

行ったこと

行ったこと

地価予測の概要

まとめ

進捗報告

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行ったこと

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- ・富山県の公示地価データを国土数値情報ダウンロードサイトから取得した。
- ・犯罪情報は「富山県犯罪マップ」から、施設情報はNAVITIMEからスクレイピングをして取得した。

行ったこと

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地価予測の概要

まとめ

123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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行ったこと

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- ・ 公示地価の地点から施設までの最短距離を求めた。
- ・ 集めたデータに対して、カテゴリ変数のダミー変数化,z-score による正規化を行った。
- ・ 正規化を行った後に lingam による因果探索を行って、説明変数の絞り込みを行った。

行ったこと

行ったこと

地価予測の概要

まとめ

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	公示地価	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist	min_dist
2	0.078993	-0.50484	0.472625	0.409643	-0.43915	-0.83206	-0.9338	0.070871	-0.33614	0.561427	-0.16659	-0.4884	0.171396	-0.45503	-0.53596	-0.57968	-0.52842	-0.74954	-0.19398	-0.01116	-0.79792	-0.24769	-0.93833	-0.7749	0.102715	-0.07329
3	0.092345	-0.42182	-0.07123	-0.24316	-0.06006	-0.696	-0.97898	-0.38272	0.00516	-0.76334	-0.96254	-0.70784	-0.49985	-0.32769	-0.05584	-0.62923	0.374325	-0.1897	-0.4109	0.21608	-0.11021	-0.6223	-0.91797	0.580088	0.314095	-0.7182
4	-0.66862	-0.4495	1.327028	0.37033	1.335212	0.440816	0.260221	-1.22981	-0.76856	1.788169	0.755243	1.32906	1.468463	0.379015	-0.1354	-0.98379	0.320559	0.374325	-0.29667	0.738626	0.785105	-0.74121	0.453471	0.670775	0.96993	1.225432
5	0.31512	-0.39604	-0.27349	-0.64405	-0.3035	0.087312	-0.64175	0.079046	-0.79528	-0.38091	-0.61832	1.34664	0.239665	-1.09934	0.71485	-1.0052	-0.40177	-0.4771	-0.4669	-0.75589	-0.58612	-0.36677	-0.4349	-0.44768	-0.55902	-0.4521
6	1.35155	-0.38619	-0.68633	-1.44433	0.21793	-0.77258	0.668238	-0.57617	-0.9716	0.023237	-1.00406	1.09997	-0.49038	-0.51294	-0.71776	-1.08067	-0.61546	-0.3581	-0.29187	-0.88788	-0.05641	-0.6058	-0.66055	0.10152	2.9862	
7	0.620438	-0.45711	-0.05803	-0.61226	-0.98435	-0.26295	-0.53457	-0.36575	-1.06996	-0.27842	-0.49153	-1.63917	-0.92462	-0.60912	-0.77983	0.847793	-0.04347	0.706912	-0.05062	0.004585	-0.48673	0.256057	-0.71035	0.088352	-0.73117	1.480897
8	0.534186	0.381385	-0.11715	0.008333	0.53962	-0.10707	-0.81583	-1.21553	-0.33379	0.216023	-0.58817	1.20314	0.890604	-0.38447	-0.29161	0.069837	-0.78415	-1.23178	-0.31673	-0.54083	-0.63549	-0.57457	-0.28125	-0.87417	-0.40052	0.821309
