Brunt of Night Shift on the Leisure Time, Social Relationship and Social Commitment of Employees

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Abstract

Objectives: The purpose of this empirical research paper is to study the impact of night shift on the Leisure Time, Social Relationship and Social Commitment of employees working in the call center industry at Chennai. The paper aims to highlight the relationship between night shift and leisure time, social relationship and social commitment. **Methods/Analysis:** The target sample size for the study is 190, but the legitimate samples were 168 and these were found to be valid for the study. In this study, the independent variables used are Night Shift Schedule and Night shift Challenges whereas the dependent variables are Leisure Time, Social Relationship and Social Commitment. CFA was run and the convergent validity as well as discriminant validity was found to be reliable and valid. Amos using SEM was used to bring out the relationship between variables. **Findings:** The SEM Model was found to be fit with all recommended values as per the requirements ensuring that there exists a relationship between night shift schedule and night shift challenges on the Leisure Time, Social relationship and Social commitment of the employees. **Application/Improvement:** This study is a path way for the organizations working in shift work to understand that Leisure time, Social relationship and Social commitment is an important part of an employee's life. This study is a trend setter for future studies as there are very few articles on the impact of night shift on the social life of the employees.

Keywords: Leisure Time, Night Shift, Shift Work, Social Commitment, Social Life, Social Relationship

1. Introduction

Call center Industry has become an important part of customer satisfaction or customer access and works 24/7 to solve the customer related queries. The people in the call center industry tend to work long hours and many of the employees work in night shift. There are certain individuals who enjoy working in night as well as employees who find the night shift work tiring and too tedious in fulfilling their family life duties. Usually the work hours in India for night shifts are divided into different schedules beginning at 4 PM and goes up to 7 or 8 in the morning. The employees of night shift find it very difficult in adjusting themselves to the night schedule and at the same time find it difficult to fulfill their societal needs, consequently leading to social isolation. According to[1], there is a strain on the biological clock which leads to strain in social life. The Employees working in night shift are more likely to sense the feeling of social isolation and makes them feel excluded from everyone around[2]. The night work hours have an adverse effect on the whole family including the worker, spouse and their children. The night shift workers displacement from the family could lead to inconvenience among the members of the family[3].

Night shift work makes it difficult for the employees of the shift worker in time and space can result in domestic

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inconvenience, both for the individual and spouse as well as other members of the family, to the extent that it could have detrimental effects on family relationships. The difficulties in social life are mainly due to an inharmonious relationship between work schedules of shift workers and those of other day workers. Thus, it is difficult for shift workers to participate in regular meetings and in other social events/activities, which are usually scheduled in the evening or on weekends[4]. Employees who work in night shift face several problems such as stress, work-family conflict, problems in their family fulfillment, marital relations and also they are cut off from their friends and family. The night shift workers are unable to attend functions or ceremonies as they are unavailable in the most crucial time. The employees are forced to work in night shifts due to variety of reasons especially in India when there is a shortage of jobs; individuals tend to take up night shift jobs to meet the economic demands of their family fulfillments[5].

1.1 Night Shift Schedule and Stress

Stress usually occurs due to three reasons: firstly, When the resources are lost meaning that the demand of work schedule keeps out the employee from spending time with his family and social sphere, Secondly, When the resources are being threatened in the way of announcing a shift change and thirdly when one is not willing to work in the night shift but forced to do so. In this context of night shift or shift work, the resources are either demanded or threatened in different ways. These demands that are put up on the resources that are related to family life, health, and social life could lead to emotional exhaustion in the long run[6]. The Night shift employees usually work when all the others are asleep and sleep when all the others are at work. The days off that they get actually don't coincide with that of the society needs; these time deviances lead to alterations in their social life. The night shift employee faces problems such as not taking part in cultural programmes, attending functions, marriages, meeting friends etc. These are the factors that lead them to social isolation[7].

1.2 Family and Social Commitments

According to a study conducted by[8], the effects of night shift can be divided into two main areas which are family life and social life. The insufficient sleep caused due to night shift work has a greater impact on both the areas.

