

Qualitative to Quantitative Sub Theme Model

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Introduction

- Looking at how the qualitative responses match to related multiple choice questions
- Determine if sentiment matches between both types of responses
- Look into why they don't agree o May be mc questions don't match well with sub theme
- Help to backup results of survey and confirm that both reports (qual & quant) are saying the same thing
- Explain parts of mc that could be improved
- Match mc and subthemes - explain parts to be improved

The Work Environment Survey (WES) collects quantitative data through multiple choice questions with a 5-point scale. One main short answer question is asked which forms the qualitative data. Being able to relate the qualitative and quantitative data can strengthen the results of the WES. The hypothesis is that the topic present in the short answer question will correspond to a negative rating in the related multiple-choice questions. An example would be the short answer question relates to laptop software and that they have a negative response in the multiple-choice questions about computer software.

Methods

- Relate comment subthemes to related mc questions
- Remove all positive tags and assume all comments are negative
- Bin mc responses to pos, neg and neutral
- Subtheme can match to multiple mc questions
- Mc questions can have from 0 to 1+ subthemes
- Generalize up to main themes

To be able to relate the short answer questions to the multiple-choice questions on the sub-theme level, each multiple-choice question was matched to a sub-theme. Not all multiple-choice questions were matched to a sub-theme and some were matched to multiple sub-themes. Three independent raters matched the sub-theme to the multiple-choice questions and looked at the inter-rater agreement to help quantify the quality of the matching. The short answer question is designed to generate negative responses but sometimes there are positive comments supplied. All positive codes were removed as they did not relate to a specific sub-theme which assumes all remaining codes are negative. The multiple-choice responses were binned into three groups: negative, neutral and positive. To determine the level of agreement the sentiment was compared and calculated to be either strong, medium or weak, based on differences shown in table xx. The sub-theme level agreement was generalized to the main theme level.

Discussion

- do not start writing until inter-rater stuff done and final sub-theme mc done
- discuss sub-theme-mc matching
 - visualization to show which sub-themes appeared multiple times to which didn't at all
 - lack of flexible work mc

Results & Recommendations

- summary table showing top 5 strong and top 5 weak

Literature

Wisdom J and Creswell JW. Mixed Methods: Integrating Quantitative and Qualitative Data Collection and Analysis While Studying Patient-Centered Medical Home Models. Rockville, MD: Agency for Healthcare Research and Quality. February 2013. AHRQ Publication No. 13-0028-EF

- Talks about validating findings using qual and quant data (Wisdom & Creswell, 2013)

Appendix

- create table to match sub-theme numbers to names

Table 1. Overall Counts of each level of Agreement

Qualitative Sentiment	Quantitative Sentiment	Level of Agreement	Count	Total Percentage
negative	negative	strong	14503	46.920
negative	neutral	medium	6236	20.170
negative	positive	weak	10173	32.910

Table 2. Themes and Subtheme Level of Agreement

Theme	Sub-theme	Total Number	Strong Agreement (%)	Medium Agreement (%)	Weak Agreement (%)
Career & Personal Development	12	202	44.550	12.870	42.570
	13	3587	34.570	24.900	40.540
	14	507	47.530	22.290	30.180
Compensation & Benefits	21	147	87.070	9.520	3.400
	23	541	76.710	13.120	10.170
	24	1563	87.520	7.930	4.540
Engagement & Workplace Culture	32	307	63.520	10.420	26.060
	33	364	32.420	16.760	50.820
	35	247	27.530	20.650	51.820
Executives	41	2346	52.600	23.910	23.490
	43	1809	52.900	20.510	26.590
Staffing Practices	61	1544	62.240	16.900	20.850
Recognition & Empowerment	71	590	35.930	22.880	41.190
	72	443	40.860	20.540	38.600
	73	150	16.000	20.670	63.330
	74	955	40.520	20.940	38.530
Supervisors	82	409	63.330	17.600	19.070
	83	4209	40.370	16.270	43.360
	84	1959	28.790	19.140	52.070
Stress & Workload	92	514	43.970	25.490	30.540
	93	3719	43.160	21.080	35.760
	94	281	33.810	23.490	42.700
Tools, Equipment & Physical Environment	101	414	64.730	16.430	18.840
	102	1362	60.650	21.070	18.280
	103	385	51.690	30.650	17.660
	105	616	63.640	22.560	13.800
Vision, Mission & Goals	111	1742	31.630	27.320	41.040