9	-0.76008	-0.40081	-0.68215	-1.21895	0.991132	0.10182	-0.28279	0.70183	0.425893	0.044357	-0.42861	0.302233	-0.41538	-0.67703	-0.21345	0.885722	-0.47042	1.390605	-1.17995	-0.33343	-0.20832	-0.19682	-0.79169	-0.24562	-0.98636	-0.5241
10	0.353038	-0.40909	-0.31709	0.02115	-0.05988	-0.72316	-0.33812	-0.75763	-0.22831	-0.08077	-0.72784	-0.72832	-0.20277	-0.91752	-0.66407	-0.95263	-0.38705	-0.89257	-0.46066	-0.60579	-0.64543	-0.45489	-0.82728	-0.65517	-0.19814	-0.2610
11	0.391014	-0.28152	-0.04632	-0.24996	-0.63754	-0.74479	-0.07945	-0.50406	-0.94368	1.337962	0.347185	-0.56133	-0.41791	-0.20962	-0.58262	-0.32398	-0.23668	-0.60134	0.282242	-0.7163	-0.17645	-0.52241	-0.48396	-0.28402	-0.55903	0.370483
12	0.683638	-0.49351	0.111605	-0.00895	-0.18231	-0.5998	0.20775	0.17632	-0.4782	0.02134	0.205438	1.127963	-0.10515	-0.17966	-0.58503	-0.11227	-0.53549	-0.64408	-0.01039	-0.23184	-0.13764	-0.66836	-0.37325	-0.65076	-0.74299	0.397369
13	-0.86249	0.511123	-0.40797	1.746994	0.604998	0.320841	0.873983	1.27217	0.599071	-0.11242	-0.09613	2.593818	1.71726	-0.53464	0.023696	0.221629	1.169466	1.325455	-0.11967	0.03174	1.95418	-0.02518	0.446681	0.720624	0.688766	0.521278
14	-0.59651	0.516219	-0.83179	-1.22024	0.0883	0.22015	-0.75394	0.200385	-1.0105	-1.65234	0.284193	1.25991	-1.38596	-0.18996	0.401236	-1.25912	1.511359	-0.51337	-0.15314	0.066002	1.289196	-0.83826	1.590023	1.511651	0.828598	-1.12911
15	-0.22757	-0.4733	0.81016	-1.11195	1.08791	0.266538	-0.52292	1.215963	0.007706	0.346713	-0.55314	0.552934	-0.93177	-0.03340	0.18345	1.124369	-0.40428	0.817005	-0.05335	-0.24197	-0.56474	0.440989	-0.54933	-0.71709	-0.11291	-0.13458
16	1.138014	-0.6801	-0.93223	-1.18918	0.127317	0.155373	-0.27041	-0.76893	-0.04756	-0.28452	-0.42454	0.018309	-1.2003	-0.56553	-0.7364	1.236076	-0.62398	0.292607	-0.5849	-0.94152	-0.5402	-0.75555	-0.75612	-0.57844	-0.76644	-0.6721
17	1.268009	-0.4878	-0.40763	-0.86177	-0.32448	-1.00731	-1.25254	-1.185	-0.5026	-0.08773	-0.77242	-0.34103	-0.69619	-0.57418	-0.69759	-1.08646	-0.20824	-0.64489	-0.53629	-1.08802	-0.303	-0.73421	-0.76245	-0.81807	-0.82007	-0.28571
18	0.290049	-0.51278	-0.56955	-0.11982	-0.93487	-0.47542	-0.21307	0.489944	0.154122	0.744709	-0.2013	0.31169	0.21751	-0.03152	-0.55623	-0.51505	-0.3536	-0.352	-0.11961	-0.32463	-0.6196	-0.04194	-0.77429	-0.79532	0.006627	0.983456
19	-0.2833	-0.43015	0.438681	0.758294	-0.04503	0.105229	0.961393	-0.90409	0.622527	2.009906	1.09146	0.67805	0.662258	0.623134	-0.36106	1.731142	-0.28032	0.007279	-0.29218	0.76147	-0.38021	-0.49758	-0.50278	0.157439	-0.47057	0.40281
