

Master of Science in Business Analytics 625 | Storytelling with Data (Part Two)

















Blue Team – Tenure and Job Classification **Green** Team – Age and Generation Analysis Gold Team - Remote versus Traditional Work **Black** Team – Employees with Children Yellow Team – Value & Satisfaction **Red** Team – Job Satisfaction Index Orange Team – The Impact of Covid-19 Purple Team – Conclusion & Takeaways from Qualitative Data Taught by Dr. Zac Goldman and Dr. Abby Koenig



Better Workplaces, Better World The Story of Louisville's Workforce





83%

Employed Full-Time

1%

Employed but looking to change jobs

4.2

National Turnover Rate in years (BLS)

37.6%

Have been in the same position for more than 3 years





The largest gaps between satisfaction and importance occur in pay factors and opportunities and investment in growth.





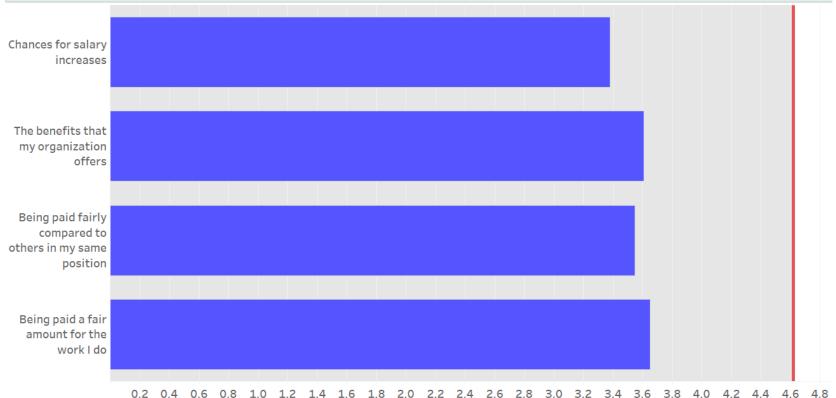
Employees are least satisfied with pay factors after 7-10 years in their current position.





Employees would like to see more chances for salary increases.

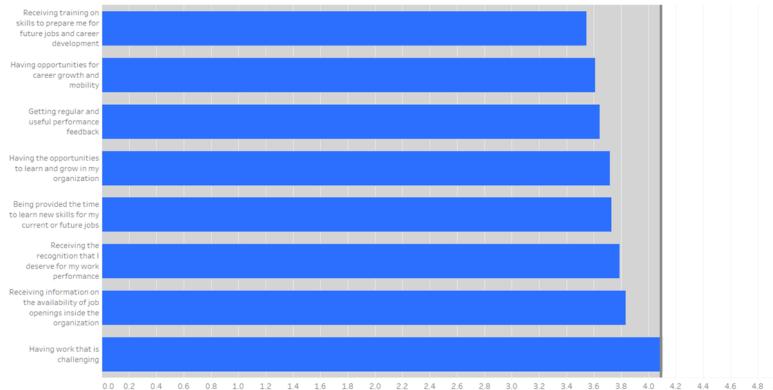
Satisfaction with Pay among Full- and Part-Time Employees





Employees would like more training for career development.

Satisfaction with Opportunities and Investment in Growth among Full- and Part-Time Employees

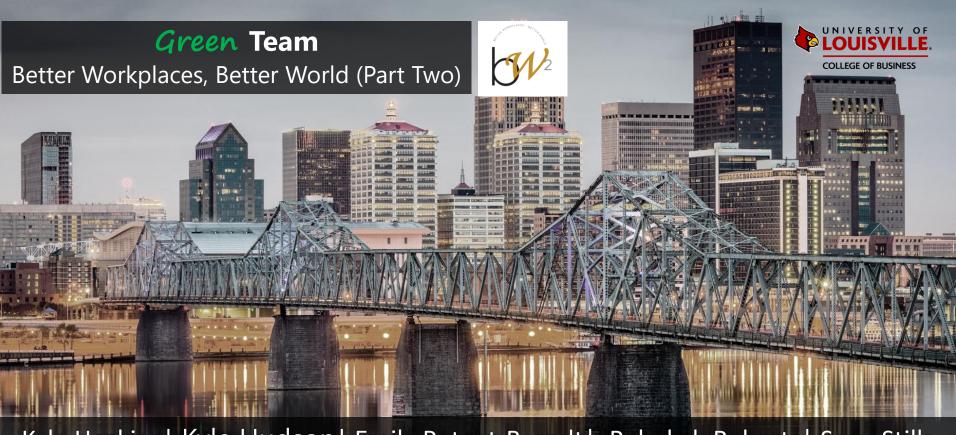




Employers should review their pay scale and training opportunities to retain employees.

- Pay: Offer transparency about factors that relate to salary increases.
- Pay: Evaluate benefits package and usage.
- Opportunities: Develop soft skills training plan.
- Opportunities: Reevaluate performance review process and encourage a frequent-feedback culture.





Kyle Hoskins | Kyle Hudson | Emily Poteet-Berndt | Rebekah Roberts | Sean Stills



Green Team Agenda

- Overall Job Satisfaction by Generation
- Generational Breakdown by Gender
- Pay Importance vs Satisfaction
- Generational Differences in Benefits Preferred
- Louisville Data & National Data Comparison
 - Benefits Preferred
 - Workplace Satisfaction

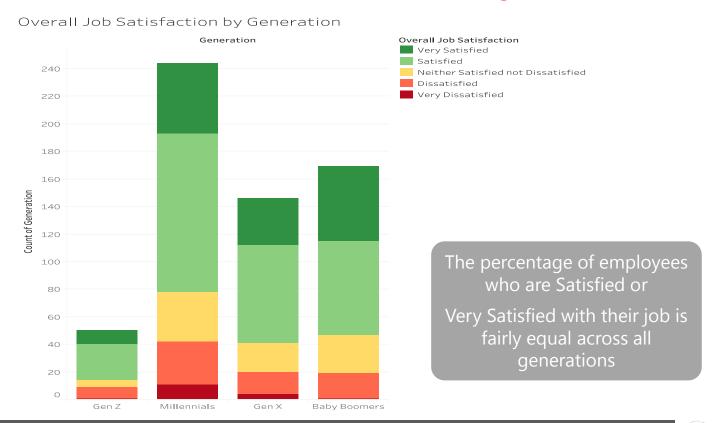


To prepare the data, **generational** categories were defined.

Original Data Value	Age Group Represented	Assigned Generation
1	Less than 18	Gen Z
2	18 to 22	Gen Z
3	23 to 27	Gen Z
4	28 to 32	Millennial
5	33 to 37	Millennial
6	38 to 42	Millennial
7	43 to 47	Gen X
8	48 to 52	Gen X
9	53 to 57	Baby Boomer
10	58 to 62	Baby Boomer
11	Over 62	Baby Boomer

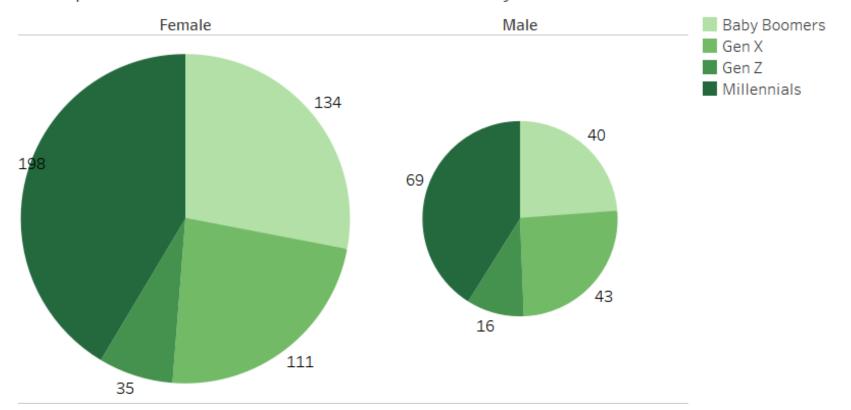


The percentage of employees who are Dissatisfied or Very Dissatisfied with their job decreases as age increases.





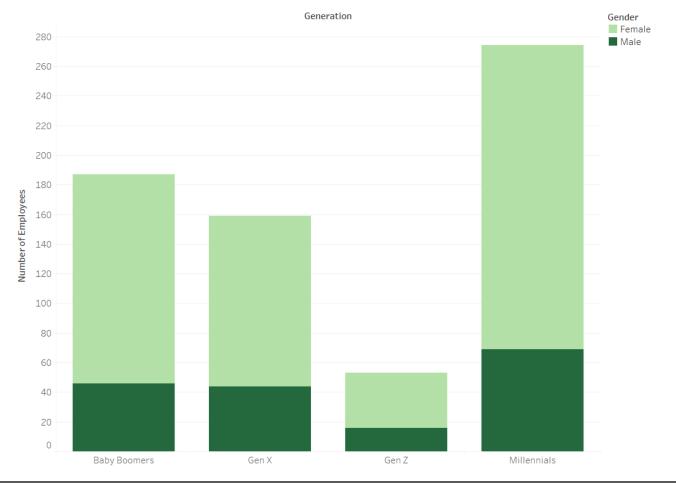
Comparative Generational Breakdown by Gender





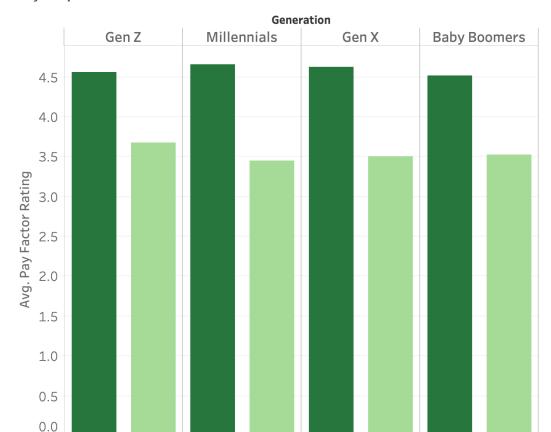


Generational Gender Breakdown





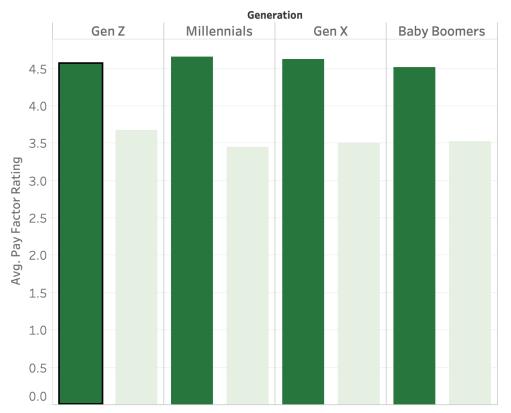
Pay Importance vs Satisfaction



Across generations, pay is important, yet no group is fully satisfied.

