



Work Factors and Commitment of Public Health Care Providers, in Oromiya Region, Ethiopia/2010: The Case of Equity and Extrinsic Factors

Girma Tenkolu Bune*, Solomon Hailemariam Tesfaye, Henok Tadesse Ayele, Tadesse Alemu Zerfu

Dilla University, Dilla, Ethiopia

Email: girmatenkolu1973@gmail.com, solomon0917242124@gmail.com, hennypho@yahoo.com, tadal2005@yahoo.com

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Abstract

Statistical report of the Ethiopian Federal Ministry of Health for the years 2006/7 shows that the number of health professionals in the country is insignificant compared to the demand of the population. The objective of this study is assessing the factors which reduce the commitment of the professional health workers and force them to flee away to other places. For that, a cross-sectional design with multi-stage stratified sampling technique on a total of 660 health workers was employed. Following, the reliability of our data collection tools was assessed and then, principal component analysis with varimax rotation to identify components of the composite extrinsic factors with higher variance was also done. After that, factor scores, correlations, and stepwise multiple linear regressions were calculated. A total of 573 participants with a response rate of 86.03% were included in the study. A two-factor solutions from the 10 items with Eigen values = 6.8 and 1.2 was extracted for extrinsic factors, which were called as extrinsic factor_1 & _2, and one factor of affective commitment_1 from 6 was also extracted. Lastly, extrinsic factors of work_1 & _2 ($B = 0.202$, 95% CI 0.152, 0.253, $p < 0.0001$ and $B = 0.231$, 95% CI 0.169, 0.292, $p < 0.0001$) respectively are considered as predictors of workers commitment. This implies that, the higher workers dissatisfaction with extrinsic factors of work, the lower their affective commitments will be. Therefore, policy makers in the ministry of health should revise their policy to bring some improvement on the extrinsic factors of work such as, salary, fringe benefits, and the incentive system of health care organizations by assessing the conditions of those factors in each health care organization.

Keywords

Work Factors, Public Health Care

*Corresponding author.

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1. Background

Economic, social, and political development can only be achieved by building and sustaining effective and productive organizations. This demands human resource management skills. Good human resource management results in attracting, retaining, and satisfying committed employees. Employees join and continue for an organization, as long as they are satisfied by the working conditions [1].

In order to satisfy the ever growing demand for professional health workers throughout the world, we need to add about four million more health workers to the system. The demand is most acute in Africa. This continent bears 24% of the world's burden of disease, and yet has only 3% of the global health work force. Of the total of 57 countries falling below the threshold density of 2.5 health workers per 1000 people, 36 are in Africa [2]. Therefore, it is widely acknowledged that the number of health workers in Africa is almost negligible compared to the demand and this will surely hinder the continent from achieving the MDGs [3].

The situation in Ethiopia is similar to that of the rest of the continent. Both the population of the country and the rate of attrition and migration of the health workers are growing rapidly. This demands a drastic action both to train more health workers and to retain the existing few. This in turn requires finding ways of increasing motivation, adding satisfaction, and raising commitment levels of the workers. Despite its importance, there is a dearth of studies on organizational commitment in the Ethiopia's health care organization. Moreover, little is known about the relationship between workers factors, job satisfaction, and organizational commitment in the country in general and in the study area in particular [4].

Therefore, we hope that the findings of this study will fill the existing knowledge gap regarding the relationship between satisfaction of the health workers and their output and retain. This will create awareness on the part of the health management in those health institutions about the most determinant variables that can influence the commitment level of the health workers. Furthermore, the study will add to the existing literatures and may serve as additional source for reference and it will also serve as a spring board for other researchers who want to conduct detailed research on the issue.

1.1. The Effect of Work Factors on Organizational Commitment

According to Kate and Masako, individual and organizational factors may affect the level of effective commitment [5]. Individual factors include factors such as personality, values orientation, education or age. Hence, **Figure 1** is a theoretical framework which was first adopted from relevant literature done before to explain the variables of affective commitment as well as use of Herzberg's two-factor theory and Equity theory to explain the variables of extrinsic factors and equity theory respectively and show the effect of those factors on health workers' affective commitment. Hertzberg found that, when people are satisfied with their jobs, they are concerned about the environment in which they work. Upon satisfaction of these hygiene or maintenance factors, Hertzberg contends, that workers can then be motivated by the content of work, such as opportunities for achievement, etc. Put somewhat differently, if hygiene factors are not fairly satisfied, people will tend not to be interested in the challenges of a more responsible job [6]. Moreover, the relationship of satisfaction with pay to organizational commitment is quite straightforward. To the extent the job allows for adequate financial compensation, a linear and positive relationship between satisfaction with pay and organizational commitment would be observed [7].

1.2. Equity Theory

Inequity has both structural and specific components. Structural inequity refers to a belief by workers that a general discrepancy exists between the amount of effort they commit to their work and the rewards offered by the organization. On the other hand, specific inequity refers to situations where employers reward to specific workers on the basis of criteria unrelated to the work. And also the specific workers on the basis of criteria unrelated to employee performance and productivity. Some of the particularistic criteria include blood relationship, friendship or gossip [8].