20	-0.58522	1.148959	-0.35497	-0.807	0.066051	-0.66573	0.677406	1.16123	0.216762	-0.25734	2.009711	-1.28237	0.259306	0.994299	-0.42167	-1.00183	1.399303	-0.66677	-0.31024	0.491748	0.719064	0.932288	0.981329	1.295162	0.752529	0.370369
21	-0.19041	-0.44827	-0.32236	0.394512	-0.39389	-0.08159	-0.37697	-0.08918	-0.6367	0.707219	-0.65872	0.294288	-0.69129	-0.62851	-0.50774	0.284229	-0.08725	-0.40076	-0.38177	0.119618	-0.0022	-0.93289	-0.06143	-0.17549	0.035903	-1.2209
22	0.873259	-0.32189	-0.17986	-0.76385	0.113545	-0.55958	-0.89216	-0.00123	-0.88846	0.59479	-0.95598	0.080622	-0.25956	-1.01997	-0.70179	0.326669	0.080719	0.09396	-0.01011	-0.87182	-0.52031	0.072007	-0.8168	0.32568	-0.83119	0.151177
23	0.0278	0.47892	-0.73855	-0.39058	1.12117	-0.66238	-0.00076	-0.88653	0.680278	0.774906	-0.31382	0.759574	0.566189	0.074516	-0.40745	0.996118	-0.78533	-0.75845	-0.47433	-0.34299	0.23155	-0.78653	-0.52343	-0.44746	-0.27929	0.95959
24	-0.71063	0.576592	-0.10769	0.800298	0.31661	0.093244	-0.20355	-0.54659	-1.20412	0.058367	-0.31678	3.33548	-1.11007	-0.353	0.448735	1.784184	0.765335	-0.01174	0.388453	-1.14619	-0.05346	-0.42137	3.051211	0.845909	3.643016	0.45027
25	0.185824	0.07801	1.05505	0.70446	0.821668	-0.07491	-0.44878	-0.02806	-0.70215	-1.05778	-0.83526	-0.91041	1.180663	-0.2653	-0.27872	-0.87715	-0.21082	-0.58629	-0.17508	-0.46846	-0.35452	-0.54563	-0.59397	-0.30393	-0.03708	0.656958
26	1.142659	-0.51288	-0.38115	-0.61295	-0.8242	-0.46759	-0.29767	-1.00755	-0.2287	0.005904	-0.3604	0.361324	-0.87243	-0.74702	-0.68877	-0.4503	-0.44993	-0.12027	-0.44118	0.089047	-0.78811	-0.54037	-0.56857	-0.12527		
27	2.234193	-0.48906	-0.78996	-1.07822	-0.36388	-0.21059	-0.60302	-0.586	-1.13891	-0.40144	-1.00389	-0.13885	-0.6626	-0.5409	-0.59844	-1.23954	-0.32569	-0.33318	-0.50171	-0.91014	-0.98319	-0.55745	-0.91483	-0.57994	-0.8284	-0.12344
28	-0.06287	-0.45146	0.20097	-0.15923	0.30916	0.15157	-0.00996	0.01707	0.664124	-0.89563	-0.909	-0.77396	1.047953	0.382451	-0.42248	-0.09931	-0.31786	-0.7733	-0.18084	0.06787	-0.96979	-0.427159	-0.38074	-0.17399	0.23535	0.106321
29	2.4525	-0.4635	-0.48043	-0.76481	-0.72153	-0.23274	-0.69682	-0.47763	-0.93102	-0.80408	-0.59127	-1.38891	-1.24828	-0.21476	-0.5822	-0.06261	-0.49652	-0.50779	-0.500219	-0.87363	-0.87572	-0.5422	-0.84592	-0.54109	-1.02004	-0.65904

