TECHNICKÁ UNIVERZITA V LIBERCI
Ekonomická fakulta

Use of Emotion in Designing BI Dashboards

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Agenda

- Introduction
- Methodology
- Results
- Conclusion

Introduction

We tested the possibility of using of using emotion recognition software to test user-friendliness during software development

Introduction

It exists research gap of using emotion in designing UI&UX of software.

This study assumes that better UX & UI design is related to positive emotions such as happiness. Also, we suppose that confusing and ugly UX & UI designs can trigger negative emotions like sadness, anger, fear and disgust.

Methodology

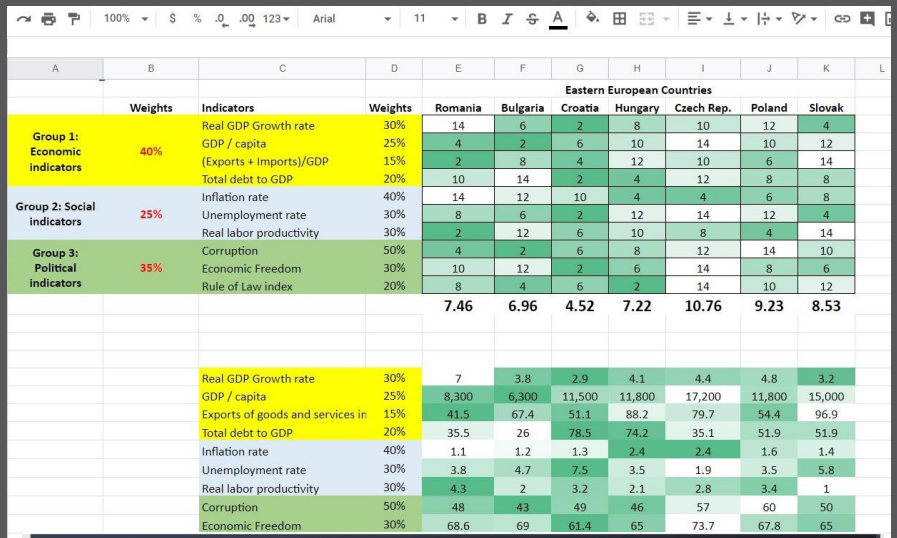
We tested on **six BI drafts** the design of the UI&UX

The order of drafts was randomly selected

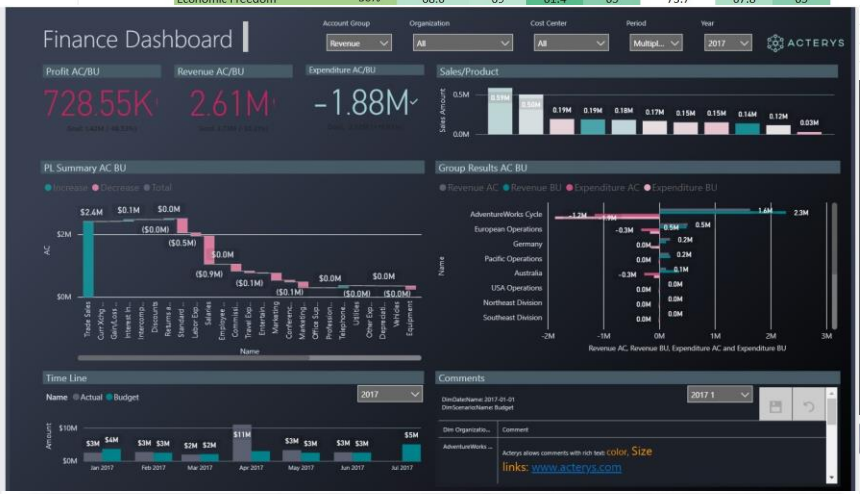
To participant have to find **2 values** in the draft

