

Academic job satisfaction questionnaire: Construction and validation in Saudi Arabia

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ABSTRACT

Background: Colleges and universities are becoming increasingly accountable for teaching outcomes in order to meet rigorous accreditation standards. Job satisfaction (JS) seems more difficult to measure in the academic field in view of the complexity of roles, duties and responsibilities. **Objectives:** To compile and determine the psychometric properties of a proposed Academic Job Satisfaction Questionnaire (AJSQ) suitable for university faculty, and amenable to future upgrading. **Materials and Methods:** A 46-item five-option Likert-type draft questionnaire on JS was distributed for anonymous self-reporting by all the academic staff of five colleges in University of Dammam (n=340). The outcome measures were (1) factor analysis of the questionnaire items, (2) intra-factor α -Coefficient of Internal Consistency Reliability, (3) inter-factor correlations, (4) comparison of psychometric properties in separately analyzed main faculty subgroups. **Results:** The response rate was 72.9 percent. Factor analysis extracted eight factors which conjointly explained 60.3 percent of the variance in JS. These factors, in descending order of eigenvalue, were labeled "Authority", "Supervision", "Policies and Facilities", "My Work Itself", "Interpersonal Relationships", "Commitment", "Salary" and "Workload". Cronbach's- α ranged from 0.90 in "Supervision" to 0.63 in "Salary" and "Workload". All inter-factor correlations were positive and significant, ranging from 0.65 to 0.23. The psychometric properties of the instrument in separately analyzed subgroups divided by sex, nationality, college and clinical duties produced fairly comparable findings. **Conclusion:** The AJSQ demonstrated good overall psychometric properties in terms of construct validity and internal consistency reliability in both the overall sample and its separately analyzed subgroups. **Recommendation:** To replicate these findings in larger multicenter samples of academic staff.

Key words: Academic faculty, accreditation, job satisfaction, job questionnaire, Saudi Arabia

INTRODUCTION

About one-third of human adult life is spent in breadwinning activities. But, work is more than a mere means of subsistence. It bestows on one a personal identity, self-actualization and social image. Some theorists conceptualize job satisfaction (JS) as the positive emotional reactions and attitudes toward one's job.^[1] Others emphasize its role as a major determinant of overall wellbeing.^[2] The association

of job dissatisfaction with burnout,^[3] absenteeism,^[4] and turnover,^[5] makes it a main concern for employees, employers and human resource agencies.

The literature abounds in studies on JS. Different instruments have been developed. Some are single-item measures,^[6] others have varying numbers of items.^[7-10] Some of the latter are further subdivided into subscales or domains varying from 2 to 20.^[8] Others view it as a multidimensional construct of intrinsic and extrinsic components,^[11] or of many more dimensions.^[12] Varied as they are, each of these instruments claims superiority in judging JS.

Most popular among these instruments include the Minnesota Satisfaction Questionnaire (MSQ),^[8] Job Descriptive Index (JDI),^[13] Job in General Scale (JIG),^[14] Job Satisfaction Survey (JSS),^[9] Warr Job Satisfaction

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Questionnaire (WJSQ)^[15] and Measure of Job Satisfaction (MJS).^[16]

Some of the original versions proved too lengthy for routine surveys. For example, the proprietors of MSQ^[8] developed a 20-item 'Short Form' as an alternative to their original 100-item 'Long Form'. Likewise, the proprietors of JDI^[13] developed an 'Abridged' 25-item version (AJDI), marketed in the same package with the original 72-item JDI. In both cases, the short version demonstrated psychometric power comparable to the long version.

Indecision as to which to choose from a plethora of such instruments motivated many newcomers to develop their own instruments.^[17]

In a country such as Saudi Arabia, relatively few studies have addressed JS. Most are on nurses,^[18-24] fewer on primary care physicians,^[24,25] and, one is on 'senior staff of a big oil company'.^[26] We were unable to trace any local study on JS among academic staff.

Despite the sizable literature on JS of academic staff, most studies have employed relatively generic all-purpose instruments.^[7-14] These "instruments were developed and originally worded to reflect the job of an hourly-paid worker rather than a salaried professional".^[27]

Developing JS measures specifically tailored for academic staff has become a pressing need in the face of increasing accountability for teaching outcomes to meet accreditation standards.^[28]

Objectives

The purpose of the present study was to develop and validate a self-administered Academic Job Satisfaction Questionnaire (AJSQ) suitable for university faculty, and, hopefully applicable to related professions. Specifically, we aimed at assessing the instrument's psychometric properties in terms of factor structure and internal consistency, as well as inter-item and inter-factor correlations.

