

Happiness among higher education academicians: a demographic analysis

Ritu Gandhi Arora

Department of Business Studies, DAV Institute of Management, Faridabad, India

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Abstract

Purpose – To deal with highly energetic younger generation patiently, need academicians who can spread happiness while teaching/mentoring are needed. This is possible when an academician himself is a happy person. This paper aims to explore the factors that generate happiness among academicians, studies the impact of demographic variables on academicians' happiness and examines the relationship between academicians' happiness and their performance.

Design/methodology/approach – Convenience purposive sampling method was used to obtain data through self-administered survey questionnaire based on a five-point Likert scale, delineating the research purpose and assurance of confidentiality. For data analysis, statistical techniques like mean, percentage method, Levene's test, *t*-test and analysis of variance were used. To study the relationship between performance and happiness, the attitude, motivation and outcome theory was applied and happiness index was developed.

Findings – After analyzing the various factors impacting academicians' happiness, this study found that except for work–life balance, research activities and working environment, all other factors are available to academicians according to their ranked importance assigned to them. This study also obtained a happiness index using matrix and has developed an equation which can be applied to find out the relationship between happiness and performance in future.

Research limitations/implications – This study has certain limitations, first, this study has been conducted on academicians working in higher education institutes situated in Delhi/NCR and thus entails a specific socio-cultural environment that may limit the potential level of generalization.

Practical implications – The results of this research might help institutes/higher education bodies to make rules and policies which may further augment academicians' happiness to accomplish their desired goals.

Social implications – An academician who is happy, satisfied and motivated can easily deal with today's enthusiastic younger generation and can spread happiness amongst them. so it is very much necessary for an academician to be happy and energetic all the time.

Originality/value – This study found the factors impacting higher education academicians' happiness and its impact on their teaching performance.

Keywords Higher education, Negative emotions, Academicians' performance, Happiness index, Happiness quotient, Workplace happiness

Paper type Research paper



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Introduction

Longman's dictionary (2005, p. 634) defines happiness as "state of being happy", means a feeling of gratification, i.e. something is fine or correct, as being satisfied with something, not apprehensive or about being fortunate and doing well. Happiness is generally confused with a form of mood or emotion or satisfaction; also, both these terms are used interchangeably by many authors. Happiness has been termed as positive emotions by various psychologists. Workplace happiness is the result of strategies, principles, rules and regulations made by the top management. It is a general notion amongst employees that if they are successful at their job and completing all their targets well in time, they are happy. But today, the scenario has been reversed. It is important to be happy, which will then help people become a success. There are enormous changes coming in the work environment. Long-established systems, policies, rules and strategies might not be apt for today's generation. For this generation, the meaning of work and work style has also changed. Old customs need revalidation, and new approaches require fast adaptation. It is apparent of one becoming irritating and annoyed after a stretched and chaotic schedule, but this may not even happen if one finds his/her work interesting enough. Getting engaged in work results in high productivity and will automatically generate interest only when employees are feeling happy at work place. Being happy is the key to productivity (Djoen and Hewagamage, 2016), and it has considerable relationship with performance (Michael, 1989). Employers also look forward to a high-performing employee who in turn gives high productivity, to attain organizational goals. To enhance employee productivity, management adopts various strategies like rewards/incentives, direction communication with staff members, top management supports, employee involvement in decision making and so on.

Conceptualization

Happiness is subjective, i.e. a feeling of well-being experienced by an individual, specially featured by the presence of affirmative emotions and the nonappearance of negative emotions. It may be distinct as the experience of recurrent positive effect, infrequent negative effect and, on the whole, a sense of satisfaction with life (McBride, 2010). Happiness at work is closely correlated with greater performance and productivity as well as greater energy, better reviews, faster promotion, higher income, better health and long life. If taken as a whole, the idea of happiness is how much you like what you have or do. Even if two persons have everything equal, they may differ in their happiness, as it depends on how much you actually require, i.e. your expectations may differ.

In an academicians' career, his/her happiness not only depends upon job satisfaction, students' results and feedback. Government systems, its pay policies and organizational hierarchies also plays a major role. Academicians work in an altogether different environment, i.e. they deal with the younger generation in classrooms, matured individuals and learned faculty outside the classrooms and knowledgeable entrepreneurs to understand industry requirements.

