

The Impact of Overtime on Job Satisfaction and Work Stress among Indian Contract Workers

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ABSTRACT

This paper aims to investigate and review the relationship between overtime and employee welfare metrics such as perceived levels of job satisfaction and job stress, in the Indian context. The purpose is to assess the relationship between overtime, satisfaction and stress faced by Indian contract labourers and gig workers, and thereby to determine the optimal level of overtime for such workers which would lead to work-life balance.

The study is a mixed-method study, employing sequential exploratory design to combine quantitative as well as qualitative approaches. Primary data for the same was collected through in-depth interviews and questionnaire-led surveys of contract laborers who were identified and sampled through snowball sampling. The criteria of inclusion for the study are jobs which are contractual in nature and jobs where workers are paid on an hourly or daily basis. Various metrics for measuring the stress and satisfaction level of the target group were identified based on previous studies involving overtime and lifestyles of contract laborers.

The research establishes a relationship between overtime and work-life balance on employee welfare metrics such as perceived levels of satisfaction and stress. In-depth qualitative interviews were then used to corroborate and explain the quantitative findings.

This research provides insights into the relationship between satisfaction and working hours including perceived levels of stress of contract labourers. The research can be used further by future studies to identify and explain the causal factors behind worker non-performance and dissatisfaction. The practical implications of the same can be applied to larger, more diverse sets of workers to test the scalability and applicability of the insights, as well as to make necessary changes through future research to ensure the relevance of the findings to changing scenarios.

Through the results found, the study highlights important differences between contract labourers and permanent workers, with regard to overtime and its effect on satisfaction, stress and work-life balance.

Keywords

Overtime, Employees, Work, Contract Workers, Work-life Balance, Job Satisfaction, Work Stress

Article Received: 10 August 2020, Revised: 25 October 2020, Accepted: 18 November 2020

Introduction

Work-life balance has become a pertinent subject of debate not only for those engaged in business, but also for governments and academicians (Warhurst et al., 2008). Balancing professional and personal commitments is a major issue as it poses significant challenges for firms, workers and researchers (Khan and Agha, 2013).

In recent times, the shifts in the traditional boundaries between work and family have forced working individuals to acclimatise themselves to these changes, with each both playing a role in influencing the other (Frone & Rice, 1987). Work-life balance has thus been established as the successful attempt by an individual to manage conflicts arising out of the clashing requirements of his or her personal and professional life, in a way that enables the individual to achieve goals in both these spheres (Clutterbuck, 2003).

Globalization on the other hand has accelerated the process of change significantly, by altering the already dynamic and ever-evolving business landscape, both for organisations as well as for employees – the latter group already under pressure and insecurity of job due to fear of being replaced by another person or even by a machine, thereby resulting in globalisation having a significant impact on the work-life balance debate (Bloom et al., 2009).

It is a well-acknowledged fact that work is a major cause of stress for working professionals (Michie, 2002). Job stress not only influences employees' physical and mental wellbeing but is also believed to detract from performance and overall satisfaction levels of employees, leading to absenteeism and, in some cases, addictions (Tennant, 2001). Stress thus results in an imbalance between the demands an employee perceives as being required of them, and the coping mechanisms this employee might have at his/her disposal (Wong, 2008).

Stress, and the factors causing it to have thus been conclusively proved to have an effect on workers' job satisfaction (Sullivan and Bhagat, 1992). The latter comprising a range of psychological, physiological and environmental triggers that impact overall employee satisfaction (Hoppock, 1935), important questions arise for businesses, due to the inherent importance of job satisfaction on organizational efficiency (Burns, 2003). This stress can in turn be caused by a number of factors, not least of all overtime work (Sato et al., 2009).

According to the Factories Act 1948, a worker is entitled to work at normal wages for 48 hours a week, i.e. approximately 9 hours a day, 6 days a week. Any time more than that spent on the work will be treated as overtime and the workers are entitled to receive compensation at twice the ordinary rate of wage. 'Ordinary rate of wages' refers to the basic wages plus allowances such as the cash equivalent of

food grains and other articles accrued to workers, This, however, does not include a bonus and wages for overtime work.

Overtime thus represents an opportunity for employees to earn more by putting in additional hours of work. In a country like India, which houses a large number of formal as well informal firms which hire an even larger number of contract workers, there is a great demand for work, and therefore an opportunity for supplemented earnings for contract workers by working overtime. Such contract labourers are defined by the Contractual Labour (Abolition and regulation) Act, 1970, as “a workman shall be deemed to be employed as ‘contract labour’ in or in connection with the work of an establishment when he/she is hired in or in connection with such work by or through a contractor, with or without the knowledge of the principal employer”.