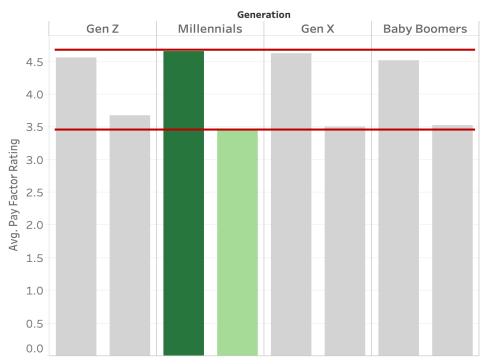
Pay is rated important across all generations.

Pay Importance vs Satisfaction



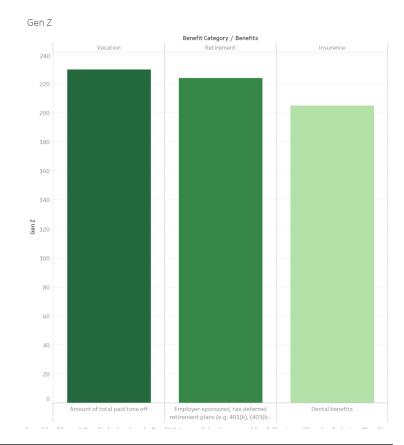
Millennials harbor the **biggest opportunity** for improvement.

Pay Importance vs Satisfaction



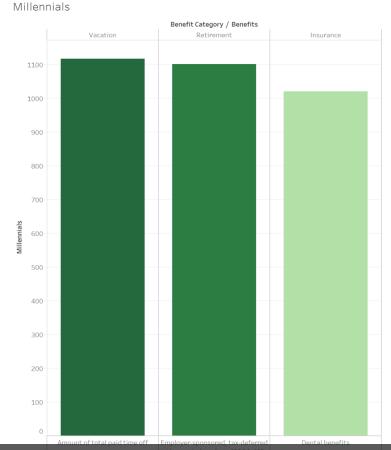
Gen Z rate vacation as the most preferred benefit.

"Since I'm just starting out, tuition reimbursement and pay are more important than retirement or traditional benefits." Emily (Gen Z)



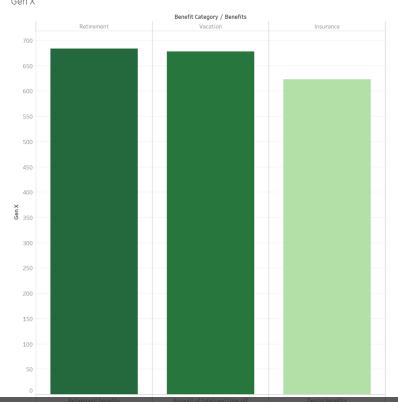
Millennials also rate vacation as the most preferred.

"Since I'm established in my career money isn't as important to me as family benefits and time off" – Rebekah (Millennial)



Gen X rate **retirement** as most preferred benefit, only slightly above vacation.

"Having health insurance is important, but it would be nice if it wasn't so expensive" Gen Z

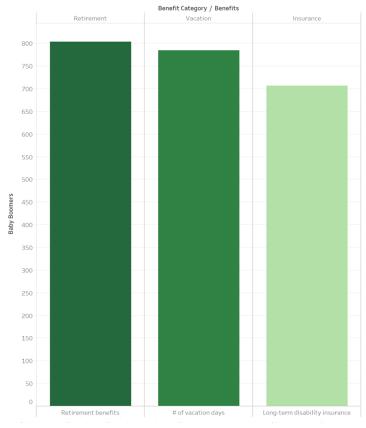


Baby Boomers rate retirement as the most preferred

benefit.

Baby Boomers

"401k needs to be available day 1, any match should be provided timely, and vestment period should be fair. Health plans should offer both high-deductible and traditional plans to reflect differing needs of all employees." – Baby Boomer



Louisville Workplace Benefits and Workplace **Environment**

From the survey data these are the benefits and workplace variables I will be focusing on for Gen X and Millennials.

Benefits:

- Compensation
- Retirement
- Flexible Work Schedule
- Work/Life balance
- Health Benefits
- Feels good about job
- Job Security
- Tuition reimbursement
- Wellness Programs

Workplace Variable:

- Respected Boss
- Safe Work Environment
- Friends at Work
- Praise for Work Done
- Private Workspace
- Open Workspace



Generational Breakdown: Millennials

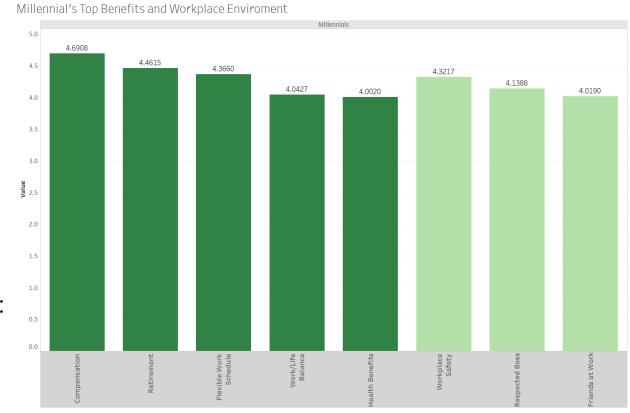
From Important (4.0) to Very Important (5.0)

Top Benefits:

- 1. Compensation
- 2. Retirement
- 3. Flexible Work Schedule
- 4. Work/Life Balance
- 5. Health Benefits

Top Workplace Variables:

- 1. Workplace Safety
- 2. Respected Boss
- 3. Friends At Work





Generational Breakdown: Generation X

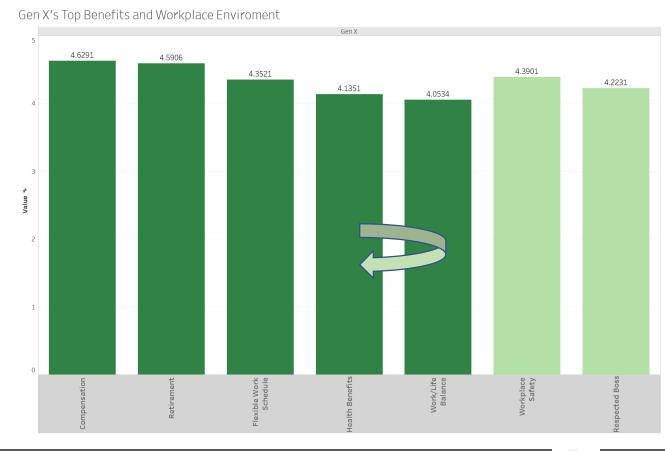
From Important (4.0) to Very Important (5.0)

Top Benefits:

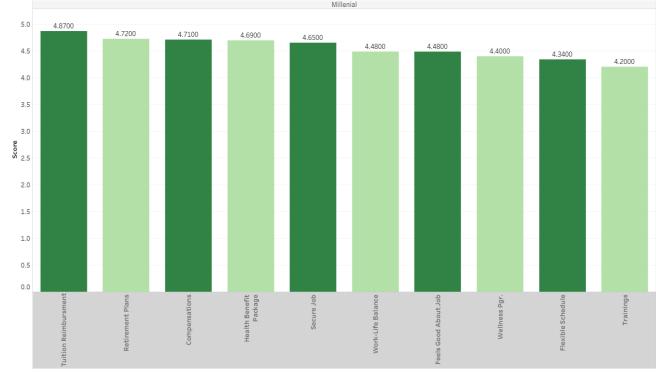
- 1. Compensation
- 2. Retirement
- 3. Flexible Work Schedule
- 4. Health Benefits
- 5. Work/Life Balance

Top Workplace Variables:

- 1. Workplace Safety
- 2. Respected Boss







"2016 Cross-Generational Benchmarking Report from "International Public Management Association for Human Resources"

IMPA Top 5:

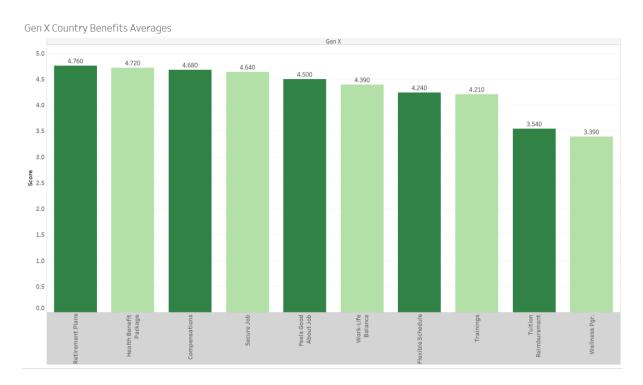
- I. Tuition Reimbursement
- 2. Retirements
- 3. Pay
- 4. Health Plans
- 5. Secure Job

Louisville's Top 5:

- 1. Pay (3rd)
- 2. Retirements
- 3. Flexible Work Schedule
- 4. Work/Life Balance (6th)
- 5. Health Plans (4th)

In Louisville's Survey, Millennials score tuition reimbursement next to last: maybe sacrificing that for more pay; however, nationally Millennials rank tuition reimbursement as highest.

