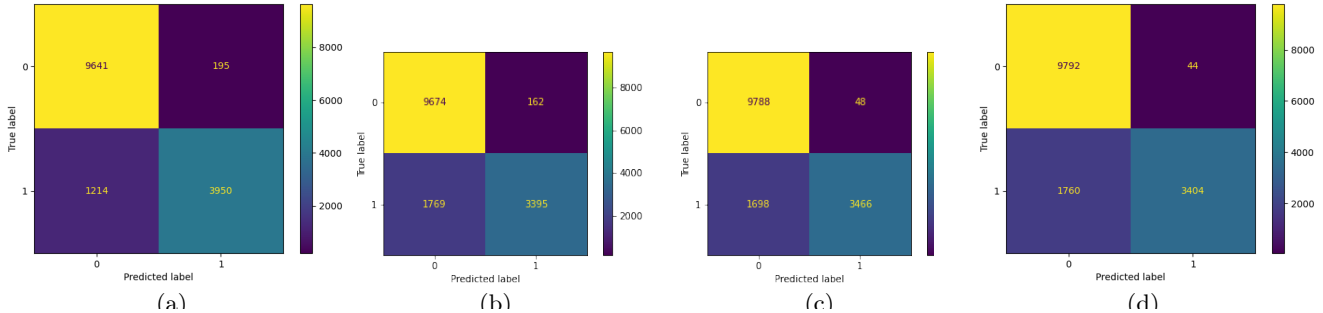
Model on FakeNewsCorpus without metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.906067	0.920559	0.872543	0.890272	15000.0	0.910468	0.906067	0.903239	15000.0
_ngram_2_LogisticRegression(solver='sag')_	0.871267	0.899932	0.820483	0.843917	15000.0	0.882949	0.871267	0.864267	15000.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.883600	0.919254	0.833153	0.858457	15000.0	0.898359	0.883600	0.877038	15000.0
_ngram_2_SVC(kernel='linear')_	0.879733	0.917442	0.827353	0.853089	15000.0	0.895703	0.879733	0.872576	15000.0
_ngram_3_SVC(kernel='linear')_	0.883933	0.920971	0.832993	0.858640	15000.0	0.899390	0.883933	0.877264	15000.0
_ngram_2_DecisionTreeClassifier()_	0.837667	0.822000	0.815145	0.818337	15000.0	0.836313	0.837667	0.836794	15000.0
_ngram_3_DecisionTreeClassifier()_	0.878867	0.905265	0.831337	0.854169	15000.0	0.889194	0.878867	0.872861	15000.0
_ngramKNN_2k=1	0.776267	0.753521	0.764694	0.757915	15000.0	0.783139	0.776267	0.778675	15000.0
_ngramKNN_2k=3	0.838333	0.834065	0.799326	0.812010	15000.0	0.837108	0.838333	0.833920	15000.0
_ngramKNN_2k=5	0.850533	0.860903	0.803662	0.821928	15000.0	0.854313	0.850533	0.844157	15000.0
_ngramKNN_2k=7	0.857467	0.877749	0.806833	0.828007	15000.0	0.865512	0.857467	0.850178	15000.0
_ngramKNN_2k=10	0.861933	0.897945	0.805180	0.830074	15000.0	0.877718	0.861933	0.852991	15000.0
_ngramKNN_3k=1	0.862000	0.871524	0.819258	0.836884	15000.0	0.865257	0.862000	0.856820	15000.0
_ngramKNN_3k=3	0.878600	0.909864	0.828696	0.852848	15000.0	0.891323	0.878600	0.872021	15000.0
_ngramKNN_3k=5	0.879600	0.911909	0.829505	0.853932	15000.0	0.892811	0.879600	0.873003	15000.0
_ngramKNN_3k=7	0.881400	0.917750	0.830049	0.855495	15000.0	0.896601	0.881400	0.874552	15000.0
_ngramKNN_3k=10	0.880667	0.918760	0.828386	0.854229	15000.0	0.896799	0.880667	0.873565	15000.0
_TFIDF_LogisticRegression(solver='sag')_	0.906067	0.920559	0.872543	0.890272	15000.0	0.910468	0.906067	0.903239	15000.0
_TFIDF_SVC(kernel='linear')_	0.916267	0.926137	0.888461	0.903315	15000.0	0.918827	0.916267	0.914337	15000.0
_TFIDF_DecisionTreeClassifier()_	0.873600	0.861547	0.856893	0.859126	15000.0	0.872937	0.873600	0.873191	15000.0
_KNN_1	0.691267	0.826811	0.552297	0.500293	15000.0	0.781167	0.691267	0.596511	15000.0
_KNN_3	0.680067	0.833357	0.535433	0.468258	15000.0	0.783142	0.680067	0.572787	15000.0
_KNN_5	0.677800	0.835265	0.532049	0.461624	15000.0	0.783955	0.677800	0.567881	15000.0
_KNN_7	0.676267	0.834740	0.529822	0.457298	15000.0	0.783267	0.676267	0.564668	15000.0
_KNN_10	0.674600	0.834171	0.527401	0.452558	15000.0	0.782521	0.674600	0.561150	15000.0

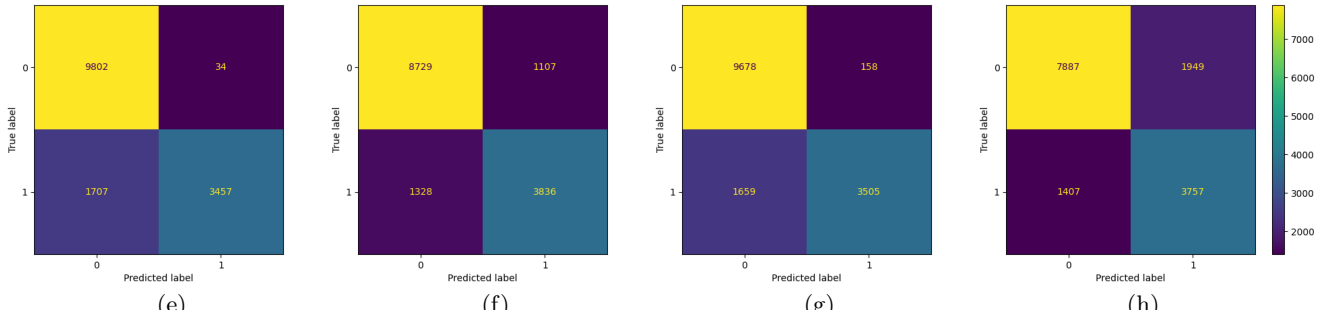


(a)