In India, the last three decades of industrial growth have resulted in a steep increase by businesses in the use of services provided by contract labourers, thereby multiplying the problems faced by such workers as well (Bhandari and Heshmati, 2006). However, despite there being ample literature mapping the influence of job satisfaction and work stress (Fairbrother and Warn, 2003), these studies are limited to formal employees working full-time jobs, and rarely turn their focus towards the effect of overtime on stress and satisfaction among contract labourers, implying there exists very little empirical evidence of these same relationships holding true for contract workers. While the varying work hours of contract labour can be equated with flexitime work in corporate organisations, the latter being a far more researched field (Haar, 2008), there still exist significant differences between informal work such as contract labour and more permanent employment (Mattos and Ogura, 2009).

The need for this distinction becomes more apparent in the case India, where large wage inequalities have become apparent post economic liberalization (Chamarbagwala, 2006; Banga, 2005; Mehta and Hasan, 2012). Contract workers inevitably fall at the lower end of the economic spectrum, with very few opportunities for economic betterment (Anant et. al, 2006). Further, such workers do not reap the benefits and perquisites that are extended to salaried permanent employees (Das and Pandey, 2004), all of which have significant impacts on job security, a concept perceived very differently, if at all, by contract workers in India. Moreover, a fall in female participation rates in wage labour in the country post 1990 due to a range of reasons (Sundaram, 2001), the burden of providing for family has fallen heavily on males as the sole breadwinner of the household.

It is in this context that this study attempts to explore unresearched territory by conducting in-depth surveys of 100 contract labourers, and then performing quantitative analysis on the data procured, to arrive at conclusions regarding the relationship of overtime with job stress and job satisfaction. These findings were then scrutinised for differences between two groups, demarcated on the basis of age, in terms of reported levels of stress and satisfaction at each level of overtime work. In-depth interviews of the workers were used to further explain the findings of the quantitative analysis. The findings thus both diverge from

and confirm parts of the extant literature regarding the relationship between overtime, stress and satisfaction.

Literature Review

Overtime and Work-life balance

Since the industrial revolution, work life has been considered separate from family life (Rapoport and Bailyn, 1996). The literature on the subject defines work-life balance as a situation where an individual is able to fulfil both personal and professional obligations (Saikia, 2011). Overtime, on the other hand, is defined as a situation where a worker works for hours that are in excess of the standard contractual hours (Hart, 2004). The two are therefore inextricably linked, with research showing that longer working hours, one of the reasons for which is overtime work, lead to poor work-life balance (Albertsen et al., 2008; Beehr & Newman, 1978; Bhui et al., 2016). The need for work-life balance is therefore indubitably established (Mukhtar, 2012). The field has been further analysed by researchers who have examined the effect of overtime and longer working hours on work-life balance by segregating specific socio-demographic groups – the impact of the same on men vs women (House et al., 1986), of married vs unmarried workers (Panisoara and Serban, 2013), and of people with children vs childless workers (Schneider and Waite, 2005).

Job Stress

Job Stress, also referred to in the literature as work stress, arises when individuals doubt their ability to perform job tasks asked of them, and to meet the demands of their employers and immediate superiors (Lazarus, 1966). Conflict between the demands of the job as laid out by employers, and the ability of an employee to accomplish the tasks and meet these demands invariably becomes one of the primary causes of workplace stress (Arandelović & Ilić, 2006). The multitudinous other causes of stress in the workplace include a complex mix of physical, mental and social issues (Bickford, 2005). Stress has been shown to cause mental as well physical distress among people (Blaug et al., 2007), and far from being a necessary part of a job which is to be ignored, it is in fact extremely costly due to the toll it takes on individuals' mental and physical health. Stress is therefore not to be considered a price one needs to pay for a career (Hassard et al., 2014).

Job Satisfaction

For a long time, job satisfaction as a concept has been subjected to research, due to its integral role in organizational efficacy (Pila-Ngram, 2016). It has been established as a concept which different people perceive differently, since its dynamic and complex nature is subjective rather than objective (Maslow, 1954), and has most commonly been found to be linked to employees' perceived sense of achievement (Mullins, 2005). The phrases employee attitudes and job satisfaction are therefore used interchangeably (Robbins and Coulter, 2007), also primarily due to the perceived influence of positive or

negative employee attitudes towards job satisfaction (Abdul et al., 2010).

There has been documented research on the impact of factors related to work on employee satisfaction levels (Nadeem and Abbas, 2009), as well as on the association between flexitime and job satisfaction (McNall et al., 2009). However, since the very nature of contract labour is flexible, the benefits of flexitime do not arise for contract labourers.

Interaction of Job Stress with Job Satisfaction

The amount of stress faced by workers is considered by researchers to be a direct result of the number of hours worked (Wang et al., 2017). These two factors which determine employee performance are shown not only to have an inverse relationship with each other, but also to be influenced by external organizational variables such as organizational culture, flexible time and other socioeconomic factors, all of which do not revolve solely around the employees' tasks but also around the working conditions as created by the employer.