IPMA-HR Breakdown: Generation X



IMPA Top 5:

- 1. Retirement Plans
- 2. Health Plans
- 3. Pay
- 4. Secure Job
- 5. Feel Good about Job

Louisville's Top 5:

- 1. Pay (3rd)
- 2. Retirements (1st)
- 3. Flexible Work Schedule
- 4. Health Plans(2nd)
- 5. Work/Life Balance(6th)

In Louisville's survey, Gen X rate pay as more important over other factors; however, nationally they want to see themselves feeling good about their jobs and more secure in their positions.





ments about values cited <mark>leadership</mark> has a top value.

handle office data help time available feedback company changes employee team opportunities growth feel WOrk leaders recognition Leadership employees bad people environment open Working organization positiveemployees.company.feedback. basedemployers different decisions qood pay space

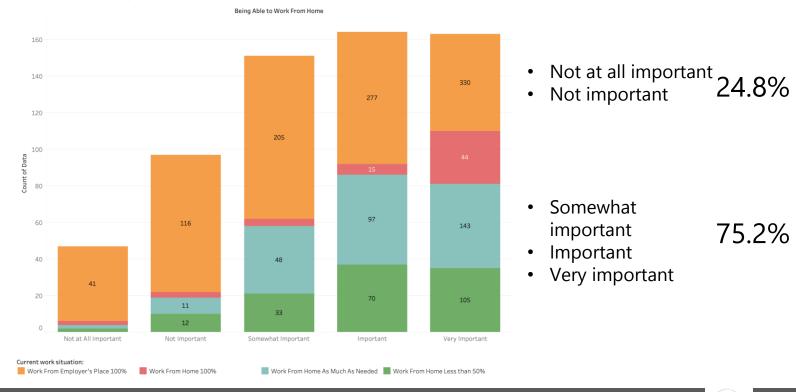




The majority of respondents value the ability to work

from home.

How important of being able to work from home?

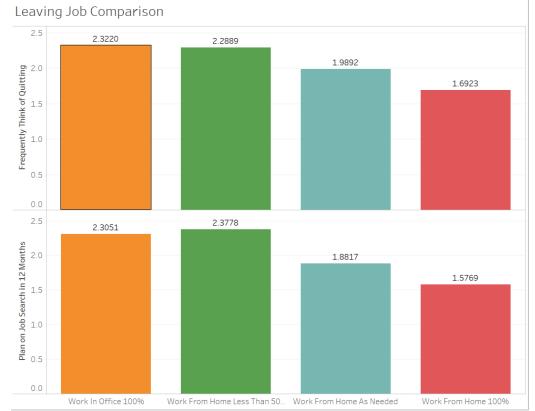






Those who work from home are less likely to look for a

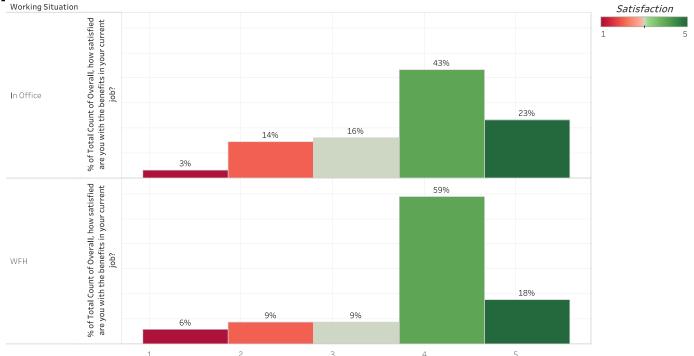
new job.

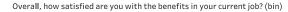






Those who work from office are less satisfied with their current benefits as compared to those who work from home.



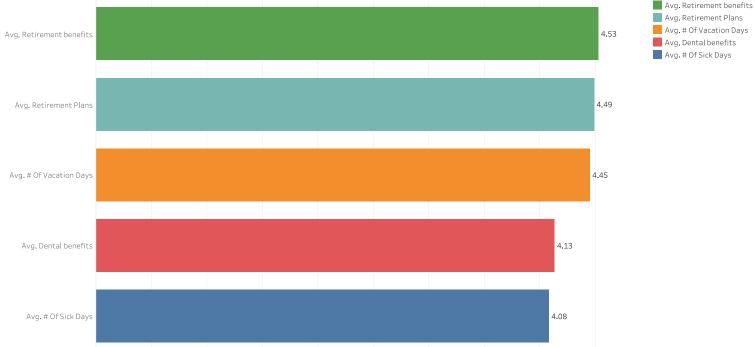






Across the survey, retirement benefits was rated most

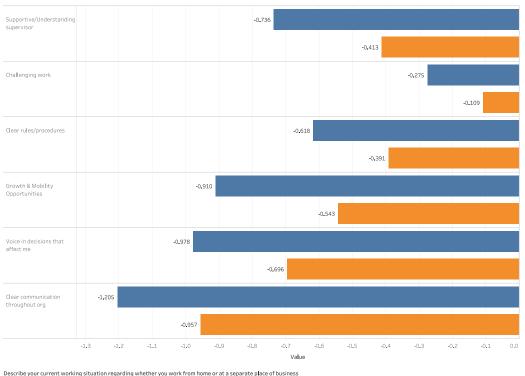
important.







Respondents' biggest dissatisfactions with work environment is the lack of clear communication.

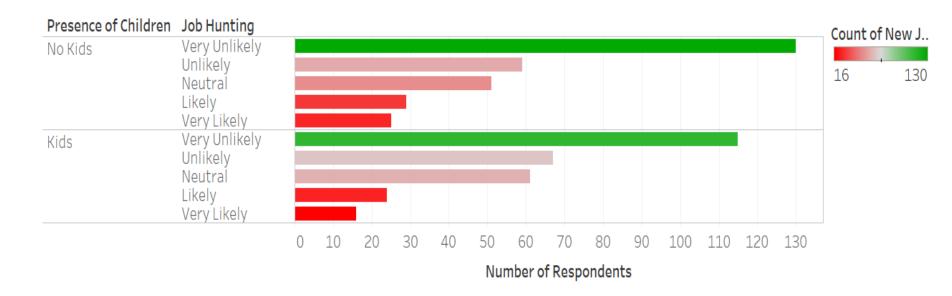








Most employees did not indicate they would search for another job. However, employees **without kids** are slightly more likely to look for another job.





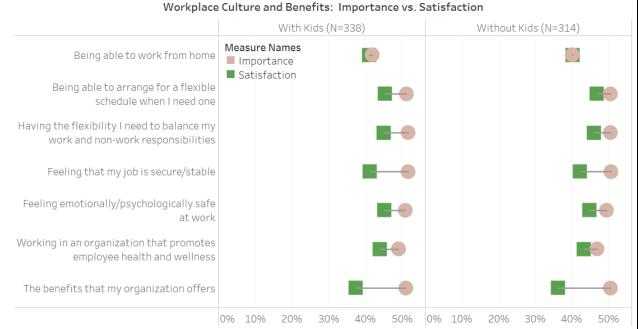




25% of the respondents are not satisfied with their

current salaries

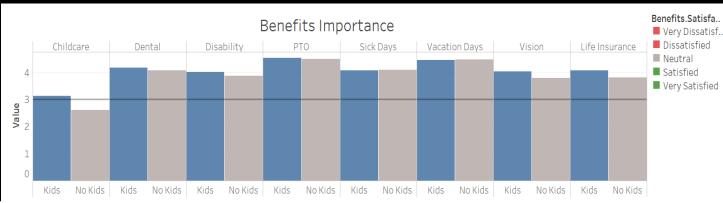
Employees without kids
have greater intentions to
leave their present
organizations



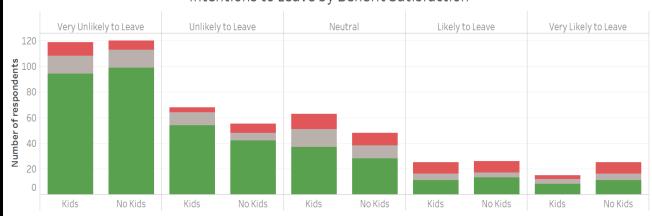




Being dissatisfied with benefits correlates with leaving more with respondents without kids compared to those with kids



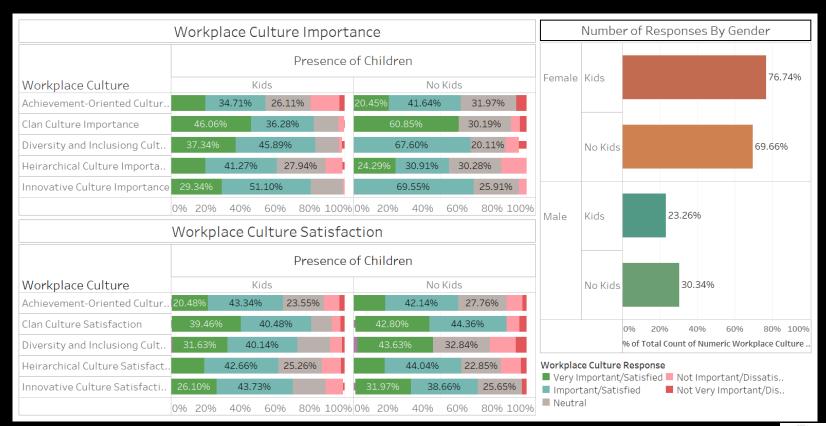


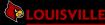






Achievement-Oriented Culture









Companies face these main issues:

- Employees without kids are more likely to leave a job within the next 12 months.
- Employees without kids are more likely to leave due to dissatisfaction with benefits.
- Employees with kids are more likely to leave due to dissatisfaction with flexible work schedules.