MATERIALS AND METHODS

Design

The study design was that of a whole population cross-sectional survey. The target population was all the academic faculty of the five colleges of the University of Dammam [UOD]. The primary dependent measure was the overall level of JS. The assessment tool was a fully structured multi-item self-administered questionnaire. The outcome target was the psychometric properties of a proposed AJSQ.

The questionnaire

The impetus for this present study was a directive from the National Commission for Academic Accreditation and Assessment (NCAAA), prompting the development of academic assessment tools including staff JS rates. This stimulated a process of extensive scanning of the literature, scrutiny of existing JS measures,^[6-26] as well as expert panels and focus group deliberations.

The outcome was a fully structured draft questionnaire composed of two parts. The first part contained basic demographic and professional data including sex, age, nationality, academic degrees, college, department and duration of service at the University. The second part contained 46 items, one of which was an overall judgment about one's own JS, and the remaining items subdivided into eleven putative JS domains.

Each item required a 5-option Likert-type response coded from 1 to 5 according whether it was "Strongly Disagree", "Disagree", "Neutral", "Agree", or "Strongly Agree" respectively. The questionnaire was dispatched by internal college mail to each faculty member for anonymous self-administration.

Materials

A total of 248 of all the 340 academic staff of UOD returned their completed questionnaires making a response rate of 72.9 percent. The responders were 62.2 percent males, 61.5 percent expatriates, 26.1 percent below age 44, and, 37.3 percent above 50. By academic titles, 17.8 percent were professors, 27.6 percent associates, and 54.6 percent assistants. By duration of service in UOD, 36.0 percent were less than 5 years and 38.1 percent were more than 10 years. By colleges, 60.5 percent were from the College of Medicine, 13.6 percent Nursing, 10.9 percent Applied Sciences, 8.1 percent Architecture and 6.9 percent Dentistry.

Outcome measures

Five measures were to be estimated: (1) The correlation matrix of all questionnaire items, (2) the overall factor structure of the instrument, (3) the Cronbach's α -coefficient of internal consistency reliability within each factor, (4) the pair-wise inter-factor correlations, and (5) the foregoing psychometric properties within separately analyzed faculty subgroups.

Statistical analysis

Data entry and data analysis used SPSS for Windows Version 16.^[29] The initial Exploratory Factor Analysis was conducted on default options. The tailored subsequent Confirmatory Factor Analysis interchangeably used Principal Component Analysis and α -Factoring with Varimax Rotation, minimum 1.0 eigenvalue for factor

extraction, minimum 0.35 for item-to-factor loading and 25 iterations.

The within-factor internal consistency was tested with Cronbach's α -coefficient. The correlation matrix and the pair-wise inter-factor correlations used Pearson's correlation coefficient. The data analysis of JS indices in separate faculty subgroups followed the same statistical procedures as for the whole faculty sample.

RESULTS

Table 1 displays the factor structure of the emerging AJSQ. Eight factors had been extracted. Conjointly, they accommodated 45 out of the initially introduced 46 items. The singularly rejected item had failed to achieve the set minimum of 0.35 loading to any factor. Two factors contained nine items each, three factors contained five each, and the remaining three factors contained four each. Factor 1 alone contributed half the 60.3 percent overall explained variance. The remaining seven factors explained from 6.80 to 2.97 percent each.

Table 2 shows that the overall internal consistency reliability as tested by Cronbach's α -coefficient was 0.76, ranging in descending order from 0.90 in Factor 2 ("Supervision") to as 0.63 in each of Factors 7 and 8 ("Salary" and "Workload", respectively).

Table 3 shows that all the pair-wise factor-factor correlations were significantly positive. The strongest of these correlations was between "Interpersonal Relationship" and "My Work Itself", and the weakest was between "Salary" and "Commitment".

The correlation between the questionnaire's overall JS item and the mean score of all the other 45 items was + 0.7134 ($P < 0.001$).