図 2: 処理後

lingam による因果探索

結果, 施設までの距離データは 8 つの変数に絞ることが出来た。

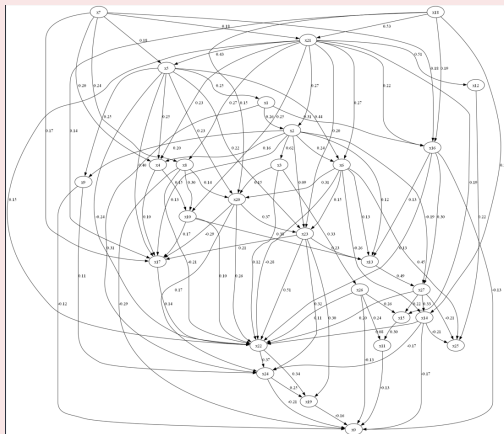


図 3: 因果探索結果

行ったこと

行ったこと

地価予測の概要

まとめ

lingam による因果探索

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	
1			公共施設	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14	x15	x16	x17	x18	x19	x20	x21	x22	x23	x24	x25	x26	x27	
2	公共施設	x0	0	0	0	0	0	0	0	-0.2917	-0.1238	0	0	-0.1322	0	0	-0.1721	0	-0.1284	0	0	-0.1614	0	0	0	0	-0.2563	0	-0.1393	0	
3	mm_data	x1	0	0.25558	0	0	0	0.25268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.27101	0	0	0	0	
4	mm_data	x2	0	0	0.03864	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	mm_data	x3	0	0	0.18107	0	0	0.24824	0	0.20552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.23331	0	0	0	0	
6	mm_data	x4	0	0	0	0	0	0	0	0.18345	0	0	0	0	0	0	0	0	0	0	0.4327	0	0	0	0	0	0	0	0	0	
7	mm_data	x5	0	0	0.24186	0	0	0.43801	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2748	0	0	0	0	0	0	0	0	
8	mm_data	x6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	mm_data	x7	0	0	0	0	0	0	0	0.23848	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.27555	0	0	0	0
10	mm_data	x8	0	0	0.1994	0	0	0.24988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	mm_data	x9	0	0	0.14557	0	0	0	0	0.28696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.24969	0	0	0	0	
12	mm_data	x10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.39344	0	0	0	0	0	0	0	0	0	0	0	0.24411	0	
13	mm_data	x11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.51491	0	0	0	0	
14	mm_data	x12	0	0	0.12341	0	0	0	0.13163	0	0	0	0.37886	0	0	0	0	0.13465	0	0	0	0	0	0	0	0.23482	0	0	0	0	
15	mm_data	x13	0	0	0	0	0	-0.2615	0	0	0	0	0	0	0	0	0	0	0	0.57751	0	0	0	0	0	0	0	0	0.33695	0	
16	mm_data	x14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19283	0	0	0.25851	0.22489	
17	mm_data	x15	0	0.39377	0	0	0	0	0.17881	0	0	0	0	0	0	0	0	0.18123	0	0.21262	0	0	0	0	0	0	0.21262	0	0	0	0
18	mm_data	x16	0	0	0.131	0	0.09383	0.30906	0	0.17334	0	0	0.1754	0	0	0	0	0	0.11741	0	-0.2095	0	0	0	0	0.20755	0	0	0	0	
19	mm_data	x17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20	mm_data	x18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.33845	0.29616	0.24658	0	0	
21	mm_data	x19	0	0	0.15016	0	0.22841	0.30724	0	0.14423	0	0	0	0	0	0	0	0	0	0.11425	0	0	0	0	0	0	0	0	0	0	
22	mm_data	x20	0	0	0	0	0	0	0.18311	0	0	0	0	0	0	0	0	0	0	0.53029	0	0	0	0	0	0	0	0	0	0	
23	mm_data	x21	0	0.12335	0	-0.242	-0.276	0	-0.2069	0.18216	0	0	0	0	0	0.807656	0.133179	0.13849	0	0.262291	0.15293	0	0.51445	0	0	0.11997	0.253	0	0	0	
24	mm_data	x22	0	0	0.88923	0	0.22057	0.15236	0	0	0	0	0	0	0	0	0	0	0	0.37071	0.21602	0	0	0	0	0	0	0	0	0	
25	mm_data	x23	0	0.30977	0	0	0	0	0	0	0.11429	0	0	0	0	-0.1656	0	0	0	0.17261	0.37282	0.318	0	0	0	0	0	0	0	0	
26	mm_data	x24	0	0	0	0	0	0.44588	0	0	0	0	0	0.22364	-0.2069	0	0	0	0	0	0	0	0	0	0	0	0	0	-0.2067	0	
27	mm_data	x25	0	0	0.32093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	mm_data	x26	0	0	-0.1923	0	0	0	0	0	0	0	0	0	0	0	0.48392	0	0.29904	0	0	0	0	0	0	0	0	0	0	0	0

図 4: 隣接行列

行ったこと

6/8

データの取得を行い、そのデータに対して欠損値の処理やカテゴリ変数へのダミー変数化などのデータクリーニングを行い、各土地毎の各施設までの最短距離を求めてデータセットの作成を行った。