We suggest the following actions to reduce turnover:

- Companies give employees the ability to work at home via a VPN when needed.
- Companies revaluate their benefit packages to make them more comparable to the national average.
- Companies examine and self-reflect on the culture and make it more inviting and healthier for employees.





Agges Oliver | Diego Medina | Joseph Prather | Heather Shell | Christopher Spurlock

Conceptual Overview

Goal

 For this assignment we were tasked with examining the relationship between the reported importance/value of benefits and their satisfaction, potentially considering congruence/discrepancy in the process.

Process

 To successfully analyze the data we were required to make a certain amount of transformations as well as rename some column names which can be seen in the attached excel file.

Conclusions

- The average total value of flexibility and pay benefits remained consistent despite differing ratings of overall satisfaction.
- Flexibility and pay satisfaction seems to drop slightly as tenure increases.
- It is important to compensate fairly regardless gender as this is a a very important factor for women especially.



The average total value of flexibility and pay benefits remained consistent despite differing ratings of overall satisfaction.

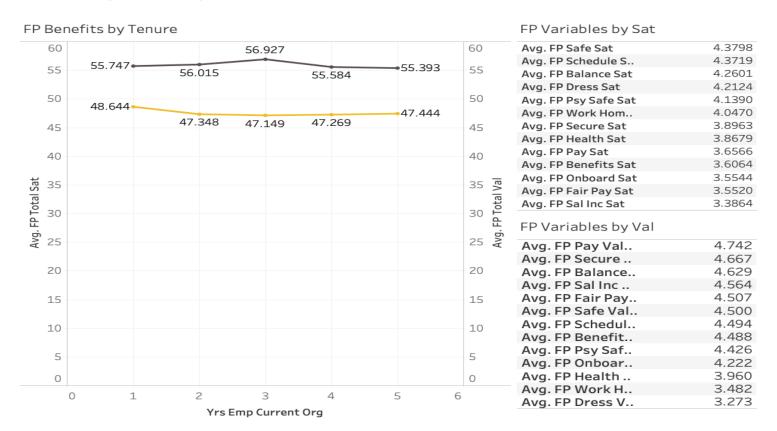






Flexibility and pay satisfaction seems to drop slightly as tenure increases.

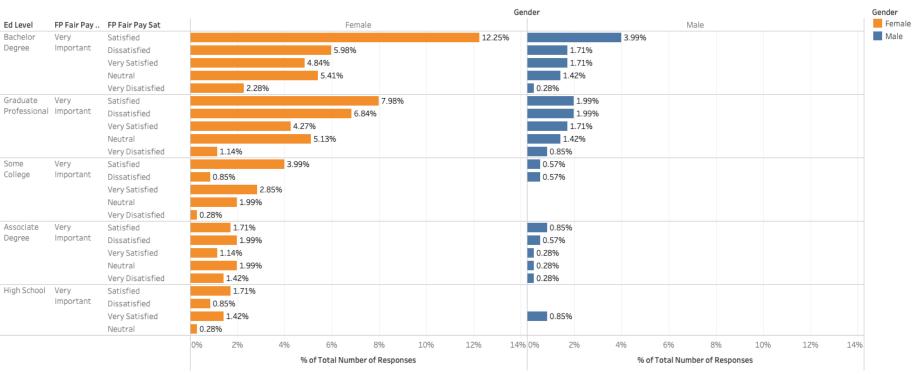
Measur.. Avg. FP Tot.. Avg. FP Tot..







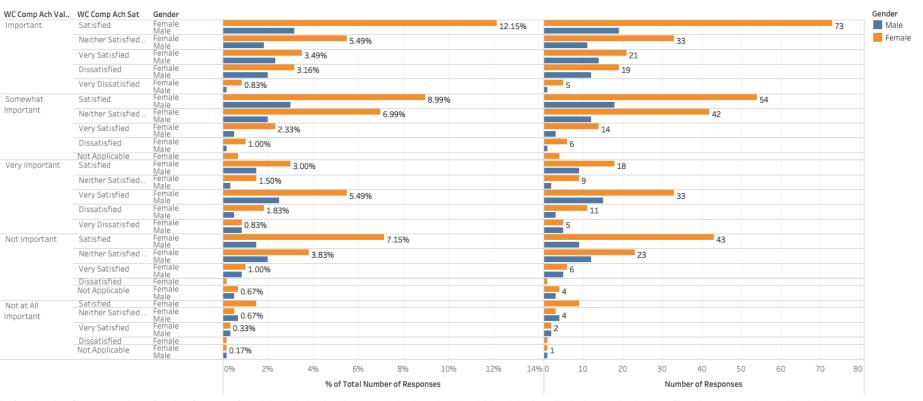
Being paid fairly compared to others in my same position Importance vs Satisfaction



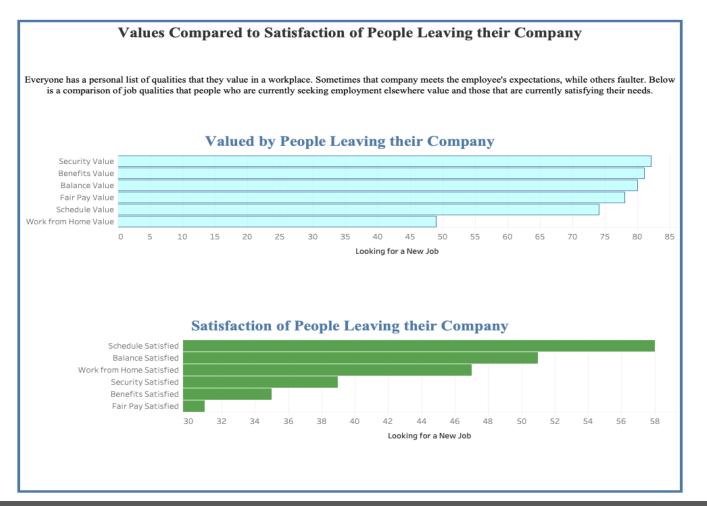
% of Total Number of Responses for each FP Fair Pay Sat broken down by Gender vs. Ed Level and FP Fair Pay Value. Color shows details about Gender. The view is filtered on Ed Level, FP Fair Pay Value, FP Fair Pay Sat and Gender. The Ed Level filter excludes Null. The FP Fair Pay Value filter has multiple members selected. The FP Fair Pay Sat filter excludes Null and 6. The Gender filter keeps Male and Female.



Working in an organization with a competitive, achievement-oriented culture Importance vs Satisfaction



% of Total Number of Responses and sum of Number of Responses for each Gender broken down by WC Comp Ach Value and WC Comp Ach Sat. Color shows details about Gender. The view is filtered on WC Comp Ach Sat and Gender. The WC Comp Ach Sat filter excludes Null. The Gender filter keeps Male and Female.

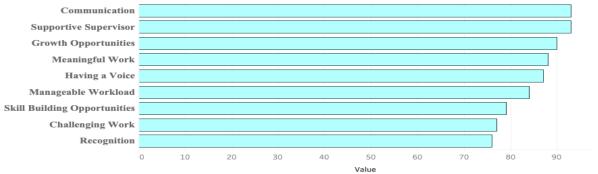




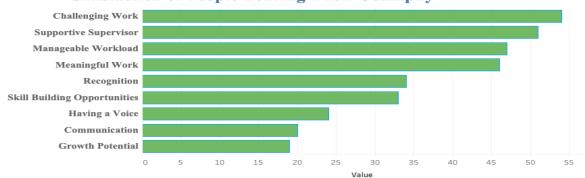


People who leave their current job are often dissatisfied with the communications that they receive.

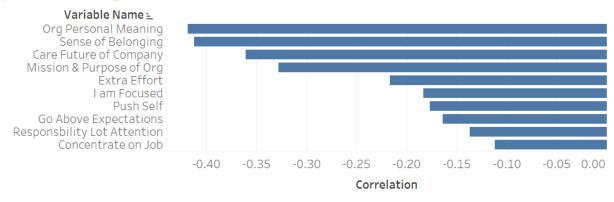
Valued by People Leaving Their Company



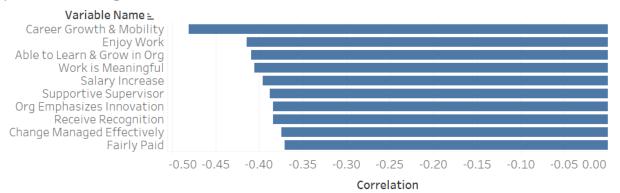
Satisfaction of People Leaving Their Comapny



Top 10: Looking For Job Correlated w Personal Beliefs

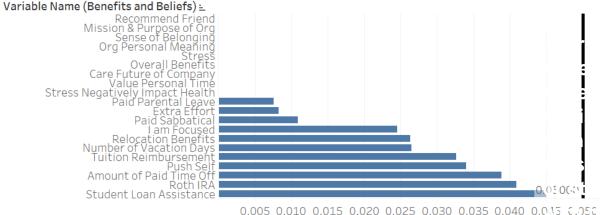


Top 10: Looking For Job Correlated w Job Satisfaction



Some job characteristics, benefits and beliefs correlate stronger with those looking for a new job in the next 12 months more than others

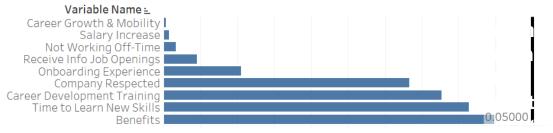
Significant Benefits & Beliefs



0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040 0.045 0.050

T Sig (Benefits and Beliefs)