Even though many studies available on the relationship between happiness and productivity, performance, stress among employees, etc. that concentrate on many industries, e.g. construction, Information Technology (IT), Information Technology Enabled Services (ITeS), manufacturing, textile, telecom, etc. but very few studies are available as far as academicians' happiness is concerned. Among academicians also, the higher education faculty plays the crucial role in shaping the personality of students from unrefined human product to refined saleable product to be further consumed by industry and later by the economy. Their low happiness level influences their knowledge sharing in the classrooms

and ultimate sufferers are none other than students (Ministry of Human Resource Development (MHRD) Survey, 2015-16). So, to enhance their performance, keeping them happy is exceptionally important across the education sector.

This study mainly focuses on finding out the various factors which impact their happiness at workplace. The results of this research might help institutes/higher education bodies to make rules and policies which may further augment academicians' happiness to accomplish their desired goals.

Literature review

Happiness

Ford *et al.* (2003) argued that happiness involves activities that convey a sense of pleasantness, happiness and positive well-being, that not only make working satisfied but also fun. In psychology, happiness is a relatively positive perception about self, but definitely not total absence of negative emotions (Diener and Satvik, 1991). Happiness at workplace has positive effects on performance. To make employees happy, companies must decide the factors that contribute to their happiness and pleasure at workplace. Workplace happiness and relationship between employees (individual or group) are, therefore, positively related to each other. Frey and Stulzer (2000) examined three factors of happiness, i.e. personality and demographic factors (work, income, community, value, religion, family, experience, education, gender and age), micro- and macro-economic factors (per capita income, employment, inflation) and third is institutional factors like democracy and federalism. Whereas, Graham *et al.* (2004) mentioned that happiness is subject to various changes and fluctuations; it is a part of our nature, inherent in us by our parents through genes.

Factors affecting happiness at workplace among academicians

Hill (1986) has reported empirical support for extrinsic factors such as salary, administrative work and fringe benefits as far as happiness among faculty is concerned, but he also supported research and teaching as intrinsic happiness factors. Lacy and Sheehan (1997), contended work environment, organization's atmosphere, relationship with colleagues as predictors of happiness among academicians. Leung *et al.* (2000) observed further that acknowledgment, management policies and monetary sufficiency are the predictors of job happiness among academicians. Mushtaq and Sajid (2013) in their study found that classroom environment makes academicians happy. If their students are happy, they do not even feel the work load stress. Jennifer (1996) discussed the impact of financial rewards, classroom teaching culture, role diversity, autonomy and organizational structure on the academician's happiness at work. Further in this, Farren and Nelson (1999) underlined that the employees' feel connected with those organizations which carry out mixture of staff development program compared with those who do not. Since long, researchers have also maintained that variety of facilities (monetary/non-monetary) have positive effects on employees' attitudes (Simons *et al.*, 2007, Butter, Lowe, 2010). Empirical research done in Lithuania depicts that employee-oriented practices always have a significant and positive relation with employee motivation as well as their happiness also affects employee turnover intentions.

Academic institutions transmit knowledge and develop students; their poor performance or low morale can influence the knowledge sharing, and the ultimate sufferers are the future generations. At apex level, the Indian higher education industry has number of central, state, deemed and private universities (All India Survey on Higher Education 2016-17, 2017). This industry is either short of manpower or the quality of faculty is very poor in terms of communication skills, subject expertise, industry academia interface, etc. This requires the

severe need for enhancing the attractiveness of teaching as a profession as well as motivator to select this profession by choice not by compulsion amongst the young generation.

Objectives of the study

The objective of this study is to:

- find out factors influencing happiness of academicians at various institutional levels;
- explore the difference in happiness level of academicians working at different hierarchical levels in terms of demographic variables like age, gender and designation; and
- use the differences for framing a mathematical model to study the relationship between academicians' happiness and their performance using the attitude, motivation and outcome (AMO) theory.

Hypotheses

The research hypotheses proposed for this study are enumerated as under:

- H0.* Workplace happiness factors significantly differ among demographic variables like age, education and designation.
- H1.* Workplace happiness factors do not significantly differ among demographic variables like age, education and designation.

Research methodology

The research study was conducted on academicians working in various universities (government, private and deemed) and colleges (self-financing or aided) located in and around Delhi/NCR. Convenience purposive sampling method was used to obtain data through self-administered survey questionnaire based on a five-point Likert scale, delineating the research purpose and assurance of confidentiality. Respondents were given the liberty of not to give their identifiable information to maintain the anonymity of the responses. The questionnaire included the instruments related to top management support, job satisfaction and work culture. Of 350, 336 duly filled questionnaires were received back via mail or in person. A total of 21 of 336 returned questionnaires were found to be invalid, so, in total, 315 responses were used for further analysis. The study was conducted from January 2018 to February 2019.