Impact of Overtime on Job Stress and Job Satisfaction

Studies have shown that greater amount of work-life balance, aided by lower levels of overtime, are shown to have higher levels of job satisfaction (Saif et al., 2011). This phenomenon is established as being true across different sectors (Rani et al., 2011), be it for men or women (Varatharaj and Vasantha, 2012; Yadav and Dabhade, 2013). Another significant factor found to impact job satisfaction is job quality (Gayathiri and Ramakrishnan, 2013). However, stress remained the biggest mediating factor reducing job satisfaction and other levels of employee welfare (Hsu et al., 2019).

In India, similar research has proven the negative influence of higher working hours on job satisfaction (Chaitra et al., 2016). Despite the large amount of literature detailing the negative effects of longer working hours, organizations seldom discourage their employees from working longer hours (Burke, 2009). In turn, even employees, in their pursuit of success, neglect work-life balance in favour of longer hours (Sturges and Guest, 2004).

The majority of the literature on the topic of work-life balance, overtime, job stress and job satisfaction are centred around salaried employees working for corporations, or at most about permanent members of the workforce. Very little if any research currently exists on the prevalence and the incidence of these concepts amongst contractual labourers. Research gaps in this regard have been attempted to be filled by exploratory studies on contract workers' working hours, time and place of work, and overall level of satisfaction (Süß & Sayah, 2013), which suggested that a heterogeneous analysis of the consequences of contract labour on work-life balance, wherein sector-wise and demographic factors are included, is required.

Similar research on the flexibility in the gig economy (Lehdonvirta, 2018) found that the biggest determinants of worker well-being were the existing structural and cultural-cognitive constraints, which varied across platforms, but to deal with which works developed tools and communities. Investigations into the manner in which job security and job

satisfaction impact organisational commitment amongst temporary, fixed-term and permanent workers showed that the elements causing stress differed greatly amongst the three groups (De Cuyper et al., 2009).

Similar studies have corroborated this idea by delineating the perceptions of contract vs permanent employees with regard to a number of factors (De Cuyper and De Witte, 2006), thereby further expanding the need for specific study into the experiences faced by contract labourers, and the differences in perceptions held by them vis-à-vis permanent workers.

Combining the findings of research on job satisfaction and job stress (Chaudhry, 2012; Nazari and Emami, 2012), the research thereby intends to fill an existing gap by analysing differences in the manner in which contract and permanent workers respond to longer hours and overtime payment, by using reported levels of job satisfaction and job stress to understand these workers' overall well-being and perceived satisfaction, specifically in India. The implication for future research is therefore to increase the sample size and conduct further rigorous empirical tests to identify and hypothesise on observable differences and divergences between the two groups.

Despite this, the literature on the subjects of stress, satisfaction and work life balance are scarce in the context of contractual labour. There is even less evidence of such studies being performed with focus on Indian contract labourers, an often-overlooked class of the working world. This paper therefore aims to throw light on the subject, using the literature present on the topic of overtime (an established cause of stress and a potential cause of satisfaction). Combining these three areas of study using quantitative as well as qualitative analysis in the form of sequential explanatory design was thought to be the most appropriate approach to properly throw light on this issue and explain the hitherto unexplored plight of contractual labourers in India.

Research Objectives

The study aims to analyse the differences in responses to higher overtime work between contract labourers of two distinct age groups by examining reported levels of work stress and job satisfaction through a cross-sectional analysis. The paper then attempts to determine the optimal level of overtime for both age groups, by maximising the level of satisfaction net stress levels, effectively determining the ideal level of "work life balance" for these workers. The study also aims to use first-hand interview excerpts from the workers to further interpret the data and explain the results. This will not only broaden the scope of academic literature on the subject but will also lead to creation of awareness of the issues and economic plight of these workers.

Methodology

The research was conducted by first analysing the population to be surveyed, which comprised contract labourers in the city of Indore, Madhya Pradesh, who were currently engaged in varying degrees of overtime work above and beyond the contractually stipulated number of work hours as determined by their employer-employee

agreements. The paper therefore applies sequential explanatory design technique to the cross-sectional data of workers who were engaged in work which consumed time in excess of their usual 48-hour work week, for which they were compensated at twice their normal wages.

A snowball sampling procedure was used to identify such workers, as well as to understand the age-spread of workers falling within the category of overtime labourers. The results thus showed a significant disparity between reported levels of stress and satisfaction for workers in the age group of 25 to 40, and those in the age group of 41 to 55. These two groups were then studied independently for greater clarity of results.

