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Effect of Artificial Intelligence on Performance of Public Sector Service Organizations with Employee Competency and ICT Strategy mediated by Employee Performance

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Abstract

This research study is mainly focused on improving performance of public sector organizations. The public sector plays important role in countries. It has the responsibility of making policies towards betterment of the citizens. There are various public sector institutions established to deliver services to the citizens in the countries under the control of governments.Some of the services are issuing permits, generating passports, providing health related services, preparation of birth and dead certificates. Most of these services are essential services requested by citizens and people seek effective and efficient service from the public institutions. It has been identified that the citizens are unsatisfied about the services delivered by public sector institutions in countries. The main reason for the unsatisfaction is weak performance shownby the public sector.According to one of the research studies, it has been identified that the performance is low because of the negative impact coming from the employees who are serving in public institutions. The absenteeism, lateness, laziness, and less commitment are some of the factors which are leadingfor negative impact of the employees. Hence this research study is designed to find the effect of artificial intelligence for public sector performance with the support of employee competency and ICT strategy while mediating employee performance. The dependent variable is defined as performance of public sector service organizations (PPSO). There are three independent variables are named as employee competency, ICT strategy and artificial intelligence. Employee performance is the mediating variable in the study. It has been formed eight hypotheses based on the conceptual framework. The quantitative methods are applied to conduct analysis of the research. it is developed a questionnaire consisting of questions which are based on variables mentioned in the framework.The Likert scale is considered in this questionnaire. In Sri Lanka, divisional secretariats are established under public sector to serve citizens by delivering essential services.It has been selected employees who are working in western province divisional secretaries to represent population of the research.The random sampling technique is used to filter respondents required to answer thequestionnaire. Once responses are collected through self-administrated questionnaire, data cleaning techniques areused to clean data avoiding missing data, out of range data and outliers. The data cleaning process isconducted using SPSS software application. The frequency analysis, cross tabulation and Mahalanobis functionalities are important among these techniques.The Histogram, Q-Q plot, and box plot techniques are used to find normality of data collected.The correlations among variables are identified by employing variance inflation factor (VIF) supported by SPSS while heteroscedasticity is tested through scatter plot technique. Once data cleaning process is over,descriptive statists are generated to understand data. Exploratory factor analysis (EFA) is executed to find relationships between items in the questionnaire. Here it is used cronbach's alpha for reliability testing purpose. After conducting exploratory factor analysis, it is performed confirmatory factor analysis (CFA) using AMOS software application to receive structural equation model (SEM). It has been presented key findings by this study based on final SEM. According to the findings,there are some relationships exists between artificial intelligence and performance of public sector service organizations,between employee performance and performance of public sector service organizations,between employee competency and employee performance. In addition, it found that employee performance mediates the relationship between employee competency and performance of public sector service organizations.

Keywords: public sector service performance, employee performance, artificial intelligence, employee competency,ICT strategy

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Introduction

The public sector plays an important role in mostcountries. It mainly focusses on delivering public expectations through policy making and public organizations (Mazzucato&Kattel, 2020). The public sector provides various services for the people via several organizations established. Some of the public sector organizations in Sri Lanka are Ceylon Electricity Board, Ceylon Petroleum Corporation, Sri Lanka Insurance Corporation, National Water Supply and Drainage Board, State Pharmaceuticals and Manufacturing Corporation of Sri Lanka, State Pharmaceuticals and Manufacturing Corporation of Sri Lanka(Ministry of Finance - Sri Lanka, n.d.). Department of Education, Department of Transport, Pension Protection Fund, Civil Aviation Authority, Architects Registration Board are few public institutions establish in United Kingdom (Departments, Agencies and Public Bodies - GOV.UK - GOV.UK, n.d.).Australian Digital Health Agency,Australian Digital Health Agency, Department of Industry, Science and Resources, Department of Industry, Science and Resources aresome of the institutions underAustralia government(Australian Government Organizations Register | Directory, n.d.).The functionalities of these public bodies are very important for citizens. The stuffs related to health, transport, education,water, andelectricityarecontrolled by these institutions in Sri Lanka. Hence the public sector shouldbe worked appropriately to receive their deliveries as expected by the people in countries.This study pays attention tothe services delivered by the public sectorinstitutions due to some of the unexpected scenarios highlighted. These scenariosare not only limited to Sri Lanka but can be identified in various countries in the world. In another words,it has been recorded some of the scenarios that government faces difficulties in delivering public services in countries efficiently and effectively. Some of the difficulties in public servicescan be stated as issuing identity cards, providing permits required andeducation and healthdeliveries (Mustafa et al., 2020). It is identified that the lives of the citizens are highly affected due to these difficulties in public services. Hence it is required to improve the quality of peoples' lives by setting efficient and effective public services with high performance (Gumah&Aziabah, 2020).