For data analysis, statistical techniques like factor analysis, mean, rank/percentage method, Levene's test, *t*-test and analysis of variance (ANOVA) were used. Levene's test was used to test the equality of variances for a variable calculated for two or more groups (Levene, 1960).

Reliability analysis

Table I represents the reliability coefficient of all scales used in this study. The reliability of the questionnaire was checked through Cronbach's alpha which is used to estimate the reliability of a psychometric test. Closer the Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale (Giem and Giem, 2003). The results of the test show that the items are reliable, i.e. 0.882. The Kaiser–Meyer–Oklin (KMO) value for these variables was 0.859, indicating that the sample size was adequate for applying factor analysis (Field, 2005).

Results and discussion

The sample comprises all categories of academicians including assistant professors, associate professors and professors having minimum qualification required for the appointment on the concerned post. The sample was selected keeping in mind the faculty/student (1:2:3) ratio decided by UGC/AICTE also to provide due and adequate representation to various other variables like age, sex, gender, nature of organization, job nature and department. The various classifications of samples are duly represented in Table II.

Exploratory factor analysis

The variables with loadings of at least 0.5 (Hair *et al.*, 2006) were included in the analysis. For factor extraction, principal component method was used. Eight factors were obtained and named according to the variables included in them. These factors with their names and respective loadings are shown in Table III.

To find out the factors affecting academicians’s happiness level in an organization, factor analysis was applied and eight factors were obtained as a result of the exploratory factor analysis, namely, research activities (F1), working environment (F2), fringe benefits (F3),

Cronbach’s alpha	0.882 (<i>ranges between 0 and 1, high internal consistency</i>)
KMO	0.859 (<i>higher than recommended value, i.e. 0.5</i>)

Table I.
Reliability tests

Respondent’s profile	No. (N)	(%)
<i>Gender</i>		
Male	125	39.7
Female	190	60.3
<i>Age (in years)</i>		
Up to 25 years	10	3.2
25 to less than 35 years	151	47.9
35 to less than 45 years	118	37.5
More than 45 years	36	11.4
<i>Qualification</i>		
NET/JRF qualified	154	48.9
MPhil	17	5.4
PhD	144	45.7
<i>Organization nature</i>		
Government	170	54.0
Nongovernment	6	1.9
Private/self-financing	139	44.1
<i>Designation</i>		
Professor	54	17.1
Associate professor	103	32.7
Assistant professor	158	50.2

Table II.
Demographic profile of respondents

Source: Primary data

Factors	Variables (items)	Factor loadings
F1 Research Activities	Membership of various professional bodies	0.524
	Invitation as keynote speaker or chairperson of Fdps/conference/seminars	0.825
	Authoring books	0.785
	Convener/chairperson of various committees	0.835
	Editorial board membership	0.806
	Challenging assignments	0.504
	Due recognition of research work	0.640
	Assignment of sponsored research project	0.538
	Copyrights/patents	0.661
	Appreciation by management/authorities	0.541
F2 Working Environment	Availability of resources to perform job	0.675
	Supportive working culture	0.660
	Opportunities for career advancement	0.657
	Management support in putting ideas into action	0.537
F3 Fringe Benefits	Support to buy periodicals, magazines, etc.	0.657
	Relationships with colleagues	0.779
	Retirement benefits	0.578
	Attitude of colleagues	0.753
	Way of dealing with professional problems A	0.685
	Competition with colleagues for growth	0.509
	Infrastructural facilities	0.546
	Routine nature of work	0.611
F4 Personal Growth	Top management support in knowledge sharing	0.597
	Opportunity to speak up and present views openly	0.592
	Involvement in decision-making	0.718
	Unbiased treatment by management	0.668
F5 Job Security	Freedom in taking decisions	0.507
	Participation in departmental administrative committees	0.763
	Authority with responsibility to perform various tasks	0.788
	tasks	
	Diversified responsibilities to upgrade interpersonal skills	0.816
F6 Salary	Getting increments when due	0.597
	Permanency in job	0.716
	Timely promotions	0.642
	Financial support for participation in professional development activities	0.589
	Monetary benefits for additional assignments	0.590
F7 Work Life Balance	Financial equity between work, qualification and experience	0.607
	Profession feeling of responsibility toward student learning	0.585
	Support in achieving family goals	0.757
F8 Social Endeavours	Family support in completing professional tasks on time.	0.732
	Getting industrial training projects for rural students	0.652
	Set up of skill development center	0.577
	Involvement in CSR activities	0.713

Table III.
Factors obtained and their loadings

Source: Extraction method: principal component analysis

personal growth (F4), job security (F5), salary (F6), work–life balance (F7) and involvement in social endeavors (F8). Mean and standard deviation (SD) of the various happiness factors thus obtained affecting happiness at workplace and their rankings are shown in Table IV.