行ったこと

行ったこと

地価予測の概要

まとめ

	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	
1	769.0154	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	584.0156	
2	38.08297	982.1457	1543.1596	381.7589	204.7699	384.7431	419.952	686.9172	1069.699	873.4478	518.1881	1232.417	1084.273	2140.561	271.5943	581.2229	304.4304	384.7431	2140.561	581.2229	385.9546	385.9546	385.9546	2140.561	1203.388	723.4995	
3	161.2618	684.0302	1000.081	482.704	298.1697	298.1697	965.6302	472.7774	281.8022	433.3296	782.5138	821.4585	5773.187	297.0819	1837.759	388.4008	1085.9999	2908.821	84.8896	105.4445	413.2336	2800.969	2908.821	647.8289	827.8929	182.6911	
4	130.867	126.0196	1452.036	951.5086	1991.584	2156.203	71.44583	387.0189	1622.405	1773.814	2142.43	2342.512	5006.975	152.8619	1634.839	588.0766	277.6957	1342.185	135.103	2353.295	2191.586	3647.773	2322.895	1055.06			
5	199.541	572.947	664.8814	607.479	448.2966	795.0642	422.2014	368.4911	645.6987	981.1772	186.3022	1133.122	186.3022	782.3979	146.5998	735.2912	118.8522	931.3823	325.4327	1086.911	792.2976	877.422	447.0683				
6	214.1483	246.2095	246.2095	581.9111	246.2095	2706.749	246.2095	246.2095	631.2915	246.2095	591.6917	768.1238	975.8977	778.5035	124.3791	472.4144	514.3502	210.3468	1684.782	493.9511	478.1095	831.2915	527.964	2312.284	3832.965	872.7171	
7	108.8196	691.2746	691.2746	177.9941	601.2677	952.9935	302.7281	177.9941	691.2746	691.2746	731.1995	462.2074	899.5257	302.7281	691.2746	1178.152	940.3481	482.8775	2165.117	691.2746	642.0234	691.2746	1455.688	691.2746	2546.745	1966.562	
8	1357.524	658.8036	1210.499	327.8824	74.47694	536.5652	74.47694	688.5451	914.0821	624.7258	1172.312	1737	1210.499	3882.086	462.5824	282.8678	77.32165	263.5989	1265.943	545.522	216.808	1265.943	282.8678	1265.943	1972.04	787.0111	
9	192.4527	183.6931	183.6931	831.8474	936.0002	1323.978	589.4832	1231.406	836.7121	745.9155	823.9278	820.7438	774.8735	6571.073	702.2821	650.4382	1298.355	376.3059	1617.382	964.6181	413.6882	251.958	1043.361	1617.382	815.2157	1335.946	
10	54.08185	548.9683	1271.12	495.617	780.6398	1212.448	197.489	781.698	700.3313	881.3894	426.1808	909.8116	439.7079	1175.084	162.0113	753.4988	321.7618	140.592	1175.084	534.6774	290.6298	534.6774	534.6774	290.6298	1045.705	286.6398	
11	399.4585	607.7066	1001.827	227.4759	265.5724	1029.196	395.5714	265.5724	1418.959	1418.959	488.9648	818.989	1428.31	1788.967	346.8117	939.3423	724.2247	707.1544	995.6878	995.6878	995.6878	995.6878	1584.528	265.5724			
12	54.89157	784.4506	1196.372	448.3296	327.6565	2066.769	448.3296	588.3963	826.3483	1297.37	1143.937	1038.396	1469.864	1782.078	409.0489	946.9858	364.0596	1474.8235	937.5413	172.131	1143.937	536.598	6071.291	1007.862	825.8786		
13	1575.289	499.0687	2664.893	744.0326	3028.43	3028.43	744.0326	1127.452	766.0795	1034.625	1687.587	2316.873	973.291	6884.466	507.204	2677.341	1237.855	178.8752	2159.117	2243.488	499.0687	2243.488	2243.488	3159.117	1714.344	2085.42	
14	1598.255	286.2799	286.2799	539.5387	631.0856	631.0856	454.7934	128.2315	72.3089	1384.889	232.8027	130.8009	1552.165	8203.46	72.3089	3099.812	415.0549	398.395	3889.473	2432.618	90.85221	2772.022	3225.584	3405.544	1218.414	934.1395	
15	84.89074	273.2161	273.2161	852.8738	970.1638	970.1638	727.5835	925.3809	927.9488	937.7789	920.875	658.4933	417.4484	4797.132	772.5785	732.382	2642.62	1885.888	1705.807	844.7408	740.9012	907.058	1138.937	1705.807	1259.388	983.5959	
16	48.22585	211.1105	211.1105	563.9899	692.7147	1302.222	564.2225	687.0569	686.5254	749.4514	714.1334	770.0593	939.2712	628.9769	806.5189	969.4448	785.2388	42.82974	628.9769	628.9769	127.8691	628.9769	628.9769	628.9769	888.1002	1172.2	