It has been identifiedthat public services delivered by Nigeriaindicates poor performance. It further denotes that the public servants show poor work attitude leading to low performance in services.Absenteeism, lateness, laziness, and lack of commitmentare some of the forms associated with the poor work attitude of the employees. This worker behavior damages economic development of the country and satisfaction of servicereceivers (Beauty et al., 2020). This signals that the low performance in services comes due to the impact of the employees who are working in public institutions. It is required to consider the way of delivering public services to the citizens reducing negative impacts made by the employees.

The research study is focused on few variablesfor improving performance of public sector services. These are artificial intelligence, employee competency, information and communication (ICT)strategy and employee performance. Artificial intelligence is one of the technologies which can be used to perform most of the tasks using machine which intelligence is programmed. This is one of the alternatives to execute the repetitive tasks in public institutions. Some of the repetitive tasks can be issuing passports, Identity cards, verification of permits and replying to customer inquiries. The tasks which employees fail to perform can be assigned to artificial intelligence to handle. The employee competency is selected in the study as it contributes to build competencies to perform the operations. The competencies required are varied based on the operation to be performed. Hence it should be discussed whether employees are lacking required competencies. Today most of the operations are handled with the support of information and communication technology. Artificial intelligence is one branch of information and communication technology. When it is planning to apply information technology to improve service performance, it is important to develop anICT strategy. The ICT strategy can be covered the areasof ICT infrastructure, ICT competencies and ICT policy. So, ICT infrastructure is also considered by this study. In addition to independent variables, it is used mediation effect of employee performance in this study.

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Literature Review

Artificial Intelligence

Artificial intelligence (AI) is one of the technologies associated under information technology field.AI mainly focuses on developing intelligent machinesfor conducting various operations (Collins et al., 2021). This term artificial intelligence is used by John McCarthy in 1956 and it is considered as 4.0 industrial revolution. Artificialintelligence can be grouped as weak AI and Strong AI. The weak AI is focused on performing narrow tasks. Siri app and some of the facial recognition apps can be considered as weak AI. Strong AI is programmed to be intelligent like human mind for executing various tasks.There are various functionalities facilitated by AI. These are automation, machine learning, vision,natural language processing, robotics, and self-driving vehicles (Tai, 2020).

Natural language processing is used in computers to understand what is representedin human languages (Khurana et al., 2022). One of the examples for natural language processing (NLP) is email categorization. The emails which are received for an accountcategorized into different labels such as promotions, spamusing keywords due to NLP. Machine learning provides computers to learn from data and perform various tasks which are complex by identifying patterns (Tiwari et al., 2018). This technology is applied to suggest user interested products based on what they search on internet. Roboticsis field of knowledge and techniques which areused to develop robots. Robotsperform human activities,and it responds to the changes in the environment by sense (Mihret, 2020). Most of the time dangeroustasks are handled using robots to reduce the risk of human lives.

Currently AI is used in various fields such as healthcare, manufacturing and production, security and surveillance, and education. Artificial intelligence is used by doctors to decide health risk and side effects of medicines in healthcare sector. This is very effective when number of patients ishigh. It takes more time andis difficultto provide treatment notices to more patients by a doctor and it can be handled easily with AI.AI does not consider number of patients are treated.In addition to that robotics analyze various tests such as X-rays andCT scans in an accurate way (Pothen,2022).AI plays an important role in manufacturing and production. The failure of machinesin factories can be predicted with the use of deep learning and neural networks and unexpected downtimes can be reduced which affect the production process. In the production process, deep neural networks can be applied to detect abnormalities in products such as damage surfaces, leaks. So, it canprevent issuing these damaged products to the market and make necessary actions to reproduce them (Javaid et al., 2021). Abnormal human activities can be identified by AI based camera systems using video analytics. This is useful to prevent potential security threats which affect can people and their properties (Doohan et al., 2022).Artificial intelligence is supportive for educationalactivities. There are many online platforms introduced such as Alison and Coursera for teaching and learning including examinations. One of the AI applications called "Nuance" provides ability of speech recognition for teachers and students. The results of the students can be analyzed using AI tools by saving time of teachers and improvingaccuracy (Balu,2022).