Table 4 provides the main psychometric properties of the instrument in separately analyzed major faculty subgroups. The overall explained variance of 60.3 percent ranged among subgroups from 56.3 percent in females, to 62.9 percent in expatriates ($P < 0.05$). Comparing subgroup counterparts, explained variance was higher in males than in females, in expatriates than in nationals, in medical

Table 1a: Factor analysis – Part 1

		Item loading
Factor 1: Eigenvalue = 12.887; Variance = 30.061 percent		
Authority		
F101	My present job provides good opportunities for promotion	0.704
F102	I have been rewarded for my good performance	0.677
F103	My opportunity for promotion is unlimited	0.630
F104	The University helps me to pursue my professional growth	0.601
F105	Job promotion is based on job performance and achievement	0.599
F106	I have been recognized for my accomplishments	0.564
F107	My job encourages competitive spirit	0.544
F108	My job is compatible with my experience	0.425
F109	I feel that KFU has a high degree of loyalty to me	0.401
Factor 2: Eigenvalue = 3.002; Variance = 6.804 percent		
Supervision		
F201	My immediate supervisor treats staff fairly	0.879
F202	I can trust my immediate supervisor	0.801
F203	My immediate supervisor does a good and efficient job	0.796
F204	My immediate supervisor uses positive feedback with staff	0.740
F205	No administrative tension with my immediate supervisor	0.514
Factor 3: Eigenvalue = 2.530; Variance = 5.769 percent		
Policies and facilities		
F301	The office/area of work is comfortable and safe	0.659
F302	Amenities (closets, etc) are clean	0.641
F303	There is NO shortness in financial resources	0.596
F304	The available equipment works properly	0.477
F305	Number of personnel is sufficient to run the work	0.459
F306	Fair university policies	0.397
F307	My department has a policy manual	0.389
F308	Capable administration in College/University	0.382
F309	I receive regular and timely feedback on my performance	0.371

Final statistics: Cumulative variance percent = 60.287 percent

Table 1b: Factor analysis – Part 2

		Item loading
Factor 4: Eigenvalue = 2.314; Variance = 5.248 percent		
My work itself		
F401	I have freedom of decision how to accomplish my assigned	0.664
F402	I have freedom of choice when performing my duties	0.618
F403	Flexible work procedures	0.612
F404	Clear job position, scope and responsibilities	0.522
F405	I have sufficient professional authority and autonomy at work	0.363
Factor 5: Eigenvalue = 1.698; Variance = 3.850 percent		
Interpersonal relationships		
F501	Sense of friendship and team spirit with colleagues	0.640
F502	Work relations are satisfactory	0.594
F503	Good interpersonal communication and cooperation	0.506
F504	Coordinated and integrated activities	0.390
F505	Chances for socialization with colleagues during work	0.386
Factor 6: Eigenvalue = 1.331; Variance = 3.019 percent		
Commitment		
F601	I am ready to put extra efforts to accomplish my work	0.646
F602	I am aware of quality concepts while performing my duties	0.570
F603	I have a high degree of loyalty to this University	0.445
F604	I have clear achievable goals and standards for my position	0.374
Factor 7: Eigenvalue = 1.247; Variance = 2.927 percent		
Salary		
F701	My salary is fair and sufficient	0.524
F702	In general I am satisfied with my job	0.409
F703	KFU has clear policies regarding salaries and allowances	0.360
F704	My salary is higher than in other universities	0.307
Factor 8: Eigenvalue = 1.195; Variance = 2.709 percent		
Workload		
F801	My required workload reduces the quality of performance	0.485
F802	My work does not make me stressed	0.479
F803	I can accomplish my assigned workload	0.433
F804	I get the necessary information to accomplish my work	0.371

Table 2: Within-factor internal consistency reliability

Factor	Subscale	Items	Cronbach's α -coefficient
1	Authority	9	0.83
2	Supervision	5	0.90
3	Policies and facilities	9	0.76
4	My work itself	5	0.76
5	Interpersonal relationships	5	0.71
6	Commitment	4	0.76
7	Salary	4	0.63
8	Workload	4	0.63
Total		45	0.76

than in non-medical, and in clinical than in non-clinical faculty. The overall α -coefficients of internal consistency reliability ranged from 0.70 in non-clinical to 0.91 in non-clinical faculty ($P < 0.001$). The Table 4 displays the detailed α -values within each factor for each faculty subgroup. The highest one was 0.95 in factor 5 of the clinical subgroup,

and the lowest was 0.61 in factor 8 of the expatriate group ($P < 0.001$).

DISCUSSION

The present study has achieved its main objective, namely validating an AJSQ. The initial face validity and content validity have been confirmed by the construct validity generated from factor analysis. The internal consistency reliability of the extracted factors has been ascertained by Cronbach's α -coefficients. The integrity of the instrument as a whole has been demonstrated by the invariably positive and significant inter-factor correlations. The consistency of the instrument across separately analyzed faculty subgroups supports its applicability in various academic settings.