Suzanne Crew conducted a questionnaire method to know the opinion of the nurses working in unsocial hours. The study stated that the nurses were alarmed because of the work hours and had to go to work in the dark and come back home in the dark leaving them minimal time of socializing. The study also explored the disadvantages of night shift which kept them always tired with no space or time to do take care of their personal activities or personal life. The participants also felt that due to continuous night shift it takes them a long time to recover from the sleeplessness and even though they get a day off for socializing, it increases the task. The participants had to use the day off more proactively and at most of the times couldn't fulfill their social obligations.

1.3 Leisure Activities

In[9] Studied the influences of shift work on the leisure activities of workers in a highly automated factory at south Sweden. Herbert was the theoretically influenced by the approaches of Blakelock and Vroom. Accordingly, many activities that the workers do are restricted to certain hours during the day. When the time of leisure activities overlap with a workers working hours, the worker will have quite a less opportunity to fulfill the leisure activity. The time a worker spends on the leisure activity depends on the flexibility that the work hours give him. The more activities he has the person is more negative towards the restrictions exercised by his work hours.

In Herbert's study we find the ratings made by 61 employees on the influence of shift work or night shift on the leisure activities. This study was conducted among the employees who were currently working in night shift. From the study we find that the activities which were regarded as more affected were eating habits, taking care of the family, meeting friends, watching sports, watching Television and listening to songs.

1.4 Time with Family and Community

The earliest reports of research that had dealt with the impact of shift work on the family and Social life was conducted with over 1,000 employees from five different plants and 700 equal respondents from wives[4]. The recent researches have been generally consistent with what was found earlier, except with some differences here and there. In general, night shift or shift work interfere with family roles and dramatically reduce the quality of time spent with family and community[10–13]. In the case of Social

life,[14] found that night shift workers have decreased level of social integration and social relationship where as[9,15] have reported that shift workers have less friends.

1.5 Work-family Conflict

The main frame of many researches highlights how shift work affects family and social life. The studies portray several findings that are consistent with the past findings.

The workers on night shifts when compared to general day shift workers usually report greater negative impact on family life, marital satisfaction and divorce.

Working night shift or non-standard schedules have a negative impact on the parent and child interaction. The employees on night shifts usually report lower levels of community activities and participation in community organizations[16].

There are many studies that found a negative association between the different non-standard working hours and work-life[17–19]. Moreover, there were studies that reported the type of shift schedule and that shift system was subjectively evaluated to find its importance. In a study, shift work or irregular shifts were found to have a much more impact on the home atmosphere and had a greater interference at home[19]. The rotating shifts in terms of backward rotating shift were found to have a severe impact than the forward rotating shifts according to a study[20]. There were also few studies that suggested night and evening shift to have more adverse effects on work-life balance[18]. A study researched that the afternoon shift schedule was more detrimental in affecting the social activities of the employees[21].

Chronic stress due to workload and inconvenient shift has been shown to have a relation with the poor quality of family and social life. As per the above, analysis on the effects of night shift requires to take into consideration the situation at the workplace as well as the home that moderate or mediate the stress level. It is necessary to consider that night shift workers or just shift workers when compared to day workers could experience isolation in participating in family routines, community activities and social life.

1.6 Social Isolation

In[22] her book "Working the night shift" talks about the isolation of night work. The late night shift makes the employees isolate or cut off from their normal social activities and social circles. According to Patel, the employees of night shift have a greater task and challenge of fulfilling ones family obligations and social expectations. According to[23] call center workers in Night shift are being forced to separate themselves from their social life.

According to a study conducted by[24,25] it was found that night shift or shift work gives them and provides them a good economic standard of living but the negative impacts are adverse and creates increased tiredness, a depleted relationship with family members, children and spouse, and missing important events such as school events, family functions, marriages, exercising, religious activities, social activities etc.