(b)

(c)

(d)

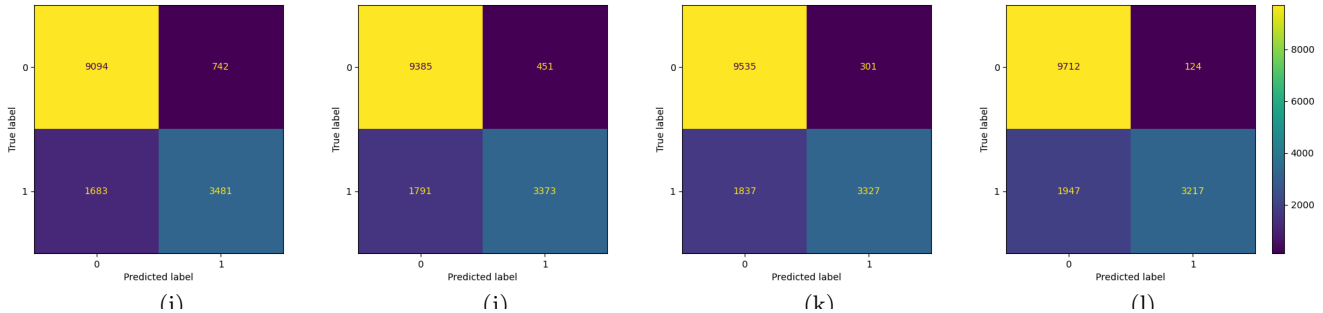


(e)

(f)

(g)

(h)



(i)

(j)

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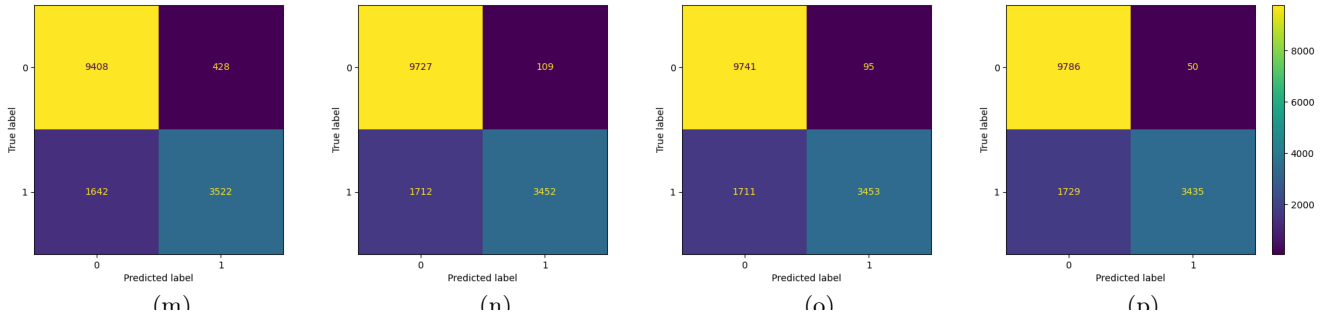

(m)

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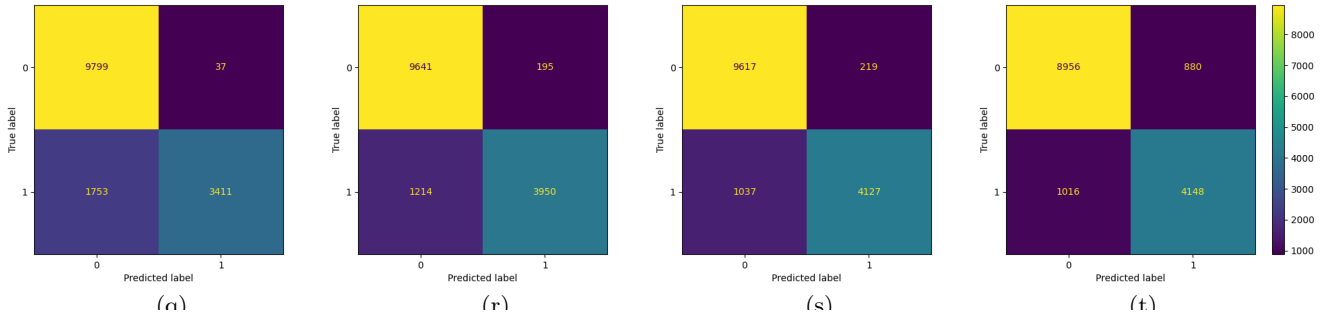

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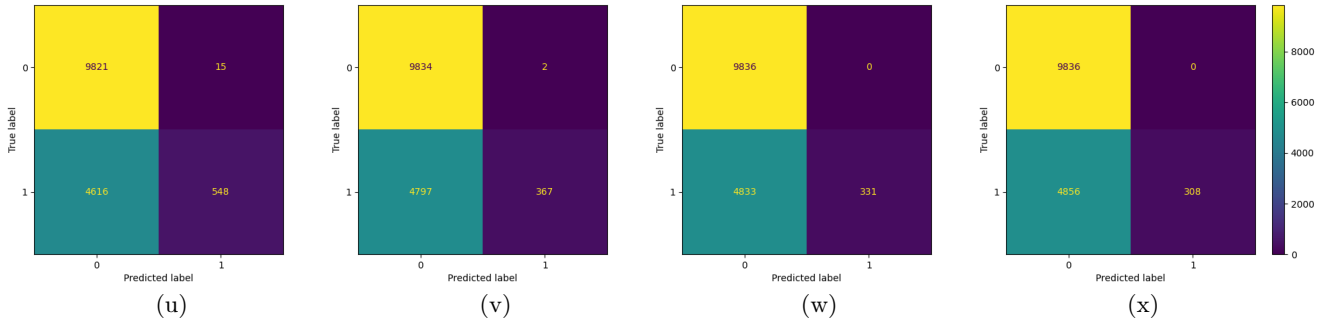

(u)

(v)

(w)

(x)

Figure 1: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)

