

Why Should We Care?

- Age discrimination against older players
 - Practice makes perfect?
 - Does APM (actions per minute) truly matter in RTS games?
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Research Question:

What is the best predictor for a player's league Index (1-8)?

Dependent Variable: League Index

Independent Variable: Age, Hours Per Week, APM

The Dataset

Skill Craft Player Behavior

helD	LeagueInDe	Age	HoursPerWe	TotalHours	APM	SelectByHot	AssignToHo	UniqueHotk M
52	5	27	10	3000	143.718	0.00351516	0.0002197	7 0
55	5	23	10	5000	129.2322	0.00330381	0.00025946	4 0
56	4	30	10	200	69.9612	0.00110109	0.00033557	4 0
57	3	19	20	400	107.6016	0.00103354	0.0002131	1
58	3	32	10	500	122.8908	0.00113601	0.00032733	2
60	2	27	6	70	44.457	0.00097839	0.00025523	2
61	1	21	8	240	46.9962	0.00082011	0.00016852	6
72	7	17	42	10000	212.6022	0.00903974	0.00067624	6 0
77	4	20	14	2708	117.4884	0.00294428	0.00052677	2
81	4	18	24	800	155.9856	0.00505391	0.00052411	8
83	3	16	16	6000	153.801	0.00167661	0.00031856	4
93	4	26	4	190	79.2948	0.00037854	0.0002551	3
97	3	18	12	350	67.4754	0.00042252	0.00016901	1
98	3	38	6	1000	119.4366	0.00495204	5.21E-05	2
100	5	16	30	5000	160.4754	0.00425386	0.00043174	2 0
102	5	17	16	1500	81.7722	0.00233348	0.00043045	4
105	4	28	8	2000	50.8374	0.00066411	0.00022137	1
106	5	20	10	120	160.6464	0.00343034	0.00063363	7
118	5	16	14	350	107.9118	0.00670131	0.0007061	5
127	4	26	28	1100	114.7806	0.00262961	0.00028739	5 0
132	5	21	10	800	115.1274	0.00265115	0.00066004	8
138	6	21	6	500	133.7016	0.00449979	0.00042011	3
139	5	18	20	800	99.5088	0.00073402	0.0001083	1
140	5	26	10	500	83.9172	0.00285351	0.00049297	3
141	4	17	14	500	216.6936	0.01249465	0.00048159	4
142	4	23	20	800	129.8598	0.00231508	0.00033377	5
144	6	18	70	2520	267.5586	0.02781493	0.00070816	10
149	5	25	6	800	74.1174	0.000875	0.00020536	6
154	5	25	20	700	101.6796	0.00140619	0.0004272	5
158	6	18	10	160	150.5004	0.00566669	0.00063153	6 0
160	3	19	6	150	64.6416	0.00067234	0.00033617	1 0
161	3	18	8	250	41.9094	0.00027575	0.0001909	0
162	5	16	16	1000	128.0784	0.00275379	9.50E-05	4 0
163	6	16	28	500	161.3466	0.00610991	0.00057748	9 0
168	4	22	4	400	90.7686	0.00161045	0.00039279	4
169	6	20	14	730	162.0876	0.00759673	0.00057163	7 0

