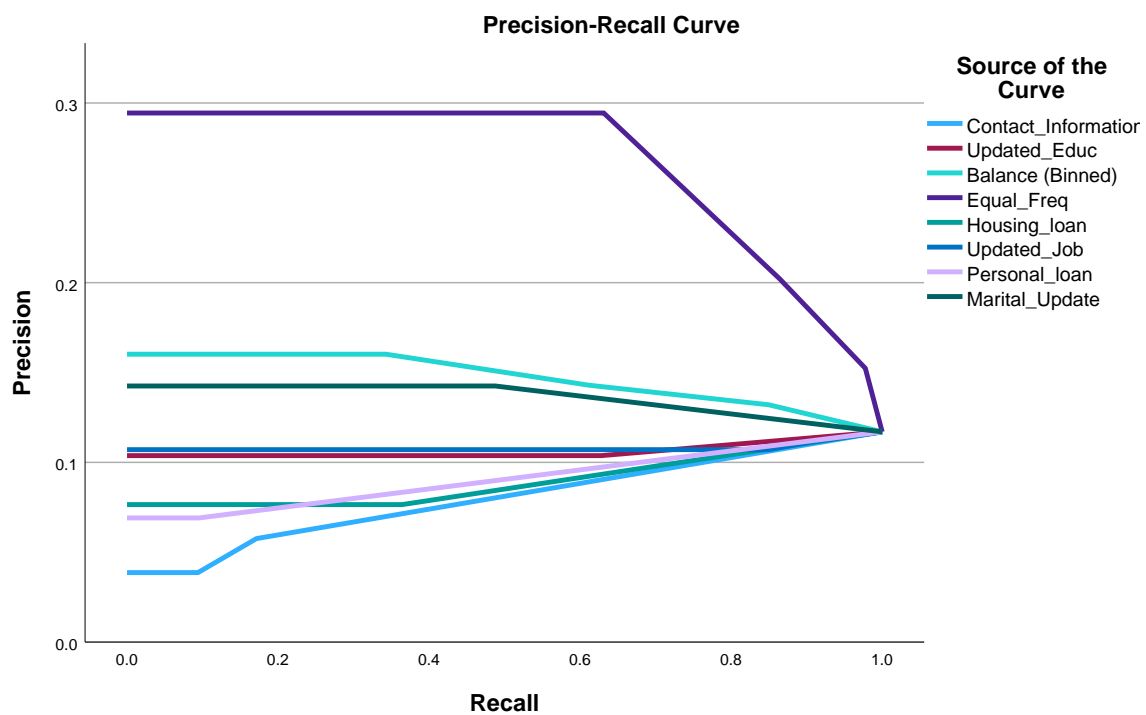
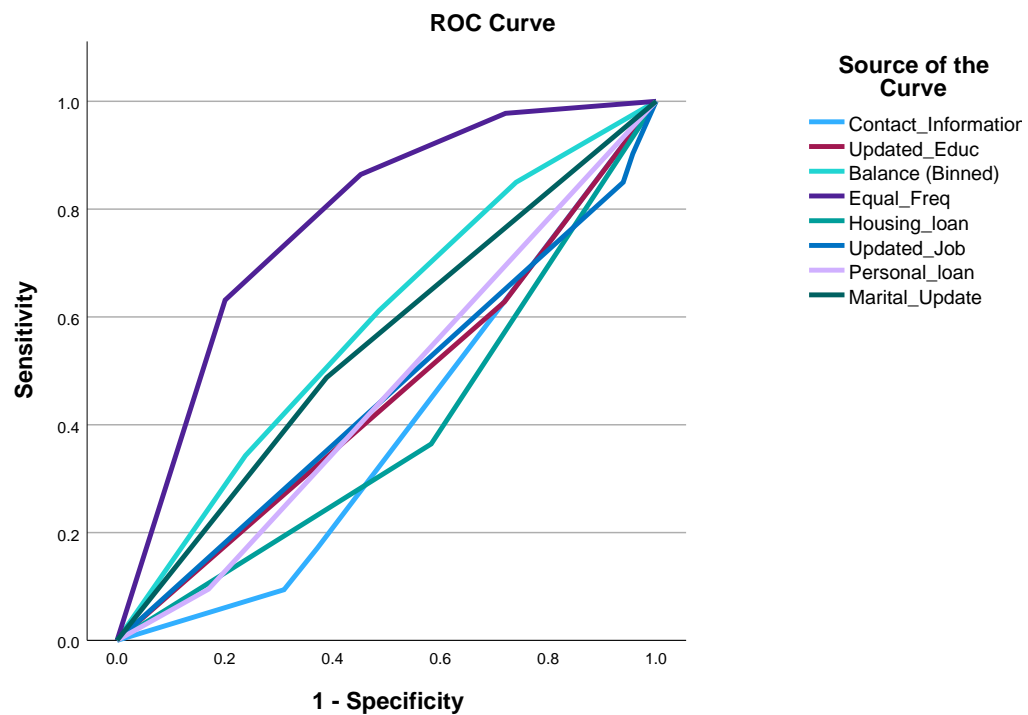
The test result variable(s): Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Updated_Job, Updated_Educ, Marital_Update has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

