

Balance Your Work-Life: Personal Interactive Web-Interface

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ABSTRACT

The term work-life balance can be described as a path to manage stresses and burnouts in the workplace. In this Covid-19 pandemic, work-from-home practice includes both personal and professional spaces as employees, more often, stay digitally connected. As a result, personal life hardly can be separated, which will potentially create imbalanced life, which creates problems regarding physical and mental health of the employees. In such unprecedented situations, we are required to maintain and/or integrate balanced work-life. A balanced work-life gives employees a stress-free environment to work and improves employees' mental and physical health conditions and relationships. In this study, we focus on maintaining a proper work-life balance through a monitoring tool, the 'Wheel of Life.' Considering the drastic changes in work culture (due to Covid-19, for example), we introduce an interactive interface based on 'Wheel of life' concept. Our interface helps tune various important factors, such as business, creative, social, love and life purpose, and provides multiple recommendations. The purpose of the study is to assist web users to balance their work-life, improve psychological well-being and quality of life in this unforeseen situation.

KEYWORDS

User Interface,
Interactive Interface,
Wheel of Life, Work-Life
Balance.

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I. INTRODUCTION

In the vast field of human resource management, an important term and the event is work-life balance. It has a strong influence on the lives of all the workers who are engaged in large size or medium-size, or miniature size business organisations. As a plank in the Women's Liberation Movement, the term "work-life balance" is first coined in the U.K. in the '80s. The workers usually worked for 14 to 16 hours a day on an average and six days a week [1]. The long working hours adversely impact social and health paradigms of the workers. In this way, the concept of work-life balance gets importance to reform and re-establishments.

The meaning of work-life balance is a level of prioritisation between personal and professional activities in an individual's life and how an individual can manage his personal and professional life. In the modern management system of the organisation, work-life balance is a very open practice to discuss, and it is a topical issue due to the enhancement of technology. The man-machine interface becomes large and complex [2]. Previously the work from home was difficult or taking the assignment from the organisation and continuing at home was not a widespread practice. There was a vivid distinguish between one's personal life and professional life too. The cloud-based software, different types of mobile technology, usage of smartphones, and the proliferation of the internet have made it more

accessible. Though it is an advantage for the business houses, on the other hand, it generates a high pressure towards the human assets and makes their life blur. A common feature of poor work-life balance is stress. In this current time there has been an increase in health issues resulting from physical and mental stress created due to an upsetting disparity between expectation and yield from employees. Employees are the organisation's critical assets; making them healthy and happy, the business house can go a long path smoothly in this competitive market. It is the responsibility of the employers to provide them with a stress-free environment to make the work-life balance in a true sense.

To capture the situation of the Covid-19 pandemic, we can focus on the present scenario of work-life balance and where we can find the various consequences of the pandemic to the work-life of the people [3]. The new trend of working from home means working more at home. Another disturbing trend that has been incorporated due to this situation is called 'bossware.' It is controversial software used by companies to monitor employees under the interpretation of enhancement of productivity. Its collapses the boundaries of work-life balance. It also generates fears that they are surveillance by employers all the time. The result is for employees, working harder and longer.

The family life or personal life is getting hamper in this way. It is also observed that breaks from work, coffee, or lunch invitation from a colleague or friend vanish. Employers' expectation is going beyond the level and gradually setting the norm of work 24/7 [4]. The true meaning of work-life balance has no significance, and it is not justified as well in the context of HR practices. Companies need to establish clear work policies and a suitable work environment that will encourage staff to take breaks and give some time to the family also. Several studies have

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discovered that long working hours are not suitable for an individual's health. It generates a negative impact on cardiovascular and mental health. Flexible working hours and schedules provide positive effects on health and well-being. Due to poor work-life balance, employees tend to sleep less. As per research, it is said that a 'normal' sleeping schedule should be an average of 7 to 9 hours per night. This adverse effect includes a higher risk of stroke, coronary heart disease, and mental disorders like anxiety and mental depression. It is also shown by a research study that individuals who work 55 hours or more than that per week have a higher risk of stroke than those people who work for standard hours. Sleep deprivation is very much linked with cardiovascular disease and myocardial infarction and stroke-causing death [5]. Due to two major factors, sleep deprivation and prolonged working hours, the health-related quality of work-life is getting poor day by day. In this pandemic time, the need for work-life balance is more important than ever.