The distribution of the sample used was structured so as to maintain fidelity to the age distribution of the labourers in the population universe. The population used in this case was not the complete universe of labourers working overtime, but rather the complete universe of labourers in the industries from which the overtime labourers were selected. This was due to insufficient data regarding the universe of overtime workers, which forced the researchers to resort to a snowball sampling technique. The inclusion criteria therefore used to define the population from which to select the sample were:

A. that the workers were employed on a contractual basis.

B. that the workers were currently engaged in some form of voluntary overtime work

C. that the workers were legally paid twice the ordinary wages for overtime work

Within the two groups (ages 25-40 and 41-55), an attempt was made by researchers to ensure the equal distribution of workers at different levels of overtime. For the first group, therefore, which comprised 80% of total participants interviewed (N=100), interviewees were further subdivided into four groups, equal in numerical representation, on the basis of number of hours of overtime worked in a week. The participants were therefore categorised as follows:

Table 1: Categories of the participants

Total Overtime Hours per Week	Corresponding Average Overtime per Day	Number of workers surveyed (Group 1)	Number of workers surveyed (Group 2)
1 - 6	Up to 1 hour	20	5
7 - 12	Above 1 and up to 2 hours	20	5
13 - 18	Above 2 and up to 3 hours	20	5
19 - 24	Above 3 and up to 4 hours	20	5

The assumption thus made is that labourers work for six days a week, implying that those working up to 6 hours of overtime per week were effectively working for an average of one hour of overtime per day, considering a 6-day work week. This is the calculation further used up to 24 hours, at which level workers are working an average of 4 hours

overtime, above their contractual 9 hours (an approximate figure) per day.

Participants were also first vetted by being asked whether they were working overtime of their own volition, to which all participants surveyed responded in the affirmative. Notwithstanding the reasons for choosing to work overtime, all participants professed a preference for working at least a minimal amount of overtime to not working any overtime at all.

Interview Procedures

The labourers surveyed belonged to a range of industries, spread geographically over the length and breadth of the city of Indore. Qualitative questionnaires regarding stress and satisfaction at different levels of overtime were used to interview labourers on a one-on-one basis, in order to understand worker's responses in the areas of stress and satisfaction to high amounts of overtime hours per week.

The questionnaires used were accompanied by 7-point Likert scales, filled orally by the workers themselves, or by the interviewer in the case of innumeracy of workers. For each of the two variables studied, i.e. satisfaction and stress, four parameters were assessed using a range of questions. Each such parameter was then concluded by a 7-point Likert scale to capture the overall sentiment of the worker vis-à-vis the given parameter. The parameters thus surveyed differed across the two variables, and have been elucidated below:

1. Satisfaction

i. How happy are you with the nature of the work you do?

ii. How happy are you with the basic and overtime wage you are paid?

iii. How competent do you feel you are to complete the task at hand?

iv. How firmly do you believe the extra hours you work are worth it?

2. Stress

i. How difficult/taxing do you find your work to be?

ii. How often do you feel you are not productive enough given the time constraints?

iii. How much physical discomfort do you experience while working?

iv. What is the degree of mental fatigue and distress you face while working?

The questions thus asked as enumerated above related specifically to workers' conditions while working overtime – workers were asked to abstain from allowing their opinions about their 48 hour shifts to influence their recounted experiences of work life post their usual work week, i.e. the questions were specific only to overtime.

Following this, workers were asked to come forward and give their views on their issues and plight in the form of in-depth qualitative interviews, to which twelve workers obliged, consensually speaking for the workers who were present but did not want to be personally interviewed.

Data Analysis

The data collected from the field was analysed using Microsoft Excel and the statistical software SPSS, to examine descriptive statistics regarding mean and standard

Aggregate Score	Stress Classification
4 – 8	Low Stress
9 – 13	Moderate Stress
14 – 18	High Stress
19 – 23	Very High Stress

deviation, as well as to find degrees of correlation between overtime, stress and satisfaction levels. The same were analysed using Pearson's Correlation, with two tailed significance at 95% level of confidence. This was done for both groups of workers, i.e. those falling in the age group of 25-40, and those in the age group of 41-55.

Polynomial regression of order 3 was used through Excel to estimate the workers' stress and satisfaction curves at increasing levels of overtime, which was then used to mathematically determine the optimal levels of stress and satisfaction for each group. Third degree polynomial regression was considered most appropriate in this case due to the correct resulting trade-off between bias and variance, resulting in a model that neither underfit nor overfit the data. R-squared values for each curve were also calculated to ensure goodness of fit.

Graphical representations of the data were then used in conjunction with open coding to understand motivators behind worker attitude and worker behaviour at increasing levels of overtime work. Transcriptions of the twelve interview audio recordings were translated to English, following which the translations were cross-checked by a co-researcher fluent in both languages, to ensure accuracy.