Model on FakeNewsCorpus with metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.935133	0.945112	0.911999	0.925577	15000.0	0.937442	0.935133	0.933883	15000.0
_ngram_2_LogisticRegression(solver='sag')_	0.873267	0.901814	0.823112	0.846528	15000.0	0.884824	0.873267	0.866481	15000.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.888733	0.922380	0.840562	0.865385	15000.0	0.902283	0.888733	0.882847	15000.0
_ngram_2_SVC(kernel='linear')_	0.893867	0.924631	0.848385	0.872387	15000.0	0.905808	0.893867	0.888694	15000.0
_ngram_3_SVC(kernel='linear')_	0.890400	0.923989	0.842707	0.867517	15000.0	0.903860	0.890400	0.884666	15000.0
_ngram_2_DecisionTreeClassifier()_	0.855200	0.841851	0.834539	0.837950	15000.0	0.854041	0.855200	0.854418	15000.0
_ngram_3_DecisionTreeClassifier()_	0.886867	0.910872	0.842772	0.864791	15000.0	0.895818	0.886867	0.881808	15000.0
_ngramKNN_2k=1	0.787200	0.764841	0.775100	0.769060	15000.0	0.792802	0.787200	0.789219	15000.0
_ngramKNN_2k=3	0.839533	0.833593	0.802725	0.814367	15000.0	0.837947	0.839533	0.835656	15000.0
_ngramKNN_2k=5	0.855200	0.864475	0.810532	0.828291	15000.0	0.858460	0.855200	0.849463	15000.0
_ngramKNN_2k=7	0.860133	0.877067	0.812178	0.832376	15000.0	0.866569	0.860133	0.853621	15000.0
_ngramKNN_2k=10	0.866933	0.903214	0.811522	0.836633	15000.0	0.882663	0.866933	0.858547	15000.0
_ngramKNN_3k=1	0.866733	0.875959	0.825627	0.842952	15000.0	0.869803	0.866733	0.861987	15000.0
_ngramKNN_3k=3	0.883400	0.911983	0.836081	0.859515	15000.0	0.894636	0.883400	0.877557	15000.0
_ngramKNN_3k=5	0.884733	0.916377	0.836362	0.860639	15000.0	0.897428	0.884733	0.878688	15000.0
_ngramKNN_3k=7	0.885267	0.918237	0.836447	0.861079	15000.0	0.898604	0.885267	0.879134	15000.0
_ngramKNN_3k=10	0.885400	0.921708	0.835169	0.860655	15000.0	0.900424	0.885400	0.878945	15000.0
_TFIDF_LogisticRegression(solver='sag')_	0.935133	0.945112	0.911999	0.925577	15000.0	0.937442	0.935133	0.933883	15000.0
_TFIDF_SVC(kernel='linear')_	0.940133	0.945249	0.921882	0.932006	15000.0	0.941056	0.940133	0.939328	15000.0
_TFIDF_DecisionTreeClassifier()_	0.920933	0.913663	0.910645	0.912121	15000.0	0.920698	0.920933	0.920789	15000.0
_KNN_1	0.783600	0.761456	0.751797	0.756011	15000.0	0.780558	0.783600	0.781565	15000.0
_KNN_3	0.798800	0.791599	0.747612	0.761111	15000.0	0.796243	0.798800	0.790665	15000.0
_KNN_5	0.809333	0.817952	0.749435	0.767125	15000.0	0.812981	0.809333	0.798005	15000.0
_KNN_7	0.813733	0.837325	0.747088	0.767309	15000.0	0.824697	0.813733	0.799681	15000.0
_KNN_10	0.809267	0.865305	0.728827	0.750518	15000.0	0.838822	0.809267	0.788225	15000.0