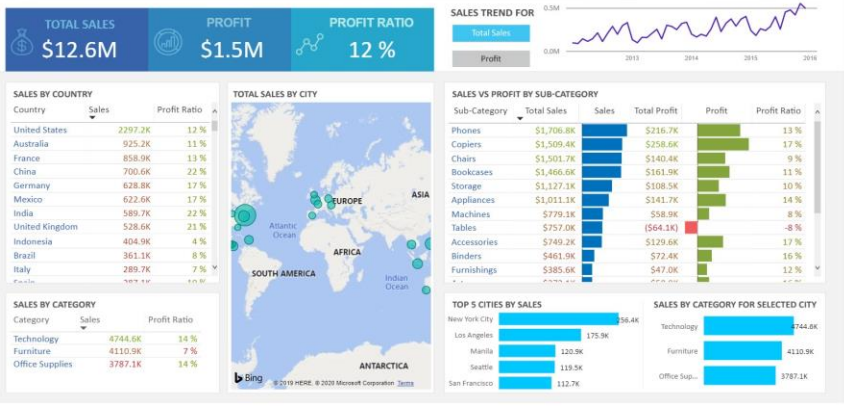
We randomly selected **20 participants** from information management (total population is 92)

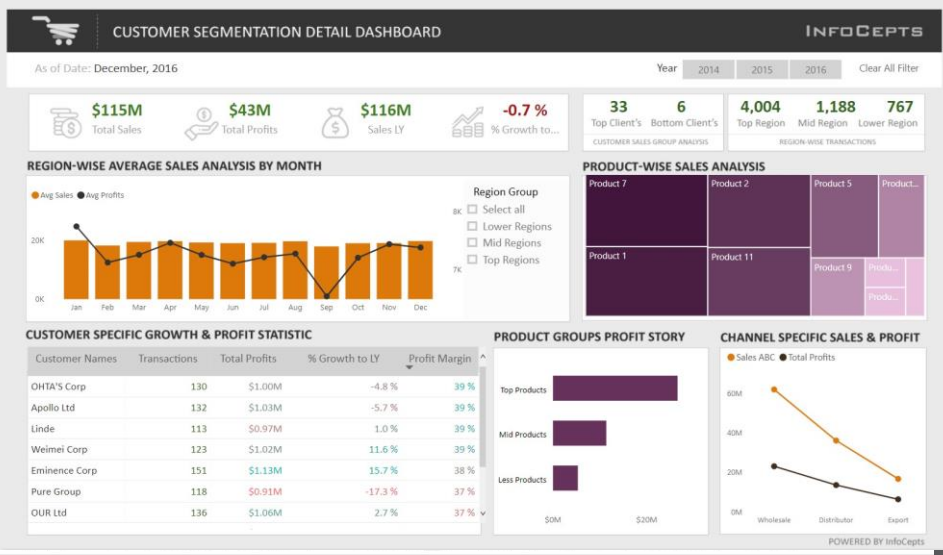
Research was conduct only by ZOOM and OBS studio



	Weights	Indicators	Weights	Romania	Bulgaria	Croatia	Hungary	Czech Rep.	Poland	Slovak
				Eastern European Countries						
Group 1: Economic indicators	40%	Real GDP Growth rate	30%	14	6	2	8	10	12	4
		GDP / capita	25%	4	2	6	10	14	10	12
		(Exports + Imports)/GDP	15%	2	8	4	12	10	6	14
		Total debt to GDP	20%	10	14	2	4	12	8	8
Group 2: Social indicators	25%	Inflation rate	40%	14	12	10	4	4	6	8
		Unemployment rate	30%	8	6	2	12	14	12	4
		Real labor productivity	30%	2	12	6	10	8	4	14
Group 3: Political indicators	35%	Corruption	50%	4	2	6	8	12	14	10
		Economic Freedom	30%	10	12	2	6	14	8	6
		Rule of Law index	20%	8	4	6	2	14	10	12
				7.46	6.96	4.52	7.22	10.76	9.23	8.53
		Real GDP Growth rate	30%	7	3.8	2.9	4.1	4.4	4.8	3.2
		GDP / capita	25%	8,300	6,300	11,500	11,800	17,200	11,800	15,000
		Exports of goods and services in	15%	41.5	67.4	51.1	88.2	79.7	54.4	96.9
		Total debt to GDP	20%	35.5	26	78.5	74.2	35.1	51.9	51.9
		Inflation rate	40%	1.1	1.2	1.3	2.4	2.4	1.6	1.4
		Unemployment rate	30%	3.8	4.7	7.5	3.5	1.9	3.5	5.8
		Real labor productivity	30%	4.3	2	3.2	2.1	2.8	3.4	1
		Corruption	50%	48	43	49	46	57	60	50
		Economic Freedom	30%	68.6	69	61.4	65	73.7	67.8	65