Significant Values



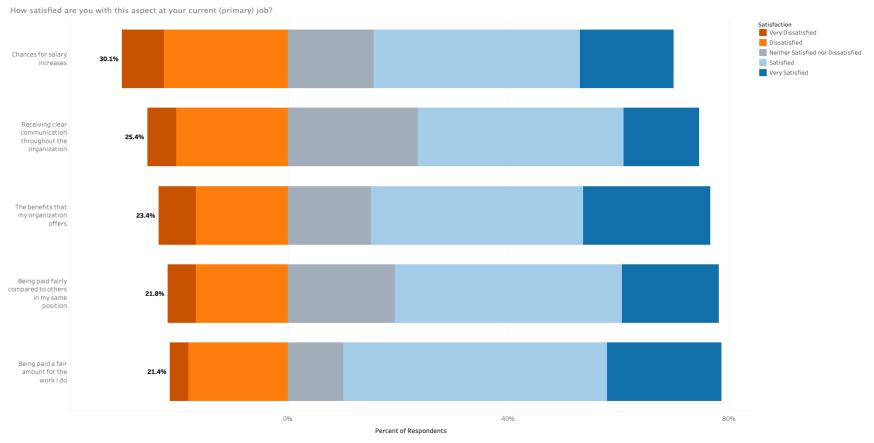
0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040 0.045 0.050

T Sig (ValueT!Test)



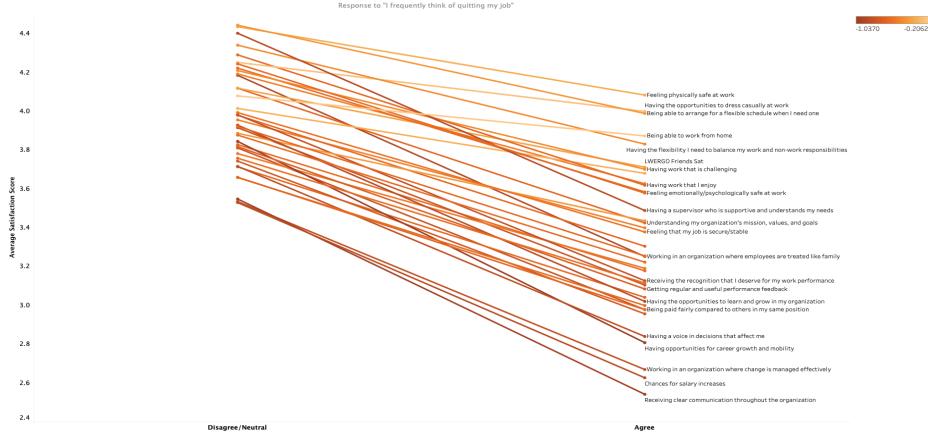


4 of the 5 job aspects with the highest dissatisfaction rate relate to benefits and pay.



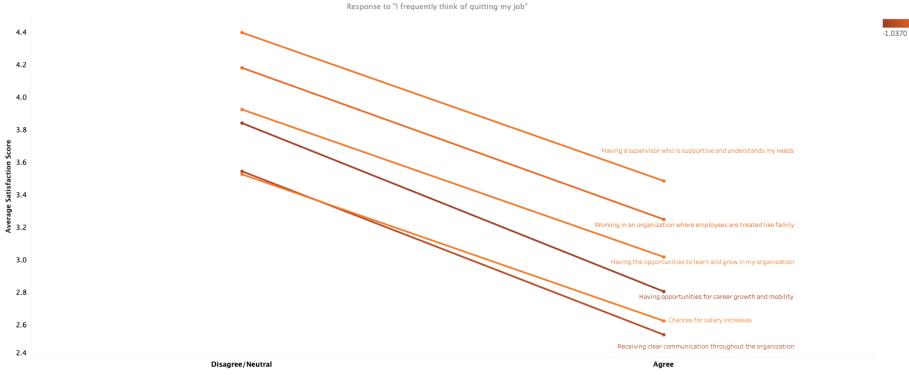
Gantt Percent 2 for each Question. Color shows details about Satisfaction. Size shows Percent of Total Sizing. The marks are labeled by Percent of Negative Responses. The view is filtered on Satisfaction and Question. The Satisfaction filter has multiple members selected. The Question filter has multiple members selected.

From those who do not frequently think of quitting their job to those who do, there is a decline in satisfaction across all job aspects.



Decline in average satisfaction from those who do not frequently think of quitting their job to those who do.

From those who do not frequently think of quitting their job to those who do, these are some of the job aspects that had the most marked decline in satisfaction.



The trend of average of Score for ThinkQuitting_Group. Color shows ThinkQuitting_Delta. The marks are labeled by Question. Details are shown for Question. The data is filtered on Question Category, which keeps Flexibility & Pay, Leadership, Work Environment, Recognition, & Growth Opportunities and Workplace Culture, The view is filtered on Question and ThinkQuitting_Delta. The Question filter has multiple members selected. The ThinkQuitting_Delta filter ranges from -1,0370 to -0,9000.



Recommendations on Retaining Employees

- Improve communication of key events across the organization as well as how each event could affect each employee individually.
- To maintain a competitive environment it is necessary to offer equal opportunities for men and women, as women value a competitive workplace more than men.
- If employers would like to retain their top talent it may be beneficial to offer to match competing offers from other firms to retain good people.





Agenda



Data Insights

General Data Trends. Multiple Models.



Sentiment Analysis

Open Ended Question – Response Analysis



Satisfaction Index

Estimating job satisfaction for employees based on survey responses.



Impact of Salary on Job Satisfaction

Understanding one of the major reasons for high attrition rate in Louisville.



Conclusions & Recommendations

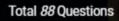
Red Team Summary.





Introduction to Data

Workplace Satisfaction Survey



Total 676 Respondents

Respondents Categorized into 25 Industries & 5 Job Roles

Responses to Open Ended questions





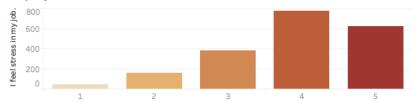
MSBA 625: Storytelling with Data (Part Two): Red Team

Stress at Work

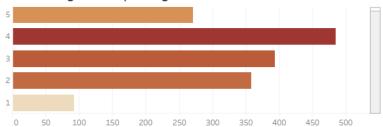
Employees Who Push Themselves Past was is Asked of Them



Employees Who Feel Stress at Work

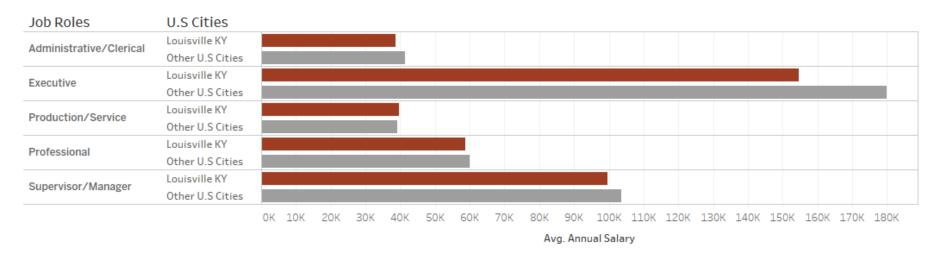


Work Stress Negative Impacting Health





Comparing Salary per Job role in Louisville to other cities from US

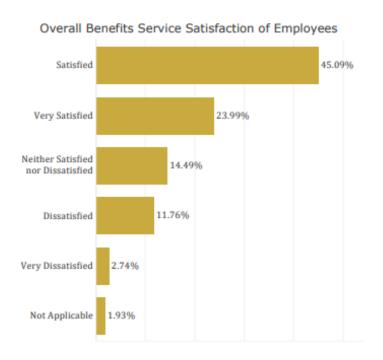


Direct comparison of salaries from different cities shows *positive* salary difference in Louisville for most of the Job Roles





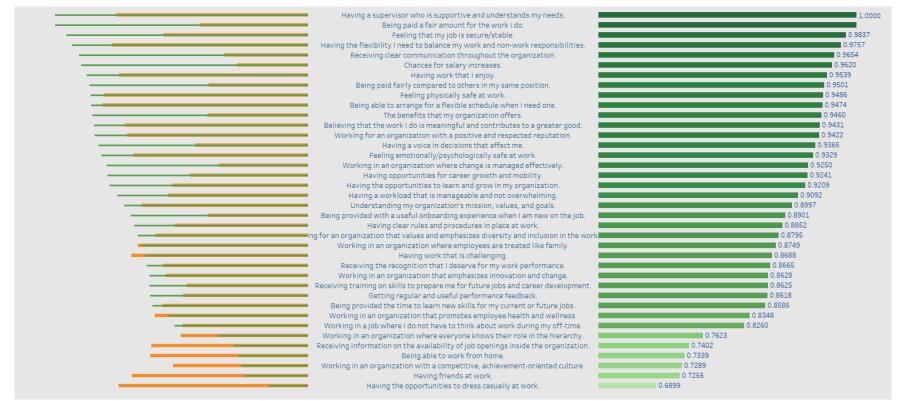
Source of Turnover in Labor Market



Employees *are satisfied* with benefits offered

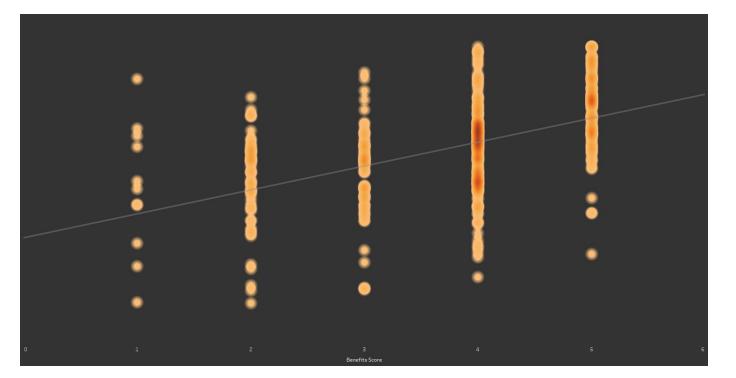


Employee Satisfaction per Survey Question





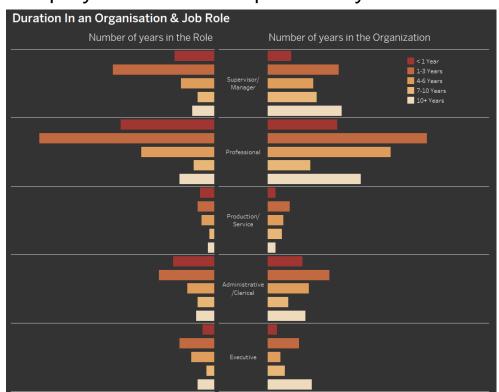
Job Satisfaction & Benefits Satisfaction







Employee Satisfaction per Survey Question



Majority of the work force is below 3 Years suggesting a *High Attrition Rate*



Sentiment Analysis

Open-Ended Questions

Sentiment analysis was performed on responses to the following open-ended questions:

- Do you have any other comments on leadership, work environment, recognition, and growth opportunities that you value?
- Do you have any other comments on the flexibility, pay and benefits that are important to you?
- Do you have any other comments on your engagement, stress and balance, and intentions to stay in your current job?