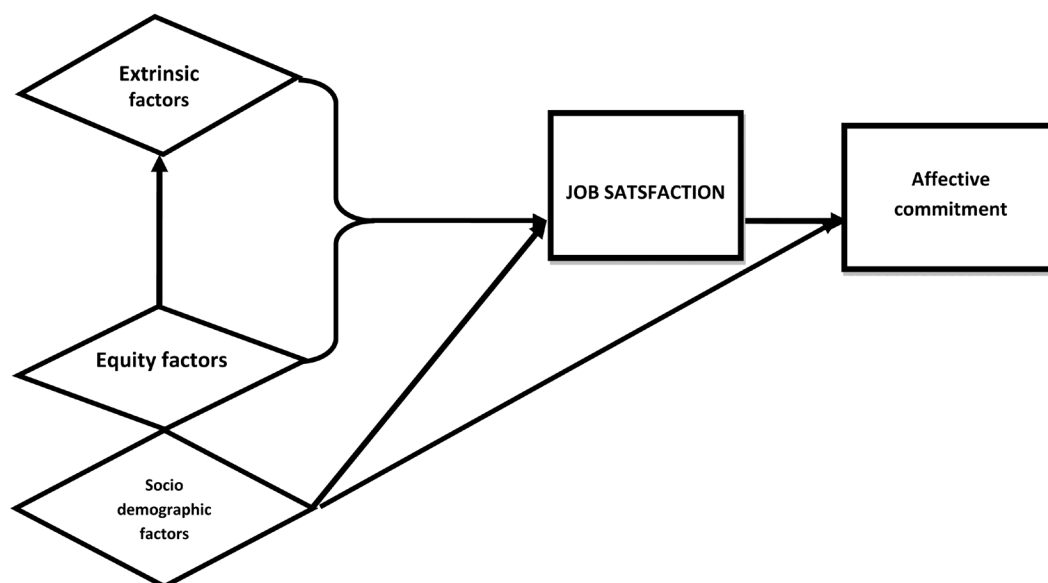


Figure 1. Conceptual framework of the study among government health workers in Eastern Showa and Adama special zones from March 1st to March 30th.

2. Methods

2.1. Study Area and Period

This study was conducted in Eastern Showa and Adama special zones. Eastern Showa zone is one of the zones of Oromiya region with 13 districts. Within these districts there are a total of 55 health centers. From these health centers, only 26 are providing service to the community. The rest 33 of the health centers are opened recently and have not yet started offering service. Together, there are 301 health posts that are located in the rural part of the zones. Within the 13 districts, there exist 1203 permanent health workers of various professions. This includes 44 health officers, 323 nurses, 33 pharmacy technicians, 40 laboratory technicians, 660 health extension workers and 58 other type of health workers. Adama special zone is also one of the zones in the region where the study was conducted. In this zone, there is only one public hospital called “Adama Teaching and Referral Hospital” and there are also four health centers of which only two are functional. In this zone, there exist 159 health workers with different professions. These are: 4 environmental technicians, 2 x-ray technician, 12 medical doctors, 11 health officers, 8 pharmacist/druggists, 20 laboratory technicians and 102 different nurses. The study was conducted from March 1st to 30th 2010.

2.2. Study Design

A facility based cross sectional study design was employed.

2.3. Source Population

All health workers working in the public health facilities of the study zones were considered as the source populations.

2.4. Study Population

Sampled health workers in the government health institutions who were fulfilling the inclusion criteria were included in the study.

2.5. Inclusion and Exclusion Criteria

Health workers who had been serving for 6 month or more in the government health institutions and who were permanent employees of the organizations were included in the study. A seriously ill and mentally disabled

health worker in the government health institutions were excluded from the study.

2.6. Sampling Technique

A multi-stage stratified random sampling technique was employed.

2.7. Sampling Procedure

First the health institutions which were found in both zones were listed with name and stratified with the criteria of level of service delivery. There were only 28 primary health care units (PHCU) and 1 hospital which provide service to the community. By considering resource available at hand, sixty percent of PHCU were selected by using simple random sampling technique. Therefore, in addition to Adama referral hospital, the study included 17 PHCUs that are named as Awash Melkassa, Cheffe Donsa, Adulala, Wonji Kuruftu, Shewoa Alemtena, Walnchity, Doni, Algea, Mojo, Maqi, Qoqa, Bote, Methara, Batu, Adama, Geda, Bulbula, health centers together with their 5 satellite health posts. All health workers who were employed in the above health institutions became the study subjects.

2.8. Sample Size Determination

The sample was calculated using single population proportion estimation formula with 5% level of significance assuming estimated proportion 50% for affective commitment, and margin of error 5%. Though the sample size required for the study was 384, the total number of health professionals found in the two zones was 1381 which is less than 10,000. Therefore, by using population correction formula, the total sample size required became 300. However, due to design effect of the study, the calculated final sample size was multiplied by two and adding anticipated non-response 10%, the final required sample size was $300 \times 2 = 600 + 60 = 660$.

2.9. Data Collection Methods and Procedure

A total of 8 data collectors and 4 supervisors were involved after two days of intensive training. The data collectors were grade 12 complete who can speak both “Oromiffa & Amharic” and had previously been involved in similar activities. A self-administered questionnaire was distributed to health workers who were included on the final sample at their respective post of service delivery. The instrument was adopted from literature done on previous study [1], adapted in to local context and then translated in to “Amharic” and back translated in to original version with the help of two language experts. It consists of 4 parts. The first is socio demographic part that consists of 11 questions which were planned to collect personal information related to individual identity like age, sex, marital status, professional class, residence (urban/rural), income and work experience. The second is extrinsic factors of work that measure the degree of worker dissatisfaction/no dissatisfaction level with 10 items. The third is perception of equity scale which measures employee’s perceptions on 5 items. These were prepared according to Tansik *et al.* (1980) [8]. The items were meant to assess workers perception regarding their health care manager whether or not the managers are treating workers with in an equitable/inequitable way. These variables were measured using Meyer and Allen’s affective Organizational Commitment Scale [9]. This scale contains six-item components to examine the degree of workers emotional attachment with their organizations, their intension to stay with the health care organization, willingness to exert high level of effort on behalf of the organization, and degree of belief in and acceptance of values and goals of the organization. All of the above questions were prepared on a Likert scale.

2.10. Reliability

Reliability was assessed before any analysis was held by calculating Cronbach’s coefficient alpha for all likert scale questions. Cronbach’s alpha for the extrinsic factors of work and affective commitment scale were computed and well exceeded 0.7 (Table 4, Annex) according to the criterion suggested by Nunnally, J.C. However, all items of equity factors of work were excluded from further analysis due to lack of reliability [10].

2.11. Variables

2.11.1. Dependent

Affective commitment.

2.11.2. Intermediate Variable

Job satisfaction.

2.11.3. Independent

Socio demographic factors, extrinsic factors of work that includes: salaries, promotion, job security, fringe benefits, opportunity for training, company policies, quality of technical supervision.

