

Determinants of Employee Satisfaction (ES) in Public Health Service Organizations (PHSO) in Eastern Province of Sri Lanka: A Pilot Study

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Abstract

Employee satisfaction in public health service organizations is meeting the expectations of employees with respect to psychological, structural and environmental factors. Many authors have studied employee satisfaction in different context in different organizations. This study tries to determine factors affecting employee satisfaction in PHSOs; to know the reliability and validity of items & factors and to create a mathematical equation model. Data are collected in both secondary and primary sources. Researcher collected 41 from employee satisfaction in public health service organisations' performance during the period of 2012 to 1996. Primary data have been collected using questionnaire. Since this is a pilot study researcher selected only 100 hospital employees out of 3 selected government hospitals in Addalaichenai Divisional Secretariat of Ampara District. Collected questionnaires have been analysed by a factor analysis and regression analysis. Results found that environmental, psychological and structural factors have been identified as determinants of employee satisfaction in public health service organizations. Values of Cronbach alpha for items in environmental factor, psychological factor and structural factor are 0.961, 0.807 and 0.928. It shows the existence of high reliability among items of these factors. KMO is used to know the statistical validity of factors. In this study, values of KMO environmental factor, psychological factor and structural factor are 0.750, 0.598 and 0.698 respectively. Log log model is the best fitted model than linear models. In terms of this model, environmental, psychological and structural factor explain around 93% of total variation for employee satisfaction.

Keywords: Employee satisfaction, Public Health Service Organizations, Eastern Province, Sri Lanka.

1. Introduction

Eastern Province (EP) of Sri Lanka consists of three cardinal districts such as Ampara, Batticaloa and Trincomalee. Public health service organisations (PHSO) are all sorts of government medical institutions (GMIs) that are government hospitals (GHs). Heathfield (2012) defines employee satisfaction is one way to assess whether employees are happy at work. Employee satisfaction is often measured by surveys. Employee satisfaction is important to employers. He stated that factors contributing to employee satisfaction include treating employees with respect, providing regular employee recognition, empowering employees, offering above industry-average benefits and compensation, providing employee perks and company activities, and positive management within a success framework of goals, measurements, and expectations. Job satisfaction experienced by employees will include the people to give their best to the organization (Velnampy, 2008). Employee satisfaction is the satisfaction of hospital employees or health personnel (HP) or health staff (HS). Hospital employees can be satisfied by way of environmental, psychological and social needs. The population of Sri Lanka in 2003 was estimated at 19.25 million. The annual population growth rate was reduced to its current 1.3% level with an increase in Life Expectancy at birth. Sri Lanka is aging rapidly (Department of Census & Statistics, 2001). It is projected that by 2020, 20% of Sri Lanka's population will be 60 years of age or over, while the proportion in the young age group is decreasing. Hospital employees should be satisfied for making performance of PHSOs in Sri Lanka. Sri Lanka's progress in health and social development can be seen in the vital health outcomes. The Infant Mortality Rate (IMR) has declined steadily since the beginning of the last century (11.2 per 1,000 live births – 2003) while the Maternal Mortality Ratio (MMR) steadily declined until 1992 but remained stagnant thereafter (47 per 100,000 live births – 2001). However, there was significant district variation in IMR and MMR. Batticaloa and Trincomalee of Eastern Province were among the top ten in maternal deaths in Island. Batticaloa, Trincomalee and Ampara of Eastern Province had 116.1, 60.3 and 31.8 maternal deaths per 100, 000 live births during the past (World Health Organization, 2006). In order to control these

health and social conditions, performance of hospitals should be increased. When hospital staff are satisfied it is possible to get high performance of government hospitals.