Polarity

In sentiment analysis, polarity describes how negative or positive the overall sentiment of the text being analyzed is.

Polarity score > 0: indicates the comment contains more positive words/ sentiments

Polarity score = 0: indicates the text being analyzed is neutral in wording/ sentiment

Polarity score < 0: indicates the text being analyzed contains more negative words/ sentiments

Subjectivity

In sentiment analysis, subjectivity describes how objective or subjective the overall sentiment of the text being analyzed is.

If the subjectivity score is closer to 0, the comment is more objective (factual).

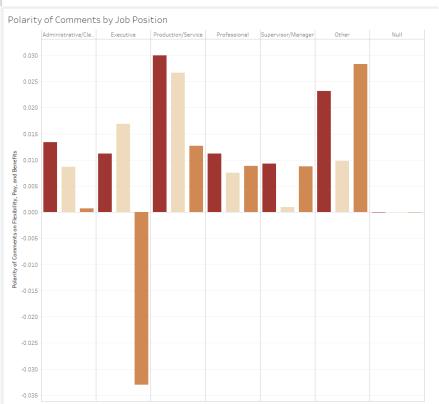
If the subjectivity score is closer to 1, the comment is more subjective (opinionated).

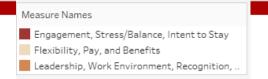


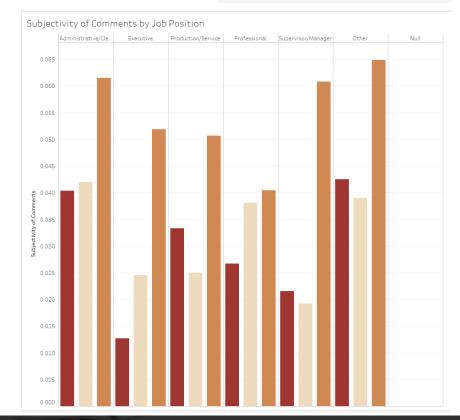


Sentiment Analysis

By Job Position





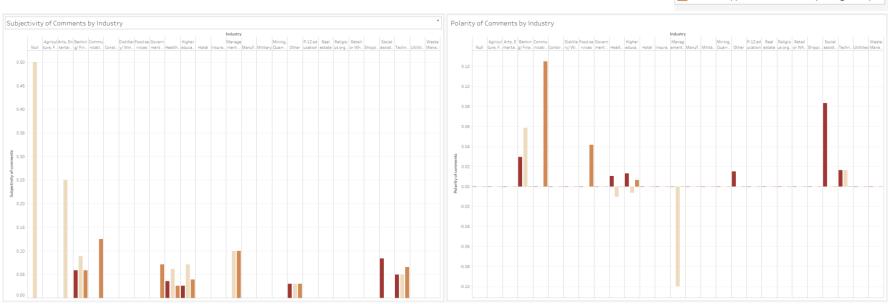




Sentiment Analysis

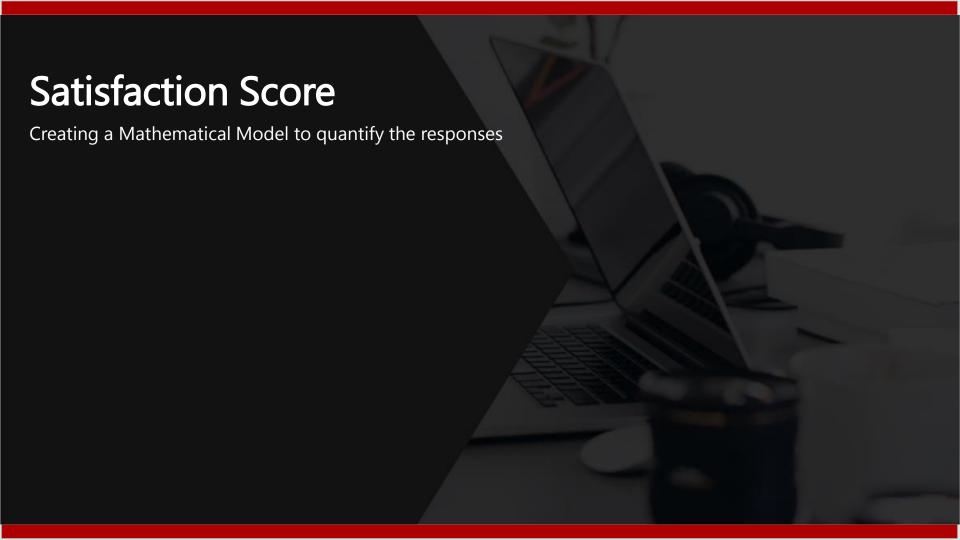
By Industry





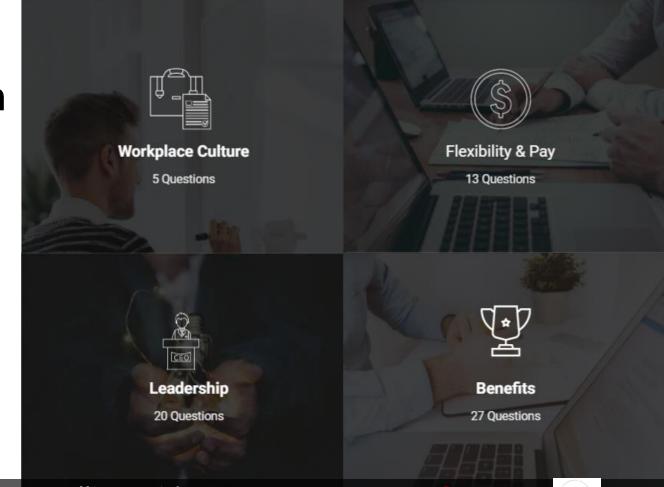






Understanding Job Satisfaction

Using the responses for these questions a satisfaction score was calculated.



Calculating Job Satisfaction Score

Weighted criteria used for calculating satisfaction score.

How Important

Not at All Important

Not Important

1

2

Somewhat Important

Important

Very Important

Very Important
Very Dissatisfied



Very Important
Very Satisfied

How Satisfied

-5 Very Dissatisfied

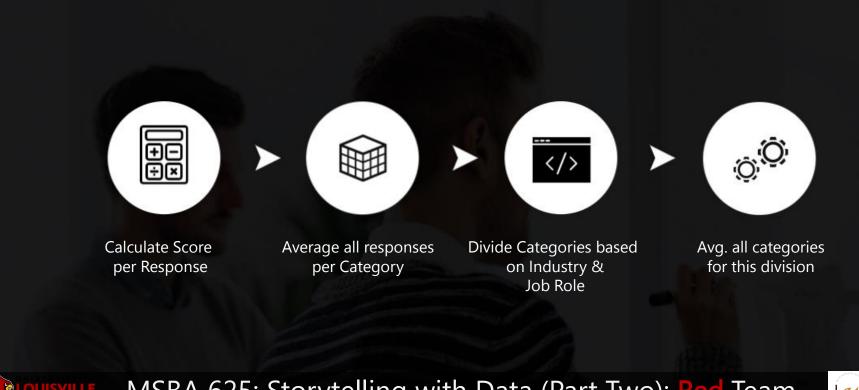
Dissatisfied

Neither Satisfied Nor Dissatisfied

2 Satisfied

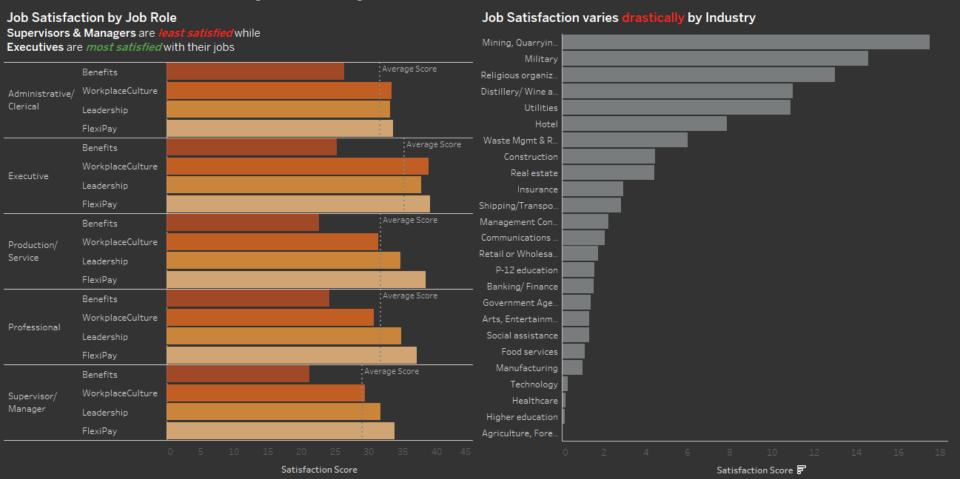
5 Very Satisfied

Calculating Job Satisfaction Score Steps used to Calculate Satisfaction Score





Job Satisfaction Relies Heavily on Industry & Job Role



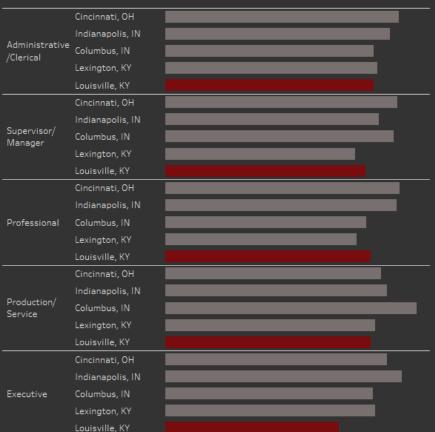


Cost of living index was used to standardize salary for all job roles in selected cities of the US & compared with each other.