Employee Competency

Employee competence is an attribute of a person which is required to perform the tasks related to what he or she is assigned,and it represents knowledge and skills necessary for performance. Competencyhas been classified as intellectual competence, emotional competence, and social competence. The employee competency should be high to improve performance of business environments. It has been found that employee performance is affected by competency of the employees (Sabuhari et al., 2020). One of the studies has statedthat interpersonal competencies are highlyimportant according to the views of the managers.They are professional development, timemanagement, kindness, and scrupulousness. The least important competencies are managerial competencies. Kindness is the way of interacting with others.The attitude toward the tasks is called scrupulousness. Professional development refers to the development by gaining skills and knowledge. The time management is about completing the tasks in a

successful manager. It has been found that the set of managerial skills including process management, IT skills and foreign languages are least important (Gasior et al., 2021).

ICT Strategy

ICT strategy plays an important role in businesses by directing the way ofapplying information technology for improving businesses. It has beenidentifiedthat organization performance can be influenced by the ICT strategyused by the organization (Ilmudeen& Bao, 2020). Onestudy conducted in Carrefour chains in Indonesia revealed that information technology strategy has no significant impact on financial performance, but non-financial performance can be influenced by information technologystrategy (Astuti et al., 2018).

Employee Performance

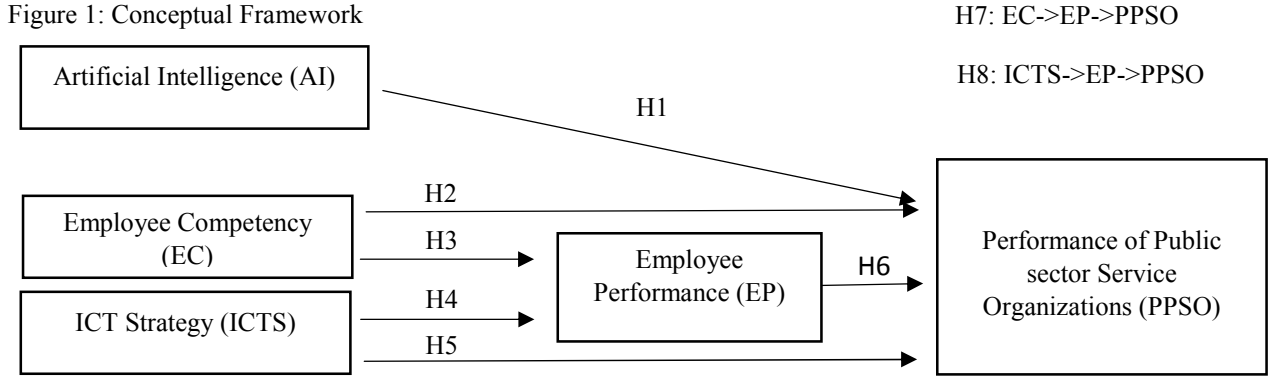
Employee performance is considered as total output which can be received due to various activities done by employees within a period of an organization. The business achievements are affected by employee performance (Priyangaa&Wickramaratne,2021).It has been found that there are various factors which affect performance of the employees. These factors are competence, management by objectives, pay based on performance and employee training.The factors, pay based on performance, management by objective and training are very important among given andaffect employee performancehighly (Daramola&Daramola,2019). Hence it is essential to pay attention to the developmentof new payment schemewhich motivates employees to perform well towards organization targets. Next important consideration ismanagement by objectives.Management by objectives is initiated by setting goals. Then it is planned and evaluated. The goals are set to be aligned with organization achievements. Then planning is required to carry out the goalswhich are set. Because of the planning, it is possible to identify resources required, risk associated and barriers available for achieving goals set. Finally, the evaluation isconducted to find the achievements compared to the goals already set.

Methods

Study Design

This study mainly focuses on enhancing existing service performance of public sector institutions. Hence it has been identified that dependent variable of the study is performance of public sector service organizations. Artificial intelligence, employee competency and information and communication technology (ICT) strategy are identified as independent variables which can be used to influence performance of public sector service organizations. One mediating variable is included in thisstudy and it is called employee performance. The conceptual framework is formed using the dependent variable, the mediating variable, and the independent variables mentioned above. The conceptual framework is presented under figure 1.There are eight hypotheses developed based on the conceptual framework and listed below from H1 to H8. It has been formed two hypotheses indicating mediating relationships out of eight hypotheses developed.