1.7 Objectives of the study

1. To find the impact of Night shift challenges on the Leisure time, Social relationship and Social Commitment of call center employees.
2. The paper aims to highlight the issues and problems faced by the night shift employees in fulfilling their social obligations.

1.8 Hypothesis

H1: There is a Strong relationship between Night Shift Schedule and Night Shift Challenges on Leisure time, Social relationship and Social Commitment.

2. Materials and Methods

The researcher uses questionnaire method to collect data and the question were based on the review of literature taken from articles pertaining to shift work and night shift. The questions consisted of 5 parts including Night Shift Schedule (NSS), Night Shift Challenges (NSC) as independent variables constructs and Leisure time, social relationship and social commitment as dependent variables constructs. A total of 20 items were used to make this study.

2.1 Statistical Analysis

Data was collected from the night shift employees working in call centers across Chennai. The population included both male and female employees. Non-probability sampling technique is used and Snow ball (Referral) sampling method was used for data collection. The questionnaires

were distributed to 190 employees out of whom 168 samples were found to be valid. The 168 samples were used for the study and found to be reliable for the tools that were used.

The researcher uses Cronbach's alpha test and KMO & Bartllet's test to check the reliability and validity at the initial stage and then the researcher uses confirmatory factor analysis to check the convergent validity and Discriminant validity. The researcher has used structural equation modeling to bring about a relationship between the exogenous variables and the endogenous variables using a path diagram and model representation of the path diagram.

3. Results and Discussion

The author uses Reliability and Validity test, Confirmatory factor analysis and SEM Modeling in the study as mentioned below.

3.1 Reliability and Validity Test

As per Table 1, Cronbach alpha test and KMO & Bartlett's Test of sphericity is used to check the reliability and validity of the constructs. All items in the constructs showed a cronbach alpha value of more than .07 which shows high level of internal consistency among the items. Cronbach alpha is basically a measure to check the internal consistency of a test or scale. It is very important to test the internal consistency before any test is used for research or examination. As the reliability test increases the fraction of error will decrease[26].

Table 1. Cronbach's alpha table

Name of the Construct	Cronbach's Alpha
Night Shift Schedule	0.874
Night Shift Challenges	0.795
Leisure Time	0.810
Social Relationship	0.821
Social Commitment	0.847

3.2 KMO and Bartlett's Test

As per Table 2, KMO & Bartlett's test of sphericity is recommended to check the ratio variances. It is a measure to check the sample adequacy hence KMO plays a crucial role in accepting the sample adequacy. The

KMO range is from 0 to 1 and the world follows an index that is over 0.5. This value is suitable for factor analysis[26]. Bartlett's test shows the suitability and validity of the responses that has been collected. If factor analysis needs to be recommended, the Bartlett's test of sphericity should show at least a value that is lesser than 0.05. The table below shows the KMO and Bartlett's test wherein the required values have been attained.

Table 2. KMO & Bartllet's test

Name of the Construct	KMO – Sampling Adequacy	BARTLETT's test of Sphericity
Night Shift Schedule	0.779	.001
Night Shift Difficulties	0.523	.001
Leisure Time	0.621	.001
Social Relationship	0.688	.001
Social Commitment	0.670	.001

3.3 Confirmatory Factor Analysis

Confirmatory factor analysi s was run to find whether the measures of constructs are consistent and whether there is a strong relationship between the items used for the study. Figure 1 showcases the relationship between constructs and items.
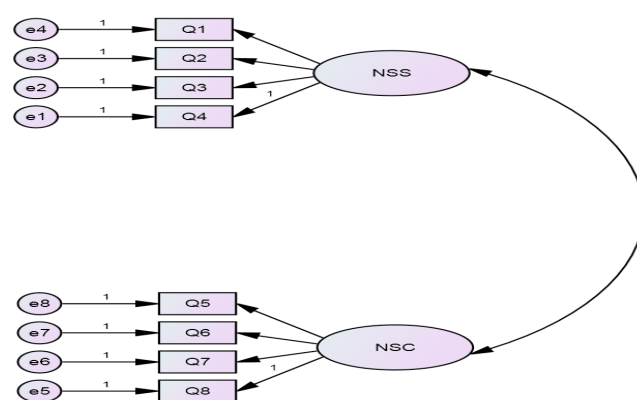
Figure 1. Measurement model – confirmatory factor analysis.