2. Statement of Problem

Research problem is stated by empirical review of literatures. Previous studies related to employee satisfaction were reviewed. Choi, Flynn and Aiken (2012) studied about nursing practice environment and registered nurses' job satisfaction in nursing homes. They concluded that a supportive practice environment is significantly associated with higher job satisfaction among RNs working in nursing homes. Unlike other nursing home characteristics, specific dimensions of the nursing practice environment should be modified through administrative actions to enhance RN job satisfaction. Grissom, Nicholson-Crotty and Keiser (2012) studied about whether boss's gender is important for explaining job satisfaction and employee turnover in the public sector. They also found important effects of gender support which appear to be driven by lower satisfaction and greater turnover among male teachers with female principals. Wickramasinghe and Wickramasinghe (2012) studied the effects of perceived organisational support on participation in decision making (PDM), affective commitment and job satisfaction in lean production in Sri Lanka. It was found that POS moderates the relationship between PDM and affective commitment, and PDM and job satisfaction. Samaranyake and Gamage (2012) studied about employee perception towards electronic monitoring at work place and its impact on job satisfaction of software professionals in Sri Lanka. The findings of this research suggested that IT security policy making in the software development organizations in Sri Lanka and in similar economics, with a special emphasis on the job satisfaction of their employees, which is the most valuable asset of the organization. These studies have been carried out in different contexts, in different countries and in different periods. Findings of these studies are also different. Factors identified these studies also different. Therefore this study is undertaken in the performance of public health service organization specially, in government hospitals in Eastern Province of Sri Lanka during the period of 2011 to 2014.

2.1 Research questions and objectives

Empirical review of literatures of previous studies confirms that research issue exists on determinants of employee satisfaction in public health service organization i.e. government hospitals. This main research issue is cascaded into three sub research questions. They are; first is what factors influence employee satisfaction in public health service organizations. Second is whether these items & factors are reliable and valid?. Third is it possible to create a mathematical equation model. These three research questions are converted into research objectives. They are; first is to determine factors affecting employee satisfaction in PHSOs. Second is to know the reliability and validity of items & factors. Third is to create a mathematical equation model.

3. Significances of the research

This study signifies in various ways. First, Employee satisfaction is important to employees for organizations for several reasons. First, employee satisfaction plays vital role in health organizations. Second, it creates employee satisfaction and loyal customers. For instance, Costen and Salazar (2011) studied the impact of training and development on employee job satisfaction, loyalty, and intent to stay in the lodging industry in the United States. They concluded that opportunity for new skills is important to employees for satisfying them in their job. Satisfaction leads to loyalty for organizations. Third, it provides job enrichment, employee satisfaction, motivation, job involvement and increased performance. Fourth, it promotes job characteristics, satisfaction and motivation. Fifth, employee satisfaction generates committed employees and reduced employee turnover. For example, Previous studies of employee satisfaction are reviewed. Han and Jekel (2011) concluded that nurse managers can try to cultivate a good relationship with the nurses for enhancing nurses' job satisfaction and in turn lower their turnover intentions. Employees are satisfied they are in turn contribute to the higher performance of government hospitals. Government hospitals may in turn render better services to patients continuously. Sixth, there are few articles in employee satisfaction specially in government hospitals in Sri Lanka. This research is in the context of employee satisfaction in Government Medical Institutes in Eastern Province of Sri Lanka. Thus, this research fills the literature gap.

4. Review of Literature

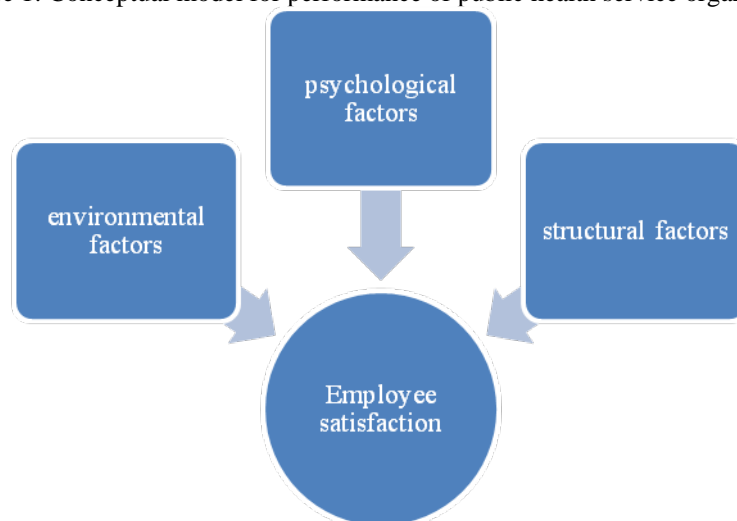
Previous studies of employee satisfaction are reviewed. Han and Jekel (2011) studied the mediating role of job satisfaction between leader-member exchange and turnover intentions. This is a cross-sectional survey study. Data were collected in a US hospital. Results showed that higher leader-member exchange was associated with lower turnover intentions ($\beta = -0.41, P < 0.001$). Leader-member exchange was positively related to one's job satisfaction ($\beta = 0.50, P < 0.001$). Job satisfaction was negatively related to turnover intentions ($\beta = -0.64, P < 0.001$). When leader-member exchange and job satisfaction were both controlled for, the link between leader-member exchange and turnover intentions was no longer significant ($\beta = -0.12, P > 0.05$). It was concluded that job satisfaction mediates the link between leader-member exchange and turnover intentions. Hann, Reeves and