Figure 1: Conceptual Framework



H7: EC->EP->PPSO

H8: ICTS->EP->PPSO

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H1-There is a relationship between artificial intelligence and performance of public sector service organizations.
H2-There is a relationship between employee competency and performance of public sector service organizations.
H3-There is a relationship between employee competency and employee performance.
H4-There is a relationship between ICT strategy and employee performance.
H5-There is a relationship between ICT strategy and performance of public sector service organizations.
H6-There is a relationship between employee performance and performance of public sector service organizations.
H7-Employee performance mediates the relationship between employee competency and performance of public sector service organizations.
H8-Employee performance mediates the relationship between ICT strategy and performance of public sector service organizations.

Questionnaire Design

There are several institutions providing services for citizens under public sector in Sri Lanka. Divisional secretariats are selected in this study to collect primary data from the employees. Hence employees who work in divisional secretariats are the respondents in this research study. The questionnaire is designed to distribute to the employees who work in offices situated in western province in Sri Lanka. The simple random sampling technique is used to select respondents of the study avoiding bias. The questionnaire consists of questions under few sections. These sections are artificial intelligence,employee competency, CTstrategy, employeeperformance, performance of public sector service organizations and demographic data. The answers of the questionnaireexcept demographic are organized according to five-pointLikert scale from strongly disagree to strongly agree. It is a self-administrated questionnaire which hardcopies are given to the respondents for answering. The items in the questionnaire are pre-tested by one of the experts and pilot study is conducted with the participation of 30 employees who work in divisional secretariats. The copies of the questionnaire are distributed to the respondents considering sample size and response rate. It is found that response rate is 65%(Samarasekara,2022). The collected data are recorded properly in a sheet using proper numeric labels for easy identification purpose, itis very difficult to handle common method bias due to various barriers such as unavailability of free employees, data missing rate and low response rate.But some actions are taken to minimize the effect of it.Nonresponse bias was controlled through various procedures such as giving clear instructions to the respondents, providing opportunity to use preferred language to fill the questionnaire, arranging a person to fill the questionnaire of the persons having physical barriers.

Data Analysis and Results

The analysis process of the study is carried out based on quantitative approach. First of all,it has been removed extensive missing data from the collected data set. There are two software tools that are used for data analysis process. They are SPSS and AMOS. The data clearing process is conducted before data analysis part of the research. The frequencies of the responses are generatedwith minimum and maximumvalues using SPSS and out of the range responses are detected and corrected. Then cross tabulation function is used with demographic data to find abnormal responses. Under the cross-tabulation,experience verse age andhighest qualification verse age arecompared. The outlier detection is carried out using Mahalanobisfunctionality given by SPSS.There are several tests applied to find data normality. Histogram, Q-Q plot, and box plot are some of the tests carried out. The variance inflation factor (VIF) is used to identify correlations between independent variables. The scatter plot is generated to present Heteroscedasticity and Homoscedasticity. Oncethe data cleaning process is over, descriptive statistics are generated to describe data. Under the descriptive statistics, frequencies of demographic data,central tendency, dispersion are considered. The reliability of the data is calculated variable wise using SPSS and cronbach's alpha values are taken out. Theexploratory factor analysis (EFA)was conducted using items related to thevariables in the conceptual framework. The structural equation model is generated via confirmatory factor analysis (CFA) using AMOS.

When results are reviewed, first it is focused on frequenciescalculated consideringdemographicdata fields. The table 2 presented figures calculated using data collected through demographic fields. When it is focused on gender of the employees, 19.3% of the employees working in divisional secretariats are males while 80.7% are femaleworkers.