3.3.1 Convergent Validity

Table 3 shows the convergent validity. The factor loadings are called Standardized regression weight.

The factor loadings are the initial task to do in checking or examining the convergent validity. The universal guidelines are that all the loadings should be .5 more preferably .7 or even at a higher value. Here there are three values that are less than .7 which is Question 2, 9 and 10. Question 2 is pertaining to Night Shift Schedule and Q9, 10 is pertaining to Night Shift Challenges.

Table 3.   Standardized regression weights: (Group number 1 - Default model)

			Estimate
Night Shift hours of work	<---	NSS	.839
Stressful Schedule	<---	NSS	.953
Inconvenient timings	<---	NSS	.575
Night shift acclimatization	<---	NSS	.900
Physical Health	<---	NSC	.939
Night Shift work pressure	<---	NSC	.961
Sleep	<---	NSC	.530
Attitudinal Changes	<---	NSC	.533

3.3.2 Average Variance

To examine convergent validity, we look at two additional measures which is Average Variance Extracted (AVE) for each construct and Construct Reliabilities (CR). The convergent validity is measured to access the construct validity[27]. Since the AVE and CR are not calculated by Amos, the researcher has done a manual calculation to check if the variance extracted and construct reliability are within the stipulated values.

Table 4 shows the factor loading according to the construct. The factor loadings for the construct Night Shift Schedule (NSS) and Night Shift Problem (NSC) are mentioned out of which the researcher has calculated the item reliabilities and delta values. The squared factor loadings give the item reliabilities and the delta which is the standardized error is derived using 1 minus the item reliabilities. The Average variance extracted here is .681 for NSS and .586 for NSC. This is calculated by dividing the total item reliabilities by 4. The rule of thumb is that the AVE should be greater than .5 to indicate a good or adequate convergent validity[27]. If the AVE which is less than .5 shows that there are still a lot of errors remaining in the items.

Table 4.   Average variance and construct reliability

	NSS	NSC	Item Reliabilities		Delta
Night Shift hours of work	0.83		0.688		0.31
Stressful Schedule	0.95		0.902		0.09
Inconvenient timings	0.57		0.324		0.67
Nightshift acclimatization	0.90		0.810	2.724	0.19
Physical Health		0.93	0.864		0.03
Night Shift work pressure		0.96	0.921		0.07
Sleep		0.53	0.280		0.72
Attitudinal Changes		0.53	0.280	2.345	0.72
Variance Extracted	68.1%	58.6%			
Construct Reliablity	0.89	0.84			

3.3.3 Construct Reliability

Construct reliability is also tested by the researcher. The construct reliability is derived from the sum of factor loadings, squared for each construct and the sum of error variance terms of a construct. The guidelines for construct validity is that the construct reliability estimate should be .7 or higher than .7 which means there is a good reliability. The reliability within .6 and .7 could be acceptable but higher construct reliability indicates that there is a good internal consistency between the items[27]. Hence in Table 4 we have the values such as .89 for NSS and .84 for NSC showing good construct reliability.

3.3.4 Discriminant Validity

The Discriminant validity takes the covariances between NSS and NSC Constructs. In Table 5 the covariance between NSS and NSC is .543. In the correlation Table 6, it is clear that standardized covariance between NSS and NSC is .525. The researcher used this standardized covariance for calculating the discriminant validity. In the above table IC means Inner Construct Correlation and SIC means Squared Interconstruct correlations. The inner construct correlation is .525 and the squared inter construct correlation is .275 as per Table 7. Now, the researcher compares the Average variance extracted with the Squared inter construct correlation that is associated with the factor.

According to Table 8, the researcher concludes that all the Average variance is larger than the squared inter construct correlation which means that there is a good association between the variables and the items showing that the model demonstrates good discriminate validity[27].