Sibbald (2011) studied the relationships between job satisfaction, intentions to leave family practice and actually leaving among family physicians in England. A national survey of family physicians working in the national health service (NHS) of England in 2001 revealed that 1/10 under 50 years of age were intending to leave direct patient care within 5 years, and that the principal predictor of their intention to leave was job satisfaction. Results revealed that of the 1174 family physicians studied, 194 (16.5%) had left direct patient care within 5 years. Multivariate regression showed that job satisfaction predicted a physician's intention to leave direct patient care and that intention to leave predicted actually leaving. Logically, job satisfaction should then have predicted actual leaving. However, their findings suggest that this is only partly true. It is concluded that although higher levels of job 'dissatisfaction' were associated with an increased likelihood of leaving, higher levels of job 'satisfaction' did not prevent leaving. Wickramasinghe and Gamage (2011) studied about high-involvement work practices, quality results, and the role of HR function. It was an exploratory study of manufacturing firms in Sri Lanka. Correlation and regression were used for the data analysis. Findings showed that team work, communication, performance evaluation, empowerment, rewards and recognition, and skill development practices significantly positively correlate with quality results. Sledge, Miles, Maartje and Sambeek (2011) studied about a comparison of employee job satisfaction in the service industry in the United States. This research incorporates Hackman and Oldham's Job Diagnostic Survey and Hofstede's dimensions of culture in a study of employees in the global services industry. The job diagnostic survey (JDS) is an instrument designed to measure variables such as objective job characteristics, particularly the degree to which jobs are designed so that they enhance work motivation and job satisfaction; personnel affective reactions of individuals to their jobs and work setting; the readiness of individuals to respond positively to "enriched" jobs--jobs with high potential for generating internal work motivation. Hofstede five dimensions are power distance, uncertainty avoidance, masculinity vs. femininity, individualism vs. collectivism and long vs. short term orientation. Literature review identified factors for performance of public health service organization. Factors for employee satisfaction in public health service organizations environmental, psychological and structural factors. Velnampy(2006) in his study revealed that incentives have a significant effect on employees' motivation.

5. Conceptual model

A conceptual model has been created by researcher using identified factors for hospital employee satisfaction. This model can be justified by several reasons. This model is a result of detailed and thorough literature review. Factors and measures have been taken from well-known, widely used and generally accepted models. Employee satisfaction is based on content and process theories of motivation. This conceptual model is shown in figure 1.

Figure 1: Conceptual model for performance of public health service organisation



6. Operationalisation of study

Operationalisation for employee satisfaction in public health service organizations is shown in table 1.

Table 1: Operationalisation for employee satisfaction

Concept	Factors	Measures	Number of measures
Employee satisfaction	Environmental factors	Early opportunity to job, work environment, working environment, social environment and participative environment	05
	Psychological factors	Positive attitude, negative attitude, assertiveness, agreeableness and workload	05
	Structural factors	Work autonomy, work stress, supervisory/ career support, job security, realization (self-actualisation), pay, promotional chances, distributive justice and flexi-time	09

(Source: Literature review)

7. Methodology

Data collection is made using secondary source and primary source. Secondary source was used for literature review. Primary data have been collected using questionnaire.

7.1 Data collection

Data are collected in both secondary and primary sources. Literature review was carried out using secondary data collection. Researcher collected 41 from employee satisfaction in public health service organisations' performance. Secondary source of data collection was made to collect articles. Collected articles were from full text journal articles (indexed & refereed), extended abstracts & abstracts (indexed & refereed), books (reviewed) and Internet access. Corporate performance articles were from during the period of 2012 to 1996. Data have been collected from primary source using questionnaire as an instrument. Questionnaire was prepared in English language first. Then, it is translated into Tamil. Research translated questionnaire from English version to Tamil version on his own with the assistance of the supervisor. Pilot study has been conducted to test the questionnaire in selected government hospitals in Addalaichenai Divisional Secretariat, Ampara District, Eastern Province of Sri Lanka.