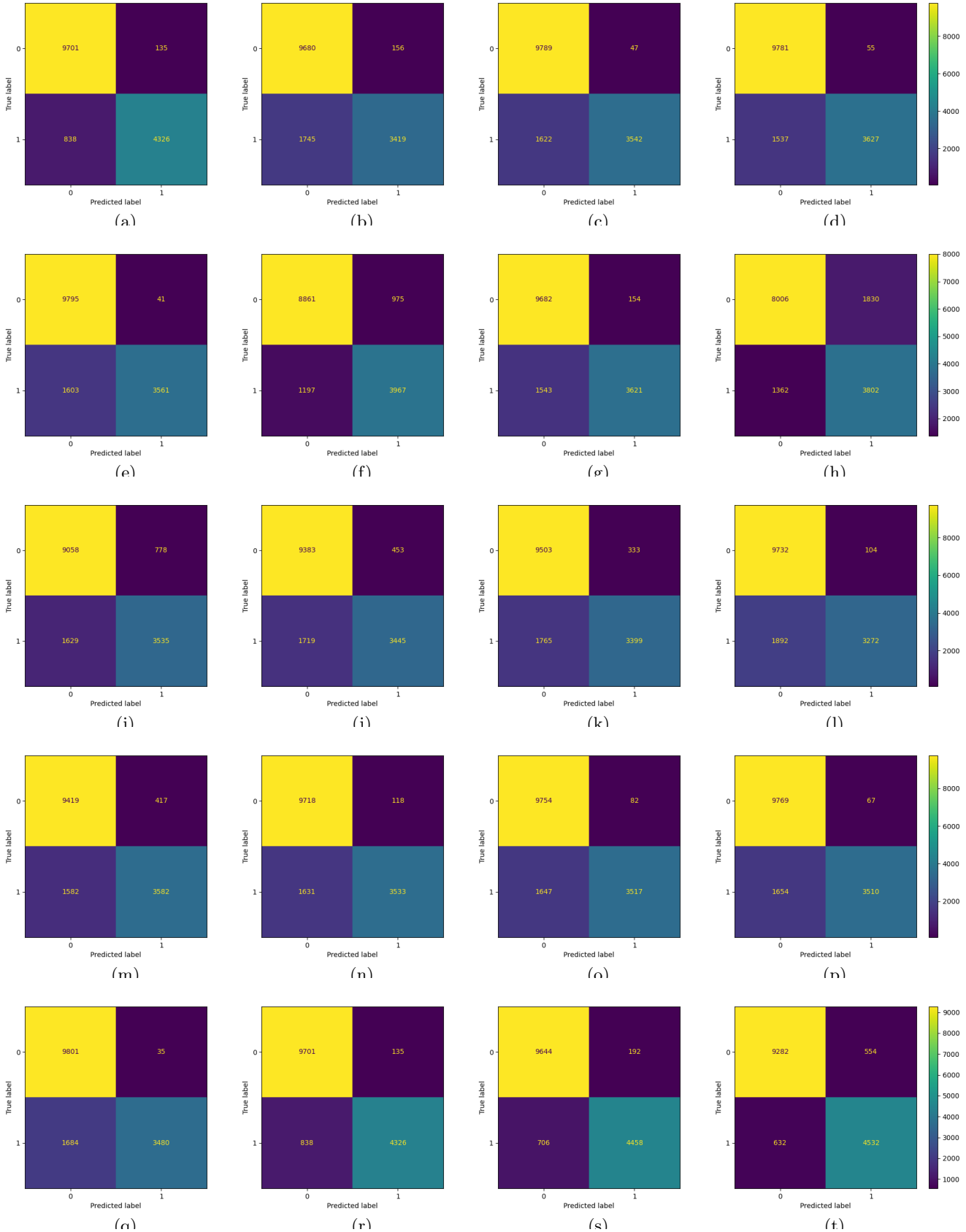

Figure 2: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)

Model on FakeNewsCorpus only with metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.794400	0.804031	0.728069	0.745114	15000.0	0.798750	0.794400	0.780024	15000.0
_ngram_2_LogisticRegression(solver='sag')_	0.723667	0.811895	0.603309	0.587649	15000.0	0.779071	0.723667	0.661413	15000.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.666333	0.803556	0.515855	0.430138	15000.0	0.759771	0.666333	0.544408	15000.0
_ngram_2_SVC(kernel='linear')_	0.723533	0.816470	0.602471	0.586029	15000.0	0.782059	0.723533	0.660340	15000.0
_ngram_3_SVC(kernel='linear')_	0.666067	0.788685	0.515744	0.430350	15000.0	0.749517	0.666067	0.544483	15000.0
_ngram_2_DecisionTreeClassifier()_	0.722733	0.800465	0.603517	0.588786	15000.0	0.771295	0.722733	0.661885	15000.0
_ngram_3_DecisionTreeClassifier()_	0.665867	0.781431	0.515591	0.430259	15000.0	0.744501	0.665867	0.544375	15000.0
_ngramKNN_2k=1	0.502400	0.619851	0.594823	0.496140	15000.0	0.688306	0.502400	0.478647	15000.0
_ngramKNN_2k=3	0.509267	0.622609	0.599461	0.504018	15000.0	0.690866	0.509267	0.488127	15000.0
_ngramKNN_2k=5	0.718000	0.762228	0.602805	0.590760	15000.0	0.745088	0.718000	0.661834	15000.0
_ngramKNN_2k=7	0.718600	0.772631	0.601607	0.588013	15000.0	0.751970	0.718600	0.660257	15000.0
_ngramKNN_2k=10	0.721000	0.804561	0.600126	0.583193	15000.0	0.773523	0.721000	0.657841	15000.0
_ngramKNN_3k=1	0.390333	0.645575	0.532597	0.333986	15000.0	0.734580	0.390333	0.273649	15000.0
_ngramKNN_3k=3	0.390800	0.643272	0.532722	0.334974	15000.0	0.731535	0.390800	0.274961	15000.0
_ngramKNN_3k=5	0.390533	0.649070	0.533025	0.333951	15000.0	0.739103	0.390533	0.273485	15000.0
_ngramKNN_3k=7	0.389067	0.652017	0.532229	0.331321	15000.0	0.743099	0.389067	0.270117	15000.0
_ngramKNN_3k=10	0.388600	0.646948	0.531505	0.331068	15000.0	0.736555	0.388600	0.269966	15000.0
_TFIDF_LogisticRegression(solver='sag')_	0.794400	0.804031	0.728069	0.745114	15000.0	0.798750	0.794400	0.780024	15000.0
_TFIDF_SVC(kernel='linear')_	0.795133	0.811350	0.725317	0.743095	15000.0	0.802770	0.795133	0.779108	15000.0
_TFIDF_DecisionTreeClassifier()_	0.754400	0.728096	0.716839	0.721465	15000.0	0.749870	0.754400	0.751297	15000.0
_KNN_1	0.730267	0.712028	0.653550	0.661827	15000.0	0.721685	0.730267	0.709212	15000.0
_KNN_3	0.738200	0.765252	0.638352	0.641480	15000.0	0.753667	0.738200	0.699480	15000.0
_KNN_5	0.672600	0.632232	0.624710	0.627389	15000.0	0.664873	0.672600	0.667815	15000.0
_KNN_7	0.676933	0.635025	0.622173	0.625819	15000.0	0.665542	0.676933	0.668894	15000.0
_KNN_10	0.701267	0.670401	0.615387	0.617762	15000.0	0.685824	0.701267	0.673408	15000.0