Covid-19 pandemic creates an unpredictable and under pressure work environment among the employees [6]. Boundary theory states that people create and maintain physical, temporal, and psychological boundaries around themselves to simplify their operations in the surrounding world [7]. Forming this limit allows employees to minimize interference between work and non-work life. According to the boundary theory, assuming that when working from home during the lockdown period, employees may find it difficult to create and maintain time limits, physical and psychological, so they may encounter some difficulties in maintaining work-life-balance. During the period of isolation at home, the possibility that work life interferes with family life, or family life interferes with work life, or both, is undeniable [8]. The result is blurring lines between work and personal activities because of the new trend to work from home more. A balanced work-life concept gives employees a stress-free environment to work; it improves their mental health and better physical health too, it makes better relationships, it helps to increase the level of employee engagement at work, supporting making people innovative and creative. Natural balance creates workforce more productive, maintains the bridges of happiness fulfillments and finally, work-life balance gives the birth of successful people in life [9].

There is a need of providing the employees with a platform for self-assessment and regulate the factors (known as areas of life) to improve work-life balance. As per our knowledge concern, no similar work has been reported in the literature. The primary motivation of this study is to provide the employees with an interactive platform for real-time self-assessment and tuning area of life (e.g., business life, creative life, social life, love life, etc.) by studying a visual tool, namely: "spiral-web" wheel (a particular type of wheel of life).

In section II, we have discussed the related work. Section III is a detailed description of the wheel of life. Section IV reports the interactive web interface design and implementation for work-life balance, followed by a discussion section (section V). Finally, section VI is the conclusion of this study.

II. LITERATURE REVIEW

Work-life balance is defined and described as a mechanism to manage the increasing amount of stress in the workplace. The typical symptoms of stress have adverse effects on employees' quality of work-life that mainly focus on mental abilities, physical well-being of employees, and their behavior pattern. The stress can come into employees' minds due to continual change of work environment, bullying, lack of challenges, continuous interruption, and a non-effective internal communication system [10]. The researchers have revealed how to manage the problems of stress by implementing simple techniques called the 'Wheel of Life'. This indicates an imbalance life

of one individual at present time and points them to address for better management. It mainly focuses on movement and changes in one's life about the above-mentioned factors (work, family, health, friends, love spirit, and wealth) and ultimately generates the wheel or circle that divides into different segments of life. It has been observed that during the 20th century, work demand was going very high, and the personal life of the people was getting hampered. Employers understood and acknowledged the necessity of work-life balance programs, to maintain a healthy balance between one's professional and personal life [11]. The study investigated and analyzed the emergence of work-life balance and established a macro-level model on the work-life balance phenomenon. This facilitated the movement from unbalanced life to balanced life at the organizational level during the 20th century. In the shadow of human resource management and organizational behavior, one of the most important fields under research is work-life balance. It is a phenomenon where personal (spiritual development, family & friends, leisure, pleasure) and work-life (professionalism, career, ambition, esteem needs) both are included. The need for work-life balance depends on the generation, culture, place, individual perception, attitude as well. Research has revealed the conflicts of perceptions of workplace people on their unbalanced life and find out the recommendations to set up a balanced work-life. Maslow's hierarchy model, Vroom's expectancy theory, and Wheel of life strategy had been implemented in this work. This study concluded to focus on the familiarized and transparent management policies. This helps to create changes in the way of better motivation of workplace people to maintain a balanced life in the business organisation. Wheel of life visualization tool has been widely used in various work-life balance studies in the recent past [12], [13]. Work-life balance is the way to solve the problem of increasing pressure in the workplace when people try to balance various factors in the work/life environment, including: family; friends; health; and spirit/ self [14]. A study [15] reported that the stress can be overcome by applying a simple tool called the "wheel of life", which can point out imbalances in an individual's current life and point out ways to solve these problems. The wheel of life is a familiar concept in many religions and spiritual cultures. It represents the constant movement and change in life. Work-life balance is a broad concept that includes adequate prioritization between "work" (career and aspirations) on the one hand and "life" on the other (happiness, leisure, fanaticism, and spiritual development). Needs are also different from generation, culture, place, and personal perception. In [16] authors investigated the views of the generation on work-life balance and, at the same time, organize how to implement work-life balance, identify conflicts of opinion and find possible suggestions to help you maintain a better work-life balance. Recent studies show that the Covid-19 pandemic has significant effects on quality of work-life of the people. The tremendous unbalanced life has been created due to work-from-home practice. People are getting stressed, and the personal life is getting worst. According to the World Health Organization, the novel coronavirus disease has brought the entire world into a relative standstill framework. Due to the absence of effective vaccination, the precautionary measures from the disease are quarantined, closing all workplaces including business houses and schools, spatial distancing, etc. In this situation, the Indian government also takes the actions of 'lockdown' and self-isolation policies. Only a few areas like purchasing for essential items, visit on health issues and other essential work purposes, had some fewer restrictions. The employees had to do work with engagement in virtual mode too much. Work from home means work a lot from home, the result is poor and unbalanced work-life with psychological distress [17]. Another research has been reported on the investigation of the effects of social support and work-life balance on burnout of employees in the context of the Covid-19 pandemic. Researchers took the samples from different sectors like education, IT, health, retailing, tourism, service,

