

Outcomes of the experiments with the models: *precision* (P), *recall* (R), *F 1-measure* (F 1) and *Geometric mean score* (G m)  $\pm$  standard deviation averaged over the 10 classification problems per KG

TARGET CLASS #1				
<i>lubm-t.nt.Class_17_24</i> $\equiv$ [ <i>lubm.GraduateStudent</i>   <i>lubm.PostDoc</i> ]				
		# Individuals		
		Positive	Negative	Unlabeled
		119	719	318
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
<i>Precision</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.963 $\pm$ 0.056	1.000 $\pm$ 0.000
<i>Recall</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.957 $\pm$ 0.065	0.857 $\pm$ 0.000
<i>F<sub>1</sub></i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.937 $\pm$ 0.096	0.857 $\pm$ 0.000
<i>G m</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.805 $\pm$ 0.298	0.926 $\pm$ 0.000

TARGET CLASS #2				
<i>lubm-t.nt.Class_17_58</i> $\equiv$ [ <i>lubm.GraduateStudent</i>   <i>lubm.Some_researchProject_range</i> ]				
		# Individuals		
		Positive	Negative	Unlabeled
		119	705	332
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
<i>Precision</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.975 $\pm$ 0.050	1.000 $\pm$ 0.000
<i>Recall</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.971 $\pm$ 0.058	0.854 $\pm$ 0.000
<i>F<sub>1</sub></i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.957 $\pm$ 0.085	0.854 $\pm$ 0.000
<i>G m</i>	1.000 $\pm$ 0.000	1.000 $\pm$ 0.000	0.871 $\pm$ 0.259	0.924 $\pm$ 0.000

TARGET CLASS #3				
lubm-t.nt.Class_1_47≡ [lubm.Article   lubm.Some_doctoralDegreeFrom_range]				
	# Individuals			
	Positive	Negative	Unlabeled	
	35	322	799	
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.992 ± 0.025	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.991 ± 0.028	0.000 ± 0.000
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.986 ± 0.041	0.000 ± 0.000
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.929 ± 0.213	0.000 ± 0.000

TARGET CLASS #4				
lubm-t.nt.Class_36_45≡ [lubm.TeachingAssistant   lubm.Some_affiliatedOrganizationOf_range]				
	# Individuals			
	Positive	Negative	Unlabeled	
	24	501	631	
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.996 ± 0.013	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.996 ± 0.013	0.746 ± 0.019
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.993 ± 0.020	0.838 ± 0.012
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.921 ± 0.238	0.864 ± 0.011

TARGET CLASS #5				
<i>lubm-t.nt.Class_3_15</i> ≡ [ <i>lubm.AssociateProfessor</i>   <i>lubm.FullProfessor</i> ]				
		# Individuals		
		Positive	Negative	Unlabeled
		19	719	418
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
<i>Precision</i>	1.000 ± 0.000	1.000 ± 0.000	0.995 ± 0.011	1.000 ± 0.000
<i>Recall</i>	1.000 ± 0.000	1.000 ± 0.000	0.995 ± 0.011	0.973 ± 0.000
<i>F<sub>1</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.992 ± 0.016	0.973 ± 0.000
<i>G<sub>m</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.832 ± 0.335	0.986 ± 0.000

TARGET CLASS #6				
<i>lubm-t.nt.Class_3_43</i> ≡ [ <i>lubm.AssociateProfessor</i>   <i>lubm.Some_advisor_range</i> ]				
		# Individuals		
		Positive	Negative	Unlabeled
		180	719	257
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
<i>Precision</i>	1.000 ± 0.000	1.000 ± 0.000	0.984 ± 0.048	1.000 ± 0.000
<i>Recall</i>	1.000 ± 0.000	1.000 ± 0.000	0.980 ± 0.060	0.800 ± 0.000
<i>F<sub>1</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.971 ± 0.087	0.800 ± 0.000
<i>G<sub>m</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.940 ± 0.180	0.894 ± 0.000

TARGET CLASS #7				
lubm-t.nt.Class_43_45=[lubm.Some_advisor_range   lubm.Some_affiliatedOrganizationOf_range]				
		# Individuals		
		Positive	Negative	Unlabeled
		168	501	487
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.986 ± 0.043	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.982 ± 0.054	0.591 ± 0.020
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.978 ± 0.066	0.659 ± 0.012
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.962 ± 0.113	0.768 ± 0.013

TARGET CLASS #8				
lubm-t.nt.Class_43_67=[lubm.Some_advisor_range   lubm.Some_worksFor_range]				
		# Individuals		
		Positive	Negative	Unlabeled
		203	719	234
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.944 ± 0.077	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.930 ± 0.099	0.780 ± 0.000
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.900 ± 0.143	0.780 ± 0.000
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.814 ± 0.263	0.883 ± 0.000

TARGET CLASS #9				
lubm-t.nt.Class_46_21≡ [lubm.Some_degreeFrom_range   lubm.Manual]				
	# Individuals			
	Positive	Negative	Unlabeled	
	154	501	501	
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.960 ± 0.071	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.949 ± 0.092	0.606 ± 0.025
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.929 ± 0.132	0.676 ± 0.016
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.876 ± 0.228	0.778 ± 0.016

TARGET CLASS #10				
lubm-t.nt.Class_50_47≡ [lubm.Some_listedCourse_range   lubm.Some_doctoralDegreeFrom_range]				
	# Individuals			
	Positive	Negative	Unlabeled	
	35	322	799	
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
Precision	1.000 ± 0.000	1.000 ± 0.000	0.975 ± 0.039	1.000 ± 0.000
Recall	1.000 ± 0.000	1.000 ± 0.000	0.972 ± 0.043	0.000 ± 0.000
F <sub>1</sub>	1.000 ± 0.000	1.000 ± 0.000	0.959 ± 0.063	0.000 ± 0.000
G <sub>m</sub>	1.000 ± 0.000	1.000 ± 0.000	0.787 ± 0.325	0.000 ± 0.000

MEANS				
Models				
Measures	MBNB	MBNB-EM	HBM	LogReg
<i>Precision</i>	1.000 ± 0.000	1.000 ± 0.000	0.977 ± 0.016	1.000 ± 0.000
<i>Recall</i>	1.000 ± 0.000	1.000 ± 0.000	0.972 ± 0.020	0.621 ± 0.329
<i>F<sub>1</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.960 ± 0.029	0.644 ± 0.333
<i>G<sub>m</sub></i>	1.000 ± 0.000	1.000 ± 0.000	0.874 ± 0.059	0.702 ± 0.357

Nemenyi-Friedman results calculated over the means				
Models	MBNB	MBNB-EM	HBM	LogReg
<b>MBNB</b>	1.000000	0.900000	0.283091	0.168634
<b>MBNB_EM</b>	0.900000	1.000000	0.283091	0.168634
<b>HBM</b>	0.283091	0.283091	1.000000	0.900000
<b>LogReg</b>	0.168634	0.168634	0.900000	1.000000