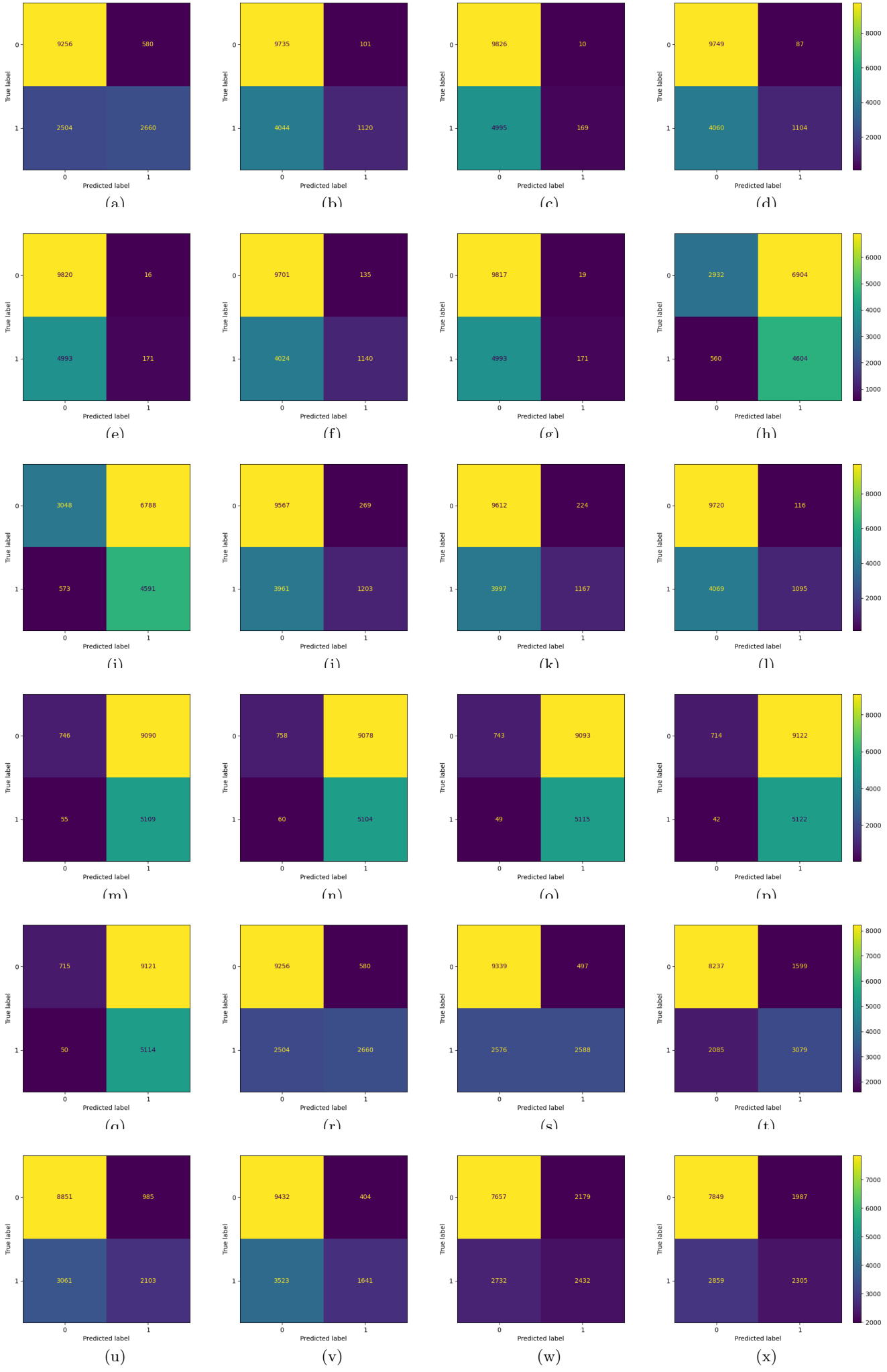

Figure 3: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)

Model on LIAR dataset without metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.719390	0.511181	0.500389	0.425609	12790.0	0.605032	0.719390	0.608166	12790.0
_ngram_2_LogisticRegression(solver='sag')_	0.719703	0.457082	0.499134	0.421204	12790.0	0.574750	0.719703	0.605926	12790.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_ngram_2_SVC(kernel='linear')_	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_ngram_3_SVC(kernel='linear')_	0.722127	0.527776	0.500032	0.419597	12790.0	0.614188	0.722127	0.605819	12790.0
_ngram_2_DecisionTreeClassifier()_	0.700704	0.493692	0.498623	0.448409	12790.0	0.594988	0.700704	0.614194	12790.0
_ngram_3_DecisionTreeClassifier()_	0.721814	0.472194	0.499903	0.419764	12790.0	0.583284	0.721814	0.605812	12790.0
_ngramKNN_2k=1	0.466380	0.504129	0.504998	0.456092	12790.0	0.603190	0.466380	0.489336	12790.0
_ngramKNN_2k=3	0.700313	0.503242	0.500777	0.454155	12790.0	0.600697	0.700313	0.617056	12790.0
_ngramKNN_2k=5	0.710477	0.485769	0.498375	0.434249	12790.0	0.590546	0.710477	0.609932	12790.0
_ngramKNN_2k=7	0.717748	0.495203	0.499772	0.426572	12790.0	0.596044	0.717748	0.608166	12790.0
_ngramKNN_2k=10	0.721736	0.503964	0.500022	0.420283	12790.0	0.600956	0.721736	0.606064	12790.0
_ngramKNN_3k=1	0.719077	0.486015	0.499567	0.423649	12790.0	0.590902	0.719077	0.607029	12790.0
_ngramKNN_3k=3	0.721423	0.454796	0.499718	0.419904	12790.0	0.573585	0.721423	0.605766	12790.0
_ngramKNN_3k=5	0.720954	0.410963	0.499307	0.419472	12790.0	0.549158	0.720954	0.605392	12790.0
_ngramKNN_3k=7	0.721736	0.361037	0.499675	0.419191	12790.0	0.521486	0.721736	0.605483	12790.0
_ngramKNN_3k=10	0.721970	0.361070	0.499838	0.419270	12790.0	0.521533	0.721970	0.605597	12790.0
_TFIDF_LogisticRegression(solver='sag')_	0.719390	0.511181	0.500389	0.425609	12790.0	0.605032	0.719390	0.608166	12790.0
_TFIDF_SVC(kernel='linear')_	0.718452	0.518988	0.500952	0.428906	12790.0	0.609471	0.718452	0.609622	12790.0
_TFIDF_DecisionTreeClassifier()_	0.655825	0.495253	0.497082	0.483058	12790.0	0.595505	0.655825	0.615869	12790.0
_KNN_1	0.721032	0.497460	0.499967	0.421397	12790.0	0.597333	0.721032	0.606439	12790.0
_KNN_3	0.722127	0.361092	0.499946	0.419323	12790.0	0.521564	0.722127	0.605674	12790.0
_KNN_5	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_KNN_7	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_KNN_10	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0