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Hence majority arefemales. Age is another field which is considered under demographic data. It considers four age groups. They are between 21-30 years, 31-40 years, 41-50 years, and 51-60 years. According to the frequencies obtained,11.7% of employees in divisional secretariats are between 21-30 years old. The percentage of the employees whose agesrange from 31 to 40 yearsis 56.9. It represents 23.4% of employees agesbetween 41-50 years. The last age group in divisional secretariats between 51-60 yearsis 7.9 as a percentage. Most of the employees in divisional secretariats are ages between 31 to 40 years while minority is between 51 to 60 years. The next demographic field is highest qualifications achieved by the employees. The survey considered PhD, qualificationsMaster,Bachelor, Diploma, Advanced Level and Ordinary Level. It has been identified that 12.3% of employees havecompleted master'sdegrees. There are 56.3% of employees qualified up tobachelor's degrees.It revealed that 5.2% of the employees are only diploma holders. It has been identified that 12% of employees have only advanced level qualification while 1.4% are qualified only for ordinary level. According to the survey results presented, there are no employees working in divisional secretariats with PhD. The majority among the employees are qualified for bachelor's degree as the highest qualification. The ordinary level of qualification is achieved by minimum percentage of employees. Finally, experience is taken as demographic factor. The experience is grouped as below 5 years,5-10 years,11-15 years,16-20 years and above 20 years. The employees have below 5 years' experience and it is recorded 25.6 as a percentage. There are 41.4% of employees having 5 to 10 yearsof experience. It is recorded that 10.4% of employees have experience from 11 to 15 years. The group of employees who have experiences 16-20 years represents 12.5% and 10.1% of employees have above 20 years of experience. The highest percentage of employees have 5 to 10 years' experienceand lowest percentage of employees have above 20 years of experience.

The results of the reliability analysis are considered. According to reliability figures mention in table 1, the variables employee competency, ICTstrategy, employee performance, artificialintelligence, and organization performance, indicate reliability values0.943,0.800,0.934,0.840 and 0.922 sequentially. According to reliability values all the variables can be used for further analyses as reliability exceeds value 0.7 and it is satisfied the reliability requirement (Sürücü&Maslakçi, 2020).

Theexploratory factor analysisgrouped the items in the questionnaire considering their relations to the variablesin the conceptualframework. The items finalized by exploratory factor analysis are used to conduct confirmatory factor analysis.It received measurement model as shown in figure 2 and structural equation model presented in figure 3. Once structural equation model is generated by AMOS, regression weights and standard regression weights are referred to find out relationships between independent variables and the dependent variable. The figures related to regression weights and standard regression weights are mentioned in table 3 and table 4. According to table 3, the relationships between dependent variable and independent variables are considered as significance, if p value is less than 0.05(Andrade,2019), (Jain and Jena, 2020).Then it is used estimate value shown under standard regression weights in table 4, to decide relationship is negative or positive. In addition to that it is used indirect effects two tailed significanceto decide significance of mediating relationships while indirect effects are used to highlight positive or negative status of the relationship. Thesestatistics are indicated in table 5 and table 6.Finally, table 7 summarizes findings received through hypotheses testing.

According to the hypotheses testing, some of the relationships mentioned under hypotheses are confirmed. These relationships are written as there is a relationship between artificial intelligence and performance of public sector service organizations, there is a relationship between employee competency and employee performance,there is a relationship between employee performance and performance of public sector service organizations, Employee performance mediates the relationship between employee competency and performance of public sector service organizations. In addition,some of the relationships mentioned under hypothesis are identified as not supportivedue to the results provided by AMOS execution. They are highlighted as there is a relationship between employee competency and performance of public sector service organizations,there is a relationship between ICT strategy and employee performance,there is a relationship between ICT strategy and performance of public sector service

organizations and Employee performance mediates the relationship between ICT strategy and performance of public sector service organizations.

Table 1: Reliability

Variable	Reliability
Employee Competency	0.943
ICT Strategy	0.800
Employee Performance	0.934
Artificial Intelligence	0.840
Organization Performance	0.922

Table 2: Frequency Table

Gender			
		Frequency	Percent
Valid	Male	71	19.3
	Female	296	80.7
	Total	367	100.0
Age			
Valid	21-30 years	43	11.7
	31-40 years	209	56.9
	41-50 years	86	23.4
	51-60 years	29	7.9
	Total	367	100.0
Highest Qualification			
Valid	Master	45	12.3
	Bachelor	254	69.2
	Diploma	19	5.2
	AL	44	12.0
	OL	5	1.4
	Total	367	100.0
Experience			
Valid	Below 5 years	94	25.6
	5-10 years	152	41.4
	11-15 years	38	10.4
	16-20 years	46	12.5
	Above 20 years	37	10.1
	Total	367	100.0