In the process of transcription and translation, the researchers attempted to uphold fidelity to the labourers' accounts, as a result of which the narratives and excerpts thus enclosed have been unchanged, barring a few grammatical corrections in the interest of clarity and comprehension. Pseudonyms were also used while referring to workers in the paper, in the interest of maintaining the anonymity of these workers' identities.

Sequential explanatory design is therefore employed (Ivankova et al., 2006) by first analysing the quantitative data, and then using qualitative data in the form of interview transcripts and excerpts to capture in-depth views of the participants and refine the empirical findings (Rossman and Wilson, 1985).

Quantitative Findings

The Likert-scale responses collected were used to calculate an aggregate "Stress" and "Satisfaction" score for each individual worker.

These scores ranged from a minimum of 4 (in the event that the response to all 4 questions was 1), to a maximum of 28 (in the event that the response to all 4 questions was 7).

The scores were then scrutinised to determine appropriate "bins", i.e. categorisations for the data.

Despite a maximum possible score of 28, it was found that no individual had a Stress score greater than 23. This was contrasted by the Satisfaction scores of the workers, which

varied from 4 to 28 with at least one worker displaying these extreme scores. The bins thus decided for the purpose of clarity were as follows:

Table 2a: Classification of stress score Table 2b.
Classification of satisfaction score

Aggregate Satisfaction Score	Classification
4 – 8	Very Low Satisfaction
9 – 13	Low Satisfaction
14 – 18	Moderate Satisfaction
19 – 23	High Satisfaction
23 – 28	Very High Satisfaction

Basis the data collected, Pearson's Correlation Coefficient was calculated for the 2 groups, using 2-tailed significance at 95% level of confidence. Polynomial regression and graphical analysis were employed to estimate and scrutinise the curves for the two variables for both groups, following which the optimal level of overtime which would maximise work-life balance as a measure of satisfaction net stress. The findings are discussed group-wise below.

a. Group 1 – Ages 25 to 40

Table 3: Descriptive statistics for age 25-40

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Stress	80	4.00	18.00	9.7750	4.61142
Satisfaction	80	14.00	28.00	19.4500	4.21840
Valid N (listwise)	80				

Table 3

It is observed that stress levels for group 1 lie squarely between low and high with no reported cases of very high stress. Simultaneously, satisfaction levels never go below "low", i.e. there are no reported cases of "very low" satisfaction.

i. Correlation Analysis

Table 4: Correlation analysis for age 25-40

		Correlations		
		Stress	Overtime	Satisfaction
Stress	Pearson Correlation	1	.898**	.015
	Sig. (2-tailed)		.000	.893
	N	80	80	80
Overtime	Pearson Correlation	.898**	1	.092
	Sig. (2-tailed)	.000		.419
	N	80	80	80
Satisfaction	Pearson Correlation	.015	.092	1
	Sig. (2-tailed)	.893	.419	
	N	80	80	80

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4

Correlation analysis between the two variables, stress and satisfaction, produced no significant observable correlation,

implying that the two variables are independent of each other. This therefore also proves that the questionnaires used to measure these two variables do not contain any overlapping metrics.

However, correlation analysis between overtime and stress shows a strong positive correlation. This would confirm the hypothesis in the literature that high levels of overtime work result in increased levels of stress for workers. The literature thus allows for correlation to be considered causation in this instance, due to the direct influential nature between the overtime and stress. The results in this case hold true at the 99% level of confidence, which, coupled with a correlation coefficient of 0.898 and a low p-value of 0.0 as obtained, confirms the hypothesis.

A similar analysis of correlation between overtime and satisfaction revealed no significant positive correlation between the two. The seemingly obvious conclusion to be drawn therefore is that while overtime might have a significant impact on stress, it has no relationship with satisfaction. However, by analysing the graphical representation of the data, with a polynomial line of best fit, a clearer picture takes shape.

ii. Graphical Analysis

The graph below plots the trendlines of the data of stress and satisfaction using polynomial regression. It is observed that as overtime increases from an average of 1 to 2 hours per day, the level of stress stays relatively unchanged, but as the average number of overtime hours per day crosses 2, stress starts to increase with commensurately with overtime.