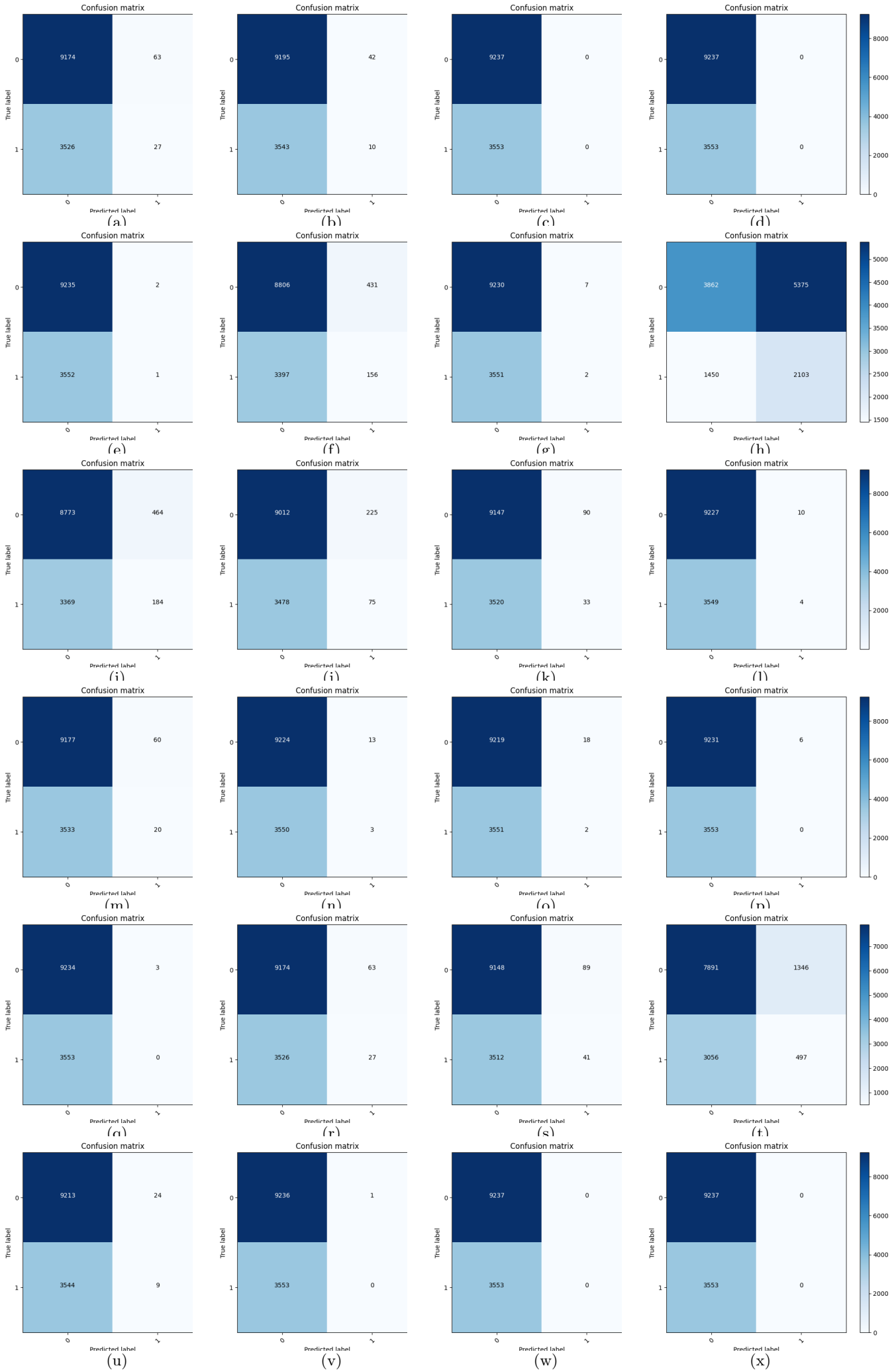

Figure 4: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)

Model on LIAR dataset with metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.720094	0.453971	0.499231	0.420802	12790.0	0.573039	0.720094	0.605833	12790.0
_ngram_2_LogisticRegression(solver='sag')_	0.719781	0.438664	0.498928	0.420424	12790.0	0.564481	0.719781	0.605536	12790.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_ngram_2_SVC(kernel='linear')_	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_ngram_3_SVC(kernel='linear')_	0.722127	0.527776	0.500032	0.419597	12790.0	0.614188	0.722127	0.605819	12790.0
_ngram_2_DecisionTreeClassifier()_	0.695387	0.495426	0.498753	0.455031	12790.0	0.595973	0.695387	0.615872	12790.0
_ngram_3_DecisionTreeClassifier()_	0.721892	0.511111	0.500043	0.420063	12790.0	0.604931	0.721892	0.605995	12790.0
_ngramKNN_2k=1	0.478264	0.497320	0.496686	0.460938	12790.0	0.595968	0.478264	0.503887	12790.0
_ngramKNN_2k=3	0.672791	0.505078	0.502593	0.482560	12790.0	0.602094	0.672791	0.621989	12790.0
_ngramKNN_2k=5	0.706802	0.486632	0.497996	0.438631	12790.0	0.590954	0.706802	0.611062	12790.0
_ngramKNN_2k=7	0.709930	0.486158	0.498343	0.434987	12790.0	0.590757	0.709930	0.610147	12790.0
_ngramKNN_2k=10	0.719625	0.475741	0.499426	0.422248	12790.0	0.585169	0.719625	0.606456	12790.0
_ngramKNN_3k=1	0.719547	0.496216	0.499891	0.423817	12790.0	0.596628	0.719547	0.607264	12790.0
_ngramKNN_3k=3	0.720954	0.444331	0.499480	0.420016	12790.0	0.567728	0.720954	0.605681	12790.0
_ngramKNN_3k=5	0.722127	0.361092	0.499946	0.419323	12790.0	0.521564	0.722127	0.605674	12790.0
_ngramKNN_3k=7	0.722127	0.361092	0.499946	0.419323	12790.0	0.521564	0.722127	0.605674	12790.0
_ngramKNN_3k=10	0.722205	0.361102	0.500000	0.419349	12790.0	0.521580	0.722205	0.605712	12790.0
_TFIDF_LogisticRegression(solver='sag')_	0.720094	0.453971	0.499231	0.420802	12790.0	0.573039	0.720094	0.605833	12790.0
_TFIDF_SVC(kernel='linear')_	0.718452	0.491032	0.499653	0.425004	12790.0	0.593705	0.718452	0.607554	12790.0
_TFIDF_DecisionTreeClassifier()_	0.677717	0.504719	0.502193	0.478425	12790.0	0.601808	0.677717	0.621706	12790.0
_KNN_1	0.600000	0.496103	0.496189	0.496088	12790.0	0.595656	0.600000	0.597781	12790.0
_KNN_3	0.646599	0.485033	0.490348	0.476955	12790.0	0.588403	0.646599	0.609335	12790.0
_KNN_5	0.657780	0.486077	0.492113	0.473632	12790.0	0.589396	0.657780	0.611992	12790.0
_KNN_7	0.669038	0.485457	0.493067	0.467620	12790.0	0.589286	0.669038	0.613147	12790.0
_KNN_10	0.691556	0.490703	0.497226	0.455727	12790.0	0.593056	0.691556	0.614945	12790.0