2.11.4. Equity Factors of Work

Structural inequity, specific inequity.

2.12. Operational Definition

2.12.1. Affective Commitment

Is defined as the health workers emotional attachment to their health care organization that, workers strongly identifies with the goals of the health care organization and desires to remain a part of the organization. To decide whether the workers are committed or not, mean was calculated and those mean scoreless or equal to 3, was categorized as low affective commitment, and those score above 3.01 as grouped high affective commitment.

2.12.2. Job Satisfaction

Is defend by the degree that how well the health care organization meet the work factors. To decide whether the workers are satisfied or not, the mean score of each of the work factors were summed up and divide by the number of factors used. Finally, those mean scores less or equal to 3, were categorized as low satisfactions and those score above 3.01 as grouped as highly satisfied.

2.12.3. Work Factors

Are motivational factors which affect ones satisfaction level with his/her job. These include the extrinsic and equity factors.

2.12.4. Extrinsic Factors of Work

Extrinsic factors of health work are factors as elements associated with the health work environment, such as: company policy and administration, supervision, relationship with supervision, work conditions, salaries, relationship with peers, personal life, relationship with staff, status, job security. To decide whether or not workers are less dissatisfied/highly dissatisfied with extrinsic factors of work, mean for each items were calculated, and for the result less or equal to 3, it was decided as not dissatisfied with extrinsic factors of work.

2.12.5. Equity Factors of Work

Will be defined in terms of defining in equity in two ways:

- 1) Structural inequity: refers to a belief by health workers that a general discrepancy exists between the amount of effort they commit to their work and the rewards offered by the health care organization. Decision was made by calculating mean and for the result less or equal to 3 it can be decided as workers dissatisfied with structural inequity.
- 2) Specific inequity: refers to situations where health care organizations managers reward specific workers on the basis of criteria unrelated to workers' performance and productivity with some of the particularistic criteria include blood relationship, friendship or gossip. Decision was made by calculating mean, results less or equal to 3 show workers' dissatisfaction with specific inequity.

2.13. Data Quality Management

Quality of data was maintained through careful design, translation, and retranslation, and pretesting of the instrument on 5% from the total sample size required on health workers found in health facilities other than the selected one. Moreover, it was also assured through provision of proper training for data collectors and supervisors, close supervision of data collectors and check up of the completeness of the questionnaires.

2.14. Data Analysis

All data were coded, entered, and analyzed using the statistical package for the Social Sciences (SPSS) version

16. The missing values were checked prior to further statistical analysis for its completeness and rejection was made for those questionnaire >20% missed items. Appropriate statistical procedures were used for exploring the data. Mean score as a measure of central tendency was used to show where the majority of responses concentrate after the reliability of all Likert scale questions being checked. Subsequently, chi-square test, Principal Component Analyses (PCAs) with Varimax rotation were used to determine the number of factors underlying the items that measure extrinsic factors of work and affective commitment to calculate factor. Finally, correlation and a stepwise multiple linear regressions was made for those significant variables to indentify predictors of health workers affective commitment.

2.15. Ethical Consideration

The proposal was submitted to the ethical committee of Jimma University for ethical review and clearance. After permission was obtained, support letters written by the University was submitted to all concerned bodies in the study area. Prior to the initiation of the data collection, written informed consent was obtained from health service organizations and verbal consent from the study subjects. Finally, the study participants were assured about the confidentiality of the information they provided and to maintain confidentiality, the names of the subjects were not registered on the questionnaire.

2.16. Dissemination Plan

After everything else, the finding was presented to Jimma University, College of Public Health and Medical Science (JUCPHMS). Subsequently, copy of the whole research were submitted to JUCPHMS and disseminated to all concerned stakeholders like: to the Oromia regional health bureau and to East Showa and Adama special zonal health office. At last, attempts will be made to present it on scientific conferences and publish it on scientific journals.

3. Result

3.1. Socio-Demographic Characteristics of the Respondents

A total of 573 respondents participated in the study giving a response rate of 86.03%. Of these participants, 417 (72.8%) were female with mean age of (28 + 6.76) with a range of (19 - 54) year. Majority of these respondents, 179 (31.2%), were from health posts, and 347 (60.6%) were married. There was different type of health professionals category participated in the study, nurses accounting to the largest proportion, 240 (41.9%). Additionally, these participants do have a diverse level of educational background; certificate, diploma, degree, and above degree which accounts 188 (32.8%), 245 (42.8%), 125 (21.8%) and 15 (2.6%), respectively. The average service year of the respondents was 5 (s.dev.5.8). Two hundred five (35.8%) participants have a monthly income of less than or equal to 667 birr and 37 (6.5%) participants had monthly income that ranges between 1637 - 2240 birr as shown in the (Table 1).

3.2. Extrinsic Factors of Work

The overall dissatisfaction level of the workers were assessed and 303 (52.9%) workers are less dissatisfied (mean score = 3.1 and SD = 1.2) (Table 2). They did, however, express greatest dissatisfaction in their salary (mean score = 2.5 and SD = 1.67), their fringe benefit (mean score = 2.7 and SD = 1.56), promotion and salary increment (mean score = 2.7 and SD = 1.50), the incentive systems (mean score = 2.8 and SD = 1.43) and opportunity for outside training (mean score = 2.9 and SD = 1.44) (Table 3).

3.3. Socio-Demographic Characteristics and Overall Job Satisfaction

Cross tabulation was made and a significant associations was observed in between overall job satisfaction and socio demographic characteristics like: type of health facility ($X^2 = 284.9$, p value < 0.001), location of health facility ($X^2 = 141.7$, p value < 0.001), professional category ($X^2 = 253.7$, p value < 0.001), sex ($X^2 = 53.1$, p value < 0.001), marital status ($X^2 = 56.8$, p value < 0.001), educational level at ($X^2 = 216.8$, p value < 0.001), income at ($X^2 = 227.4$, p value < 0.001), age ($X^2 = 126.1$, p value < 0.001) and service year of respondents at ($X^2 = 105.4$, p value < 0.001). Moreover, 210 (99.5) health post and 132 (66.7) of health centers and 275 (85.4)

Table 1. Socio-demographic characteristics of government health care provider in East Showa and Adama special zone, 2010.