Table 5. Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
NSS <--> NSC	.543	.100	5.448	***	

Table 6. Correlations: (Group number 1 - Default model)

	Estimate
NSS <--> NSC	.525

Table 7. Innerconstruct correlation andsquared interconstruct correlation

	IC	SIC
NSS - NSC	.525	0.275

Table 8. Discriminant validity table

| Construct	AVE	SI
NSS Construct	0.688	0.275
NSC Construct	0.586	0.275

3.3.5 Structural Equation Modeling

SEM is used by the researcher to test the relationship between exogenous variable and the endogenous variable. The exogenous variable is Night Shift Schedule and Night Shift Challenges whereas the endogenous variables are Leisure Time, Social relationship and Social Commitment. Now, since Cronbach Alpha, KMO & Bartletts test, CFA including convergent validity and discriminant validity has been performed and the constructs have been found to be valid and reliable, the researcher uses SEM modeling to find the effect of the exogenous variables on the endogenous variables.

According to[28] SEM is used to understand the correlation between variables and explain the variances with the model. Path analysis tests models are used to bring out the relationships between the measured variables. In this model the researcher has used the direct effect of the independent variable on the dependent variable. A path

diagram is drawn below to give a pictorial representation of the model. In this model the researcher has found that there is a strong effect of the Night shift Schedule and Night Shift Challenges on the Leisure time, social relationship and social commitment.

In the Path diagram (Figure 2) there are two exogenous variables modeled and correlated as having a direct effect on the three endogenous variables. The effect will not suffice just with the path diagram but it will suffice with the statistical explanation of the model. The researcher in order to calculate the relationship between the variables in the boxes the path tracing rules proposed by Wright[29] that the sum of correlation should be equal to the sum of all the pathways in the which the variable is connected.
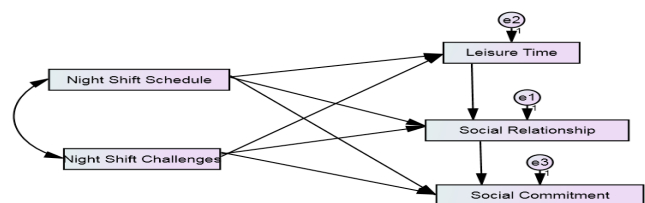
Figure 2. SEM path model.

The model fit indices are used as criteria to analyse whether the model is a perfect fit hence the acceptable indices values and the derived indices values are compared to highlight whether the model fit is good or acceptable. The fit indices are the only criteria used to establish whether there is an overall fit. A model is found to be fit when the Normed fit index, Goodness of fit index, Comparative fit index exceeds .90 [30] and the RMR value is less than .08[28].

The model fit indices in Table 9 shows a good fit as the Goodness of Fit Index (GFI) is greater than .90, the Adjusted Goodness of Fit in Index (AGFI), TLI and CFI shows values that are greater than .90 indicating a good fit. In the above model (Table) we find that GFI is 1.000, AGFI is .994, TLI is 1.017, CFI is 1.000 as well the values for IFI and NFI are within the stipulated level. In the above table we see that most importantly the RMSEA and RMR values are below .05 and .08 respectively showing .001 and .04 respectively indicating a good fit. The value for Chisquare in this model is .168 which is relatively small suggesting that the model is fit. Another criteria is the P value, the p value in the above model is >0.05 which is .68 confirming that the model

is perfectly fit. Hence here we reject the null hypothesis and accept H1 concluding that there is a strong relationship between exogenous and the endogenous variable wherein there is a strong relationship between night shift schedule as well as Night Shift Challenges with the employees leisure time, social relationship and social commitment.