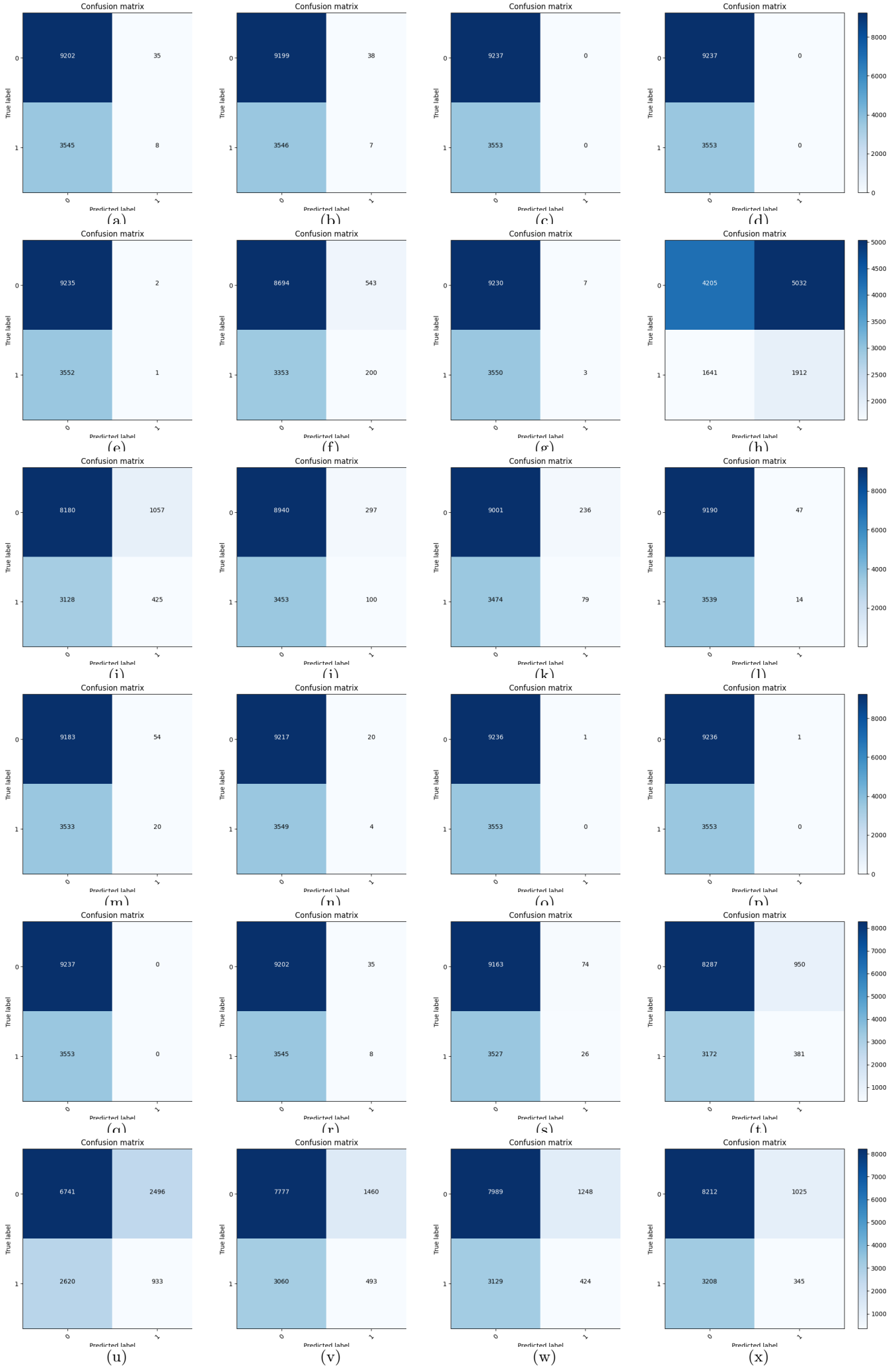

Figure 5: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)