Case Processing Summary

Response	Valid N (listwise)
Positive ^a	2777
Negative	20959
Missing	0
Total	23736

Larger values of the test result variable (s) indicate stronger evidence for a positive actual state.

a. The positive actual state is yes.



Area Under the ROC Curve

Test Result Variable(s)	Area
Contact_Information	.391
Housing_loan	.391
Personal_loan	.463
Balance (Binned)	.585
Equal_Freq	.775
Updated_Job	.456
Updated_Educ	.455
Marital_Update	.549

The test result variable(s): Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Updated_Job, Updated_Educ, Marital_Update has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

Logistic Regression

Notes

Output Created		01-JUN-2024 19:05:21
Comments		
Input	Data	D: \\Marketing\\individual\\Camp aign_Testing.sav
	Active Dataset	DataSet6
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	10173
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing

Notes

Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact housing loan Equal_balance Equal_Frequency Job_update Education_update Marital_update /CONTRAST (contact) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (Job_update)=Indicator /CONTRAST (Education_update) =Indicator /CONTRAST (Marital_update)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).	
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	10173	100.0
	Missing Cases	0	.0
	Total	10173	100.0
Unselected Cases		0	.0
Total		10173	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Balance (Binned)	<= 83	2626	1.000	.000	.000
	84 - 520	2484	.000	1.000	.000
	521 - 1655	2530	.000	.000	1.000
	1656+	2533	.000	.000	.000
Equal_Freq	<= 103	2627	1.000	.000	.000
	104 - 180	2515	.000	1.000	.000
	181 - 318	2517	.000	.000	1.000
	319+	2514	.000	.000	.000
Contact_Information	mobile	6574	1.000	.000	
	telephone	675	.000	1.000	
	unknown	2924	.000	.000	
Job_update	6	519	1.000	.000	
	9	181	.000	1.000	
	12	9473	.000	.000	
Housing_loan	no	4488	1.000		
	yes	5685	.000		
Personal_loan	no	8544	1.000		
	yes	1629	.000		
Education_update	3	3016	1.000		
	4	7157	.000		
Marital_update	2	6230	1.000		
	3	3943	.000		

Block 0: Beginning Block

Classification Table^{a,b}

Observed		Predicted		Percentage Correct
		no	yes	
Step 0	Response no	8983	0	100.0
	yes	1190	0	.0
Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.031	4293.540	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	208.793	2	<.001
		Contact_Information(1)	176.641	1	<.001
		Contact_Information(2)	.251	1	.616
		Housing_loan(1)	165.417	1	<.001
		Personal_loan(1)	54.244	1	<.001
		Balance (Binned)	104.262	3	<.001
		Balance (Binned)(1)	58.157	1	<.001
		Balance (Binned)(2)	8.910	1	.003
		Balance (Binned)(3)	6.619	1	.010
		Equal_Freq	1145.060	3	<.001
		Equal_Freq(1)	360.300	1	<.001
		Equal_Freq(2)	153.390	1	<.001
		Equal_Freq(3)	.030	1	.862
		Job_update	123.410	2	<.001
		Job_update(1)	49.711	1	<.001
		Job_update(2)	69.900	1	<.001
		Education_update(1)	32.347	1	<.001
		Marital_update(1)	48.303	1	<.001
		Overall Statistics		1635.506	14

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1685.111	14	<.001
	Block	1685.111	14	<.001
	Model	1685.111	14	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	5656.883 ^a	.153	.297