Figure 2: Measurement Model

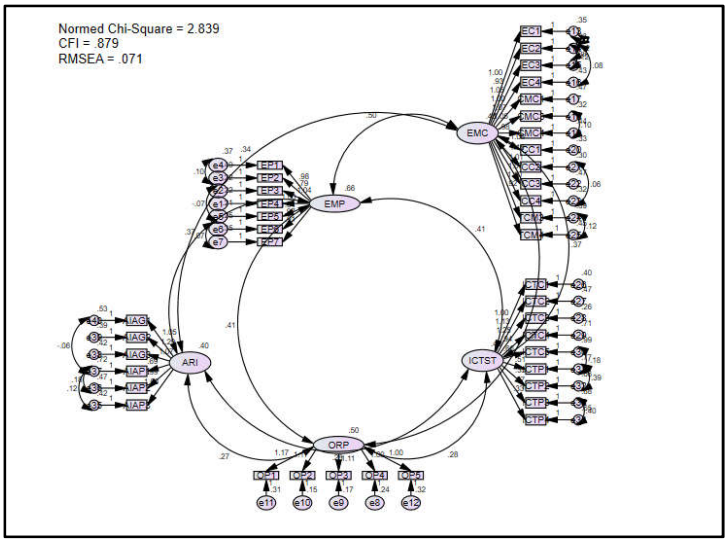

Figure 3:Structural Equation Model

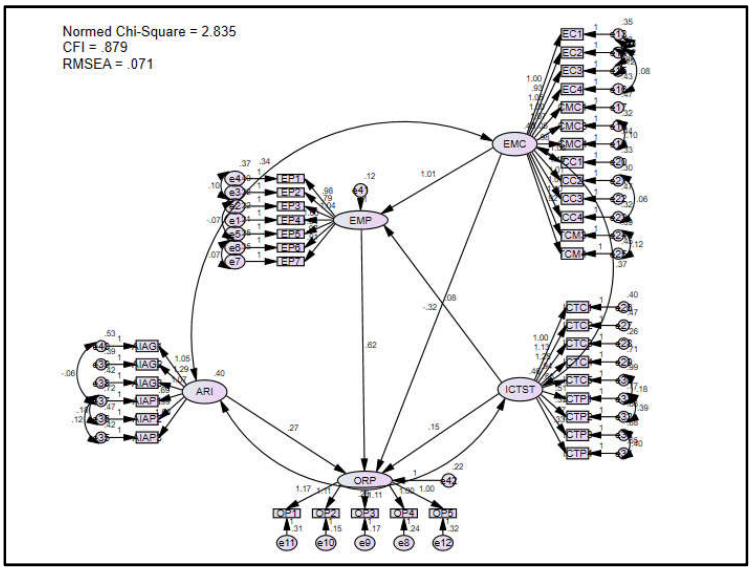

Table 3: Regression Weights

			Estimate	S.E.	C.R.	P
EMP	<---	EMC	1.014	0.09	11.328	***
EMP	<---	ICTST	0.077	0.074	1.038	0.299
ORP	<---	ARI	0.269	0.093	2.905	0.004
ORP	<---	ICTST	0.152	0.089	1.7	0.089
ORP	<---	EMC	-0.317	0.168	-1.882	0.06
ORP	<---	EMP	0.621	0.108	5.729	***

Table 4: Standard Regression Weights

			Estimate
EMP	<---	EMC	0.852
EMP	<---	ICTST	0.064
ORP	<---	ARI	0.242
ORP	<---	ICTST	0.146
ORP	<---	EMC	-0.306
ORP	<---	EMP	0.715

Table5:Indirect Effect - Two Tailed Significance

	ICTST	EMC
ORP	0.43	0.003

Table 6: Indirect Effect

	ICTST	EMC
ORP	0.048	0.629

Table 7: Hypotheses

H(X)	Hypothesis	Significance	Relationship	Reference and Justification	Finding
H1	There is a relationship between artificial intelligence and performance of public sector service organizations.	Significant	Weak positive	Table 3 Table 4	supported
H2	There is a relationship between employee competency and performance of public sector service organizations.	Not Significant	Weak negative	Table 3 Table 4	Not supported
H3	There is a relationship between employee competency and employee performance	Significant	Strong positive	Table 3 Table 4	supported
H4	There is a relationship between ICT strategy and employee performance.	Not significant	Very weak positive	Table 3 Table 4	Not supported
H5	There is a relationship between ICT strategy and performance of public sector service organizations	Not significant	Weak positive	Table 3 Table 4	Not supported
H6	There is a relationship between employee performance and performance of public sector service organizations.	Significant	Strong positive	Table 3 Table 4	supported
H7	Employee	Significant	Strong positive	Table 5	supported

	performance mediates the relationship between employee competency and performance of public sector service organizations.			Table 6	
H8	Employee performance mediates the relationship between ICT strategy and performance of public sector service organizations.	Not significant	Very weak positive	Table 5 Table 6	Not supported