Why Employeers in Louisville **Struggle** to Retain Employees?

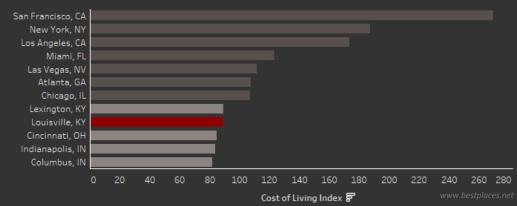
Standardized Salaries based on Cost of Living

Salaries in **Louisville** are *lower* compared to other major cities in the region



Cost of Living Index

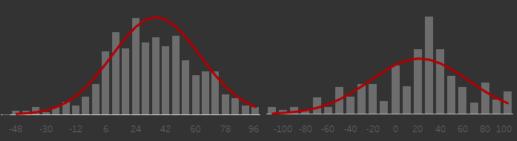
Louisville is *more expensive* than most of the major cities in the region



Satisfaction Score Distribution

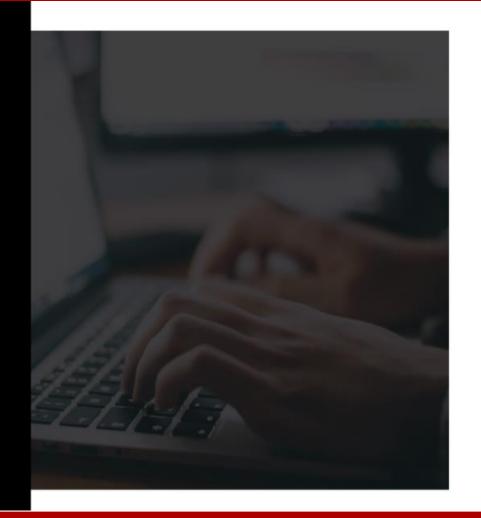
Both Flexibility and Pay Employees *are satisfied* with the score overall

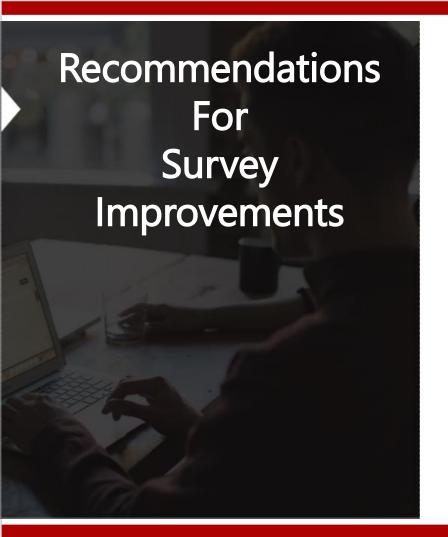
Just the Pay
Employees are *less satisfied* with Pay



Conclusions

- Supervisors & Managers are *least satisfied*
- Executives are most satisfied with their jobs
- Job satisfaction varies drastically by Industry
- Salaries in Louisville are *lower* as compared to other major cities in the region
- Louisville is *more expensive* than most of the major cities in the region
- Employees are less satisfied with Pay in Louisville as compared to other categories







Better Granularity of Data

- Job Roles to align with US Labor Salary Data
- No. of Years in the Job & Organization to include exact number of years & Months



Diversify Respondents

Majority of respondents from Healthcare & Higher Education



Similar Surveys in different Cities

Perform similar surveys in other cities in the region to have a better comparison factor



Pre-COVID-19 Preferences of Louisville Workers



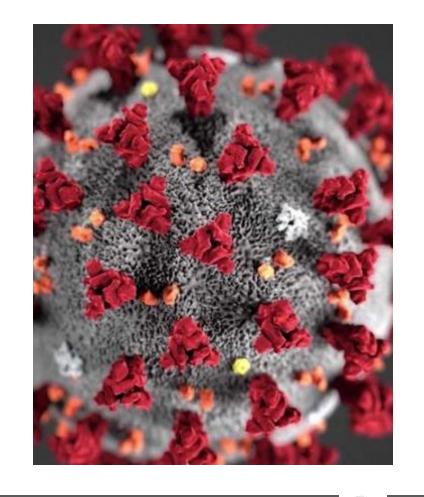
Louisville's COVID-19 **Timeline**

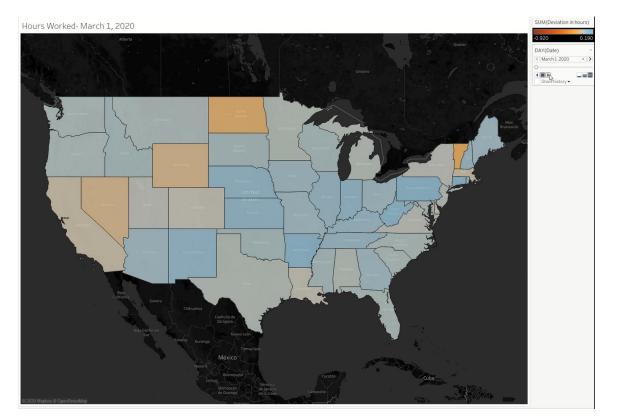
3/9 First Louisville Case

3/14 Closure of Most Public Gathering Places

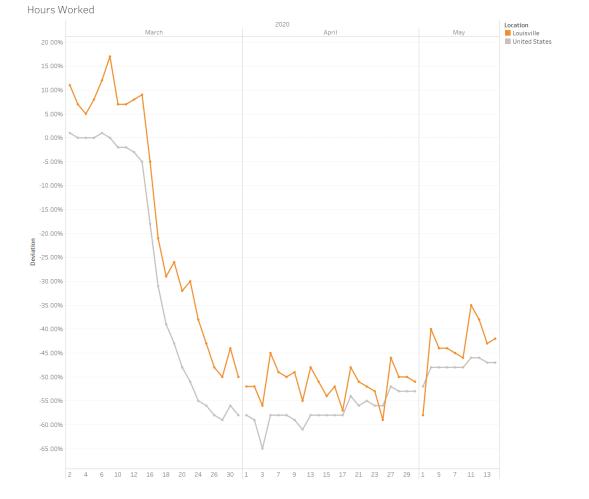
3/16 Closure of Restaurants and Bars

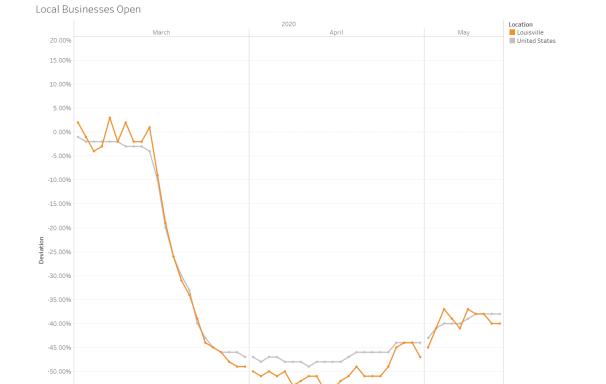
3/18 All Public Facing Business Forced to Close





US unemployment claims increase exponentially.







-55.00% -60.0096 -65.00%

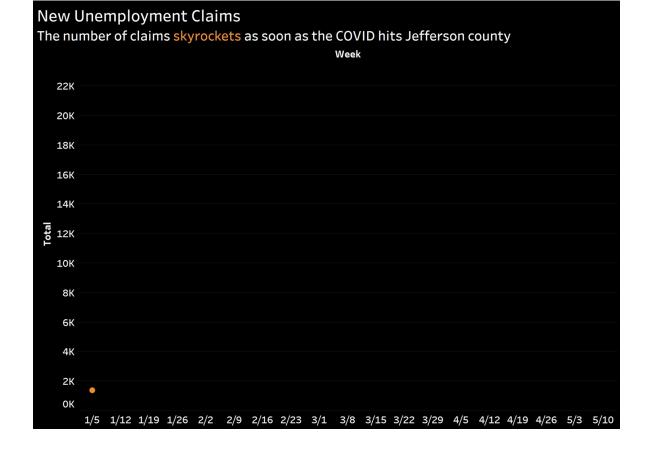






How has COVID-19 impacted Jefferson County?

Source: Kentucky Center For Statistics

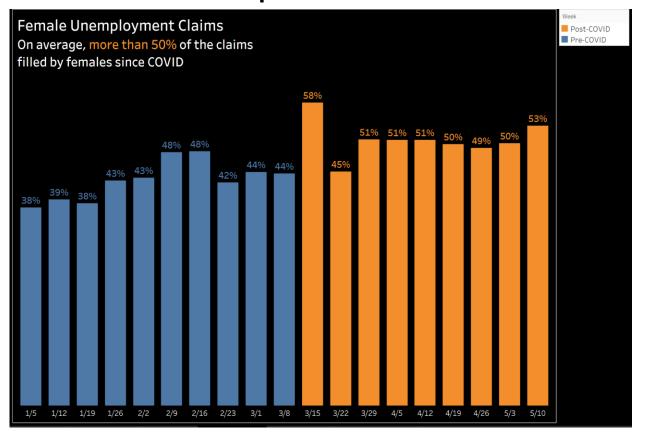


Jefferson County Weekly Unemployment Claims

Who has Claimed Unemployment the Most as a Result of COVID-19?