Table 9. Goodness of fit indices for structural equation modeling

Type of Measure	Recommended Values	Observed Values
P Value	>.05	.68
RMR	<.08	.04
RMSEA	Marginal fit <0.090 Acceptable <0.080, Good fit <0.050	0.001
Goodness-of-fit index (GFI)	1.000	>0.90
Tucker –Lewis index (TLI)	1.017	> 0.90
Adjusted goodness-of-fit index (AGFI)	.994	> 0.90
Comparative fit index (CFI)	1.000	> 0.90
Incremental fit index (IFI)	1.002	> 0.90
Normed fit index (NFI)	1.000	> 0.90
Parsimony goodness of fit Index (PGFI)	.067	0-1
Parsimony normal fit index (PNFI)	.100	0-1

4. Conclusion

The study has given a detailed account into the effect of night shift on the Leisure time, Social relationship and social commitment of the employees working in the call center industry at Chennai. We see that the results show that a strong relationship exists between Night shift schedule and Night shift challenges on the leisure time, social relationship and social commitments of the employees. Most of the employees were not having time to spend with their loved ones and the leisure time that they had was very less.

The multivariate analysis test conducted gives us the fact that night shift schedule and night shift challenges depends on the position of the employees and the no of years the employees have been in night shift. The study proves that the impact of night shift was more on the leisure time of the employees rather than social relationship and social commitment highlighting that there are definitely insufficient hours for the employees to involve in leisure activities. The test conducted for gender differences found that there again exists a difference on leisure time of the employees.

Since the study is first of a kind in the Indian context a more detailed study can be conducted on the effects of night shift or shift work on the leisure time using more tools. The study can be also conducted across various industries to see the relevance of this study. This study could be a benchmark for the further studies on the impact of night shift on the social life. Though there were few studies that highlighted the effects of shift work on the social life of the employees, this study gives a more detailed outlook on the state of employees in night shift. The study found that most of the employees were finding it difficult to balance between the work and family causing disruptions in the leisure time.

The study will help the organizations to focus more on the Intrinsic and Extrinsic motivation for the employees since work environment, recognition for performance; promotion opportunities etc would give the employees a good feeling to work and extrinsic motivation like job security, interpersonal relationship between superiors and peers, pay benefits, holiday package for family etc. would motivate them to stay in the organization[31].

Future studies can focus on the effects of shift work on the family leisure time or the time spent on activities such as gym, sports etc. The limitations of the study are that this study had a broad outcome and did not focus on specific areas of leisure. The study rather gave a general view on the effects of night shift on the leisure time. More intense study can be conducted to test whether there is any effect of night shift on the social relationship and social commitment of the employees since the results here were not so supportive.

5. References

1. Shazia memon. The solitude of working nights [Internet]. [cited 2015 Feb 03]. Available from: http://www.theatlantic.com/health/archive/2013/09/the-solitude-of-working-nights/279745/.

2. Eichler A. Night workers have greater feelings of social isolation: study [Internet]. [cited 2016]. Available from: http://www.huffingtonpost.com/entry/night-weekend-shift-workers_n_1148331.html?section=india.

3. Rupashree G. Shift work and its effect on social and personal life. International Journal of Research in Management Economies and Commerce. 2012 May; 2(4):47–63.

4. Mott, PE, Mann FC, McLoughlin Q, Warwick DP. Shiftwork: The social, psychological, and physical consequences. University of Michigan Press: Ann Arbor, MI; 1965.

5. Foster BL. The night shift [Internet]. [cited 2014 May 06]. Available from:https://www.psychologytoday.com/articles/201404/the-night-shift.

6. Hobfoll SE, Freedy J. Conservation of resources: a general stress theory applied to Burnout. Schaufeli, WB, Maslach C, Marek T, editors. Professional burnout: Recent developments in theory and research. Taylor & Francis, London; 1993. p. 115–29.

7. Escriba-Aguir V. Nurses' attitudes towards shiftwork and quality of life. Scandinavian Journal of Social Medicine. 1992 Jun; 20(2):115–18.

8. Crew S. A qualitative study on effects of working unsocial hours NT Research. 2006 Jun; 102(23):30–3.

9. Herbert A. The influence of shiftwork on leisure activities: A study with repeated measurement. Ergonomics. 1983 Jun; 26(6):565–74.