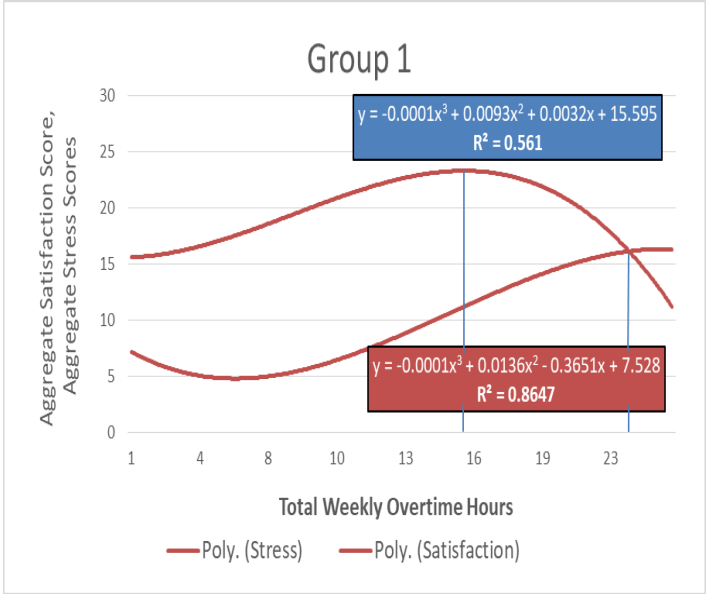


Figure. 1

At the same time, satisfaction levels start to increase at relatively lower levels of overtime (when compared to stress), with a peak being obtained at approximately 15 hours of overtime per week, i.e. an average of 2.5 hours overtime per day. The curved nature of this relationship explains why the correlation between overtime and satisfaction was so weak.

The two variables, stress and satisfaction, coincide at the stage where labourers are working overtime amounts in excess of 22 hours per week, i.e. an average of 3.5 hours overtime per day. At levels greater than 23 hours overtime per week, the stress levels overtake satisfaction levels.

iii. Optimal Level of Overtime

Using polynomial regression, we obtain the equations for the two curves, which are:

Stress: $y_1 = -0.0001x^3 + 0.0136x^2 - 0.3651x + 7.528$

Satisfaction: $y_2 = -0.0001x^3 + 0.0093x^2 + 0.0032x + 15.595$

Where:

y_1 = aggregate satisfaction score,

y_2 = aggregate stress score, and

x = total weekly overtime hours

The optimal level of satisfaction is thus obtained at that point where the difference between satisfaction (a positive outcome) and stress (a negative outcome) are maximised. In order to obtain this maximum difference, the first order derivative of the two equations as presented above are equated, to find the value of x at which the slopes of the two lines are equal.

The calculation of the above results in a value of $x = 7.902$.

The implication is therefore that the optimal level of overtime per week that labourers within the age group of 25-40 should be undertaking, is approximately 8 hours per week, or 1.3 hours per day on average.

Beyond this value of 7.9, workers experience increasing satisfaction at a decreasing rate, and increasing stress at an increasing rate. Therefore at 7.9 hours of overtime per week, net worker satisfaction is maximised.

b. Group 2 – Ages 41 to 55

Table 5: Descriptive Analysis for age 41 to 55

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Stress	20	6.00	22.00	13.8000	5.68099
Satisfaction	20	5.00	23.00	13.2000	5.90807
Valid N (listwise)	20				

Table 5

is observed that for Group 2, the descriptive statistics with respect to maximum, minimum and average levels of both stress and satisfaction are almost identical, while the maximum and minimum levels of stress and satisfaction both fall under the most extreme bins for both these variables, i.e. “very high” levels of satisfaction as well as “very low” levels of the same are reported, and “low” levels of stress as well as “very high” levels of the same are also reported.

i. Correlation Analysis

Correlation analysis between overtime and stress shows a strong positive correlation, once again corroborating the hypothesis in the literature that high levels of overtime work result in increased levels of stress for workers (an assumption of causality). The results in this case hold true at the 99% level of confidence, which, coupled with a correlation coefficient of 0.937 as obtained, confirms the hypothesis.

Table 5: Descriptive Analysis for age 41 to 55

Correlations		Overtime	Satisfaction	Stress
Overtime	Pearson Correlation	1	-.966**	.937**
	Sig. (2-tailed)		.000	.000
	N	20	20	20
Satisfaction	Pearson Correlation	-.966**	1	-.927**
	Sig. (2-tailed)	.000		.000
	N	20	20	20
Stress	Pearson Correlation	.937**	-.927**	1
	Sig. (2-tailed)	.000	.000	
	N	20	20	20