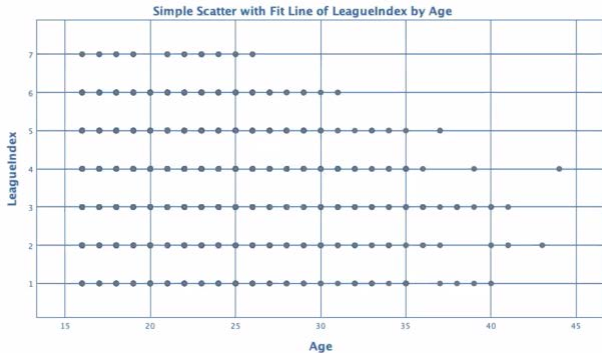
Methods

Step 1: Preliminary data analysis

Step 2: Clean the outliers

Step3: Linear Regression

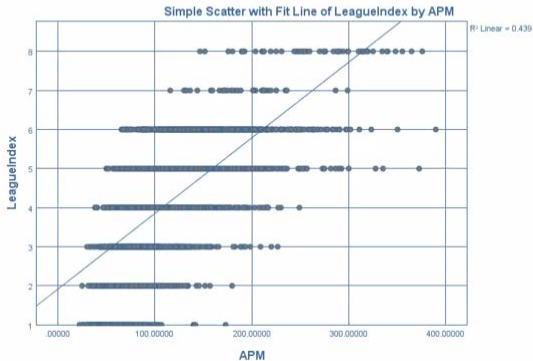
Scatter Plot: Age vs. League Index



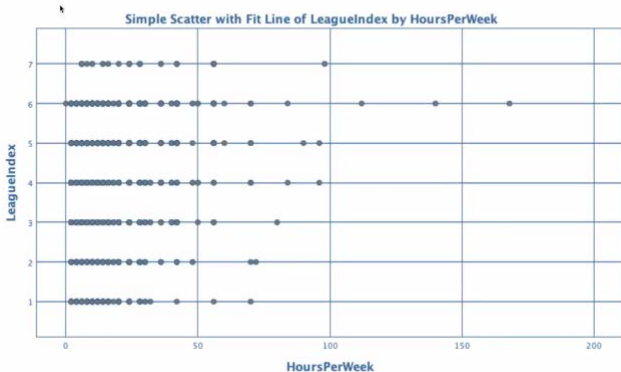
Scatter Plot: Age vs. League Index



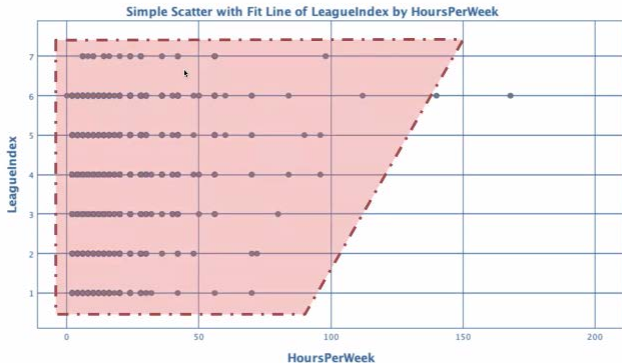
Scatter Plot: APM vs. League Index



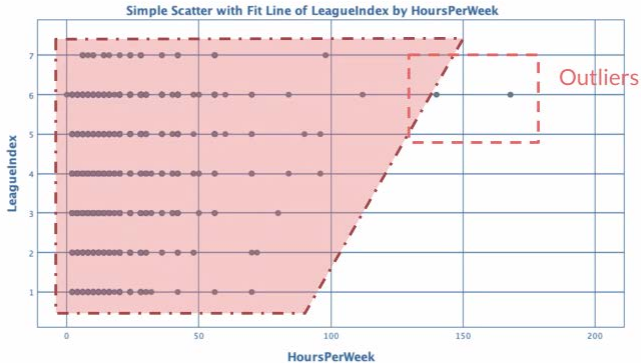
Simple Scatter Plot



Simple Scatter Plot



Simple Scatter Plot



Correlations

Correlations

		LeagueIndex	HoursPerWeek	Age	APM
Pearson Correlation	LeagueIndex	1.000	.218	-.127	.624
	HoursPerWeek	.218	1.000	-.191	.243
	Age	-.127	-.191	1.000	-.210
	APM	.624	.243	-.210	1.000
Sig. (1-tailed)	LeagueIndex	.	.000	.000	.000
	HoursPerWeek	.000	.	.000	.000
	Age	.000	.000	.	.000
	APM	.000	.000	.000	.
N	LeagueIndex	3335	3335	3335	3335
	HoursPerWeek	3335	3335	3335	3335
	Age	3335	3335	3335	3335
	APM	3335	3335	3335	3335

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		LeagueIndex	HoursPerWeek	Age	APM
Pearson Correlation	LeagueIndex	1.000	.218	-.127	.624
	HoursPerWeek	.218	Low Positive Correlation	.243	
	Age	-.127	Low Negative Correlation	-.210	
	APM	.624	High Positive Correlation	1.000	
Sig. (1-tailed)	LeagueIndex	.	.000	.000	.000
	HoursPerWeek	.000	.	.000	.000
	Age	.000	.000	.	.000
	APM	.000	.000	.000	.
N	LeagueIndex	3335	3335	3335	3335
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	Age	3335	3335	3335	3335
	APM	3335	3335	3335	3335

Regression Outcome

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	1.760	.128		13.756	.000	1.509	2.011
HoursPerWeek	.009	.002	.072	5.142	.000	.006	.013
Age	.005	.005	.015	1.070	.285	-.004	.015
APM	.018	.000	.610	43.182	.000	.018	.019

a. Dependent Variable: LeagueIndex

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a. Dependent Variable: LeagueIndex

When APM rises 1 standard deviation,
League Index rises for 0.6

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a. Dependent Variable: LeagueIndex

Best Predictor

When APM rises 1 standard deviation,
League Index rises for 0.6

Conclusion

1. Hours per week has a low positive correlation with League Index.
 2. Age has a low negative correlation with League Index.
 3. APM has high positive relationship with League Index, and therefore is the best predictor.
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What We Learn

Age and hours per week only matters a little bit in mastering gameplay.
Say no to age discrimination in gaming.

Practice makes progress, but it isn't game changing.

APM matters significantly in RTS games, perhaps some players are born for this genre.