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

			Predicted		Percentage Correct
			Response no	yes	
Step 1	Response	no	8852	131	98.5
		yes	1045	145	12.2
	Overall Percentage				88.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			129.678	2	<.001	
	Contact_Information(1)	1.159	.102	129.636	1	<.001	3.188
	Contact_Information(2)	.979	.164	35.565	1	<.001	2.661
	Housing_loan(1)	.655	.073	81.360	1	<.001	1.925
	Personal_loan(1)	.616	.115	28.645	1	<.001	1.852
	Balance (Binned)			50.935	3	<.001	
	Balance (Binned)(1)	-.660	.101	42.620	1	<.001	.517
	Balance (Binned)(2)	-.389	.096	16.458	1	<.001	.678
	Balance (Binned)(3)	-.102	.090	1.290	1	.256	.903
	Equal_Freq			797.394	3	<.001	
	Equal_Freq(1)	-3.419	.171	398.569	1	<.001	.033
	Equal_Freq(2)	-2.224	.106	438.481	1	<.001	.108
	Equal_Freq(3)	-1.199	.080	225.226	1	<.001	.301
	Job_update			32.117	2	<.001	
	Job_update(1)	.507	.133	14.640	1	<.001	1.661
	Job_update(2)	.877	.199	19.418	1	<.001	2.405
	Education_update(1)	.220	.074	8.889	1	.003	1.246
	Marital_update(1)	-.379	.071	28.359	1	<.001	.685
	Constant	-2.278	.162	197.070	1	<.001	.102

a. Variable(s) entered on step 1: Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Job_update, Education_update, Marital_update.

Logistic Regression

Notes

Output Created		03-JUN-2024 08:18:57
Comments		
Input	Data	D:\Marketing\individual\Campaign_Training.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	23736
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact housing loan Equal_balance Equal_Frequency Job_update Education_Update Marital_Update /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (contact) =Indicator /CONTRAST (Job_update)=Indicator /CONTRAST (Education_Update) =Indicator /CONTRAST (Marital_Update)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5) /OUTFILE= MODEL ('D:\Marketing\individual\Final_logistic_scorecard.xml').	
Resources	Processor Time	00:00:00.09
	Elapsed Time	00:00:00.15

Notes

File Saved	Model Information	D: Marketing\individual\Final_ logistic_scorecard.xml
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[DataSet1] D:\Marketing\individual\Campaign_Training.sav

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	23736	100.0
	Missing Cases	0	.0
	Total	23736	100.0
Unselected Cases		0	.0
Total		23736	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Balance (Binned)	<= 83	5862	1.000	.000	.000
	84 - 520	5996	.000	1.000	.000
	521 - 1655	5935	.000	.000	1.000
	1656+	5943	.000	.000	.000
Equal_Freq	<= 103	5917	1.000	.000	.000
	104 - 180	5945	.000	1.000	.000
	181 - 318	5920	.000	.000	1.000
	319+	5954	.000	.000	.000
Contact_Information	mobile	15470	1.000	.000	
	telephone	1515	.000	1.000	
	unknown	6751	.000	.000	
Updated_Job	6	1178	1.000	.000	
	9	519	.000	1.000	
	12	22039	.000	.000	
Housing_loan	no	10510	1.000		
	yes	13226	.000		
Personal_loan	no	19914	1.000		
	yes	3822	.000		
Updated_Educ	3	6928	1.000		
	4	16808	.000		
Marital_Update	2	14234	1.000		
	3	9502	.000		

Block 0: Beginning Block

Classification Table^{a,b}

			Predicted		Percentage Correct
Observed		Response	no	yes	
Step 0	Response	no	20959	0	100.0
		yes	2777	0	.0
	Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.020	10017.427	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	561.003	2	<.001
		Contact_Information(1)	433.312	1	<.001
		Contact_Information(2)	9.727	1	.002
		Housing_loan(1)	473.771	1	<.001
		Personal_loan(1)	101.267	1	<.001
		Balance (Binned)	233.528	3	<.001
		Balance (Binned)(1)	158.472	1	<.001
		Balance (Binned)(2)	3.371	1	.066
		Balance (Binned)(3)	5.798	1	.016
		Equal_Freq	2703.392	3	<.001
		Equal_Freq(1)	865.630	1	<.001
		Equal_Freq(2)	314.570	1	<.001
		Equal_Freq(3)	4.532	1	.033
		Updated_Job	303.368	2	<.001
		Updated_Job(1)	151.063	1	<.001
		Updated_Job(2)	141.944	1	<.001
		Updated_Educ(1)	97.643	1	<.001
		Marital_Update(1)	99.742	1	<.001
		Overall Statistics	3932.533	14	<.001