7.2 Sampling units (SUs)

Primary sampling units (PSUs) are all government hospital units in all three Districts of Eastern Province. There 65 government hospitals in Eastern Province. Ampara, Batticaloa and Trincomalee districts consist of 29, 18 and 18 government hospitals respectively. Sample size has been determined using the sample size formula. Primary sampling units (PSUs) are research sites i.e. government hospitals where research is carried out. Researcher wished to know how many government hospitals have to be taken from these 65 government hospitals as primary sampling units. He estimated mean number of government hospital units more precisely so that the estimate will be within ± 2 government hospitals of mean number of true population of government hospitals. The following formula is used to calculate sample size of government hospital units.

$$n = \frac{\sigma^2 * z^2}{D^2} \dots \dots \dots \text{formula (1)}$$

D^2 (Source: Malhorta, 2006). Where; σ^2 = variance of the population number of hospitals. z^2 = z value associated with 95 % of the confidence level. Associated z value is 1.96. Of the 65 government hospitals, 39 government hospitals have to be taken as sample size for the study in Eastern Province. 17, 11 and 11 government hospitals have to be taken in Ampara district, Batticaloa district and Trincomalee district of Eastern Province respectively. Pilot study should be undertaken with a limited sample size. Since this is a pilot study researcher selected only 3 government hospitals in Addalaichenai Divisional Secretariat of Ampara District. Secondary sampling units are government hospital staff/ health employees who are working in these 3 government hospitals. There are 31420 health personnel in all three districts of Eastern Province. Ampara district, Batticaloa district and Trincomalee district consist of 19194, 7535 and 4691 hospital staff respectively. Researcher wanted to estimate mean number of health personnel more precisely so that the estimate will be within ± 275 health personnel of mean number of true population of hospital health personnel. The following formula is used to calculate sample size of hospital health personnel.

$$n = \frac{\sigma^2 * z^2}{D^2} \dots \dots \dots \text{formula (2)}$$

D^2 Where; σ^2 = variance of the population number of health personnel. z^2 = z value associated with 95 % of the confidence level. Associated z value is 1.96. Of the 31420 health personnel, 3000 hospital health personnel have to be taken as sample size of SSUs of government hospital employees for the study. 1832, 720 and 448 hospital employees have to be taken as sample size in Ampara district, Batticaloa district and Trincomalee district of Eastern Province respectively. Pilot study should be undertaken with a limited sample

size. Since this is a pilot study researcher selected only 100 hospital employees out of 3 selected government hospitals in Addalaichenai Divisional Secretariat of Ampara District.

7.3 Data source, period and analysis

Primary source of data collection have been made to collect questionnaires from hospital employees. A questionnaire has been prepared using identified measures above. Questionnaire consists of two sections such as personal & demographic variables of employees and employee satisfaction in PHSOs. Instrument- questionnaire is scaled in 5 point likert- scale. Employee satisfaction in public health service organizations are scaled in agreement scale ranging from 5 to 1. Collected questionnaires have been cross checked and used as input for processing in SPSS. Data have been collected during the period of first quarter of 2013. Collected questionnaires have been analysed by a factor analysis and regression analysis.

8. Results and discussion of findings

8.1 Reliability and validity

Cronbach alpha is most widely used method for checking the reliability of scale. It may be mentioned that its value varies from 0 to 1 but, satisfactory value is required to be more than 0.6 for the scale to be reliable (Malhorta, 2002; Cronbach, 1951). In this study, researcher use Cronbach alpha scale as a measure of reliability. Environmental factor is comprised of opportunity to job, work environment, working environment, social environment and participative environment. Cronbach alphas for these social and participative environments were also high. But, these two were not taken into grant due to communality value of less than 0.6. Values of Cronbach alpha for opportunity to job, work environment and working environment are 0.961. Psychological factor is composed of positive attitude, negative attitude, assertiveness, agreeableness and workload. Cronbach alpha for these 11 items is 0.807. Structural factor is composed of work autonomy, job stress, supervisory or career support, job security, realization or self-actualisation, distributive justice, promotional chances, pay and flexi-time. Cronbach alphas for Job stress and supervisory or career support were also high. But, these two were not taken into grant due to communality value of less than 0.6. Cronbach alpha for these 7 items is 0.928. Reliability statistics are shown in table 2.

