

Employee Well-being made easy



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Problem Statement

Design a solution to identify metrics and calculate wellness scores of employees looking at the aspects in a holistic perspective, which could provide a 360° view of an employee.



“Abstract

Employees spend a lot of time in the workplace, and correlating wellness goals with work life balance is mission critical to driving business outcomes. Having a corporate wellness program is imperative to the foundation of businesses. Building a successful corporate wellness program takes time, and includes a wellness solution that is embedded in the culture of the organization. Therefore, we come up with a solutions which is mutually beneficial, multidisciplinary, multidimensional approach to find out this wellness metrics.



Phases of the Project

	A
Phase 1	Identification of Metrics
Phase 2	Checking compliance with GDPR and other laws
Phase 3	Employee Wellness Score
Phase 4	Digital Cloning
Phase 5	Strategies for wellness programs (Included in POC Summary)



1 Identification of Metrics

Phase 1



Wellness is an umbrella term. It consists of many factors and its measurement can go in intangible dimensions. Having said that, in this theme solution, we tried to dive into the deepest, and more often, the unexplored ends to collect and bring the metrics which affect wellness of an employee in the corporate sector.

We not only considered the Mental and Physical wellness, but after a heavy research, we came up with an almost exhaustive list of factor umbrella which affects employee wellness in a lot of ways.

Exploring all those metrics, we emphasized on two major factors :

1. Ease of Collection of Data
2. GDPR and other privacy laws.



6 Factors of Employee Wellness in Tech Industries....

1. Mental Health
2. Physical Health
3. Corporate Social Metrics, Diversity Equity and Inclusion
4. Demography of the region
5. Work Life and Work life balance
6. Finance and Benefits

All of these factors are well researched and their effects are well measured and openly available.



Mental Health...



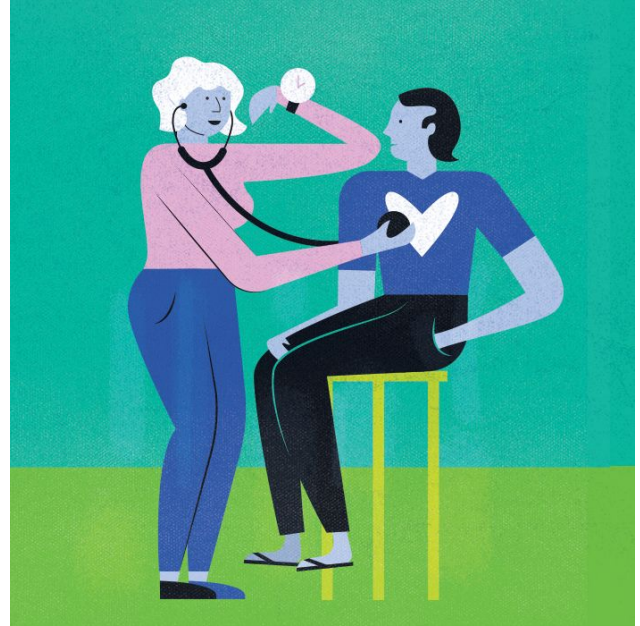
Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make healthy choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood.

1. Age
2. Gender Identity
3. No.of hours of sleep
4. Stress level
5. Medications
6. Hours of Meditation
7. Life Satisfaction
8. Relationship Status
9. Relationship Satisfaction
10. Job satisfaction
11. Achievements/Awards
12. Emotional Quotient

Physical Health...

A person who has good physical health is likely to have bodily functions and processes working at their peak. This is not only due not only to an absence of disease. Regular exercise, balanced nutrition, and adequate rest all contribute to good health.

- | | |
|---------------------------|--------------------------------------|
| 1. Age | 6. Water Intake per day |
| 2. Gender Identity | 7. Daily Exercise Hrs |
| 3. BMI | 8. Healthy Eating Index |
| 4. Blood Pressure | 9. Alcohol Consumption intake |
| 5. Body Composition Index | 10. BRAC (Basic Rest Activity Cycle) |



Corporate Wellness, Diversity Equity and Inclusion...



Workplace wellness is any workplace health promotion activity or organizational policy designed to support healthy behavior in the workplace and to improve health outcomes

Diversity and inclusion (D&I) is more than policies, programs, or headcounts. Equitable employers outpace their competitors by respecting the unique needs, perspectives and potential of all their team members. As a result, diverse and inclusive workplaces earn deeper trust and more commitment from their employees.