Table IV shows that academicians want F4 ($\bar{x} = 4.32$) through a well-structured organization chart/defined hierarchy; they expect an institute to define their career path

clearly at the time of joining or through a well-defined individual career plan. Also, because of government emphasis and increasing awareness among public for social causes, academicians have given importance to institutional F8 to serve societies and their involvement in same ($\bar{x} = 4.21$).

To establish the difference between the happiness factors and various demographic variables, ANOVA and *t*-test have been applied. Further, the significant relationship between the groups within a demographic characteristic has been tested by applying the *post hoc* test.

Gender-wise comparison of factors affecting academicians' happiness at workplace

Academicians may have different views regarding happiness factors. To find out whether there is any significant difference between the mean score of male and female academicians, *t*-test has been applied (Table V). Highest mean value for F7 for both females ($\bar{x} = 4.35$) and males ($\bar{x} = 4.27$) depicts that both men and women want to maintain equity in their professional and personal life. They give equal priority to enjoyment and work. For both, F6 is the second important factor which makes them happy. Whereas, in case of female academicians, their involvement in social awareness programs gives them happiness, and male academicians feel happy when they are more involved in what and why questions related to various issues at social and professional front, i.e. their involvement in F1.

Factor	Factor name	Rank	Mean	SD
F1	Research activities	VIII	4.00	0.66
F2	Working environment	VII	3.65	1.03
F3	Fringe benefits	III	4.16	0.74
F4	Personal growth	I	4.32	0.46
F5	Job security	IV	4.02	0.45
F6	Salary	VI	4.01	0.69
F7	Work-life balance	V	4.05	0.64
F8	Social endeavors	II	4.21	0.56

Source: Primary data

Table IV.
Mean, standard deviation and ranking of factors affecting happiness

Factors (F)	Male (N = 125)		Female (N = 190)		<i>t</i> -value	Significance value	Hypothesis accepted/ rejected
	Mean	SD	Mean	SD			
F1	4.08	0.71	4.03	0.69	0.592	0.554	Rejected
F2	3.97	0.68	4.10	0.61	-1.764	0.079	Rejected
F3	2.94	0.76	3.24	0.80	-3.414	0.001*	Accepted
F4	4.02	0.65	4.00	0.66	0.246	0.806	Rejected
F5	3.47	1.07	3.77	1.00	-2.476	0.014**	Accepted
F6	4.12	0.73	4.18	0.75	-0.622	0.534	Rejected
F7	4.27	0.42	4.35	0.49	-1.424	0.156	Rejected
F8	3.94	0.47	4.07	0.43	-2.391	0.018**	Accepted

Source: Primary Data; F1: Research activities, F2: Working environment, F3: Fringe benefits, F4: Personal growth, F5: Job security, F6: Salary, F7: Work-life balance, F8: Social endeavors; * indicates significance at 0.00 level and ** indicates significance at 0.01 level

Table V.
Gender-wise comparison of factors

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Further, the results show that there is a significant difference between male and female academicians in the influence of F3, F5 and F8 on their happiness.

Null hypothesis is hence rejected, as there is a significant difference between male and female respondents regarding various factors affecting their happiness while working and performing in an institution.

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Age-wise comparison of factors affecting happiness

Age of an academician also came out as an important factor, which determines happiness quotient of academicians. Academicians under 35 years of age rate F7 and F2 at work place as more important than their F6 and growth prospects in the college/institute as one of the important reasons to be happy. Whereas, academicians above 35 years of age feel happy when they are involved in F1, F6 and are able to maintain F7. They feel happy when an institute offers them competitive pay package and also provides them sufficient time and facilities to balance their work and life (Table VI).

The comparison of factors between different age groups of respondents regarding factors impacting their happiness at workplace differs significantly except on two factors, i.e. F7 and F8. Study clearly stated that because of the difference in age, employee priorities also change; at one point of time, he/she gives more preference to F6 and at another point of time he/she is more in favor of research and CSR activities. To be happy at workplace, academicians need regular feedback and appropriate appraisals. Hence, the null hypothesis is rejected, and alternate hypothesis accepted for these factors.