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4120.266	14	<.001
	Block	4120.266	14	<.001
	Model	4120.266	14	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	13012.153 ^a	.159	.310

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

Observed		Predicted		Percentage Correct
		Response no	Response yes	
Step 1	Response no	20556	403	98.1
	Response yes	2338	439	15.8
	Overall Percentage			88.5

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			347.079	2	<.001	
	Contact_Information(1)	1.321	.071	344.718	1	<.001	3.748
	Contact_Information(2)	1.301	.109	142.979	1	<.001	3.672
	Housing_loan(1)	.666	.048	193.790	1	<.001	1.947
	Personal_loan(1)	.481	.073	43.308	1	<.001	1.617
	Balance (Binned)			103.905	3	<.001	
	Balance (Binned)(1)	-.693	.069	102.362	1	<.001	.500
	Balance (Binned)(2)	-.263	.061	18.385	1	<.001	.769
	Balance (Binned)(3)	-.187	.060	9.844	1	.002	.830
	Equal_Freq			1829.012	3	<.001	
	Equal_Freq(1)	-3.760	.132	810.745	1	<.001	.023
	Equal_Freq(2)	-2.141	.067	1017.851	1	<.001	.118
	Equal_Freq(3)	-1.308	.053	603.157	1	<.001	.270
	Updated_Job			107.052	2	<.001	
	Updated_Job(1)	.658	.087	57.157	1	<.001	1.931
	Updated_Job(2)	.909	.120	57.024	1	<.001	2.481
	Updated_Educ(1)	.291	.049	35.925	1	<.001	1.338
	Marital_Update(1)	-.338	.047	51.853	1	<.001	.713
	Constant	-2.383	.107	494.172	1	<.001	.092

a. Variable(s) entered on step 1: Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Updated_Job, Updated_Educ, Marital_Update.

Model Handle

Notes

Output Created		03-JUN-2024 08:20:49
Comments		
Input	Data	D:\Marketing\individual\Campaign_Testing.sav
	Active Dataset	DataSet6
	Filter	<none>
	Weight	<none>
	Split File	<none>
Syntax		MODEL HANDLE NAME=Final_logistic_scorecard FILE='D:\Marketing\individual\Final_logistic_scorecard.xml' /OPTIONS MISSING=SUBSTITUTE /MAP VARIABLES=Education_update Marital_update MODELVARIABLES="Education_Update" "Marital_Update" .
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

[DataSet6] D:\Marketing\individual\Campaign_Testing.sav

FINAL_LOGISTIC_SCORECARD

SPSS Statistics Variables	Name	Model Variables			
		Label	Type	Width	Role
response	response	Predicted Value	Numeric	1	Target
contact	contact	Contact_Information	Numeric	1	Predictor
housing	housing	Housing_loan	Numeric	1	Predictor
loan	loan	Personal_loan	Numeric	1	Predictor
Equal_balance	Equal_balance	Balance (Binned)	Numeric	5	Predictor
Equal_Frequency	Equal_Frequency	Equal_Freq	Numeric	5	Predictor
Job_update	Job_update	Updated_Job	Numeric	8	Predictor
Education_update	Education_Update	Updated_Educ	Numeric	8	Predictor
Marital_update	Marital_Update	Marital_Update	Numeric	8	Predictor

FINAL_LOGISTIC_SCORECARD

SPSS Statistics Variables	Model Variables Measurement
response	Nominal
contact	Nominal
housing	Nominal
loan	Nominal
Equal_balance	Nominal
Equal_Frequency	Nominal
Job_update	Nominal
Education_update	Nominal
Marital_update	Nominal

ROC Analysis

Notes

Output Created		03-JUN-2024 08:22:09
Comments		
Input	Data	D: Marketing\individual\Campaign_Testing.sav
	Active Dataset	DataSet6
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	10173
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Only cases with valid data for all analysis variables are used in computing any statistics.
Weight Handling		not applicable