** . Correlation is significant at the 0.01 level (2-tailed).

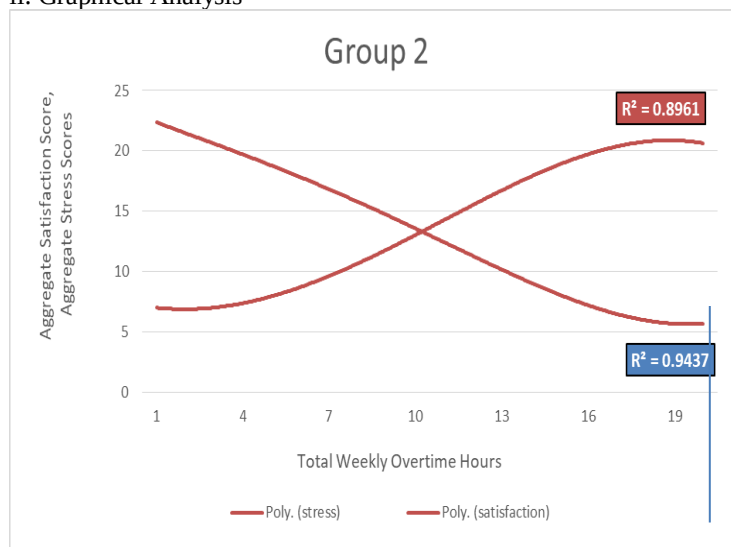
Table 6

A correlation analysis between overtime and satisfaction reveals similar results, with the two showing a strong negative correlation of -0.966, once again significant at 99% level of confidence.

Contrary to the prior case, overtime and satisfaction are seen to be strongly positively correlated here. While in the previous case, correlation was low, causation was nonetheless established by the graphical analysis done thereafter. Therefore, in the case of group 2, should graphical analysis using polynomial regression trendline corroborate this data, the hypothesis of overtime influencing satisfaction levels is seemingly confirmed.

Due to the strong influence of overtime on both satisfaction and stress, a correlation analysis of stress and satisfaction shows a strong negative correlation of -0.927 at 99% level of confidence between the two, which is in concurrence with the findings above.

ii. Graphical Analysis

**Figure. 2**

It is observed from the graph above that as overtime hours increase, there is a steady increase in stress, as well as a steady decrease in satisfaction levels. At approximately 10-11 hours per week, i.e. approaching an average of 2 hours of overtime work per day, the level of stress and satisfaction reach the same point. Beyond this point, individuals

belonging to Group 2 are experiencing greater stress than satisfaction, an undesirable situation.

iii. Optimal Level of Overtime

Due to the nature of the curves representing stress and satisfaction for Group 2 workers, an analysis of the curve equations is not required. The optimum level of overtime, i.e. the overtime level at which net satisfaction is maximized, is clearly evident to be the lowest possible level of overtime, where satisfaction is maximum, and stress is minimum. Using the data obtained, this figure is observed therefore to fall in the range of 1-4 hours of overtime per week.

Discussion

The insights obtained as above have significant ramifications on the literature regarding overtime, stress and satisfaction, which has hitherto been focused on treating the target sample as a largely under-researched group, wherein all hypotheses and theories regarding permanent salaried workers are generalised to apply to the entire group. The findings of this paper not only conclusively prove that with a carefully constructed questionnaire, overtime does indeed have independent impacts on both stress and satisfaction, but it also studies the differences in these impacts across the age spectrum.

For individuals belonging to the younger Group 1, stress was observed to take effect only at higher levels of overtime, with workers seemingly immune to any harmful perceived impacts of stress at lower levels of overtime.

Satisfaction, on the other hand, was observed to be more sensitive to lower levels of overtime, and thus increased steadily, first at an increasing rate, and then at a diminishing rate, before reaching a maximum. Of note here is the fact that even post this point, individuals did continue to enjoy satisfaction, but simply at levels lower than before.

However, the maximum point of satisfaction is not the ideal level of overtime for workers of Group 1, due to the negative effects of stress, which become sensitive to greater amounts of overtime as the number of overtime hours per week increased. The point of optimal overtime thus calculated for these workers is approximately an hour and 20 minutes each day, which computes to a total of nearly ten and a half hours of work per day (given a 9 hour per day work week).

For individuals belonging to the older Group 2, however, both stress and satisfaction proved to be extremely sensitive to even lower levels of overtime, with the former showing a sharp increase while the latter steadily fell at higher levels of overtime. The implication therefore is that older contractual labourers prefer working fewer hours of overtime, despite the benefits. The optimal level of overtime was thus calculated as falling in a range of 1-4 hours of overtime per week, which if spread equally amongst the six-day work week, would compute to a marginal 2/3rds of an hour per day overtime, at maximum.

This insight is not surprising when taken in context of the following account narrated by Raja, a 48-year-old contract labourer who currently does 3 hours overtime per week, and who best explained a sentiment echoed by eight other workers belonging to Group 2:

“There is a reason it’s called overtime, and a reason it pays so much. It’s because at the end of a long day’s manual work, you need to put in more hours. Now these younger workers here, they can do it, they have the strength for it. But when you reach my age, you really just want to go home and relax after your day’s work. Some days I work a little extra, if I’m feeling up to it. But these labourers who do 15-20-25 hours overtime per week? I can’t do that anymore. Maybe it’s because I don’t have children to look after like they do, so I don’t have that burden.”