1. Diversity and Inclusion Index
2. Workplace Equality Index
3. Accessibility for differently abled
4. Is Effective Code of conduct implemented?
5. Hygiene and Work Environment Metrics
6. No of Workshops on mental Health in office in year
7. No. of Workshops on Awareness, Equity and Inclusion in year (DEI)
8. Time given for Recreational Activities per day (in mins)

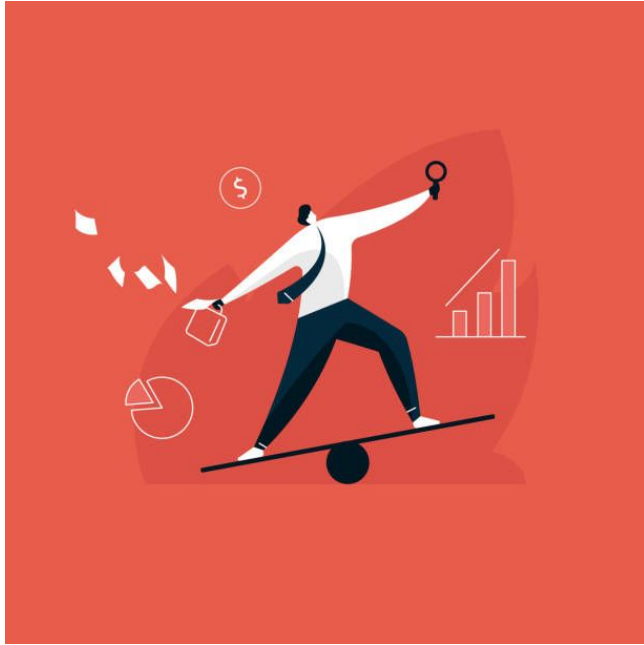
Demographics...

Demography is the statistical study of populations, especially human beings. Demographic analysis can cover whole societies or groups defined by criteria such as education, nationality, religion, and ethnicity.

1. Country
2. Degree of Universal Health Care
3. Life Expectancy Rate
4. Racial and Ethnic Equality
5. Happiness Index of the country
6. Pollution Index
7. GDP per capita (in \$)
8. Population density Normalised



Work Life and Work Life Balance...



Work-life balance is the equilibrium between personal life and career work. Work-life balance is an important aspect of a healthy work environment. Maintaining work-life balance helps reduce stress and helps prevent burnout in the workplace.

- | | |
|------------------------|---------------------------|
| 1. Job level | 8. Overtime |
| 2. Working hours | 9. Daily travelling time |
| 3. Performance rating | 10. Paid Leaves |
| 4. Work Experience | 11. Sick Leaves |
| 5. Experience - Same | 12. Paternity Leave Index |
| 6. Last Promotion | 13. Maternity Leave Index |
| 7. Percent salary hike | 14. Equal Pay Index |

Finance and Benefits...

1. EmpID
2. CTC
3. Salary
4. Health Insurance
5. Life Insurance
6. Pension plan
7. Vacation and Paid Time off
8. Childcare
9. Performance Bonus
10. Stock option or equity (Equity Share)



Checking compliance with GDPR, Privacy and other Laws

Phase 2



We checked the compliance of data and features that we are analysing under the following 4 major Bodies in the scope of this theme. Added to that we examined the ease of collection of data.

01

General Data Protection Regulation

02

Privacy Laws by United States of America

03

Privacy Laws by European Union

04

Privacy laws in Asia and Pacific Region



Reports 2.1 : GDPR and other laws compliance an easy of collection of data

Meta Features	Ease of Collection	Collected From	Percentage of features which are in compliance with GDPR and other Privacy and Legal laws
Mental HSC	Medium	Employee E/V/HR	100%
Physical HSC	Easy	Employee E/V/HR	100%
Corporate Social Metrics	Easy	Corporate Metrics	100%
Demography	Easy	Openly Available	100%
Work Life	Medium	HR Systems	100%
Finance and Benefits	Easy	HR System	100%



Employee Wellness Score

Phase 3



Employee Wellness Score, EWS is calculated using Natural Weighted Average

$$EWS = \frac{m(A) + p(B) + s(c) + d(D) + w(E) + f(F)}{m + p + s + d + w + f}$$

Tasks :

1. To find the values of the scores : A, B, C, D, E, F
2. To find the values of constants : m, p, s, d, w, f

Tools and Technologies :

Python, Jupyter notebook, Data Analysis, Data Science, Data Visualization etc.

We tried to decouple all the 6 meta-features and separately calculated each of them individually.

Reason for separate calculation :

1. Makes system loosely coupled
2. Makes analysis studies easier.
3. Data collected from similar sources are clubbed together
4. Easier to study individual features and act upon it.
5. Decoupling will ensure privacy during the calculation stage.

Mental Health Screening Score	Physical Health Screening score	Corporate Social Metrics
A	B	C
Demography	Work Status - Work Life Balance	Finance and Benefits
D	E	F

Mental Health Screening Score (A)

Parameter	Correlation with Report Score	Weight Standardised f(w)
Age	-0.065932	$-\ln(w)*1$
Gender Identity	<i>Not Considered</i>	<i>Non Considered</i>
No. of Hours of Sleep	-0.031705	$w*3.1$
Stress Level	-0.255038	$-w*2.1$
Medications	-0.020349	$-w*0.5$
Hours of Meditation	0.020686	$+w*1.2$
Life satisfaction	0.018759	$+w*0.7$
Relationship Status	<i>Not Considered</i>	<i>Non Considered</i>
Relationship Satisfaction	-0.00416	$+w*0.3$
Rewards	0.077664	$+w*0.3$
Emotional Quotient	0.939325	$+w*0.9$

Physical Health Screening Score (B)