The *post hoc* test results (Table VI) reveal that the difference is significant among the different age group for six factors (except F7 and F8).

Designation-wise comparison of factors affecting happiness

Table VII shows that assistant professors feel happy when they have been provided cordial Work Environment (F2) in an institute ($\bar{x} = 4.27$) through which they can maintain coordination between their family and job F2 ($\bar{x} = 4.22$). Teaching is known to be a profession which needs dedication and hard work not only for self but also for society. So, faculty needs to be calm and cool while dealing with young generation of 20-25 years of age.

Associate professors gives importance to factors which ensures their F5 ($\bar{x} = 4.47$) along with F1 ($\bar{x} = 4.40$) and F7 ($\bar{x} = 4.40$), and same is in the case of professors. They also want to be involved in more research projects ($\bar{x} = 4.45$) sponsored/funded by UGC or companies, respectively. But simultaneously, they are also of a viewpoint that maintaining work-life and good F6 package is equally important because of family responsibilities and presence of growing/teenage kids at home.

As per the results shown in Table VII, hypothesis H0 that designation of faculty member significantly influences workplace happiness among academicians is accepted in case of five major factors, namely, F1, F2, F3, F4 and F5. The *post hoc* results also state that this difference is significant in case of these five factors only.

Mathematical model and equation to draw the relationship between academicians' performance and happiness using the AMO theory

After exploring the factors influencing higher education academicians' happiness level, the interaction of extracted factors has been used to draw a matrix.

In this study, three matrices are used to represent the relationship among the factors affecting happiness at the three designations: assistant professor, associate professor and professors, because of difference in factors influencing happiness at the three hierarchical

Age/factor	less than 25 years A1		25 to less than 35 years A2		35 to less than 45 years A3		Above 45 years A4		F	Significance (p value)	Post hoc test result significance pairs	Hypothesis accepted/rejected
	Mean	SD	Mean	SD	Mean	SD	Mean	SD				
F1	3.59	0.68	3.68	0.59	4.45	0.59	4.48	0.48	46.428	0.000*	A1 vs A2 A1 Vs A3 A2 Vs A3	Accepted
F2	4.04	0.45	4.17	0.71	3.96	0.58	3.83	0.47	4.115	0.007*	A2 Vs A4 A2 vs A3 A2VsA4 A3VsA4	Accepted
F3	3.38	0.43	3.28	0.79	2.97	0.84	2.84	0.55	5.444	0.001*	A2 vs A3 A2VsA4	Accepted
F4	3.58	0.66	3.96	0.65	4.16	0.65	3.81	0.62	4.967	0.002*	A1 vs A3 A2VsA3 A3VsA4	Accepted
F5	3.66	0.60	3.36	0.99	4.28	0.82	2.81	0.82	34.248	0.000*	A1 vs A4 A2VsA3 A2VsA4 A3VsA4	Accepted
F6	3.43	1.12	4.02	0.79	4.37	0.58	4.22	0.63	8.73	0.000*	A1 vs A3 A1VsA4 A2VsA3	Accepted
F7	4.56	0.44	4.25	0.52	4.37	0.39	4.35	0.39	2.52	0.058	-	Rejected
F8	3.93	0.71	4.05	0.51	4.02	0.38	3.90	0.31	1.14	0.333	-	Rejected

Source: Primary Data; F1: Research activities; F2: Working environment; F3: Fringe benefits; F4: Personal growth; F5: Job security; F6: Salary; F7: Work-life balance; F8: Social endeavors; *indicates significance at 0.00 level

Table VI.
Age-wise comparison
of factors

Table VII.
Designation-wise
comparison of
factors

Designation/factor	Assistant professor DS1		Associate professor DS2		Professor DS3		F	Significance (p value)	Post hoc test result significance pairs	Hypothesis accepted/ rejected
	Mean	SD	Mean	SD	Mean	SD				
F1	3.70	0.61	4.40	0.67	4.45	0.43	35.758	0.000*	DS1 vs DS2 DS2V s DS4	Accepted
F2	4.22	0.66	3.93	0.64	3.81	0.44	7.710	0.000*	DS1 vs DS2 DS2V s DS4	Accepted
F3	3.31	0.81	2.93	0.81	2.88	0.55	7.879	0.000*	DS1 vs DS2 DS2V s DS4	Accepted
F4	4.04	0.57	4.08	0.78	3.78	0.63	2.979	0.032*	DS2 vs DS3	Accepted
F5	3.32	0.95	4.47	0.66	2.99	0.89	49.423	0.000*	DS2 vs DS4 DS2V s DS3 DS3V s DS4	Accepted
F6	4.05	0.79	4.26	0.74	4.28	0.57	2.22	0.085	-	Rejected
F7	4.27	0.54	4.40	0.37	4.28	0.35	1.66	0.175	-	Rejected
F8	4.06	0.50	3.99	0.41	3.91	0.39	2.043	0.108	-	Rejected