Source: Kentucky Center For Statistics

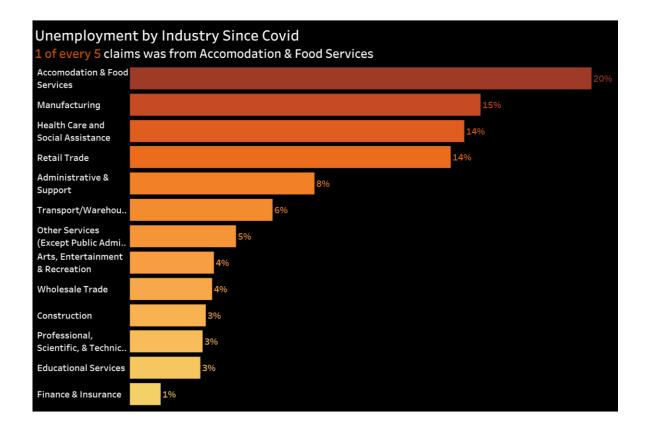
Women were impacted the more than men.



What industries are impacted during this pandemic?

Source: Kentucky Center For Statistics

The food services industry was impacted the most by COVID-19



COVID-19's Impact on Worker **Preferences** Safe work environments become a priority

Working from home becomes standard practice

Health benefits become non-negotiable

Job security becomes paramount

Salary increases are not guaranteed







Prioritize employee health

Recommendations for Louisville Employers post COVID-19



Prepare your business for future work from home situations



Become more flexible as an organization



Invest in your employees







Leslie Dawson | Brandon Jackson | Weston Kostrzewsky | Ayodeji Oyewumi |
Praveena Vutchula













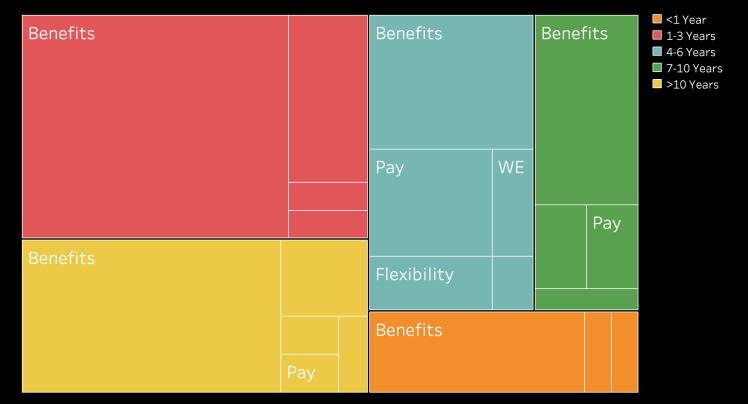
BETTER WORKPLACE BETTER WORLD

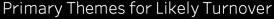






Regardless of tenure, more people care about the Benefits a company offers than any other theme.







Among employees that agreed they were likely to leave, **Benefits** and warranted the most commentary.

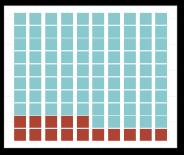
Qualitative Analysis

Responders / Non - Responders

Importance oF Flexibility, Pay and Benefits

Responders - 15%

Non-Responders - 85%



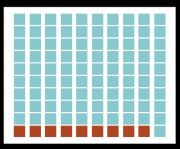
Work environment, Recognition & Growth opportunities

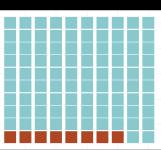
Responders - 8%

Non-Responders - 92%



Responders - 9% Non-Respondrs - 91%





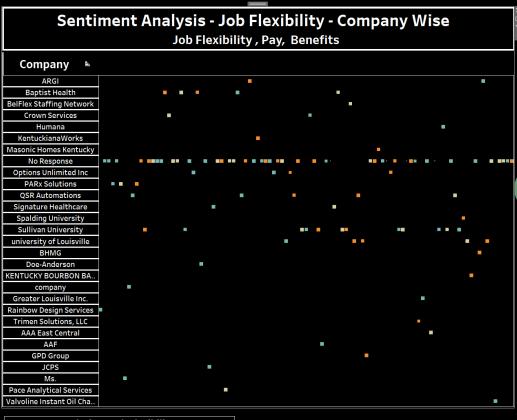
Participation

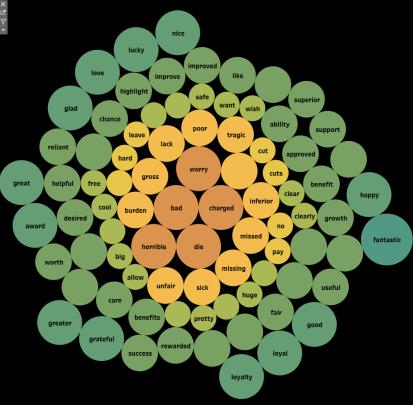
48% of all repondents to the survey revealed their Employer names

Survey Respondents(676) represent

O. 10% of Civilian Labor Force in
Louisville-Jefferson County (668,077 as
on March 2020)

JOB FLEXIBILITY , PAY, BENEFITS

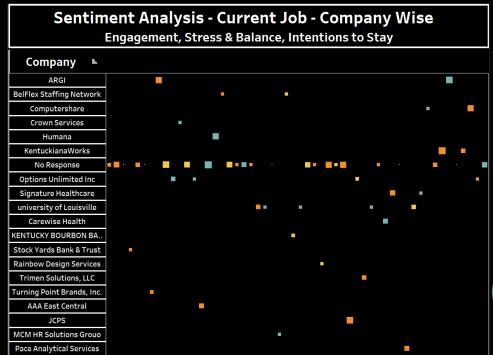


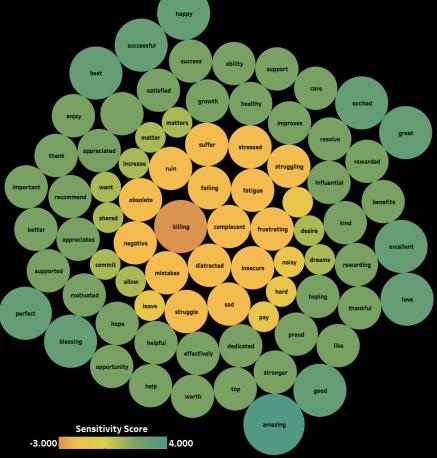


Polarity - Job Flexibility
■ negative ■ neutral ■ positive

Sentiment Score
-3.000 4.000

CURRENT JOB, ENGAGEMENT, STRESS & BALANCE,
INTENSIONS TO STAY





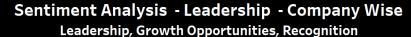
Polarity - Current Job

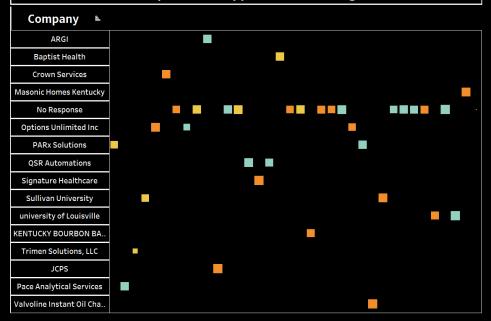
positive

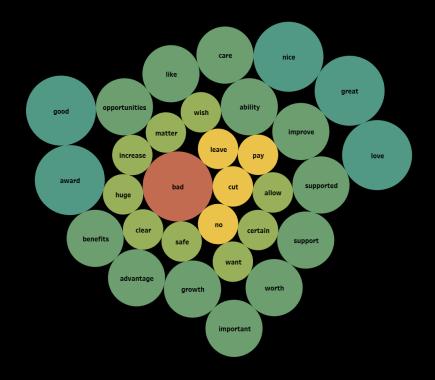
negative neutral

^{**} No Response in Company indicates all respondents who hasn't revealed their employer name.

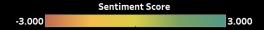
LEADERSHIP, GROWTH OPPORTUNITY, RECOGNITION, WORK ENVIRONMENT











^{**} No Response in Company indicates all respondents who hasn't revealed their employer name

HIGHLIGHTS

TENURE AND JOB CLASSIFICATION



AGE & GENERATION



Dissatisfaction

➤ Millennials

Gen X - Different priorities Louisville vs. National



REMOTE VS. TRADITIONAL WORKERS



EMPLOYEES WITH CHILDREN

- ➤ No Kids Benefits
- > Kids Flexibility



HIGHLIGHTS

VALUE & SATISFACTION (YELLOW)



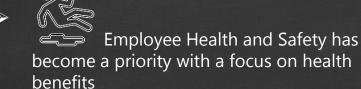


JOB SATISFACTION INDEX

- Louisville cost of living
- > Employee pay satisfaction



IMPACT OF COVID-19 (ORANGE)







QUALITATIVE RESPONSES

> Job flexibility, pay, and benefits







Where do we go from here?



Factors Addressed: ✓ Current Job Satisfaction

- Flexibility, Pay, Benefits
- **Employee Demographics**
- Leadership, Growth
- **Opportunities**
- Work Culture
- Stress and Balance

- **Previous Work:**
- > # of employers
 - Voluntary / Involuntary separation ➤ If voluntary, why they left
- X Current Work:
- Public / Government sector
 - Level of job (C's, executives, manager, etc.)
- Demographics:
 - Include trade schools/alternative education

 - Income role in household
 - (primary/secondary)
 - Louisville native vs. relocated

Future Survey Factors:

Moving Forward: Recommended Improvements To Improve Data Collection

1. Collect the smallest unit possible and use number over categories when possible



2. Use a representative sample / Define you target audience









3. Make fields required