Notes

Syntax	ROC ANALYSIS SelectedProbability BY response (1) /MISSING USERMISSING=EXCLUDE /CRITERIA CUTOFF=INCLUDE TESTPOS=LARGE DISTRIBUTION=FREE CI=95 /DESIGN PAIR=FALSE /PLOT CURVE=ROC (REFERENCE) PR PR_INTERPOLATE=TP MODELQUALITY=FALSE /PRINT SE=FALSE CLASSIFIER=FALSE.	
Resources	Processor Time	00:00:00.16
	Elapsed Time	00:00:00.28

Warnings

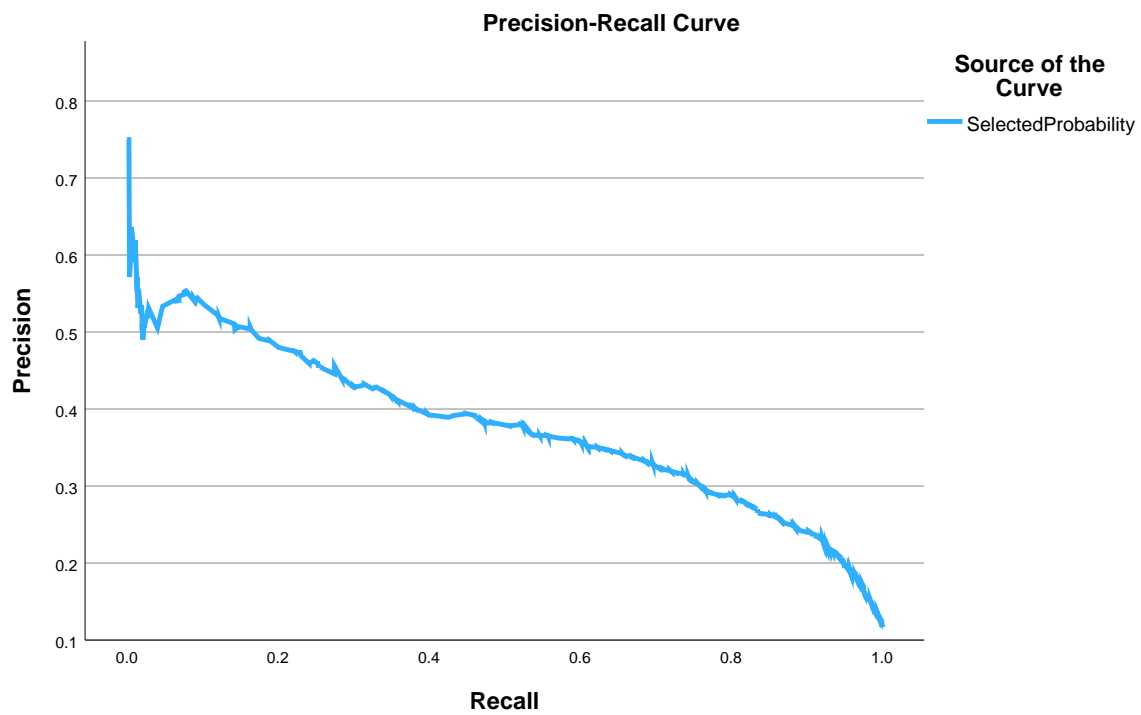
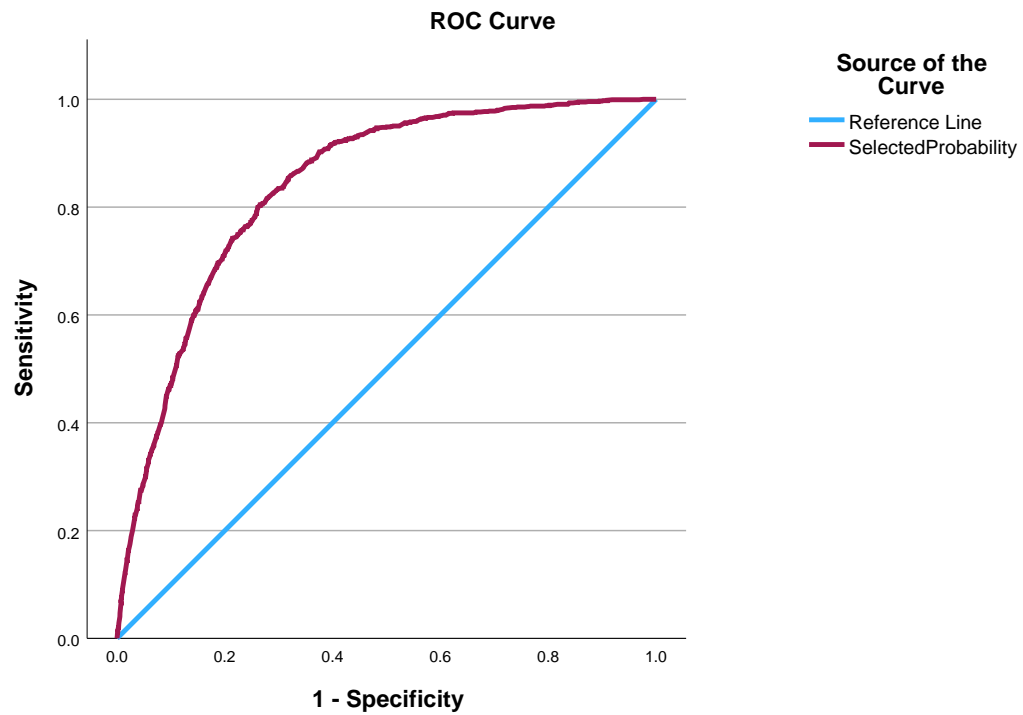
The test result variable(s): SelectedProbability has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