Source: Primary Data; F1: Research activities, F2: Working environment, F3: Fringe benefits, F4: Personal growth, F5: Job security, F6: Salary, F7: Work-life balance, F8: Social endeavors; * indicates significance at 0.00 level

levels; so, to determine the numerical happiness index, the permanence of the matrices is evaluated. The permanent is similar to determinant of matrix but with all signs positive, e.g.:

$$\text{perm} \begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix} = aei + bfg + cdh + ceg + bdi + afh.$$

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The permanent of assistant professor matrix:

$$\begin{aligned} \text{perm}(M_{AP}) = & ((D_4F_6G_2 + B_2D_4F_6)H_7 + (D_4F_7G_2 + B_2D_4F_7)H_6 \\ & + B_2D_4F_6G_7)I_9 + ((D_4F_9G_2 + B_2D_4)H_6 + B_2D_4F_6)I_7 + (B_{11}D_4F_6G_9H_7 \\ & + (D_4F_7G_9 + D_4G_7)H_6)I_2)J_{10}K_8 + ((B_{11}D_4F_6G_2 + B_2D_4F_6G_{11})H_8I_9 \\ & + B_{11}D_4F_6G_9H_8I_2)J_{10}K_7 + (B_{11}D_4F_6G_7H_8I_9 + B_{11}D_4F_6G_9H_8I_7)J_{10}K_2 \\ & + (B_2D_4F_6G_7H_8I_9 + B_2D_4F_6G_9H_8I_7)J_{10}K_{11} + (((B_{11}D_4F_6G_2 \\ & + B_2D_4F_6G_{11})H_8I_7 + B_{11}D_4F_6G_7H_8I_2)J_9 + (((B_{11}D_4F_6G_2 \\ & + B_2D_4F_6G_{11})H_7 + (B_{11}D_4F_7G_2 + B_2D_4F_7G_{11})H_6 + B_2D_4F_6G_7H_{11})I_9 \\ & + ((B_{11}D_4F_9G_2 + B_2D_4F_9G_{11})H_6 + B_2D_4F_6G_9H_{11})I_7 + (B_{11}D_4F_6G_9H_7 \\ & + (B_{11}D_4F_7G_9 + B_{11}D_4F_9G_7)H_6)I_2)J_8 + ((B_{11}D_4F_7G_2 \\ & + B_2D_4F_7G_{11})H_8I_9 + (B_{11}D_4F_9G_2 + B_2D_4F_9G_{11})H_8I_7 + (B_{11}D_4F_7G_9 \\ & + B_{11}D_4F_9G_7)H_8I_2)J_6 + (B_{11}D_4F_6G_7H_8I_9 + B_{11}D_4F_6G_9H_8I_7)J_2)K_{10} \end{aligned}$$

The permanent of associate professor matrix:

$$\begin{aligned} \text{perm}(M_{ASOP}) = & (((A_1D_4E_5F_{12} + (A_{12}D_4E_5 + A_5D_4E_{12})F_1)G_{11}H_6 + (A_1D_5E_{12}F_6 \\ & + A_6D_5E_{12}F_1)G_{11}H_4 + (A_1D_4E_5F_6 + A_6D_4E_5F_1)G_{11}H_{12} \\ & + (A_1D_4E_5F_6 + A_6D_4E_5F_1)G_{12}H_{11} + ((A_{12}D_4E_5 + A_5D_4E_{12})F_6 \\ & + A_6D_4E_5F_{12})G_{11}H_1)K_7 + ((A_1D_4E_5F_6 + A_6D_4E_5F_1)G_{12}H_7 \\ & + ((A_1D_4E_5F_{12} + (A_{12}D_4E_5 + A_5D_4E_{12})F_1)G_7 + A_1D_4E_5F_7G_{12})H_6 \\ & + (A_1D_5E_{12}F_6 + A_6D_5E_{12}F_1)G_7H_4 + (A_1D_4E_5F_6 \\ & + A_6D_4E_5F_1)G_7H_{12} + (((A_{12}D_4E_5 + A_5D_4E_{12})F_6 + A_6D_4E_5F_{12})G_7 \\ & + A_6D_4E_5F_7G_{12})H_1)K_{11})L_8 + (((A_1D_4E_5F_{12} + (A_{12}D_4E_5 \\ & + A_5D_4E_{12})F_1)G_{11}H_6 + (A_1D_5E_{12}F_6 + A_6D_5E_{12}F_1)G_{11}H_4 \\ & + (A_1D_4E_5F_6 + A_6D_4E_5F_1)G_{11}H_{12} + (A_1D_4E_5F_6 \end{aligned}$$