S. No	Variable	No (%)	S. No	Variable	No (%)
	Age				
	Less than 20	7 (1.2)			
	21 - 24	207 (36.1)			
	30 - 34	183 (31.9)			
1	25 - 29	46 (8)	2	Sex	
	35 - 39	78 (13.7)		Male	156 (27.2)
	40 - 44	41 (7.2)		Female	417 (72.8)
	45 - 49	9 (1.6)		Total	573
	50 and above	2 (0.3)			
	Total	573			
	Marital status			Monthly income	
	Single	206 (36)		< or =667	205 (35.8)
3	Married	347 (60.6)	4	668 - 884	106 (18.5)
	Divorced	15 (2.6)		885 - 1636	169 (29.5)
	Widowed	5 (0.9)		1637 - 2240	37 (6.5)
	Total	573		> or =2241	56 (9.8)
				Total	573
	Location			Educational Level	
	Urban	251 (43.8)	6	Certificate	188 (32.8)
5	Rural	322 (56.2)		Diploma	245 (42.8)
	Total	573		Degree	125 (21.8)
				Above degree	15 (2.6)
				Total	573
	Service year			Professional category	
	1 - 5 year	415 (72.4)	8	Specialist doctor	15 (2.6)
	6 - 10 year	59 (10.3)		General practitioner	23 (4)
	11 - 15 year	56 (9.8)		Health officer	34 (5.9)
7	16 - 20 year	33 (5.8)		All type of nurse	240 (41.9)
	21 - 25 year	4 (0.7)		Pharmacist & druggist	33 (5.8)
	26 - 30 year	4 (0.7)		X-ray/radiology technicians	6 (1)
	30 - 35 year	2 (0.3)		Environmental health	4 (0.7)
	Total	573		Laboratory technicians	34 (5.4)
				Health extension worker	179 (31.2)
				Others	5 (0.9)
				Total	573
	Type of health facilities				
	Hospital	164 (28.6)			
9	Health centers	230 (40.1)			
	Health post	179 (31.2)			
	Total	573			

Table 2. Mean score reliability coefficients and level of factors for each scale of extrinsic factors of work and affective commitment, East Showa and Adama special zones, March 1st to 30th, 2010.

S. No	Factors	No of items	Cronbach's alpha value	Mean value	S.D	Level of factor	No (%)
1	Extrinsic factor of work scale	10	0.947	3.11	1.2	Highly dissatisfied	270 (47.1)
						Less dissatisfied	303 (52.9)
	Over all job satisfaction			3.51	0.93	Highly satisfied	355 (62)
						Less satisfied	196 (34.2)
2	Affective commitment	6	0.962	3.32	1.4	Highly committed	488 (85.2)
						Less committed	85 (14.8)

Table 3. Extrinsic factors of work among government health care providers in the Eastern Showa and Adama special zones in 2010.

S. No	Extrinsic factors of work	S. Disagre	Disagree	Indifferent	Agree	S. Agree	Mean	S.D
		No (%)	No (%)	No (%)	No (%)	No (%)		
1	I'm satisfied with the salary	244 (42.6%)	126 (22.0%)	10 (1.7%)	51 (8.9%)	142 (24.8%)	2.5	1.67
2	I'm satisfied with the fringe benefits	156 (27.1%)	197 (34.4%)	16 (2.8%)	64 (11.2%)	144 (24.6%)	2.7	1.56
3	I'm satisfied with the promotion and salary increment	163 (28.4%)	180 (31.4%)	31 (5.4%)	91 (15.9%)	108 (18.8%)	2.7	1.5
4	I'm satisfied with the job security	94 (16.4%)	105 (18.3%)	35 (6.1%)	199 (34.4%)	140 (24.4%)	3.3	1.44
5	I'm satisfied with the health management welfare consideration	94 (16.4%)	135 (23.6%)	45 (7.9%)	150 (26.2%)	149 (26%)	3.2	1.47
6	I'm satisfied with the incentive System	123 (21.5%)	184 (32.1%)	27 (4.7%)	146 (25.5%)	93 (16.2%)	2.8	1.43
7	I'm satisfied with the opportunity for outside training	131 (22.9%)	129 (22.5%)	26 (4.5%)	206 (36%)	81 (14.1%)	2.9	1.44
8	I'm satisfied with the opportunity for in-house training	68 (11.9%)	149 (26.0%)	25 (4.4%)	178 (31.1%)	153 (26.7%)	3.4	1.41
9	I'm satisfied with the post employment security	58 (10.1%)	96 (16.8%)	58 (10.1%)	177 (30.9%)	184 (32.1%)	3.6	1.35
10	I'm satisfied with the relationship with co-workers	49 (8.6%)	44 (7.7%)	7 (1.2%)	233 (40.7%)	240 (41.9%)	4	1.23

workers who reside in the rural part of the area were highly satisfied with their context of job, and 212 (99.1) health extension workers, 309 (74.1) female, 197 (56.8) married, 169 (82) single, 203 (99) and 26 (70.3) of workers who earn monthly income of <667 birr and in between 1636 - 2241 birr per month were highly satisfied with their job. Similarly, 18 (94.7) of health workers whose age was less than 20 and 312 (78.4) range between 21 - 30, 322 (65.8) who served the institutions 1 - 5 years were also highly satisfied with their job (**Table 4**).

3.4. Affective Commitment

Four hundred eighty eight (85%) workers of the two zones were highly committed to their health care organization with (mean score = 3.32, SD = 1.4) (**Table 2**). Similarly, they were also scored above the expected middle value for all constructs of affective commitments (**Table 5**).