Figure 1. Distribution of Agreement per Subtheme

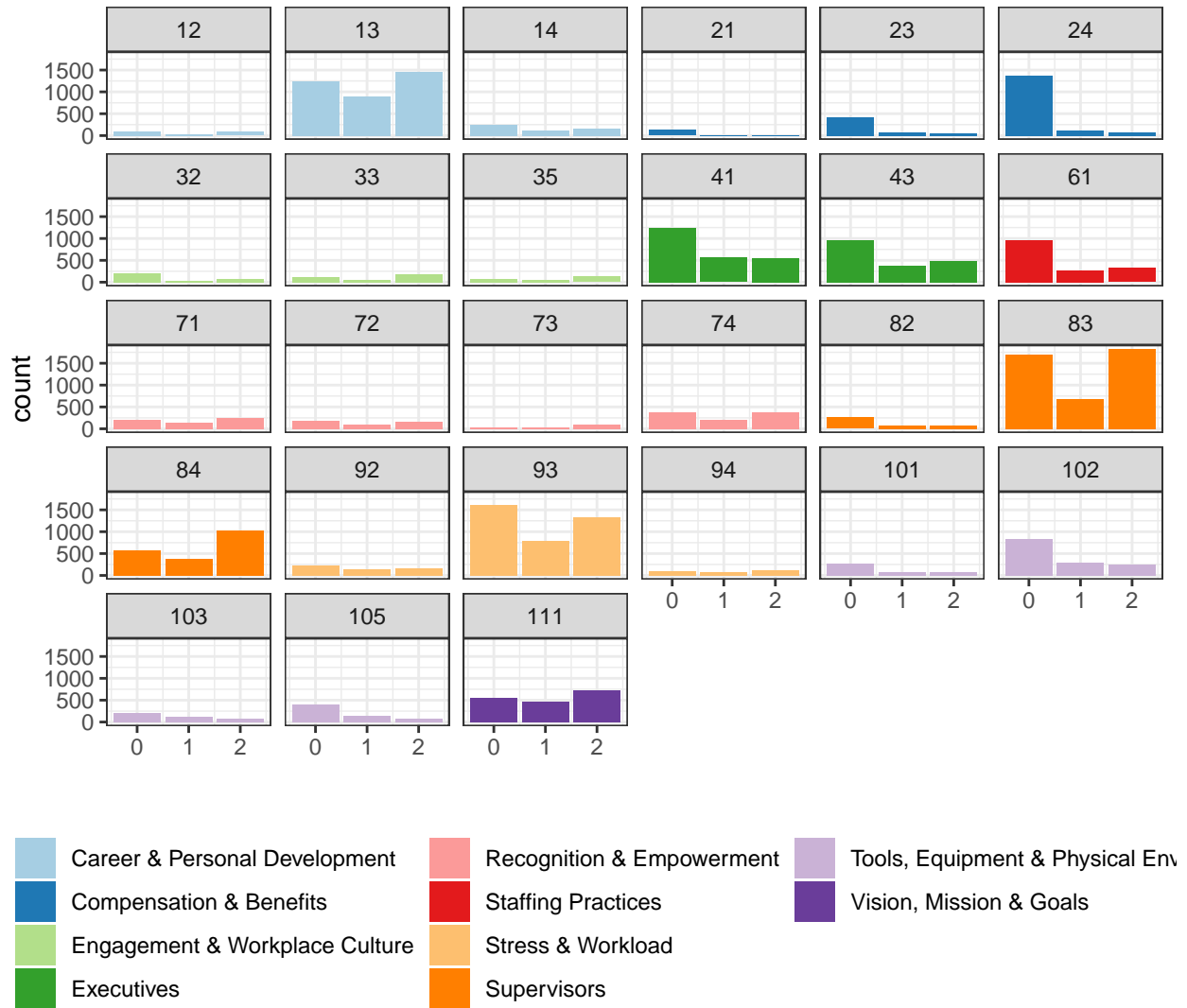
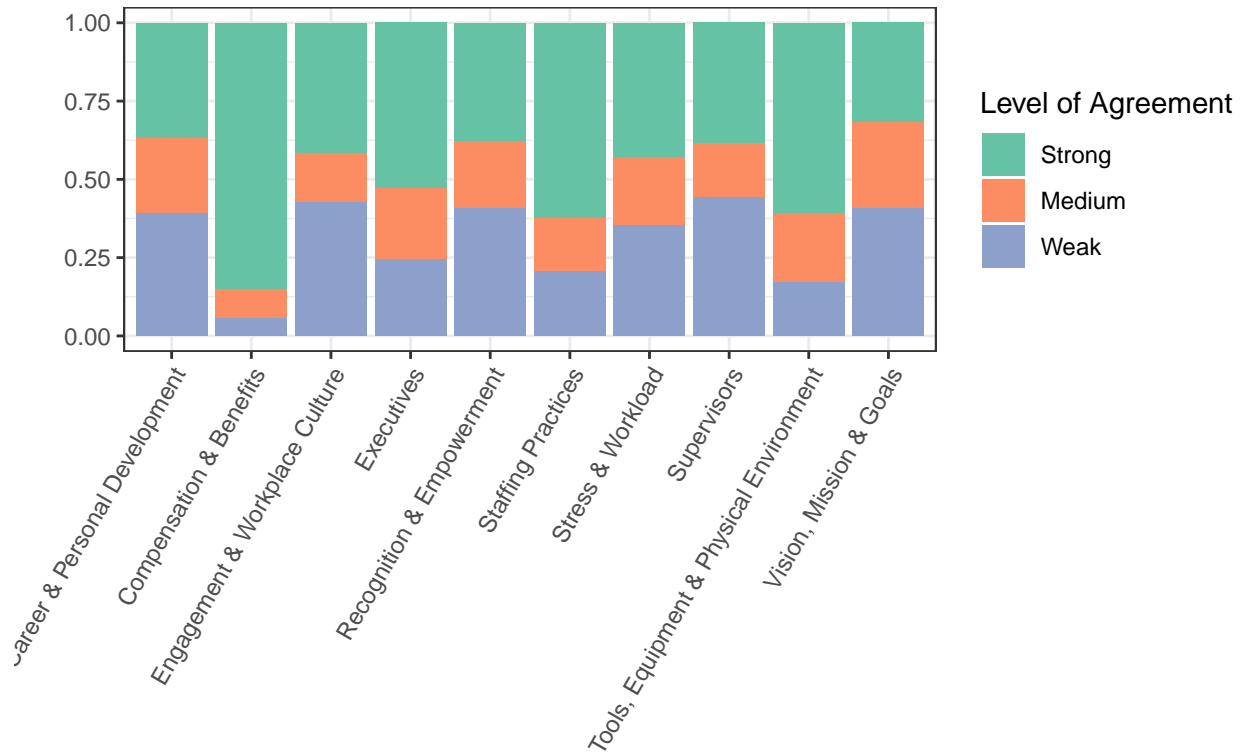


Figure 2. Proportions of Agreement by Qualitative Theme



Comments and To do's

- write some more unit tests/double check filter conditions
- create table/appendix that lists sub-themes, their names and main theme groups
- fix names
- start writing
- why does img html tag have to go from back to render properly