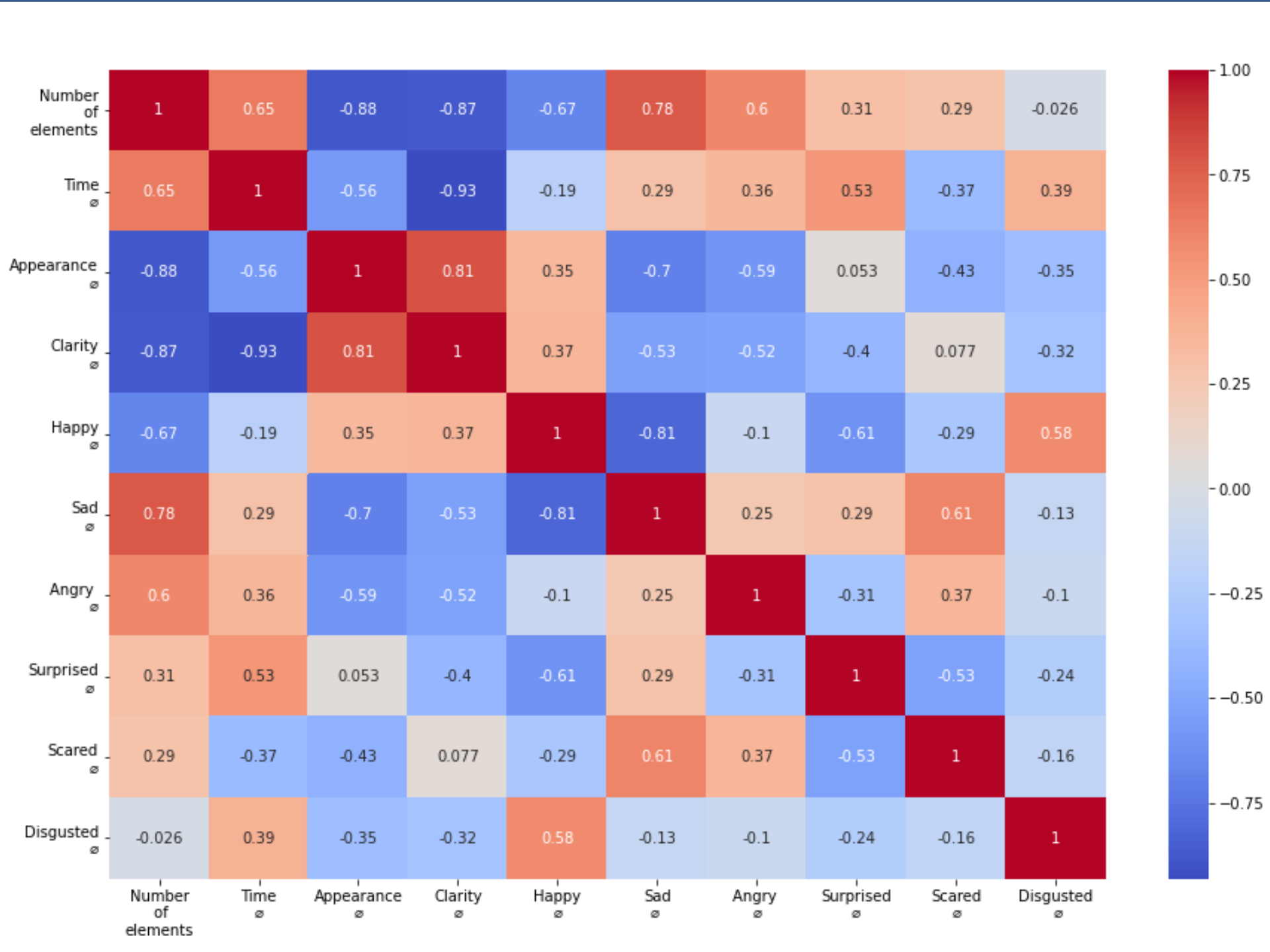


Customer Names	Transactions	Total Profits	% Growth to LY	Profit Margin
OHTA'S Corp	130	$1.00M	-4.8 %	39 %
Apollo Ltd	132	$1.03M	-5.7 %	39 %
Linde	113	$0.97M	1.0 %	39 %
Weimei Corp	123	$1.02M	11.6 %	39 %
Eminence Corp	151	$1.13M	15.7 %	38 %
Pure Group	118	$0.91M	-17.3 %	37 %
OUR Ltd	136	$1.06M	2.7 %	37 %