Case Processing Summary

Response	Valid N (listwise)
Positive ^a	1190
Negative	8983
Missing	0
Total	10173

Larger values of the test result variable (s) indicate stronger evidence for a positive actual state.

a. The positive actual state is yes.



Area Under the ROC Curve

Test Result Variable(s): SelectedProbability

Area
.839

The test result variable (s): SelectedProbability has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

Frequencies

Notes

Output Created		03-JUN-2024 08:39:05
Comments		
Input	Data	D:\Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet8
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=Equal_balance Equal_Frequency Binned_age /PERCENTILES=25.0 50.0 75.0 /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN MODE /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.02

[DataSet8] D:\Marketing\individual\all_campaign_1.sav

Statistics

		Balance (Binned)	Equal_Freq	Age (Binned)
N	Valid	33909	33909	33909
	Missing	0	0	0
Mean		2.50	2.50	2.44
Median		2.00	2.00	2.00
Mode		1	1	1
Std. Deviation		1.118	1.120	1.150
Minimum		1	1	1
Maximum		4	4	4
Percentiles	25	1.00	1.00	1.00
	50	2.00	2.00	2.00
	75	3.00	3.00	3.00

Frequency Table

Balance (Binned)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 83	8488	25.0	25.0	25.0
	84 - 520	8480	25.0	25.0	50.0
	521 - 1655	8465	25.0	25.0	75.0
	1656+	8476	25.0	25.0	100.0
	Total	33909	100.0	100.0	

Equal_Freq

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 103	8544	25.2	25.2	25.2
	104 - 180	8460	24.9	24.9	50.1
	181 - 318	8437	24.9	24.9	75.0
	319+	8468	25.0	25.0	100.0
	Total	33909	100.0	100.0	

Age (Binned)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 33	9776	28.8	28.8	28.8
	34 - 39	7740	22.8	22.8	51.7
	40 - 48	7935	23.4	23.4	75.1
	49+	8458	24.9	24.9	100.0
	Total	33909	100.0	100.0	

Logistic Regression

Notes

Output Created		03-JUN-2024 10:33:14
Comments		
Input	Data	D: \\Marketing\individual\Campaign_Testing.sav
	Active Dataset	DataSet6
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	10173
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing

Notes

Syntax	LOGISTIC REGRESSION VARIABLES response /METHOD=ENTER contact housing loan Equal_balance Equal_Frequency Job_update Education_update Marital_update /CONTRAST (contact) =Indicator /CONTRAST (housing) =Indicator /CONTRAST (loan) =Indicator /CONTRAST (Equal_balance)=Indicator /CONTRAST (Equal_Frequency) =Indicator /CONTRAST (Job_update)=Indicator /CONTRAST (Education_update) =Indicator /CONTRAST (Marital_update)=Indicator /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).	
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:00.05