Parameter	Correlation with Report Score	Weight Standardised f(w)
Age	-0.065932	$-\ln(w)*1$
Gender Identity	<i>Not Considered</i>	<i>Non Considered</i>
BMI	-0.427081	$- w - 21.7 * 2.2$
Blood Pressure	-0.179245	$- w-100 *0.8$
Body Composition Index	0.098724	$+w*0.5$
Water Intake Per day	0.066767	$+w*1$
Daily Exercise Hours	0.005042	$+w*1.3$
Healthy Eating Index	0.821278	$+w*1.7$
Alcohol Consumption Index	-0.059184	$-w*0.6$
BRAC	0.163455	$+w*0.9$

Corporate Wellness Metrics (C)

Parameter	Correlation with Report Score	Weight Standardised
Diversity and Inclusion Index	0.237785	+w*2.5
Workplace Equality Index	0.169801	+w*2
Accessibility for differently-abled	0.04048	+w*1
COC	0.006528	+w*0.5
Hygiene and Work Environment Metrics	0.029794	+w*1.1
Health Workshops	0.117402	+w*0.9
DEI Workshops	-0.010786	+w*0.5
Recreational Activities	0.942814	+w*1.5

Demographics (D)

Parameter	Correlation with Report Score	Weight Standardised f(w)
Country	<i>Not Considered</i>	<i>Non Considered</i>
Degree of Universal Health Care	0.020836	+w*4.5
Life Expectancy Rate	-0.004998	+w*1.6
Racial and Ethnic Equality	0.013174	+w*0.7
Happiness Index of the country	0.026393	+w*0.5
Pollution Index	0.657865	+w*1.2
GDP per capita	0.617029	+w*0.9
Population density Normalised	0.003584	-w*0.6

Work Life and Work Life Balance (E)

Parameter	Correlation with Report Score	Weight Standardised
Job Level	0.059243	+w*0.3
Working Hours	-0.117485	- w-8 * 1.5
Performance Ratings	0.063513	+w*1
Work Experience	<i>Not Considered</i>	<i>Non Considered</i>
Experience in same Company	Not Considered	Non Considered
Last promotion	-0.080899	-w*0.5
Percent salary Hire	0.964006	+w*0.8
Overtime	-0.0722	-w*1.1
Daily Travelling time	-0.0649	-w*1.5
Paid Leaves	0.102624	+w*0.6
Sick Leaves	0.096068	+w*0.8
Paternity Leave index	0.079954	+w*0.6
Maternity Leave Index	0.036403	+w*0.6
Equal Pay Index	0.086879	+w*0.7

Finance and Benefits (F)

Parameter	Correlation with Report Score	Weight Standardised f(w)
CTC	<i>Not Considered</i>	<i>Not Considered</i>
Salary (in Hand)	1.0	+w*0.7
Health Insurance	1.0	+w*1.5
Life Insurance	1.0	+w*1.1
Pension Plans	1.0	+w*1.2
Vacation and Paid Time off	-0.003938	+ 12 - w *2
Childcare	1.0	+w*1.1
Performance Bonus	1.0	+w*2
Stock option or equity	-0.042124	+w*0.4

Now we will find out, the scores all the meta parameters.

Score of **Mental Health Screening Score** is given by

$$A = \sum_1^n f_i (w_i)$$

Similarly we can find the values of B, C, D, E, F

$$D = \sum_1^n f_i (w_i)$$



We took some samples from the given dataset to calculate the value of A, B, C, D, E

Performing Calculations on employee with ID = 619-51-3328

We will create a **Digital twin** of the employee, with the same parameters as the employee with this employee ID.

Meta Features	Notation	Value
Mental HSC	A	52.29
Physical HSC	B	37.3
Corporate Social Metrics	C	85.9
Demography	D	182745
Work Life	E	38.6
Finance and Benefits	F	105250



Values of Constants

Constants	Value
m	3.3
p	3.3
s	2.4
d	$1.2/1000 = 0.0012$
w	1.2
f	$0.6/1000 = 0.0006$

$$EWS = \frac{m(A) + p(B) + s(c) + d(D) + w(E) + f(F)}{m + p + s + d + w + f}$$

$$EWS = [m (52.29) + p (37.3) + s (85.9) + d (182745) + w (38.6) + f (105250)] / (m + p + s + d + w + f)$$

Putting the values of Constants

$$EWS = [3.3 (52.29) + 3.3 (37.3) + 2.4 (85.9) + 0.0012 (182745) + 1.2 (38.6) + 0.0006 (105250)] / 12$$

$$(m + p + s + d + w + f) = 12$$

$$EWS = 69.21$$



Digital Cloning

Phase 4



Case Study : Jane Sloan

Check out Jane's Story and Report at
[<https://drive.google.com/file/d/1azaiqvAbIeSVqj5XftmdUUPAX9oKx43B/view?usp=sharing>]

EWS = 98.00



Case Study : Alex Crawford

Check out Alex's Story and Report at
[<https://drive.google.com/file/d/1azaiqvAbIeSVqj5XftmdUUPAX9oKx43B/view?usp=sharing>]

EWS = 124.4



Thank you!

