

Empirical problem set
BUS456 Fall 2022

Group 12
Ekaterina Poruchikova - s222650
Add
Add
Add

2022-09-23

Question 1

Table 1: Frequency of the claim colour

Green	Red	Yellow
5677	1492	13191

Table 2: Frequency of the insurance type

	auto	life	other	property	travel
2	7563	2305	35	5865	4590

```
## [1] "Insurance claim with empty insurance type: 17857"  
## [2] "Insurance claim with empty insurance type: 18515"
```

Comment on question 1

Question 2

Table 3: Percentage of claim color

green	yellow	red
0.2787602	0.6479517	0.0732881

Table 4: Percentage of claim color by insurance type

insurancetype	green	yellow	red
auto	0.3411345	0.6402221	0.0186434
life	0.2125813	0.7422993	0.0451193
other	0.8857143	0.0857143	0.0285714
property	0.3636829	0.5459506	0.0903666
travel	0.0960784	0.7479303	0.1559913

Question 3

Table 5: Title

treatmentgroup	0	1	2	3	4
green	0.2816386	0.2753448	0.2696765	0.2925290	0.2751244
yellow	0.6452085	0.6503750	0.6569290	0.6317516	0.6549751
red	0.07315289	0.07428018	0.07339450	0.07571933	0.06990050
auto	0.3733236	0.3684975	0.3679382	0.3702675	0.3776119
life	0.1128993	0.1200097	0.1103332	0.1128218	0.1099502

Table 5: Title

property	0.2845647	0.2884104	0.2940608	0.2895003	0.2838308
travel	0.2275055	0.2213888	0.2262192	0.2253912	0.2268657
other	0.001706901	0.001693685	0.001448576	0.002019182	0.001741294
privatefinanced	0.8351622	0.8400677	0.8401738	0.8200404	0.8504975

Question 4

Question 5

Run the same regression but now add the following control variables (green red auto other life property privatefinanced). How do you interpret the point estimate of privatefinanced? Why do you think including that variable reduced the point estimate of the social norm group!? Does your conclusion about treatment effects change in some way?

Call: `lm(formula = accept_automatic ~ simplification + personalization + social.norm + combined + insurancetype + red + green, data = auto)`

Residuals: Min 1Q Median 3Q Max -1.00349 0.07242 0.11547 0.14399 0.19977

Coefficients: Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.850298 0.006160 138.038 < 2e-16 **simplification 0.007470 0.007164 1.043 0.297109**

personalization 0.005715 0.007161 0.798 0.424849

social.norm 0.015044 0.007241 2.078 0.037762

combined 0.026950 0.007214 3.736 0.000188 *insurancetype*life 0.075914 0.007764 9.777 < 2e-16 **in-**

surancetypeother -0.020318 0.055145 -0.368 0.712540

insurancetypeproperty -0.044928 0.005696 -7.888 3.22e-15 *insurancetype*travel 0.031898 0.006304

5.060 4.22e-07 **red -0.005136 0.009028 -0.569 0.569419**

green 0.050331 0.005301 9.495 < 2e-16 * — Signif. codes: 0 ‘**0.001**’ ‘**0.01**’ ‘0.05’ ‘0.1’ ‘1’

Residual standard error: 0.325 on 20347 degrees of freedom Multiple R-squared: 0.0164, Adjusted R-squared: 0.01591 F-statistic: 33.92 on 10 and 20347 DF, p-value: < 2.2e-16

Table 6:

	<i>Dependent variable:</i>	
	accept_automatic	
	(1)	(2)
simplification	0.007 (0.007)	0.007 (0.007)
personalization	0.004 (0.007)	0.006 (0.007)
social.norm	0.015** (0.007)	0.015** (0.007)
combined	0.026*** (0.007)	0.027*** (0.007)
insurancetype _{life}		0.076*** (0.008)
insurancetype _{other}		-0.020 (0.055)
insurancetype _{property}		-0.045*** (0.006)
insurancetype _{travel}		0.032*** (0.006)
red		-0.005 (0.009)
green		0.050*** (0.005)
Constant	0.867*** (0.005)	0.850*** (0.006)
Observations	20,358	20,358
R ²	0.001	0.016
Adjusted R ²	0.001	0.016
Residual Std. Error	0.328 (df = 20353)	0.325 (df = 20347)
F Statistic	4.090*** (df = 4; 20353)	33.918*** (df = 10; 20347)

Note:

*p<0.1; **p<0.05; ***p<0.01