and logistics. The study discovered the relation between burnout, social support, and work-life balance. Findings depicted that social support affects work-life balance and partial effect on burnout. Due to the changing pattern of work-life in the pandemic situation, there is no significant change in male and female employees' state of mind [18], [19]. There is also an adverse impact created by the Covid-19 pandemic and prolongs lockdown to an individual's life in the form of unhappiness, depression, frustration, boredom, fatigue, and other negative emotional symptoms. While work-life balance is found unbalanced, then happiness acts as a protective factor that can help make a better-balanced life [20]. The quality of work-life and work-life balance are entering into uncertainty due to the uncertain nature of the situation. People need to be happy and cherish every sphere of their life to live long with good health. Therefore, their unbalanced life should be balanced and maintained [21]. The literature depicts a need for a real-time self-assessment visual tool for the Employees to understand their current state and in which area (areas of life) they need to improve for better and balanced livelihood.

III. THE WHEEL OF LIFE

The wheel of life is the perfect tool to monitor an individual's journey towards happiness and success. By using this tool, one can reflect and gain some meaningful insight into the balance of his life [22]. This tool also provides satisfaction in one's life and its different areas. In our study wheel of life, it is focused on goal setting and coaching of the individuals. The purpose is to spend his or her present time, and how much one can be satisfied in different categories of life and work [23]. The wheel of life mainly includes the "Pie" style and the "Spider Web" style. In "Spider Web", style scores are noted on the actual lines for each category (not across the segment). The wheel of life is segmented into different areas. The areas are business life, life purpose, love life, social life, and creative life. Each of the main areas of life is divided into two subcategories as shown in Fig. 1, namely: money & finance, career & work, growth & learning, health & fitness, partners & love, family & friends, environment and community, health & fitness and fun and recreation.

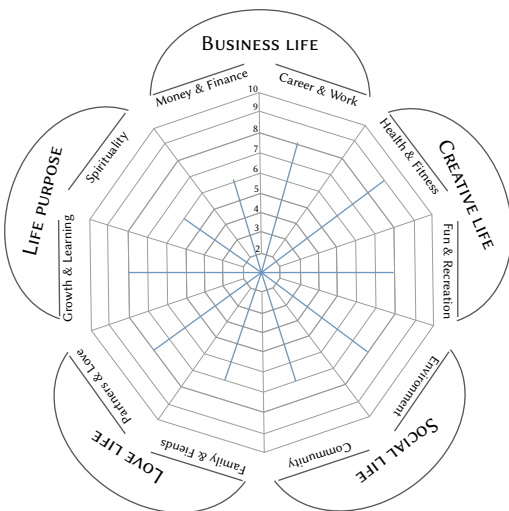


Fig. 1. The wheel of life.