Most of our reported psychometric indices compare favorably with published studies. Our response rate of 72.9 percent is considerably higher than the average of 56

Table 3: Correlations between factors

Inter-	Authority	Supervision	Policies	My work	Personal	Salary	Workload
Supervision	.386**						
Policies	.573**	.377**					
My work	.509**	.470**	.579**				
Interpersonal	.565**	.515**	.650**	.650**			
Commitment	.425**	.330**	.361**	.495**	.341**		
Salary	.481**	.355**	.616**	.372**	.422**	.219*	
Workload	.489**	.372**	.460**	.514**	.445**	.431**	.323**

* $P < 0.01$, ** $P < 0.001$ **Table 4: Psychometric properties in separately analyzed staff subgroups**

Measure	Gender			Citizenship		Medical		Clinical	
	Both	Males	Females	Saudis	Expats	Medic	Other	Yes	No
All (n)	248	157	91	96	152	150	98	83	165
Factors 9 (n)	8	8	8	8	8	8	8	8	8
Variance percent	60.3	61.0	56.3	58.3	62.9	62.2	60.16	62.3	59.4
Items (n)									
Factor 1	9	9	5	9	8	7	12	11	6
Factor 2	5	8	10	8	9	5	7	10	9
Factor 3	9	7	9	5	9	8	7	5	9
Factor 4	5	7	8	6	7	9	6	6	10
Factor 5	5	8	7	6	5	8	5	2	5
Factor 6	4	4	3	5	3	4	4	5	2
Factor 7	4	1	3	3	3	2	3	4	3
Factor 8	4	2	1	4	2	3	2	3	2
α									
Overall	0.78	0.76	0.83	0.81	0.71	0.77	0.82	0.91	0.70
Factor 1	0.87	0.79	0.91	0.93	0.78	0.80	0.93	0.92	0.78
Factor 2	0.86	0.87	0.89	0.79	0.82	0.86	0.83	0.92	0.75
Factor 3	0.77	0.76	0.78	0.80	0.74	0.75	0.87	0.91	0.83
Factor 4	0.74	0.70	0.77	0.83	0.71	0.73	0.79	0.85	0.71
Factor 5	0.73	0.72	0.74	0.72	0.69	0.74	0.89	0.95	0.70
Factor 6	0.79	0.68	0.88	0.91	0.66	0.74	0.76	0.94	0.63
Factor 7	0.73	0.69	0.76	0.71	0.64	0.70	0.71	0.91	0.57
Factor 8	0.75	0.68	0.93	0.79	0.61	0.79	0.74	0.91	0.62

percent drawn from 27 different studies where it ranged from 39.0^[30] to 87.2 percent.^[31] The number of 46 items in our instrument is intermediate among the reported range of 13^[32] to 100.^[8] The number of eight extracted factors is modal among reported range of 3^[33] to 11^[34] factors. The explained variance of 60.3 percent is exceeded by only one out of 13 studies ranging in variance from 44^[35] to 68 percent.^[36] Our within factor α -coefficients ranging from 0.63 to 0.90 were intermediate among 25 other studies in which the range reported was from 0.43^[37] to 0.90.^[38] These comparisons justify recommending this AJSQ for use in various academic settings.

Future studies are needed to identify and incorporate some hitherto unoperationalized determinants of JS.

For, irrespective of whichever JS instrument is being used, 32-56 percent of the overall variance in JS remains unexplained.^[35,36] This might be partly the result of inadequate coverage of important job aspects, yet a major part of this effect might be caused by extra-job factors.^[39] It was claimed that personality factors explain 44-58 percent of the variance in JS.^[42,43] Other authors implicated work-family conflicts,^[42,43] demographic characteristics and health state or spiritual involvement.^[44,45]

The foregoing calls for the development of a new generation of JS instruments variably tailored to fit specified professional groups and sensitive to prevailing extra-job influences. These issues constitute an agenda for further qualitative and quantitative investigations

aiming to consolidate and upgrade of the present draft of our AJSQ.

CONCLUSIONS

The study successfully developed and validated a JS questionnaire suitable for academic staff in colleges and specialties. The following five attributes make AJSQ strongly commendable for the investigation of the state of JS in various academic settings. They are the explained variance of 60.3 percent, the overall 0.78 α -coefficient of internal consistency reliability, the invariably positive and significant inter-factor correlations, and the stability of the psychometric properties in separately analyzed faculty subgroups. Planned qualitative and quantitative investigations are envisaged to confirm and upgrade the obtained results.

Limitations

The total study population of 340 academic faculty was rather modest. The response rate of 72.9 percent, though higher than in most retrievable studies, might not have been unbiased. Self-reporting of 'satisfaction' is essentially a subjective appraisal amenable to extraneous influences rather than an independent objective judgment. Although, these reservations apply to all studies on JS, they should not be ignored when evaluating the observed findings.

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