[DataSet6] D:\Marketing\individual\Campaign_Testing.sav

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	10173	100.0
	Missing Cases	0	.0
	Total	10173	100.0
Unselected Cases		0	.0
Total		10173	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
no	0
yes	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Balance (Binned)	<= 83	2626	1.000	.000	.000
	84 - 520	2484	.000	1.000	.000
	521 - 1655	2530	.000	.000	1.000
	1656+	2533	.000	.000	.000
Equal_Freq	<= 103	2627	1.000	.000	.000
	104 - 180	2515	.000	1.000	.000
	181 - 318	2517	.000	.000	1.000
	319+	2514	.000	.000	.000
Contact_Information	mobile	6574	1.000	.000	
	telephone	675	.000	1.000	
	unknown	2924	.000	.000	
Job_update	6	519	1.000	.000	
	9	181	.000	1.000	
	12	9473	.000	.000	
Housing_loan	no	4488	1.000		
	yes	5685	.000		
Personal_loan	no	8544	1.000		
	yes	1629	.000		
Education_update	3	3016	1.000		
	4	7157	.000		
Marital_update	2	6230	1.000		
	3	3943	.000		

Block 0: Beginning Block

Classification Table^{a,b}

Observed		Predicted		Percentage Correct
		no	yes	
Step 0	Response no	8983	0	100.0
	yes	1190	0	.0
Overall Percentage				88.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.021	.031	4293.540	1	<.001	.132

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Contact_Information	208.793	2	<.001
		Contact_Information(1)	176.641	1	<.001
		Contact_Information(2)	.251	1	.616
		Housing_loan(1)	165.417	1	<.001
		Personal_loan(1)	54.244	1	<.001
		Balance (Binned)	104.262	3	<.001
		Balance (Binned)(1)	58.157	1	<.001
		Balance (Binned)(2)	8.910	1	.003
		Balance (Binned)(3)	6.619	1	.010
		Equal_Freq	1145.060	3	<.001
		Equal_Freq(1)	360.300	1	<.001
		Equal_Freq(2)	153.390	1	<.001
		Equal_Freq(3)	.030	1	.862
		Job_update	123.410	2	<.001
		Job_update(1)	49.711	1	<.001
		Job_update(2)	69.900	1	<.001
		Education_update(1)	32.347	1	<.001
		Marital_update(1)	48.303	1	<.001
		Overall Statistics		1635.506	14

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	1685.111	14	<.001
	Block	1685.111	14	<.001
	Model	1685.111	14	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	5656.883 ^a	.153	.297

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Classification Table^a

			Predicted		Percentage Correct
			Response no	yes	
Step 1	Response	no	8852	131	98.5
		yes	1045	145	12.2
	Overall Percentage				88.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Contact_Information			129.678	2	<.001	
	Contact_Information(1)	1.159	.102	129.636	1	<.001	3.188
	Contact_Information(2)	.979	.164	35.565	1	<.001	2.661
	Housing_loan(1)	.655	.073	81.360	1	<.001	1.925
	Personal_loan(1)	.616	.115	28.645	1	<.001	1.852
	Balance (Binned)			50.935	3	<.001	
	Balance (Binned)(1)	-.660	.101	42.620	1	<.001	.517
	Balance (Binned)(2)	-.389	.096	16.458	1	<.001	.678
	Balance (Binned)(3)	-.102	.090	1.290	1	.256	.903
	Equal_Freq			797.394	3	<.001	
	Equal_Freq(1)	-3.419	.171	398.569	1	<.001	.033
	Equal_Freq(2)	-2.224	.106	438.481	1	<.001	.108
	Equal_Freq(3)	-1.199	.080	225.226	1	<.001	.301
	Job_update			32.117	2	<.001	
	Job_update(1)	.507	.133	14.640	1	<.001	1.661
	Job_update(2)	.877	.199	19.418	1	<.001	2.405
	Education_update(1)	.220	.074	8.889	1	.003	1.246
	Marital_update(1)	-.379	.071	28.359	1	<.001	.685
	Constant	-2.278	.162	197.070	1	<.001	.102