In-wheel of life employees satisfaction levels for each area of life can be scored out of 10, where 1 signifies least satisfaction level and 10 depicts the most satisfactory level. There is always a chance of bias input from the employee, which might affect the overall performance of the proposed model. The user must keep in mind these points

before self-assessment: justification of low or high score, an idea about the ideal score for each life area, targeted values (want to achieve) after a month, after three months, after six months, and after a year, etc. Parents need to prioritize work-life balance to lower the level of family conflict, increase job and life satisfaction, reduce stress levels and overall productivity. Most people live complicated lives taking multiple actions in various directions every day. Those who simplify their lives are much happier [24]. Wheel of life is a visual tool to balance work-life and living a happier life.

IV. INTERACTIVE WEB-INTERFACE TUNING FOR WORK-LIFE BALANCE

The need for interactive web interface design and implementation has been discussed in the previous section. In this section, we will discuss the model design, and implementation of the same.

A. Design and Implementation

As discussed in the earlier section, the wheel of life has various areas of life which can be tuned to balance work-life. Fig. 2. shows the steps of the designing process of the proposed interactive web interface.

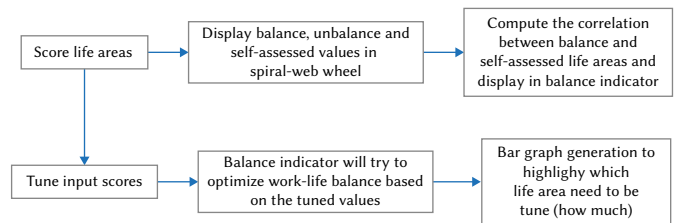


Fig. 2. Interactive web-interface design for living area tuning and work-life balancing.

In this work, an interactive web interface is developed (<https://workbalancedlife.web.app/> Last Access Date: 06.07.2021) using JavaScript as a backend language and HTML and CSS as a front-end coding language. In our study, users can provide inputs in 10 points Likert scale for each area of life (Fig. 3) (1 = least satisfied, 10 = most satisfied). The values will reflect (in blue color) in the "spiral web" wheel (Fig. 4). In-wheel of life, red colour shows unbalanced life and green color depicts balanced life where the values are predefined in a previous study [25]. Correlation between green color and blue color is computed to find out closeness between self-assessed work-life and balanced work-life. Based on the correlation value, the balance indicator will shift and try to optimize work-life balance.

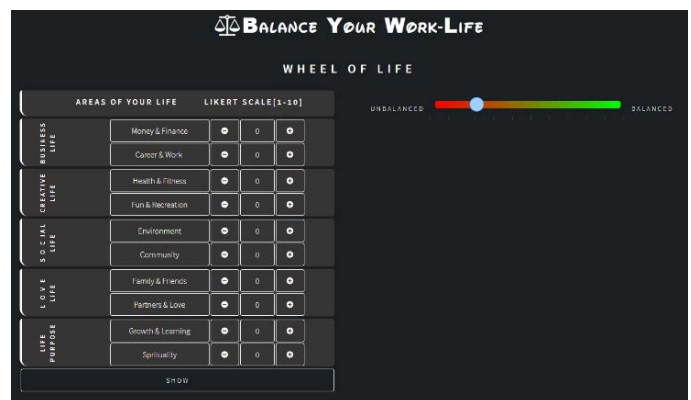


Fig. 3. Areas of life on the Likert scale.

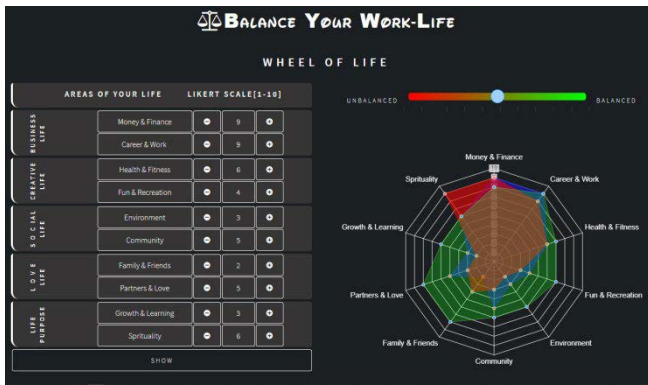


Fig. 4. Wheel of life.