Table 2: Reliability statistics

Factors	Value of Cronbach's Alpha	N of items	N of items
Environment	0.807	5	3
Psychology	.807	5	5
Learning and growth	.651	9	7

8.2 Communalities and testing the sufficiency of sample size

Researcher tested collected data for appropriateness for factor analysis. Appropriateness of factor analysis is dependent upon the sample size. In this connection, MacCallum, Windaman, Zhang and Hong (1999) have shown that the minimum sample size depends upon other aspects of the design of the study. According to them, as communalities become lower the importance of sample size increases. They have advocated that if all communalities are above 0.6 relatively small samples (less than 100) may be perfectly appropriate. In this regard, communalities for opportunity to job (0.896), work environment (0.956) and working environment (0.946) are more than 0.6. Since communalities for social and participative environments were less than 0.6 therefore, these two were not taken into grant. Communalities for positive attitude (.845), negative attitude (.936), assertiveness (.946), agreeableness (.852) and workload (.912) are greater than 0.6. Communalities for work autonomy (.925), job security (.633), realisation or self-actualisation (.848), distributive justice (.862), promotional chances (.945), pay (.845) and flexi-time (.959) are greater than 0.6. Communalities are shown in table 3.

Table 3: Communalities

Environmental factor	Values of Communality (Extraction)	Psychological factor	Values of Communality (Extraction)	Structural factor	Values of Communality (Extraction)
opportunity to job	0.896	Positive attitude	.845	Work autonomy	.925
work environment	0.956	Negative attitude	.936	Job security	.633
working environment	0.946	Assertiveness	.946	Realisation or self-actualisation	.848
		Agreeableness	.852	Distributive justice	.862
		Workload	.912	Promotional chances	.945
				Pay	.845
				Flexi-time	.959

Measure of Keyzer-Meyer-Oklin (KMO) is another method for to show the appropriateness of data for factor analysis. KMO statistics varies between 0 and 1. Keyzer (1974) recommended that values greater than 0.5 are acceptable; between 0.5 to 0.7 are moderate; between 0.7 to 0.8 are good; between 0.8 to 0.9 are superior (Field, 2000). Bartlet's test of sphericity is the final statistical test applied in this study for verifying its appropriateness (Bartlet, 1950). In this study, values of KMO for 3 items of environmental factor, 5 items of psychological factors and 7 items of structural factor are 0.750, 0.598 and 0.698. These values indicate sample taken to process factor analysis is statistically significant. In addition to KMO, Chi-square value for environmental factor, psychological factors and structural factor is 375, 405 and 836 with significance value of 0.000. These values confirm test is statistically significant when significance value is less than significance level. Significance value is 0.000 at 5% level of significance. These values indicate that data are statistically significant for factor analysis. Values of KMO and Bartlet test of Sphericity are shown in table 4.

Table 4: KMO & Bartlett's Test of Sphericity

Environmental factor			Psychological factor			Structural factor		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.750		Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.598		Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.698	
Bartlett's Test of Sphericity	Approx. Chi-Square	375.500	Bartlett's Test of Sphericity	Approx. Chi-Square	405.796	Bartlett's Test of Sphericity	Approx. Chi-Square	836.238
	Df	3		Df	10		Df	21
	Sig.	.000		Sig.	.000		Sig.	.000

8.3 Factor Analysis

After examining the reliability of the scale and test appropriateness of data as above, researcher carry out factor analysis to know factors affecting corporate performance of Public Health Service Organisations in Eastern Province of Sri Lanka and to select an appropriate regression model for Public Health Service Organisations in Eastern Province of Sri Lanka. For achieving these objectives, researcher employs principal component analysis (PCA) that is followed by the varimax rotation. Varimax rotation is mostly used in factor analysis (Hema and Anura, 1993). From table, it can be seen that environmental factor has two components. These components are extracted from the analysis with an eigen value greater than 1 (Tabachnick and Field, 1996). In this study, these two components of environmental factor explain 98% of the total variation. Two components of psychological factor explain 89%. Two components of structural factor explain 85%. Variation is shown in table 5.

