

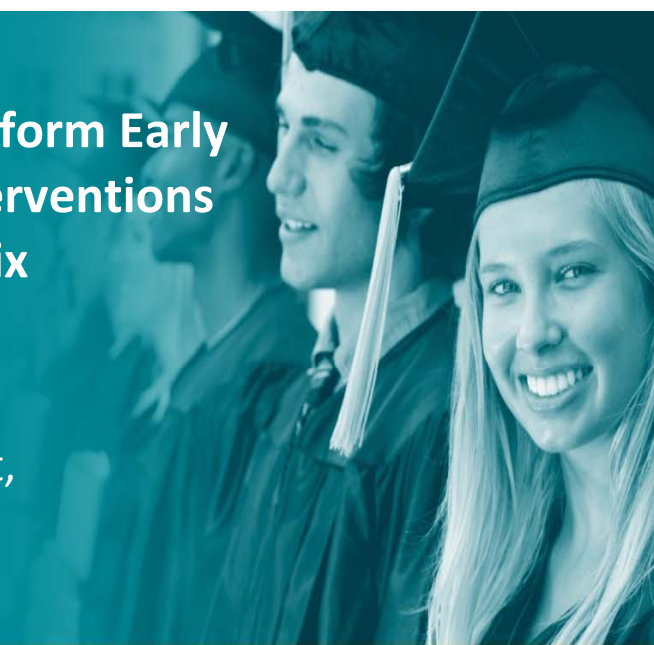


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## Using Predictive Modelling to Inform Early Alert and Intrusive Advising Interventions and Improve Retention Appendix

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## Appendix A

### Predictive Model Coefficient Estimates and Performance

Table A.1 shows the coefficient estimates from the logistic regression model shown in Section 3.3. These estimates are inputted in the formula shown in Section 3.4 to generate the individual predicted probabilities of leaving.

**Table A.1: Coefficient Estimates of the Predictive Model**

		Estimate	Std. Error	
<b>Gender (Male)</b>	<i>Female</i>	-0.320	0.044	***
	<i>Missing</i>	-0.274	0.342	
<b>Age (18)</b>	<i>0-17</i>	-0.147	0.089	
	<i>19</i>	0.076	0.050	
	<i>20-22</i>	-0.063	0.053	
	<i>23-26</i>	-0.293	0.073	***
	<i>27 and above</i>	-0.413	0.077	***
	<i>Missing</i>	-0.381	0.882	
<b>Regional Status (Rural)</b>	<i>Urban</i>	-0.019	0.056	
	<i>International</i>	0.125	0.100	
	<i>Missing</i>	-1.542	1.203	
<b>HS Average (B)</b>	<i>A plus</i>	-0.116	0.237	
	<i>A</i>	-0.160	0.145	
	<i>A minus</i>	-0.107	0.097	
	<i>B plus</i>	-0.047	0.079	
	<i>C plus</i>	-0.012	0.071	
	<i>C</i>	0.078	0.074	
	<i>D plus</i>	0.302	0.083	***
	<i>D</i>	0.609	0.102	***
	<i>F</i>	0.586	0.151	***
<i>Missing</i>	-0.015	0.066		

*Table continued on next page*

<b>School (Building and Construction Sciences)</b>	<i>Chemical and Environmental</i>	0.242	0.106	*
	<i>Computer Science and IT</i>	-0.155	0.114	
	<i>Electrotechnology</i>	0.643	0.096	***
	<i>Engineering Technology Preparatory</i>	0.251	0.137	
	<i>Graduate Studies (Business)</i>	-0.650	0.299	*
	<i>Human Services</i>	0.155	0.097	
	<i>Interdisciplinary Studies</i>	0.388	0.097	***
	<i>Justice and Wellness Studies</i>	-0.679	0.767	
	<i>Management Studies</i>	0.376	0.082	***
	<i>Mechanical and Industrial Technology</i>	0.098	0.117	
	<i>Media and Entertainment</i>	-0.218	0.098	*
	<i>Medical Radiation Sciences and Allied Health</i>	13.500	119.500	
	<i>Office Administration Studies</i>	-0.304	0.125	*
	<i>Skilled Trades</i>	-0.351	0.159	*
<b>Credential (Advanced Diploma)</b>	<i>Certificate</i>	0.378	0.068	***
	<i>Diploma</i>	0.050	0.049	
	<i>Graduate Certificate</i>	-0.895	0.230	***
	<i>Missing</i>	1.399	1.025	
<b>At Risk, Career Clarity (No)</b>	<i>Yes</i>	0.097	0.046	*
	<i>Missing</i>	1.871	1.429	
<b>At Risk, Confidence (No)</b>	<i>Yes</i>	0.141	0.083	
	<i>Missing</i>	0.052	0.117	
<b>At Risk, Edu. Commit. (No)</b>	<i>Yes</i>	0.354	0.101	***
	<i>Missing</i>	0.036	0.053	
<b>At Risk, Transition (No)</b>	<i>Yes</i>	-0.001	0.050	
	<i>Missing</i>	-1.528	1.430	
<b>At Risk, Work Over 15 Hrs (No)</b>	<i>Yes</i>	-0.046	0.043	
	<i>Missing</i>	0.005	0.117	

*Table continued on next page*

<b>Assessment Score, Math (1)</b>	2	-0.202	0.099	*
	3	-0.333	0.102	**
	4	-0.537	0.106	***
	5	-0.782	0.112	***
	6	-1.112	0.123	***
	7	-1.165	0.126	***
	8	-1.466	0.143	***
	<i>Missing</i>	-0.363	0.078	***
<b>Assessment Score, Read (1)</b>	2	-0.116	0.087	
	3	-0.134	0.088	
	4	-0.285	0.091	**
	5	-0.335	0.093	***
	6	-0.408	0.095	***
	7	-0.530	0.100	***
	8	-0.515	0.105	***
	<i>Missing</i>	-0.163	0.077	*
<b>Assessment Score, Write (1)</b>	2	-0.093	0.061	
	<i>Missing</i>	0.017	0.055	
	<i>(Intercept)</i>	-1.201	0.137	***

Note: The labels given in parentheses denote the categories for the relevant variable that were omitted from the estimation. The superscripts \*\*\*, \*\* and \* denote statistical significance at 1%, 5% and 10% significance levels.

**Table A.2: Performance of the Predictive Model**

	Predicted	Actual		Model Performance	
		Continuer (%)	Leaver (%)	Correctly Identified (%)	Incorrectly Identified (%)
<b>Threshold = 10%</b>	<i>Continuer</i>	34	3	<b>46</b>	<b>53</b>
	<i>Leaver</i>	50	12		
<b>Threshold = 20%</b>	<i>Continuer</i>	66	9	<b>73</b>	<b>27</b>
	<i>Leaver</i>	18	7		
<b>Threshold = 30%</b>	<i>Continuer</i>	79	14	<b>81</b>	<b>19</b>
	<i>Leaver</i>	5	2		



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