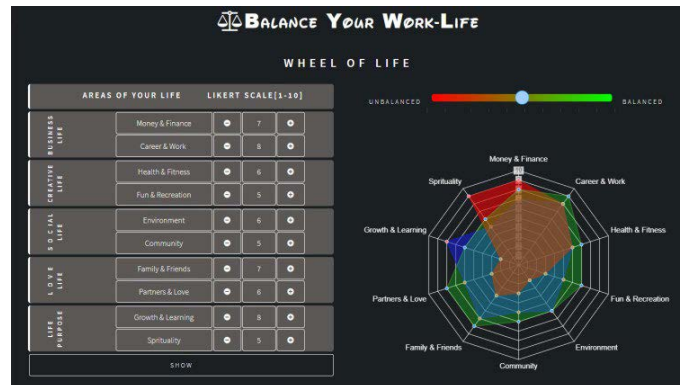


Fig. 6. Wheel of life (Case study).

Fig. 5 shows that the input values by the user will automatically propagate in the tuning table. The user can tune those values, and the balance indicator can be tuned accordingly. Tuned indicators can be compared with ground truth values. Our prime objective is to tune those life areas in such a way so that balance work-life can be achieved. Fig. 5 also shows that depending upon the tuned values (an increase or decrease of the original inputs), a bar graph is reported where the red color indicates which area of life needs to give less focus, whereas Green indicates highly focused.