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$$\begin{aligned}
& + A_6D_4E_5F_1) G_{12}H_{11} + ((A_{12}D_4E_5 + A_5D_4E_{12}) F_6 \\
& + A_6D_4E_5F_{12}) G_{11}H_1) K_8 + ((A_1D_4E_5F_6 + A_6D_4E_5F_1) G_{12}H_8 \\
& + A_5D_4E_8F_1G_{12}H_6 + (A_1D_5E_8F_6 + A_6D_5E_8F_1) G_{12}H_4 \\
& + A_5D_4E_8F_6G_{12}H_1) K_{11}) L_7 + (((A_1D_4E_5F_6 + A_6D_4E_5F_1) G_{11}H_7 \\
& + A_1D_4E_5F_7G_{11}H_6 + (A_1D_4E_5F_6 + A_6D_4E_5F_1) G_7H_{11} \\
& + A_6D_4E_5F_7G_{11}H_1) K_8 + ((A_1D_4E_5F_6 + A_6D_4E_5F_1) G_{11}H_8 \\
& + A_5D_4E_8F_1G_{11}H_6 + (A_1D_5E_8F_6 + A_6D_5E_8F_1) G_{11}H_4 \\
& + A_5D_4E_8F_6G_{11}H_1) K_7 + ((A_1D_4E_5F_6 + A_6D_4E_5F_1) G_7H_8 \\
& + A_5D_4E_8F_1G_7H_6 + (A_1D_5E_8F_6 + A_6D_5E_8F_1) G_7H_4 \\
& + A_5D_4E_8F_6G_7H_1) K_{11}) L_{12} + (((A_{12}D_4E_5 + A_5D_4E_{12}) F_6 \\
& + A_6D_4E_5F_{12}) G_{11}H_7 + (A_{12}D_4E_5 + A_5D_4E_{12}) F_7G_{11}H_6 \\
& + A_6D_5E_{12}F_7G_{11}H_4 + A_6D_4E_5F_7G_{11}H_{12} + (((A_{12}D_4E_5 \\
& + A_5D_4E_{12}) F_6 + A_6D_4E_5F_{12}) G_7 + A_6D_4E_5F_7G_{12}) H_{11}) K_8 \\
& + (((A_{12}D_4E_5 + A_5D_4E_{12}) F_6 + A_6D_4E_5F_{12}) G_{11}H_8 \\
& + A_5D_4E_8F_{12}G_{11}H_6 + (A_{12}D_5E_8F_6 + A_6D_5E_8F_{12}) G_{11}H_4 \\
& + A_5D_4E_8F_6G_{11}H_{12} + A_5D_4E_8F_6G_{12}H_{11}) K_7 + (((A_{12}D_4E_5 \\
& + A_5D_4E_{12}) F_6 + A_6D_4E_5F_{12}) G_7 + A_6D_4E_5F_7G_{12}) H_8 \\
& + A_5D_4E_8F_6G_{12}H_7 + (A_5D_4E_8F_{12}G_7 + A_5D_4E_8F_7G_{12}) H_6 \\
& + ((A_{12}D_5E_8F_6 + A_6D_5E_8F_{12}) G_7 + A_6D_5E_8F_7G_{12}) H_4 \\
& + A_5D_4E_8F_6G_7H_{12}) K_{11}) L_1
\end{aligned}$$

The permanent of professors matrix is:

$$\begin{aligned}
\text{perma}(M_p) = & ((A_1F_6 + A_6F_1) G_{12}H_7 + ((A_1F_{12} + A_{12}F_1) G_7 + A_1F_7G_{12}) H_6 \\
& + (A_1F_6 + A_6F_1) G_7H_{12} + ((A_{12}F_6 + A_6F_{12}) G_7 + A_6F_7G_{12})) H_1) L_8 \\
& + (A_1F_6 + A_6F_1) G_{12}H_8L_7 + (A_1F_6 + A_6F_1) G_7H_8L_{12} \\
& + ((A_{12}F_6 + A_6F_{12}) G_7 + A_6F_7G_{12}) H_8L_1
\end{aligned}$$

The permanence of this matrix has been used to quantify the qualitative happiness factors. The happiness index thus obtained through the matrix has been related to the

performance of the academicians. Thus, the factors of happiness are converted to a numerical value through which the degree of performance can be ascertained. So, this matrix helped to quantify the qualitative factors of happiness. According to Davidoff (1987), individual performance is generally determined by three factors, namely, ability – the capability to do the job; work environment – the tools, materials and information needed to do the job; and motivation – the desire to do the job happily and readily.