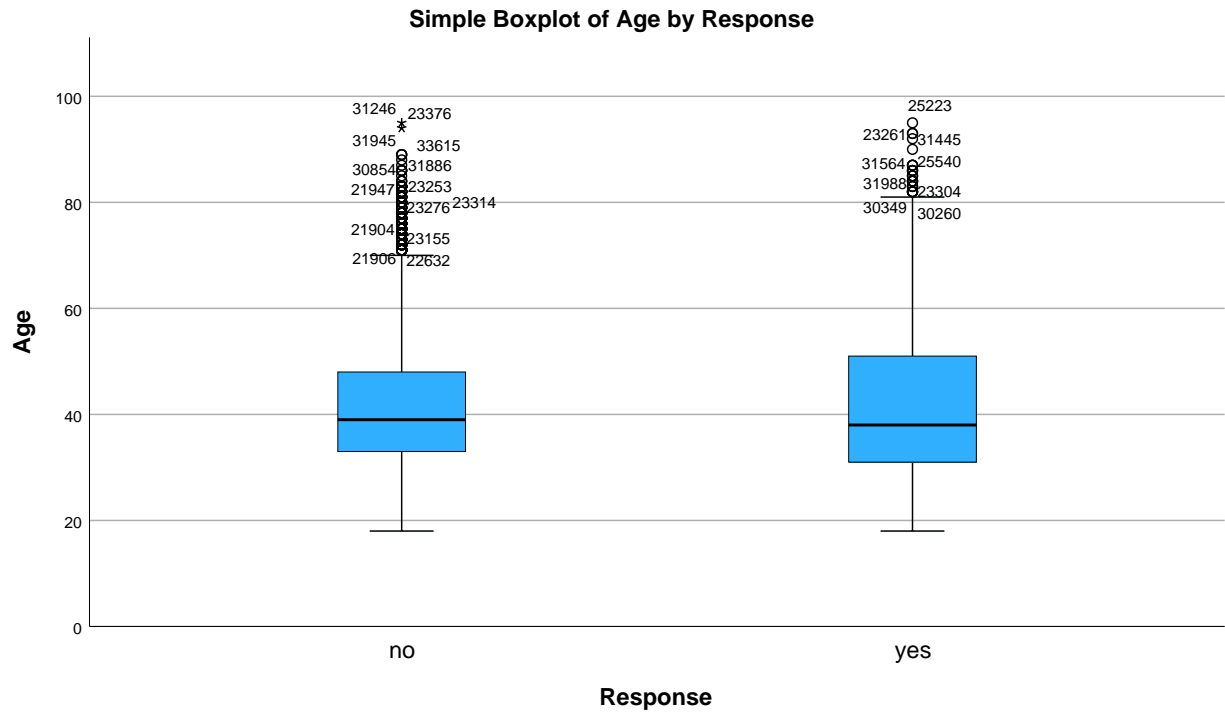
a. Variable(s) entered on step 1: Contact_Information, Housing_loan, Personal_loan, Balance (Binned), Equal_Freq, Job_update, Education_update, Marital_update.

GGraph

Notes

Output Created		03-JUN-2024 11:38:18
Comments		
Input	Data	D: Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet8
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909
Syntax		<pre> GGGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=response age MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL DATA: id=col(source(s), name("\$CASENUM"), unit. category()) GUIDE: axis(dim(1), label ("Response")) GUIDE: axis(dim(2), label ("Age")) GUIDE: text.title(label ("Simple Boxplot of Age by Response")) SCALE: cat(dim(1), include("0", "1")) SCALE: linear(dim(2), include(0)) ELEMENT: schema (position(bin.quantile.letter (response*age)), label(id)) END GPL. </pre>
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.25

[DataSet8] D:\Marketing\individual\all_campaign_1.sav



GGraph

Notes

Output Created		03-JUN-2024 11:38:38
Comments		
Input	Data	D:\Marketing\individual\all_campaign_1.sav
	Active Dataset	DataSet8
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	33909

Notes

Syntax	<pre> GGRAPH /GRAPHDATASET NAME="graphdataset" VARIABLES=age MISSING=LISTWISE REPORTMISSING=NO /GRAPHSPEC SOURCE=INLINE. BEGIN GPL DATA: id=col(source(s), name("\$CASENUM"), unit. category()) GUIDE: axis(dim(2), label ("Age")) GUIDE: text.title(label ("Simple Boxplot of Age")) ELEMENT: schema (position(bin.quantile.letter (1*age)), label(id)) END GPL. </pre>	
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.14

Simple Boxplot of Age