Discussion of Findings

The research has considered few demographic elements such as gender, age, highest qualification, and experience. According to the collected data, it indicates that majority of the employees are females in these public sector institutes. Thepercentage of male employees are very less. Hence it is important to study the current work behaviors followed by the female employees in the public sector officesand the reasons behind these behaviors which lead to negative consequences. These reasons should be addressed properly to eliminate negative impactand enhance performance.Most of the working employees in these organizations are age between 31-40 years.It reflects that employees are in a matured level to understand operations conducted in the offices. In addition to that majority of the employees are young employees and not too old. In my opinion,they may not be target oriented to enhance service performanceinpublic organizations. It is necessary to convert these employees to higher performers. The employees in the age level 31-40 yearscan betrainable. According to the demographic statistics, these organizations have employeeswith acceptable level of education. Highestnumber of employees completed bachelor's degrees. It highlights that most of the employees have enough knowledge to perform tasks in offices. But it is necessary to assess the level of skills which they gained.The lack of skills may affect performance of the employees and it may decrease service performance in the institutions.The final demographic element is employee experience. When it considers experience, the majority of employees have 5 to 10 years of experience. The most of the public sector service organizations perform repetitive tasks such as issuing birth certificates, answering to the queries raised bycitizen, verification of documents. The employees who have more than five years of experience are in a good level to carry out these repetitive tasks successfully. When it goes through the findings received through demographic elements, these public institutions are employedqualified, young and experienced set of employees. It is required a very closed focus to find why these employees do notbring high service performance for the organizations.

This research is focused on finding effect of artificial intelligence on public sector service performance considering employee competency and ICT strategy mediating employee performance.This study has revealed that there is a relationship between artificial intelligence and performance of public sector service organizations. It is essential to enhance performance of public sector service organizations as it delivers most of services expected by citizens. Currently services are delivered by employees who have been recruited. One of the studies found that

servicedelivery is affected by behavior of the employees (Beauty et al., 2020).The employees are lazy, not punctual, less work committed, and poorlydisciplinedand these factorsaffectpublic service performance according to the study mentioned here.According to one of the findings of the research, "there is a relationship between artificial intelligence and performance of public sector service organizations" can be considered to enhance public service delivery performance.Hence artificial intelligence can be used to overcome resistancecoming from the employees due to their poor working style.Artificial intelligence can be proposed to automate the operations associated with public services. It should be reviewed properly the way of using artificial intelligence without affecting current workforce in the public sector. It will be a big issue if current public workforce is replaced by arterial intelligence systemscompletely. The employees are concerned about their job security.When AI systems are introduced to deliver services, it is recommended to identify services which AI is beneficial. There are some reasons behind identifyingessential services for AI. One reason is budget limitations in public institutions.The public sector organizations in developing countries are allocated limited budget by the government. Hence it is difficult to spend more money for building AI based environments. The next reason is to ensure job security of the employees. The services which are not required AI can be assigned employees to perform.The countries which have enough funds but limited human resource should be used AI systems fully to deliver services required by employees.The use of AI system for delivering public services may be challenging. So, it is recommended to develop a proper ICT strategy for high return on investment. In this research,it is unable to find the relationship between ICT strategy and public sector service performanceas hypothesisH5 is not supported. But it is safe to have an ICT strategyto implement AI systems in public sector organizations.The failures can be avoided or reduced by proper ICT strategy. The ICT strategy should be focused on ICT infrastructure, ICT policy and ICT competencies required to up and run AI systems. High processing power devices andhigh-speed internet connectivity are some of the ICT infrastructures required. ICT policy is necessary to guide users to AI systemsin a proper way under terms and conditions.AI systems can be operated successfully having proper ICT competencies. Proper literature review is important when applying AI for public operations for the first time. It helps to identify success scenarios and the way the countries reachedAI goals.