17	63.68447	486.2502	499.2052	490.4083	627.6708	820.6738	820.6738	571.4723	777.1979	447.3824	575.1766	648.9439	818.2136	922.4018	128.9513	874.6912	653.7192	62.9738	392.12	871.5282	138.9587	981.3159	323.3457	536.7799	1020.41	734.6802	
18	26.8511	386.7882	1103.276	134.471	453.2418	1426.703	933.6438	1028.925	1152.28	943.3029	828.568	369.580	1264.77	1674.525	1867.821	290.6456	794.8278	491.0525	361.0093	1631.588	966.9195	900.5487	905.63	366.0643	1979.123	211.427	1268.21
19	140.062	164.0116	1837.95	494.5888	857.7794	3186.694	158.1298	1351.777	1991.359	2133.354	156.78	1576.797	3005.036	3458.678	950.949	885.462	681.6556	182.8367	3404.241	755.7743	258.399	158.1298	1133.774	1993.894	882.5814		
20	2491.188	528.3458	528.3458	700.772	320.85	2738.786	426.1256	700.772	2908.892	211.155	1291.287	1033.881	2957.084	147.5485	2957.084	343.4126	234.0004	2957.084	1874.254	966.7946	2957.084	2957.084	2957.084	528.3458	543.5593		
21	122.0343	548.891	1533.982	372.7547	177.4574	1185.338	377.6244	478.4657	1135.397	548.891	625.8559	627.982	847.5853	2553.214	518.7308	1154.828	488.6966	210.0043	2353.214	1188.831	210.0043	5333.541	1188.831	2025.922	210.4747	1848.118	
22	13.10885	13.10885	548.7228	548.7228	406.8797	406.8797	406.8797	406.8797	296.8202	548.7228	738.2302	932.1746	596.5033	860.8029	548.7228	131.724	756.2299	470.8797	907.874	548.7228	548.7228	1087.874	548.7228	1396.01	800.782		
23	75.9445	322.9884	876.7481	84.79889	322.9884	952.2722	189.2917	1338.361	1105.521	445.7892	1002.91	1369.151	1822.311	1603.74	734.8953	263.493	288.616	179.5822	1901.774	84.6113	115.1118	941.613	782.4158	1603.74	1763.48	1312.67	
24	92.65277	661.996	1438.061	430.0607	430.0607	1322.896	254.1553	84.54686	843.0248	843.0248	1256.063	6561.422	966.5395	5885.835	691.698	843.0248	297.6805	233.6828	297.6805	233.6828	297.6805	233.6828	297.6805	233.6828	879.0738	988.3871	
25	902.8425	1339.362	1792.399	582.133	732.7265	1079.406	393.4222	431.081	340.1099	596.4499	354.9594	1940.5	1348.714	4079.194	242.993	971.3206	881.138	380.3332	1398.061	741.6121	232.5338	447.6796	971.3106	1897.596	1893.029	1679.570	
26	26.15517	513.7979	690.6988	211.3728	458.6966	1302.261	130.2397	752.814	610.2597	784.6347	445.7788	503.0312	2053.629	1296.447	212.7635	1881.425	45.2575	115.8553	513.4593	753.0642	557.1304	454.6497	677.758	973.8993	157.195	523.1895	
27	451.5129	29.4536	303.4339	387.128	637.734	783.7219	243.8478	138.1696	435.8418	246.5217	453.3607	467.3007	984.8628	338.82	77.67188	429.127	217.845	118.8822	684.9123	254.2081	228.311	471.6227	631.6386	368.4979	888.6748	545.875	
28	317.3025	635.7881	1306.911	495.5647	934.3774	1500.614	495.5647	1380.628	429.3916	238.7593	407.7018	2678.957	2251.482	2995.147	421.6787	839.068	635.2725	361.3957	2268.808	1132.697	728.9968	1132.697	1132.697	2371.081	1397.458	783.5908	
29	94.43067	571.887	569.813	295.5802	622.316	722.7997	272.6767	724.3492	454.1896	604.6861	189.967	236.6959	1419.138	1782.083	247.2085	618.1813	418.2634	110.7749	740.2109	386.6392	236.2759	110.2558	676.3691	189.227	702.9885	185.5168	

図 5: できたデータセット

行ったこと
行ったこと

地価予測の概要
まとめ

ヘドニック・アプローチ

地価の予測にヘドニック・アプローチがよく用いられていた。土地は周辺環境や広さなどが異なるため、複数の財と考えられる。そのため分析が大変になるが、ヘドニック・アプローチを用いることで簡単化できる。

宅地の特性ベクトル $z=(z_1, \dots, z_n)$
 市場価格関数 $p=p(z)$
 効用関数 $U(x, z)$
 予算制約式 $y=x+p(z)$
 無差別曲線と予算制約線の接点 (z^*, x^*)
 付け値関数 $r(z; y, u)$

図 6: ヘドニック・アプローチにおける変数

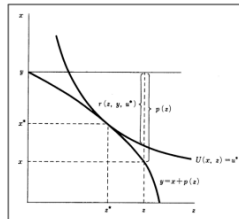


図 7: 付け値関数のグラフ

今後の課題

- ・できたデータセットに対してヘドニックアプローチを行い, 土地価格決定要因を導く.
- ・数値実験を行い, ポスターの完成を急ぐ.