3.5. Socio-Demographic Characteristics and Affective Commitment

Statistically significant associations were observed in between the mean overall commitment score and the socio-demographic characteristics of health workers; type of health facility ($X^2 = 375.7$, p value < 0.001), location of health facility ($X^2 = 256.6$, p value < 0.001), professional category ($X^2 = 261.6$, p value < 0.001), sex ($X^2 = 74.209$, p value < 0.001), marital status ($X^2 = 44.264$, p value < 0.001), educational level at ($X^2 = 241.2$, p value < 0.001), income at ($X^2 = 254.2$, p value < 0.001), age ($X^2 = 182.7$, p value < 0.001) and service year of respondents at ($X^2 = 152.5$, p value < 0.001). Therefore, 211 (100%) health post, 131 (66.2%) health center, 287 (89.1%) rural 214 (100%) health extension and 4 (100%) other type of health workers were highly committed. Similarly, 296 (71%) female, 179 (51.6%) married, 159 (77.2%) single, 217 (99.1%) certificate holder, 22 (59.5) who got 1637 - 2240 birr/ month, 63 (59.4%) who got less than 667 birr/ month, 303 (76.1%) whose age in be-

Table 4. Comparison of the overall job satisfaction and affective commitment level using the socio-demographic characteristics of government health care providers in Eastern Showa and Adama special zone, March 1st to March 30th, 2010.

S. No	Socio-demographic type	Satisfaction level				X ²	PV	Socio-demographic type	Commitment level			
		High (mean)	Low (mean)	X ²	PV				High (mean)	Low (mean)	X ²	PV
		NO (%)	NO (%)						NO (%)	NO (%)		
1	Type of health facility	Health post	210 (99.5)	1 (0.5)	287.9	0.000	Type of health facility	Health post	211 (100)	0	375.7	0.0001
		Health center	132 (66.7)	66 (33.3)				Health center	131 (66.2)	67 (33.8)		
		Hospital	35 (21.3)	129 (78.7)				Hospital	3 (1.8)	161 (98.2)		
2	Location of health facility	Rural	275 (85.4)	47 (14.6)	141.7	0.000	Location of health facility	Rural	287 (89.1)	35 (10.9)	256.6	0.0001
		Urban	102 (40.6)	149 (59.4)				Urban	58 (23.1)	193 (76.9)		
		Others	4 (100)	0				Others	4 (100)	0		
3	Profession category	Laboratory	25 (73.5)	9 (26.5)	253.8	0.000	Profession category	Laboratory	9 (26.5)	25 (73.5)	261.6	0.0001
		Environmental	2 (50)	2 (50)				Environmental	3 (75)	1 (25)		
		Health extension	212 (99.1)	2 (0.9)				Health extension	214 (100)	0		
		X-ray	1 (16.7)	5 (83.3)				X-ray	1 (16.7)	5 (83.3)		
		All pharmacy	18 (58.1)	13 (41.9)				All pharmacy	17 (54.8)	14 (45.2)		
		All nurse	91 (42.5)	123 (57.5)				All nurse	72 (33.6)	142 (66.4)		
		Health officers	19 (67.9)	9 (32.1)				Health officers	19 (67.9)	9 (32.1)		
		General practioners	3 (13)	20 (87)				General practioners	5 (21.7)	18 (78.3)		
		Specialist doctors	1 (13.3)	13 (86.7)				Specialist doctors	1 (6.7)	14 (93.3)		
4	Sex	Female	309 (74.1)	108 (25.9)	53.1	0.000	Sex	Female	296 (71)	121 (29)	74.209	0.0001
		Male	68 (43.6)	88 (56.4)				Male	49 (31.4)	107 (68.6)		
5	Marital status	Widowed	3 (60)	2 (40)	56.8	0.000	Marital status	Widowed	0 (100)	5 (100)	44.264	0.0001
		Divorced	8 (53.3)	7 (46.7)				Divorced	7 (46.7)	8 (53.3)		
		Married	197 (56.8)	150 (46.7)				Married	179 (51.6)	168 (48.4)		
6	Educational level	Single	169 (82)	37 (18)	216.8	0.000	Educational level	Single	159 (77.2)	47 (22.8)	241.2	0.0001
		Above degree	2 (13.3)	13 (86.7)				Above degree	0 (100)	15 (100)		
		Degree	45 (37.8)	74 (62.2)				Degree	32 (26.9)	87 (73.1)		
		Diploma	113 (51.4)	107 (48.6)				Diploma	96 (43.6)	124 (56.4)		
		Certificate	217 (99.1)	2 (0.9)			Certificate	217 (99.1)	2 (0.9)			

Continued

		>2241	12 (21.4)	44 (78.6)			>2241	7 (12.5)	49 (87.5)			
7	Income birr/Month	1637 - 2240	26 (70.3)	11 (29.7)	227.4	0.000	Income	1637 - 2240	22 (59.5)	15 (40.5)	254.2	0.0001
		668 - 884	67 (63.2)	39 (36.8)				668 - 884	49 (29)	120 (71)		
		<667	203 (99)	2 (1)				<667	63 (59.4)	43 (40.6)		
		>51	1 (50)	1 (50)				>51	0	2 (100)		
		41 - 50	16 (40)	24 (60)				41 - 50	7 (17.5)	33 (82.5)		
8	Age	31 - 40	30 (26.3)	84 (73.7)	126.1	0.000	Age	31 - 40	17 (14.9)	97 (85.1)	182.7	0.0000
		21 - 30	312 (78.4)	86 (21.6)				21 - 30	30376.1	95 (32.9)		
		<20	18 (94.7)	1 (5.3)				<20	18 (94.7)	1 (5.3)		
		>21	6 (60)	4 (40)				>21	5 (50)	5 (50)		
		16 - 20	9(27.3)	24 (72.7)				16 - 20	3 (9.1)	30 (9.9)		
9	Service year	11 - 15	12 (21.4)	44 (78.6)	105.4	0.000	Service year	11 - 15	3 (5.4)	53 (94.6)	152.5	0.000
		6 - 10	28 (47.5)	31 (52.5)				6 - 10	24 (40.7)	35 (59.3)		
		1 - 5	322 (65.8)	196 (34.2)				1 - 5	310 (74.7)	105 (38.8)		

Table 5. Affective commitment among government health care provider in the Eastern Showa and Adama special zone, 2010.