In this paper, matrix is used to show the relationship between various happiness factors affecting three different levels taken for study, i.e. assistant professor, associate professor and professors. The factors affecting different academicians working at different levels are related to each other. Through GTA, i.e. through digraph, matrix and permanent function, the happiness index of assistant professor (perma H_{AS}), associate professor (perma H_{ASOP}) and of professors (perma H_P) is obtained. Through this, the happiness index of academicians (HI_A) can be given as:

$$HI_A = \text{perma } H_{AS} + \text{perma } H_{ASOP} + \text{perma } H_P$$

The happiness index, thus, obtained is linked to the academician's performance in the classroom as well in the institute.

The ability A_i to perform has to be understood in a broader sense. It includes an employee's knowledge, skills and abilities. This relationship is based on the AMO theory where (P_i) is the performance of an individual, (f) is function (f) of his or her ability (A_i) to perform, his or her happiness/willingness to perform happily (H_i) and the opportunity to perform in the job is O_i (Boxall and Purcell, 2011):

$$\begin{aligned} \text{Performance } (P_i) &= \text{Ability of an individual to perform } (A_i) \times \text{Happiness } (H_i) \\ &\times \text{Opportunity to perform } (O_i) \end{aligned}$$

The derived happiness index obtained can further be used to measure the performance of an individual and, ultimately, the performance of an organization as a whole. The happiness index can be used in the AMO theory as follows:

Performance of an organization = Sum total of performance of employees of the organization. As per the results of present study, the performance of an academic institution can be measured as:

$$P_{AI} = HI_A \times N (\text{Ability of Academician} \times \text{Opportunity provided to Academician})$$

Where, P_{AI} is the performance of an academic institution and N is the number of academicians in the institution.

Conclusion and suggestions

The results of the study clearly show that most of the academicians irrespective of their age, experience and designation ranked F7 and F2 of an institute or college as most important happiness factors. The reason for ranking these factors as most important could be because of high family expectations along with student's expectations from their faculty. Because of the increasing use of ICT tools in teaching and training, students and faculty involvement has become of 24/7, which might have become troublesome for faculty members. In comparison to government universities/aided colleges, private college faculties need more upgradation with the latest technological innovations; they have more work pressures, less

holidays and no time barrier. Consequently, academicians do not find much time for their families and leisure activities. So, the management should provide them proper facilities, holidays to help them to lead a balanced life. When faculty stays for long hours in the campus, they should be compensated properly so that they should not feel that their jobs are taking a toll on them. Some faculty members look for more sponsored research work to be happy, so whenever management gets a sponsored project, interested faculty members should be given the opportunity to take that project further.

There are only few faculty members who have given importance to F6; this is somehow in contradiction to the earlier literature, where most of the faculty members specifically in the age group of 25-30 years and at the assistant professor level, have ranked F6 as the most important happiness factor.

The study analyzed the various factors which impact academicians' happiness and found that except for F7, F1 and F2, all other factors are available to academicians according to their ranked importance assigned to them by respondents. This study also obtained a happiness index using matrix and has developed an equation which can be applied to find out the relationship between happiness and performance. This study contributes to the body of literature by applying a customized set of happiness factors on understudied but important respondents, i.e. higher education academicians.

Implications of the study and scope for further research

This study quantified the qualitative aspects by converting the happiness factors thus obtained in to numerical value through which the degree of performance can be ascertained. So, the research findings can help the management to develop effective strategies for keeping academicians happy, thus leading to quality teaching. The results of the study can be further used to find the ability index, opportunity index of the employees and, ultimately, the entire quantification of performance can be done.

Limitations

This study has certain limitations, which should be kept in mind while applying the findings. First, this study has been conducted on academicians working in higher education institutes situated in Delhi/NCR, and thus entails a specific socio-cultural environment that may limit the potential level of generalization.

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Corresponding author

Ritu Gandhi Arora can be contacted at: prof.rituarora@gmail.com

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