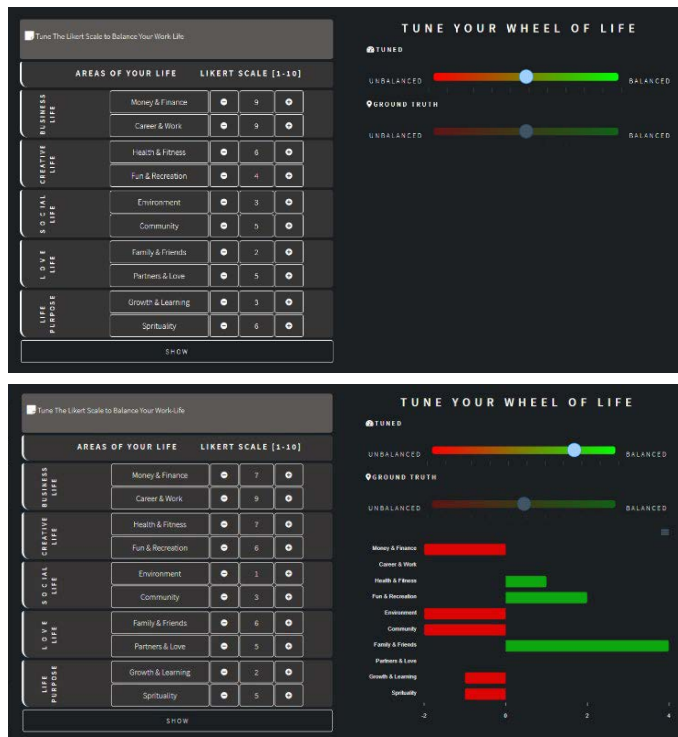
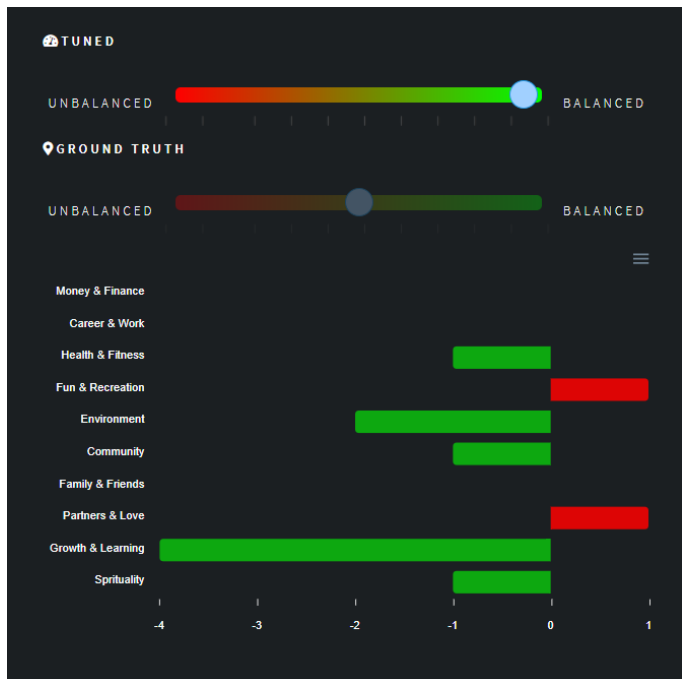
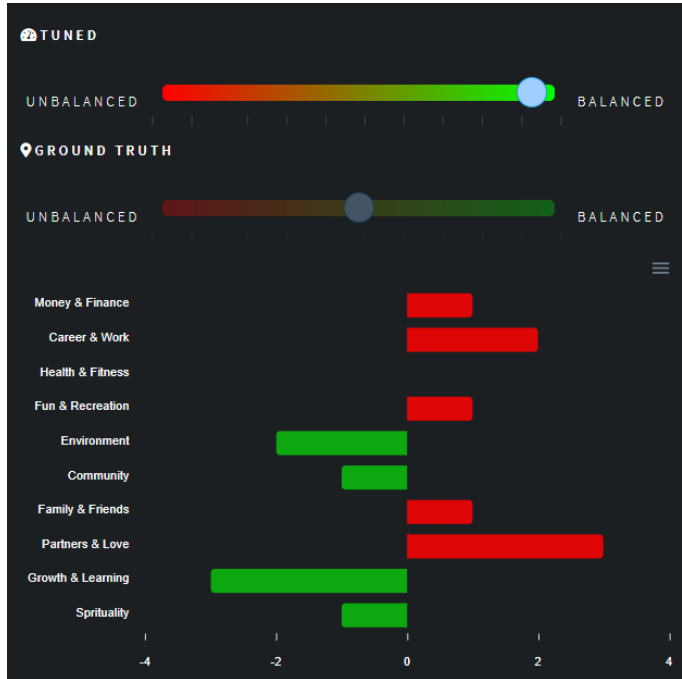


Fig. 5. Tuned value and bar graph.



As we already mentioned, the employee needs to provide their honest self-assessment as input to obtain the correct outcome.

For a given set of initial input values (areas of life) (Fig. 6.), there is always a possibility that the recommendation based upon the tuned values is not satisfactory. In that case, the user can tune multiple times, keeping the input values as-is amongst several recommendations (as shown in Fig. 7). Users can opt for any of the outcomes (bar graphs), which looks like a feasible solution for their work-life balance. The current system allows the user to select the best recommendation (as per choice) amongst several alternatives to obtain a similar outcome (balancing).