S. No	Work Factors	S. Disagre	Disagree	Indifferent	Agree	S. Agree	Mean	S.D
		No (%)	No (%)	No (%)	No (%)	No (%)		
1	I desired to stay in this organization	161 (28.1%)	113 (19.7%)	10 (1.7%)	72 (12.6%)	217 (37.9%)	3.1	1.72
2	I'm willingness to exert high levels of efforts on behalf of the organization;	70 (12.2%)	118 (29.6%)	30 (5.2%)	175 (30.5%)	180 (31.4%)	3.5	1.42
3	I accepting the values and goals of an organizations	105 (18.3%)	131 (22.9%)	23 (4%)	166 (29%)	148 (25.8%)	3.2	1.49
4	I have a feeling of emotionally attached	103 (18%)	115 (20.1%)	31 (5.4%)	178 (31.1%)	146 (25.5%)	3.3	1.47
5	I have feeling of bright future	110 (19.2%)	98 (17.1%)	24 (4.2%)	164 (28.66%)	177 (30.9%)	3.4	1.53
6	I have strong sense of belongingness	77 (13.4%)	123 (21.5%)	17 (3%)	164 (28.6%)	192 (33.5%)	3.5	1.47

tween 21 - 30, 18 (94.7%) whose age less than 20 and 310 (74.7%) of health workers who had service year of 1 - 5 were highly committed to their health care organizations (**Table 4**).

3.6. Factor Analysis

To decide whether or not factor analysis was useful for the data, the KMO and Bartlett's test were computed and the following results were obtained. Extrinsic factors of work and affective commitment were 0.759, 0.918 and 0.925 respectively which was greater than 0.5 that 75.9%, 91.8% and 92.5% of the variance in the variables was due to the underline factors. In addition, Bartlett's test of sphericity also done and the chi-square value become 1572.25, 15 df and p-value of 0.000 for intrinsic factors of work, 5874.49, 45 df and with p-value of 0.000 for

extrinsic factors of work and 4197, 15 df and p-value of 0.000. This indicated that, the variables were unrelated and therefore unsuitable for structure detection. Hence, factor analysis was useful for the data.

3.7. Extrinsic Factors of Work

The PCA in the **Table 6** provides a two factor solution from the 10 items in the initial analysis (Eigen values = 6.8 and 1.2). As the **Figure 2** shown for the scree test also suggested that, it was possible to extract up to two factors. The scree test showed a clear break between Eigen values 1 and 2 and 3. The break between 3 and 4 was not clear and it was then decided to analyse 1 and 2 factor that explains 79.6% of the variability in the original 10 variables. Following extraction, factors were rotated so as to make interpretations easier and the rotated component matrix was obtained to determine what each of the components represents. The first factor called as extrinsic factors_1 consisted of items (salary, fringe benefit, the incentive system, promotion and salary) which had a common interpretation of how much workers were dissatisfied/not dissatisfied with the financial incentive systems of an organizations, whereas items (post employment security and Relationship with co-workers) loading on the second factor called for extrinsic factors of work_2, also described workers dissatisfaction/no dissatisfaction level with non financial incentive system of an organization.

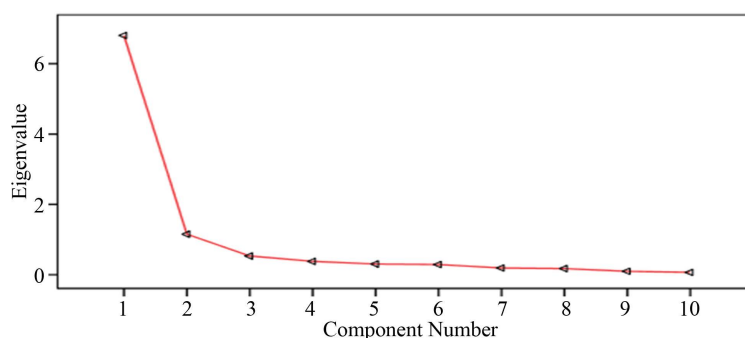


Figure 2. The scree test of extrinsic factors of work items Eastern Showa and Adama special zones, March 1st to March 30th, 2010 Gc.

Table 6. Varimax rotated factor loadings for extrinsic factors of work items Eastern Showa and Adama special zones, March 1st to 30th, 2010.

S. No	Items	Factor loading	
		1	2
Q301	Salary	0.928	0.190
Q302	Fringe benefits	0.905	0.244
Q303	Promotion and salary increment	0.906	0.255
Q304	Job security	0.581	0.561
Q305	Health management welfare consideration	0.578	0.604
Q306	The incentive system	0.833	0.373
Q307	Opportunity for outside training	0.731	0.491
Q308	Opportunity for in-house training	0.552	0.698
Q309	Post employment security	0.339	0.822
Q310	Relationship with co-workers	0.065	0.864

Extraction method: principal component analysis; rotation methods: varimax with Kaiser normalizations rotation converged in 3 item rations.

3.8. Affective Commitment

As the results presented in the **Table 7** shown, after PCA was made, one factor which is called as affective commitment_1 was extracted from the 6 items concerning affective commitment of health workers. In addition, the **Figure 3** in annex for the scree test also suggested that, it was possible to extract up to one factor. This factor accounted for 84.54% of the variance in the score (Eigen values = 5.1) and consisted all of the constructs of Meyer and Allen's affective commitment which had a common interpretation of how much workers were committed to their health care organizations.