The explanation for lower overtime rates as presented by Raja thus highlight an important aspect of overtime work – that labourers engaged in overtime do so not out of capability, but more so out of need. While capability might define the amount of overtime a worker could undertake, need drives the actual amount of overtime work undertaken by such workers.

The question which may be raised at this stage with regard to Group 2 workers is whether or not they would prefer not to work overtime at all, and whether the satisfaction and stress levels at even low levels of overtime are below and above non-overtime levels, respectively. This, however, is addressed by the question posed to workers at the start of the questionnaire itself, regarding their preference for even minimal amounts of overtime above no overtime at all.

This is explained in the following excerpt by Abdul, a 32-year-old contract worker who is currently working an average of 10 hours overtime per week:

“Of-course I would prefer working overtime. It’s extra money, which my family needs. That money puts food on the table, it provides for my children’s needs. There is a limit to how much overtime I can work, yes, but I do as much as I can so I can earn the extra overtime wages.”

The study thus attempts to understand what the ideal level of work for such workers should be, which would result in work-life balance. Although arguments may be raised that the level of satisfaction derived is independent of the labourers’ personal lives, the fact remains that these non-work related spheres of workers’ lives do influence their satisfaction levels at work as well, and that even though the satisfaction levels as measured by the questionnaire do not specifically enquire into these aspects of their lives, the labourers’ own personal experiences results in these influences making themselves apparent through their responses.

Ramesh, a 27-year-old labourer who currently works for 15 hours overtime per week, explained the following:

“I used to work over 20 hours overtime per week. My days would start at 6 a.m. and end at 7 in the evening. I managed because I would catch some sleep on the way home. But the work itself is exhausting, when you’re pushing yourself that much. I couldn’t do it for more than a month. After that, I had to bring it down. Even though the extra money is appealing, it takes a toll on you, a heavy toll. It leaves you numb and unable to do anything after going home, but sleep. So even though your questions are about satisfaction at work, the reality is that even satisfaction at home affects how happy or sad you are at work. And when you work that much, that you can’t even talk to your children after going home at night, you start hating the work also.”

Workers like Ramesh therefore confirm that a mix of home-related and work-related factors impact overall stress and

satisfaction levels, with the two often spilling over into each other rather than remaining isolated causes.

Conclusion and Recommendations

While a great deal of literature exists on the subject of job satisfaction and job stress, very little has been done to probe these same areas with specific focus on contract labourers. In the study conducted, the majority of respondents had never heard the phrase “work-life balance” before but were able to understand its essence and relate the same to their own personal leisure needs. The concept of work-life balance as it currently exists therefore, has been modified in order to better suit the working and lifestyle nature of these workers, which is recommended for all future studies attempting to understand contract labour.

In an attempt to measure stress and satisfaction, questions were framed both by using the existing literature on metrics for these two variables, as well as by keeping in mind the inherent differences in terms of approach to and perception of work between contract labourers and permanent salaried employees. Modifications thus made to the questionnaire thus put greater focus on attributes more relevant to these workers.

The optimal level of overtime notwithstanding, the study has succeeded in throwing light on the issues of workers, as well as the reasons for overtime work, which are found to differ significantly from the motivations for overtime work by permanent employees. The paper thus opens further avenues for research into the field of welfare for contract labourers in developing countries, as well as recognition of these workers as a separate group of labour with unique needs and motivations.

By using a mixed-method study which employed the use of sequential explanatory design, the researchers were able to use first-hand labourer accounts to verify and explain the quantitative results produced by the data. A combination of quantitative and qualitative designs proved to be the right technique for understanding and analysing the issues of an under-researched but large group of labourers in India. Further research into this field is recommended with special scrutiny on the factors impacting stress and satisfaction in the workplace, as well as an understanding of these two variables as being truly independent (as suggested by this study) or not.

Limitations

Due to lockdown conditions in the aftermath of the Coronavirus pandemic, the researchers were unable to collect a larger sample, thereby limiting the generalisation of the study’s results. Paucity of time on the labourers’ behalf also resulted in relatively smaller questionnaires, which although were preceded by in-depth interviews, limited the amount of data collected from each worker.

In terms of measurement, the study was successful only in measuring self-perceived levels of stress and satisfaction amongst workers, rather than actual/objective values for the same. While actual and perceived levels of stress may concur in the short run, the prolonged effects of ignored stress have implications that this study was unable to capture.

Further, the snowball sampling technique used by the researchers has its own set of drawbacks (Goodman, 1961), primary among which being the limited reach of such a technique, which therefore limits the applicability of the results (Biernacki and Waldorf, 1981).

Acknowledgement

The authors wish to acknowledge Symbiosis Centre for Management and Human Resource Development for providing the virtual access to laboratory facilities.

Conflict of Interest: There is no conflict of interest among the authors

Funding: Self-funded

Ethical approval: Not applicable

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