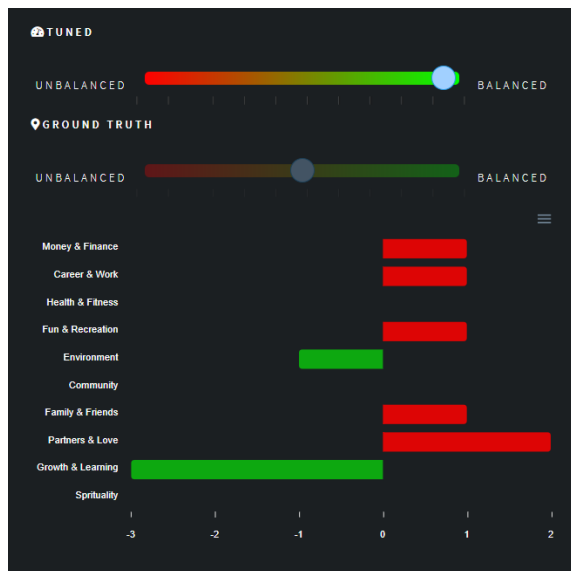
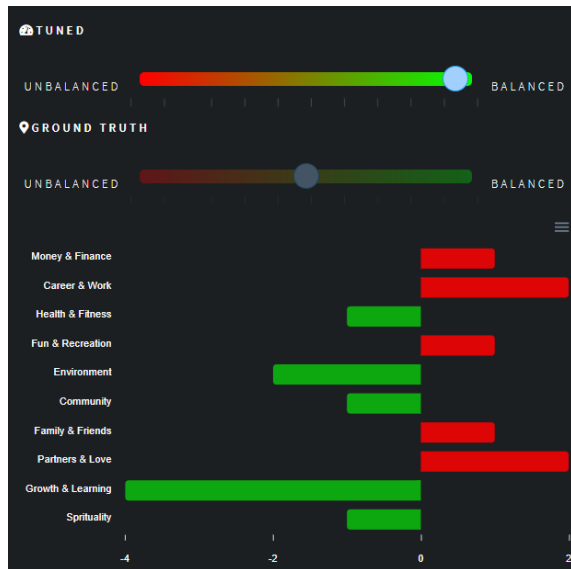


Fig. 7. Multiple bar graphs based on tuned values (same inputs).

B. Result Analysis

We have studied the work-life balancing of 120 employees of a small-scale company in Kolkata, India. Amongst 120 employees, 17 employees' work-life is not balanced ($\leq 50\%$ -marked in red color), average balancing is 40.28% (Fig. 8.) which changed to 90.48% after tuning the areas of life.

Our experimental study shows that (Fig. 9), for business life, 70 employees required positive tuning whereas four required negative tuning. It is interesting to note that 44 employees did not require any tuning in the initial input value, for career & work employees required positive tuning (93) or no change (24) (in the bar graph, green color indicates positive tuning and red signifies negative tuning) (Table I). Sixty-three people required no tuning in creative life, whereas 32 required positive tuning and 25 negative tunings. For fun & recreation, 54 people required no tuning, whereas 50 required positive tuning and 15 negative tunings. In both social life community and environment cases, the majority required either no tune or negative tuning. In Table I majorities' show that attributes namely: love life, family & friends and partners & love, needs improvement. The reason may be the excessive workloads and extended working hours, work-life imbalance during this pandemic time.



Fig. 8. Unbalance-balanced life.

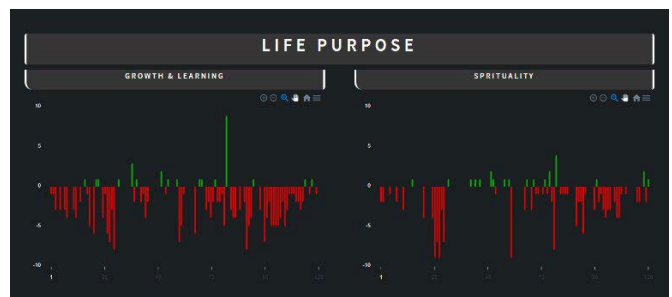
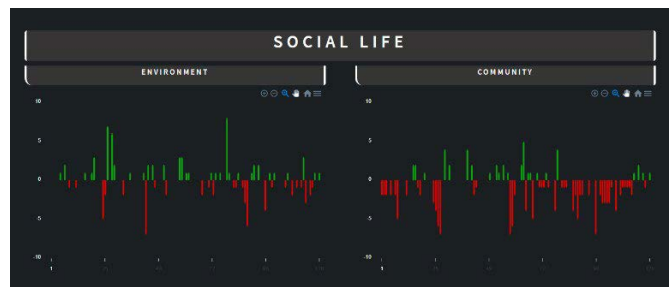
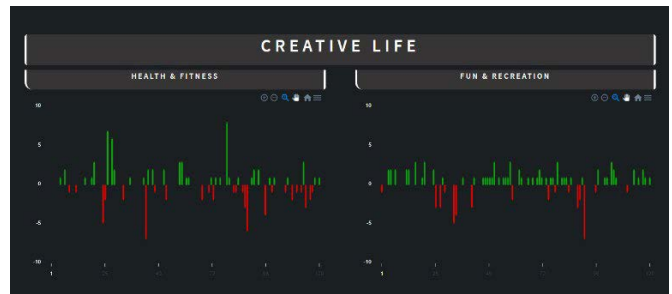


Fig. 9. Areas of life tuning.