3.9. The Relationship between Health Professionals Characteristics, Extrinsic Factors of Work and Affective Commitment

Findings from the correlations test among socio demographic variables and affective commitment_1 indicates, there was a strong positive correlation between type of health facility ($r = 0.84$, $p < 0.01$), location of health facility ($r = 0.73$, $p < 0.01$), with affective commitment_1 whereas, professional category ($r = 0.44$, $p < 0.01$), and sex ($r = 0.40$, $p < 0.01$) have a moderate positive association with health workers affective commitment_1. On the other hand, age ($r = -0.62$, and $p < 0.01$), educational level ($r = -0.62$, $p < 0.01$), and income ($r = -0.65$, $p < 0.01$) have a strong negative association with affective commitment_1 that represents all the constructs of Meyer and Allen's affective commitment. Similarly, service year ($r = -0.52$, $p < 0.01$), and marital status ($r = -0.31$, $p < 0.01$), have a moderate and weak correlation with workers affective commitment_1 respectively (**Table 6**). There was a strong positive correlation between extrinsic factors of work_1 with affective commitment_1 ($r = 0.61$, $p < 0.01$) and a moderate positive association between extrinsic factors of work_2 and affective commitment_1 ($r = 0.52$, $p < 0.01$). This indicates that, the lower the dissatisfaction of workers with extrinsic factors of work, the higher will be theirs affective commitment level (**Table 8**).

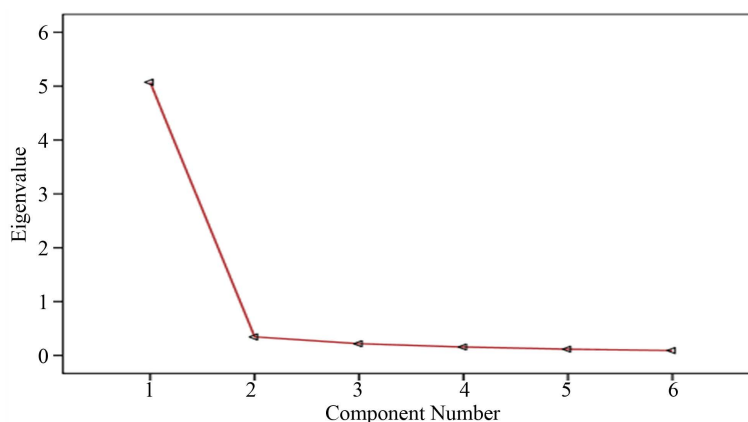


Figure 3. The scree test affective commitment items Eastern Showa and Adama special zones, March 1st to March 30th, 2010.

Table 7. Factor loadings affective commitment items, Eastern Showa and Adama special zones, February 1st to March 30th, 2010.

S. No	Items	Factor
Q501	Intention to stay	0.877
Q502	Willingness to exert high levels of efforts on behalf of the organization;	0.884
Q503	Accepting the values and goals of an organizations	0.932
Q504	Feeling of emotionally attached	0.955
Q505	Feeling of bright future	0.938
Q506	Strong sense of belongingness	0.929

Extraction method: principal component analysis; a.1 components extracte.

Table 8. Pearson's correlation between socio-demographic factors, all work factors and affective commitment using factor score for the study done on government health workers in Eastern Showa and Adama special zones, 2010.

S. No	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1	Type of HF	1											
2	Location of HF	0.77**	1										
3	Profession	0.58**	0.39**	1									
4	Age	-0.67**	-0.60**	-0.39**	1								
5	Sex	0.45**	0.35**	0.22**	-0.24**	1							
6	Marital status	-0.33**	-0.30**	-0.19**	0.50**	0.01	1						
7	Educational level	-0.76**	-0.57**	-0.66**	0.48**	-0.47**	0.16**	1					
8	Service year	-0.55**	-0.49**	-0.33**	0.82**	-0.10*	0.40**	0.39**	1				
9	Income	0.73**	0.62**	0.60**	0.60**	0.47**	0.30**	0.76**	0.46**	1			
10	Extrinsic factors of work_1	0.66**	0.57**	0.39**	0.40**	0.32**	0.24**	0.56**	0.41**	0.51**	1		
11	Extrinsic factors of work_2	0.44**	0.34**	0.29**	-0.40**	0.28**	-0.13**	-0.37**	-0.30**	-0.40**	----	1	0.0
12	Affective commitment_1	0.84**	0.73**	0.44**	-0.62**	0.40**	-0.31**	-0.62**	-0.52**	-0.65**	0.62**	0.52**	1

**Correlation is significant at 0.01 levels; *Correlation is significant at 0.05 levels.

3.10. Predictors of Health Workers Affective Commitment

A stepwise multiple linear regression showed that, there exist statistically significant relation between commitment_1 with different independent variables ($F = 58.164$, $p < 0.0001$) and the overall model fit (adjusted $R^2 = 81.1$), and the following variables were identified as predictors of workers affective commitment. Being working in hospital decrease their affective commitment ($B = -1.165$, 95% CI $-1.27, -1.052$, $p < 0.0001$) as compared to those working in health post. Similarly, those health workers who were general practitioners ($B = 0.305$, 95% CI $0.136, 0.474$, $p < 0.0001$), health extension ($B = 0.437$, 95% CI $0.308, 0.566$, $p < 0.0001$) and other type of health professionals ($B = 0.697$, 95% CI $0.259, 1.134$, $p = 0.002$) were committed as compared to all type of nurses. Additionally, those health workers who earn 885 - 1636 birr/month were more committed by ($B = 0.155$, 95% CI $0.054, 0.257$, $p = 0.003$) as compared with those below 667 birr/month (Table 9). Finally, the model explains that, as there are a decrease in dissatisfaction level of health workers with extrinsic factors of work_1 that representing (salary, the incentive system, opportunity for outside training, promotion and salary increment) and extrinsic factors of work _2 (post employment security and relationship with co-workers), leads to an increase health workers commitment level by ($B = 0.202$, 95% CI $0.152, 0.253$, $p < 0.0001$), and ($B = 0.231$, 95% CI $0.169, 0.292$, $p < 0.0001$) respectively.

4. Discussions

The study attempted to shed light on health workers' affective commitment which is an important issue for health care organizations today. Meyer and Allen define affective commitment as employees' perceptions of their emotional attachment to their organization and its goals [9]. Similarly, the result revealed that 85.2% of health workers are committed to their health care organizations (3.32 ± 1.4), 62% are satisfied with overall content and context of work (mean score = 3.51 and SD = 0.93). This finding is consistent with a cross-sectional study done among health workers in Iran hospitals [11], where the mean score of affective commitment is (mean score = 3.86 and SD = 1.12). Again this finding was also supported with an exploratory study done in Georgia (mean score = 3.26) and Jordan (mean score = 3.48) hospitals [12].