Table 5: total variation

Environmental factor				Psychological factor				Structural factor			
Component	Total	% of Variance	Cumulative %	Component	Total	% of Variance	Cumulative %	Component	Total	% of Variance	Cumulative %
1	2.797	93.243	93.243	1	2.884	57.690	57.690	1	4.162	59.457	59.457
2	.154	5.135	98.378	2	1.607	32.135	89.825	2	1.855	26.507	85.964

(Source: Survey data)

8.4 Model selection

Gujarati, Porter and Gunasker (2012) stated that Variation Inflation Factor (VIF) should be less than 10 and Durbin Watson (DW) should be between ($d_L \leq d \leq d_U$) i.e. 1.020 to 1.920 for a model selection. In this study, Log Log model has less than 10 for VIF and 2.28 for DW. Thereby, researcher selects this model as the best fitted model for his study. Results are shown in table 6.

Table 6: Selection of model

Models	Type of the model	R ² %	F statistics	P	Values of VIF	DW	Selected model
EMPLOYEE SATISFACTION LOG = 2.01 + 0.0337 ENVIRONMENTAL FACTOR - 0.00058 PSYCHOLOGICAL FACTOR + 0.0654 STRUCTURAL FACTOR	Log Linear	96.6%	902.89	0.000	6.584, 4.088 & 11.392	0.246174	
EMPLOYEE SATISFACTION = - 0.0448 - 0.00654 ENVIRONMENTAL FACTOR LOG - 0.0192 PSYCHOLOGICAL FACTOR LOG + 0.0172 STRUCTURAL FACTOR LOG	Linear Log model	100%	86869.46	0.000	6.943, 3.660 & 11.141	0.337085	
EMPLOYEE SATISFACTION LOG = - 0.00036 + 0.0784 ENVIRONMENTAL FACTOR LOG + 0.294 PSYCHOLOGICAL FACTOR LOG + 0.482 STRUCTURAL FACTOR LOG	Log Log model	92.8%	412.98	0.000	1.060, 1.233 & 1.215	2.28215	√

(Source: Survey data)

9. Conclusions

First objective is to determine factors affecting employee satisfaction in PHSOs. Environmental, psychological and structural factors have been identified as determinants of employee satisfaction in public health service organizations. Second objective is to know the reliability and validity of items & factors. In this study, researcher use Cronbach alpha scale as a measure of reliability. Environmental factor is comprised of opportunity to job, work environment, working environment, social environment and participative environment. Values of Cronbach alpha for opportunity to job, work environment and working environment are 0.961. Cronbach alphas for these social and participative environments were also high. But, these two were not taken into grant due to communality value of less than 0.6. Psychological factor is composed of positive attitude, negative attitude, assertiveness, agreeableness and workload. Cronbach alpha for these 11 items is 0.807. Structural factor is composed of work autonomy, job stress, supervisory or career support, job security, realization or self-actualisation, distributive justice, promotional chances, pay and flexi-time. Cronbach alphas for Job stress and supervisory or career support were also high. But, these two were not taken into grant due to

communality value of less than 0.6. Cronbach alpha for these 7 items is 0.928. KMO is used to know the statistical validity of factors. In this study, values of KMO for 3 items of environmental factor, 5 items of psychological factors and 7 items of structural factor are 0.750, 0.598 and 0.698. These values indicate sample taken to process factor analysis is statistically significant. Content validity and convergent validity are higher. Discriminant validity are lower statistically. Third objective is to know the best fitted model. Log log model is the best fitted model than linear models. In terms of this model, environmental, psychological and structural factor explain around 93% of total variation for employee satisfaction.

10. Limitations and avenues for future research

This research is based a pilot study that depended on small number of sample size. This study could be expanded to a larger sample size that covers Eastern Province.

11. Value addition

This study fills the literature gap. In Sri Lanka, previous studies related to corporate performance in both health service organizations and in non- health service organizations are poor. Limited number of researches are found in Public Health Service Organisations in foreign and Sri Lanka. This literature gap motivated researcher to research PHSOs in Sri Lanka. A conceptual model has been created using identified factors for public health service organization.

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