Model on LIAR dataset only with metadata

	accuracy	precision macro	recall macro	f1-score macro	support macro	precision weighted	recall weighted	f1-score weighted	support weighted
_TFIDF_LogisticRegression(solver='sag')_	0.679593	0.474018	0.490589	0.453367	12790.0	0.582493	0.679593	0.609647	12790.0
_ngram_2_LogisticRegression(solver='sag')_	0.702033	0.493106	0.498591	0.446643	12790.0	0.594657	0.702033	0.613709	12790.0
_ngram_3_LogisticRegression(max_iter=10000, n_j...	0.720954	0.582112	0.504243	0.434492	12790.0	0.645135	0.720954	0.613362	12790.0
_ngram_2_SVC(kernel='linear')_	0.713995	0.534108	0.504361	0.445495	12790.0	0.618499	0.713995	0.616973	12790.0
_ngram_3_SVC(kernel='linear')_	0.720407	0.572267	0.504037	0.434784	12790.0	0.639629	0.720407	0.613345	12790.0
_ngram_2_DecisionTreeClassifier()_	0.711493	0.527402	0.504188	0.448526	12790.0	0.614746	0.711493	0.617763	12790.0
_ngram_3_DecisionTreeClassifier()_	0.719937	0.566330	0.504059	0.435610	12790.0	0.636335	0.719937	0.613636	12790.0
_ngramKNN_2k=1	0.432760	0.491684	0.490381	0.428305	12790.0	0.589444	0.432760	0.450732	12790.0
_ngramKNN_2k=3	0.438311	0.495922	0.495264	0.433522	12790.0	0.594200	0.438311	0.456670	12790.0
_ngramKNN_2k=5	0.703675	0.534445	0.509513	0.470841	12790.0	0.619690	0.703675	0.626832	12790.0
_ngramKNN_2k=7	0.707584	0.530899	0.506591	0.459613	12790.0	0.617147	0.707584	0.622294	12790.0
_ngramKNN_2k=10	0.714855	0.504359	0.500367	0.433078	12790.0	0.601239	0.714855	0.610700	12790.0
_ngramKNN_3k=1	0.293901	0.485851	0.497209	0.252063	12790.0	0.578833	0.293901	0.173449	12790.0
_ngramKNN_3k=3	0.294371	0.481381	0.496061	0.253722	12790.0	0.572591	0.294371	0.176319	12790.0
_ngramKNN_3k=5	0.294527	0.482653	0.496343	0.253830	12790.0	0.574376	0.294527	0.176386	12790.0
_ngramKNN_3k=7	0.293354	0.484499	0.497003	0.251160	12790.0	0.576917	0.293354	0.172164	12790.0
_ngramKNN_3k=10	0.294840	0.485588	0.496992	0.253987	12790.0	0.578494	0.294840	0.176404	12790.0
_TFIDF_LogisticRegression(solver='sag')_	0.679593	0.474018	0.490589	0.453367	12790.0	0.582493	0.679593	0.609647	12790.0
_TFIDF_SVC(kernel='linear')_	0.689601	0.475076	0.492928	0.447956	12790.0	0.583560	0.689601	0.610271	12790.0
_TFIDF_DecisionTreeClassifier()_	0.607115	0.497979	0.498084	0.497717	12790.0	0.597168	0.607115	0.601892	12790.0
_KNN_1	0.700547	0.512728	0.503278	0.459836	12790.0	0.606440	0.700547	0.620085	12790.0
_KNN_3	0.718452	0.536560	0.502251	0.432743	12790.0	0.619469	0.718452	0.611654	12790.0
_KNN_5	0.602502	0.496959	0.497055	0.496889	12790.0	0.596347	0.602502	0.599330	12790.0
_KNN_7	0.616263	0.496696	0.497056	0.495580	12790.0	0.596230	0.616263	0.605228	12790.0
_KNN_10	0.668804	0.501475	0.500785	0.481898	12790.0	0.599729	0.668804	0.620192	12790.0

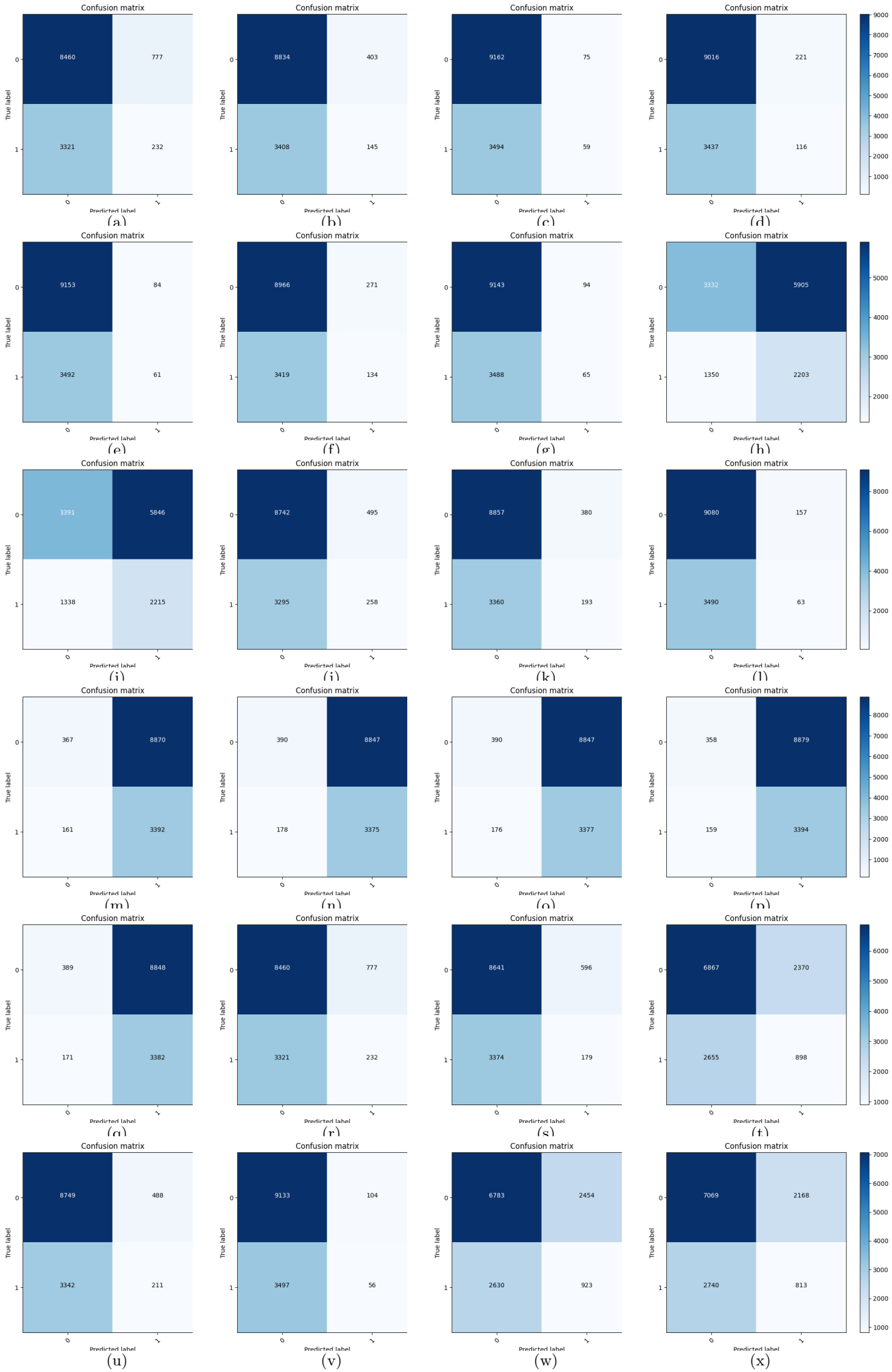

Figure 6: The models used in the above confusion matrices are respectively (a) bigram vectoriser with logistic regression; (b)