Cross tabulation was made in between health workers' socio demographic characteristics and their affective commitment level to depict the presence and absences of association. The result pointed out that there was a significant difference between health workers affective commitment to their health care organizations and loca-

Table 9. Multiple regression results with affective commitment as the outcome variable and socio demographic factors and work factors as predictors, for the study done on government health workers in Eastern Showa and Adama special zones, 2010.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	B			Lower Bound	Upper Bound
(Constant)	0.095	0.038		2.472	0.014	0.019	0.170
Hospitals	-1.165	0.057	-0.527	20.329	0.000	-1.277	-1.052
General practioners	0.305	0.086	0.076	3.549	0.000	0.136	0.474
Health extension	0.437	0.066	0.213	6.642	0.000	0.308	0.566
Others	0.697	0.223	0.058	3.127	0.002	0.259	1.134
Extrinsic factor of work_1	0.202	0.026	0.202	7.938	0.000	0.152	0.253
Extrinsic factor of work_2	0.231	0.031	0.231	7.367	0.000	0.169	0.292
	0.076	0.025	0.076	3.037	0.002	0.027	0.125
Income b/n 885-1636	0.155	0.052	0.071	3.000	0.003	0.054	0.257
2	R² = 81.13, Adjusted R² = 81.1, F = 58.164, p-value = 0.000^a						

Predictors: (constant), hospitals, professions general practioners health extension, others type of professions, extrinsic factor of work factor_1, extrinsic factor of work factor_2, income b/n 885-1636. **Dependent variables:** affective commitment_1.

tion of health facility, age, monthly income, service year, educational level, marital status, sex and professions (p, 0.000). This finding goes in line with a study done in Iran [11] in which a significant difference was obtained between employees' organizational commitment and their marital status, age and years of work experiences, and salaries received (p, 0.03).

In addition, the model from a stepwise multiple linear regressions shows that the socio demographic and extrinsic factors of work, which explains 81.13% variance in health workers affective commitment. When this result was compared with similar study done in Iran [11], the simultaneous regression model indicates that organizational, social, job, and individual factors explained 44.7% of the variance in employees' organizational commitment. The difference on the two models may be due to the fact that the existence of difference on the socio demographic characteristic of respondents in both countries might have contributed for the model to be inflated. Moreover, adding of a few predictor variables from the Herzberg's theory used in this study and the discrepancy on ways of data analysis may be the possible explanations.

According to Herzberg theory, the variables for intrinsic factors are the primary causes of satisfaction, but the hygiene factors cannot. Rather, the hygiene factors if taken care of can only play a preventative role [13]. As the finding shows, workers of the two zones were less dissatisfied with extrinsic factors of work of which relationship with co-workers had the dominant mean value (4 + 1.23) whereas, salary (2.7 + 1.56), the incentive system (2.5 + 1.67) and fringe benefit (2.8 + 1.43) were scored less. Also, this finding were in line with, a cross sectional study done on health workers in Egypt, which shows the total mean score percent of job satisfaction was (56.8 ± 17.5) and relationship with colleagues (81.3 ± 19.6) represented the domain with highest percentage of satisfaction, while the domain of salaries/incentives represented the lowest satisfaction (16.2 ± 14.7) [14]. This finding again supported with an exploratory study done in Georgia [12] with the mean score of 3.23 for extrinsic factors of work as well 3.0 for overall job satisfaction level. Similarly, the study done in Jordan [12] also indicated that the mean score 3.04 for extrinsic factors of work and 2.37 for overall job satisfaction level. In line with the above, findings from the second wave of a Cohort Study of Young Ethiopian Doctors and Nurses [15] shows that, about 80% of the health workers are unsatisfied (20%) or completely unsatisfied (about 60%) with their salary. This finding revealed that salary could the major factor to affect workers commitment levels.

As it has been consistently reported by studies, there exists a positive association between job satisfaction and organizational commitment [15] [16]. Comparable with this, this study also confirmed the existence of a positive association in between health workers affective commitment and satisfaction with extrinsic factors of work.

However, the present study had a number of strengths, like use of theories that served as a standard to discuss the finding, large area coverage and use of strong analysis methods. It had also some limitations due to the fact that the study was conducted after the application of the new strategies called BPR (Business Processing Reengineering) and during the time of election, that may induce social desirability bias. Moreover, this study did not consider other health workers who work in NGOs of the two zones that could be the major problem of external validity.

5. Conclusion

Health workers were less dissatisfied with overall extrinsic factors of work but highly dissatisfied with their monthly salary, fringe benefit, the incentive system, and promotion and salary increments. The higher workers dissatisfaction with extrinsic factors of work_1 which represents monthly salary, the incentive system, opportunity for outside training, promotion and salary increment and extrinsic factors of work_2 that represents post employment security and relationship with co-workers, the lower will be their affective commitments. Moreover, working in hospitals does have a negative effect on commitments as compared to health post workers. Being general practitioners, health extension and other professionals (community health agent) do have a positive effect on commitment level professionals as compared to all type of nurses, and earning a monthly income between 885 - 1636 birr positively increases the commitment level as compared to those who earn less than 667 birr/month. Therefore, policy makers in the ministry of health should revise their policy to bring some improvement on the extrinsic factors of work, such as, salary, fringe benefits, and the incentives system, of health care organizations by assessing the conditions of those factors in each health care organization. Plus, interested researchers should use the current finding and further explore the underline reasons for why working in hospitals decreases workers commitment as compared with those working in the PHCU.

Competing Interests

All the authors declared that, they have no any committing interest.

Author's Contribution

GT generate the topic, write the proposal, organize in data collection, did the analysis and prepare the manuscript. SH took part in data analysis and in manuscript writing. HA and TA participated in manuscript writing.

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