10. Tausig M, Fenwick R. Unbinding time: Alternate work schedules and work-life balance. Journal of Family and Economic Issues. 2001 Jun; 22(2):101–19.

11. Jackson SE, Zedeck S, Summers E. Family life disruptions: Effects of job-induced structural and emotional interference. Academy of Management Journal. 1985 Sep; 28(3):574–86.

12. Jamal M, Badawi JA. Nonstandard work schedules and non-work experiences of Muslim immigrants: A study of a minority in the majority. Journal of Social Behavior and Personality. 1995 Jan; 10(2):395–408.

13. Staines GL, Pleck JH. The impact of work schedules on the family. University of Michigan Press. Ann Arbor, MI; 1983.

14. Folkard S, Minors DS, Waterhouse JM. Chronobiology and shiftwork: Current issues and trends. Chronobiologica. 1985 Jan–Mar; 12(1):31–54.

15. Walker J. Social problems of shiftwork. In Folkard S, Monk TK, editors. Hours of work: Temporal factors in work scheduling. NY: John Wiley; 1985. p. 211–25.

16. Perrucci P, MacDermid S, King E, Tang C_Y, Brimeyer T, Ramadoss K, Kiser SJ, Swanberg J. The significance of shift work: Current status and future directions. Journal of Family and Economic Issues. 2007 Dec; 28(4):600–17.

17. Jansen NWH, Kant IJ, Nijhuis FJN, Swaen GMH, Kristensen TS. Impact of worktime arrangements on work-home interference among Dutch employees. Scandinavian Journal of Work, Environment and Health. 2004 Apr; 30(2):139–48.

18. Costa G, Sartori S, Akerstedt T. Influence of flexibility and variability of working hours on health and well-being. US National Library of Medicine National Institutes of Health. 2006; 23(6):1125–37.

19. Jansen NWH, Kant I, Kristensen TS, Nijhuis FJ. Antecedents and consequences of work-family conflict: A prospective cohort study. Journal of Occupational and Environmental Medicine. 2003 May; 45(5):79–91.

20. Van Amelsvoort LGPM, Jansen NWH, Swaen GMH, Van den Brandt PA, Kant I. Direction of rotation among three-shift workers in relation to psychological health and work–family conflict. Scandinavian Journal of Work, Environment and Health. 2004 Apr; 30(2):149–56.

21. Skipper JK, Jung FD, Coffey LC. Nurses and shiftwork: Effects on physical health and mental depression. US National library of Medicine National Institutes of Health. 1990 Jul; 15(7):835–42.

22. Patel R. Working the night shift: Women in India's call center industry. Palo Alto, CA: Stanford University Press; 2010. p. 191.

23. Mirchandani K. Practices of global capital: Gaps, cracks and ironies in transnational call centers in India. Global Networks. 2004 Oct; 4(4):355–73.

24. Wilson MG, Polzer-Debruyne A, Chen S, Fernandes S. Shift work interventions for reduced work-family conflict. Emerald Group Publishing Limited. 2007; 29(2):162–77.

25. Tavakol M, Dennick R. Making sense of Cronbach's alpha. International Journal of Medical Education. 2011 Jun; 2:53–5.

26. Williams B, Brown T, Onsman A. Exploratory factor analysis: A five-step guide for novices. Australasian Journal of Paramedicine. 2012; 8(3):1–13.

27. Campell DT, Fiske DW. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin. 1959 Mar; 56(2):81–105.

28. Kline RB. Principles and practice of structural equation modeling', NY: Guilford Press; 1998.

29. Wright S. The method of path coefficients. Annals of Mathematical Statistics. 1934; 5(3):161–215.

30. Byrne BM. Structural equation modeling with EQS and EQS/Windows. Thousand Oaks, CA: Sage Publications; 1994.

31. Evangeline ET, Raghavan VPG. Organizational culture and motivation as instigators for employee engagement. Indian Journal of Science and Technology. 2016 Jan; 9(2):1–4.