Interestingly, most of the employee required negative tuning of growth and learning and spiritual life. Growth is nothing but changing our thinking habits, emotion control, the approach of handling life, etc. It is about change by learning new things. It is most important to retain in the job market in this crisis time rather than learning, growth, and personal development. Maybe this is one reason why most of the employee's growth and learning factors need to be negatively tuned.

Again, as mentioned earlier, employees can change their mindset and always retry for alternative recommendations that might affect the overall results. In this case, we have only considered each employee's very first attempt to change the average work-life balance from 40.28% to 90.48(Fig. 8.).

TABLE I. TUNING TABLE

Area of Life	No Change required [0]	Negative tuning required [<0] [red]	Positive tuning required [>0] [Green]
Business Life			
Career & Work	24	1	93
Money & Finance	44	4	70
Creative Life			
Health & Fitness	63	25	32
Fun & Recreation	54	15	50
Social Life			
Environment	50	57	12
Community	48	48	23
Love Life			
Family & Friends	28	4	86
Partners & Love	23	6	89
Life Purpose			
Growth & Learning	39	64	16
Spirituality	57	45	17

V. DISCUSSION

Our experimental results clearly show that most employees (Fig. 7) required work-life balance in this crisis period. Areas of life are highly significant to improve the overall quality of work-life as well as personal life. Unbalance in life leads to family conflicts and creates problems in personal relationships besides mental stress and health issues [26]. Poor work-life balance decreases overall productivity, creativity, and engagement level and increases the turnover rate in the workplace. Working from home has erased the boundaries between the time dedicated to working and the time dedicated to oneself in this pandemic time [27]. This changing trend of remote working provides a high level of stress on employees. Employees require continuous mental health support from their organisations. Otherwise, employers will face the consequences of revenue generation, reputation, recognition for a long-term basis, which is not a good sign for any business organisation [28]. Satisfaction and good functioning at work and at home, with a minimum of role conflict [29] is work life -balance. It is always important to study the impact of work life-balance for psychological wellbeing of employees [30], [31]. It is well-established that there are high needs to design an interactive interface that will help the employees balance their work-life.

Our interface will help tune various life areas (business life, creative life, social life, love life, and life purpose) and provide multiple recommendations. Users can choose any one of those recommendations and improve the living areas accordingly for work-life balancing [32]. Our current system is a web-based application. In the future, we plan to design a mobile application. Push notification, convenient interface based on user habits, offline user mode, alert/alarm, etc., can also be

incorporated to make the application more robust and user friendly. As a future work of the study, we can also work to deploy decision rules generated by AI algorithms. Always there exists a thin line of defence relying on the honesty of the users who score their areas of life truthfully. The overall performance and efficacy very much depend upon the same. Our platform only recommends which areas of life users need to improve and how much but never suggests which activity needs to be performed to achieve the goal. As a future scope of the study user experience can be studied [33], [34].

VI. CONCLUSION

In today's rapidly changing modern work environment, time pressure seems to be increasing and new technologies allow work to be done anytime, anywhere. These are just two factors that make it increasingly difficult for workers to integrate work and family life. A balanced work-life gives employees a stress-free environment to work. Improvement of employee's mental and physical health condition, relationship, engagement at work, innovation, and creativity is highly dependent on balanced work-life. Happy employees are efficient and productive, and their level of engagement is very high despite having any uncertainty in a business environment. People should enjoy while working, and it is their responsibility to spend some quality time with personal life and make it successful too. Our study might assist the users to balance their work-life, improve psychological well-being and quality of life in this unforeseen situation.

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