	Weights	Indicators	Weights	Romania	Bulgaria	Croatia	Hungary	Czech Rep.	Poland	Slovak
				Eastern European Countries						
		Real GDP Growth rate	0.3	14	6	2	8	10	12	4
		GDP / capita	0.25	4	2	6	10	14	10	12
		(Exports + Imports)/GDP	0.15	2	8	4	12	10	6	14
Group 1: Economic indicators	0.4	Total debt to GDP	0.2	10	14	2	4	12	8	8
		Inflation rate	0.4	14	12	10	4	4	6	8
		Unemployment rate	0.3	8	6	2	12	14	12	4
Group 2: Social indicators	0.25	Real labor productivity	0.3	2	12	6	10	8	4	14
		Corruption	0.5	4	2	6	8	12	14	10
		Economic Freedom	0.3	10	12	2	6	14	8	6
Group 3: Political indicators	0.35	Rule of Law index	0.2	8	4	6	2	14	10	12
				7.46	6.96	4.52	7.22	10.76	9.23	8.53
		Real GDP Growth rate	0.3	7	3.8	2.9	4.1	4.4	4.8	3.2
		GDP / capita	0.25	8300	6300	11500	11800	17200	11800	15000
		Exports of goods and service	0.15	41.5	67.4	51.1	88.2	79.7	54.4	96.9
		Total debt to GDP	0.2	35.5	26	78.5	74.2	35.1	51.9	51.9
		Inflation rate	0.4	1.1	1.2	1.3	2.4	2.4	1.6	1.4
		Unemployment rate	0.3	3.8	4.7	7.5	3.5	1.9	3.5	5.8

Results

Draft	Number of elements	Time ⌀	Appearance ⌀	Clarity ⌀	Happy ⌀	Sad ⌀	Angry ⌀	Surprised ⌀	Scared ⌀	Disgusted ⌀
Draft 1	223	33.25	4.9	4.35	0.104	0.049	0.100	0.028	0.011	0.039
Draft 2	215	22.55	3.45	5.75	0.094	0.059	0.080	0.021	0.024	0.043
Draft 3	215	17.4	5.1	6.7	0.079	0.054	0.116	0.020	0.025	0.024
Draft 4	159	18	7.2	7.3	0.074	0.049	0.055	0.028	0.014	0.027
Draft 5	42	14	8.925	8.85	0.152	0.038	0.067	0.019	0.016	0.037
Draft 6	173	22	7.1	6.7	0.060	0.058	0.074	0.029	0.020	0.026


Number of elements
Time ⌀
Appearance ⌀
Clarity ⌀
Happy ⌀
Sad ⌀
Angry ⌀
Surprised ⌀
Scared ⌀
Disgusted ⌀
1 0.65 -0.88 -0.87 -0.67 0.78 0.6 0.31 0.29 -0.026
0.65 1 -0.56 -0.93 -0.19 0.29 0.36 0.53 -0.37 0.39
-0.88 -0.56 1 0.81 0.35 -0.7 -0.59 0.053 -0.43 -0.35
-0.87 -0.93 0.81 1 0.37 -0.53 -0.52 -0.4 0.077 -0.32
-0.67 -0.19 0.35 0.37 1 -0.81 -0.1 -0.61 -0.29 0.58
0.78 0.29 -0.7 -0.53 -0.81 1 0.25 0.29 0.61 -0.13
0.6 0.36 -0.59 -0.52 -0.1 0.25 1 -0.31 0.37 -0.1
0.31 0.53 0.053 -0.4 -0.61 0.29 -0.31 1 -0.53 -0.24
0.29 -0.37 -0.43 0.077 -0.29 0.61 0.37 -0.53 1 -0.16
-0.026 0.39 -0.35 -0.32 0.58 -0.13 -0.1 -0.24 -0.16 1
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75

Conclusion

The results confirmed that metrics connected with good UX & UI positively influence the emotion of the user. On the other hand, metrics connected with confusing and ugly UX & UI negatively influence the users.

There is the correlation among metrics such as number of elements, appearance, clarity, and time to complete certain tasks and emotions.

Questions?

Thank you for your attention

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