This study has found that there is a relationship between employee performance and performance of public sector service organizations.It reflects that the organizations can be performed well if employees perform well. Here there are two decisions that can be made. The recruitment of new employees with high performance is onedecision. The second decision is to enhance performance of the employees who are currently working in public sector organizations. In both cases, it should be decided required employee performance level to receive expected service performance. If employees are recruited, there should be vacancies in the organizations. Otherwise, it can be an extra cost for public sector organizations. It is vital to define set ofparameters to calculate or find performance of employees. Number of tasks successfully completed for a given time, number of hours available for services, number of failures done can be considered as set of parameters to decide level of employee performance. It is worthfinding factors which affect employee performance. According to one of the research projectsconducted (Nagarajah et al.,2021), motivation practices and rewards influence performance of the employees.

One of the findings of this research statesthat there is a relationship between employee competency and employee performance. It can be further explained as performance of the employee can be increased by developing competencies of the employees. Theemployee competency is knowledge and skills required to perform tasks assigned (Sabuhari et al., 2020).The employees have various competenciesand different tasks require different competencies. Firstly, it should be identified competencies required for the tasks performed in public sector institutions. Some of the employee competencies are self-competence, teamcompetence,change competence, communicative competence,and ethical competence (Salman et al., 2020). Secondly it is necessary to have a proper mechanism to identify people with relevant competencies. For example,communication competency is required for call handlers in an organization as many people call him or her to receive information. In this case it is required to recruit an employee having communication competency. Hence appropriate test or an interview should be conducted to filter them from the interview. In addition to recruiting new people, it should find strategies to build competencies

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of the current employees to perform well. Training is one of the strategies which can be used to improve knowledge and skills of the employees (Choiriyah& Riyanto,2021). In addition to the training, it is recommended to carry out evaluations to test that employee has gained required knowledge and skills.

This research also found that employee performance mediates the relationship between employee competency and performance of public sector service organizations. This finding explains thatthe employee who performs well because of competencies enhances performance of public sector service organizations. In this study employee competency, employee performance and artificial intelligence are important variables which can be used to improve performance of public sector service deliveries.

Conclusion

The main aim of this study is to find the effect of artificial intelligence on performance of public sector service organizations considering employee competency and ICT strategy with the mediation through employee performance. The public sector is one of the important segments of a country and the control of the public sector is under the government. The public sector delivers essential services required for citizens and develops policies required. The public sector maintains set of organizations to provide services for peoples' daily needs. Country like Sri Lanka has set of public sector institutions such as divisional secretariats, department of immigration and emigration, department of registration of persons.It has been identified that service performance of public sector institutions is poor. Thisweak performance situation is generated by negative behaviors associated with employees.However, this nature affects lifestyle of the people who seek public sector services for their needs. Not only that it further disturbs economic growth of the country due to reasons such as reduction of upcoming investments, increase of educated people migrations, reduction of facility developments. Hence this study plays an attention on improving public sector service performance to uplift current lifestyles of the citizens and remove barriers which affect economic development of the countries. This research has extracted three independent variables called ICT strategy, employee competency and artificial intelligence with one mediating variable called employee performance which can influence dependent variable called performance of public sector service organizations. It has been developed eight hypotheses based on the conceptual framework. The questionnaire is designed covering all the variables in the framework and responses are collected from employees working in divisional secretariat office in western province. The employees are selected according to simple random sampling method. The research analysis is conducted using quantitative methods. Once data screening process is over descriptive analysis is conducted. The exploratory factor analysis is conducted using variables which have acceptable reliability valueby Cronbach alpha. The structural equation model is obtained by executing confirmatory factor analysis. Finally, this study has proved that there are relationships between artificial intelligence and performance of public sector service organizations, between employee competency and employee performance,between employee performance and performance of public sector service organizations.In addition, it found that employee performance mediates the relationship between employee competency and performance of public sector service organizations. Also, it is indicated that some of the relationships formed are not supported. They are relationships between ICT strategy and employee performance, betweenICT strategy and performance of public sector service organizations. Further it revealed that employee performance does not mediates the relationship between ICT strategy and performance of public sector service organizations.There are few recommendations to be suggested for public sector improvements. One recommendation is to use AI powered applications to serve citizens efficiently and effectively. Thiswill reduce negative impact generated by employees. Here it should be properly planedthe way of using AI systems effectively with existing human capital in public sector institutions to balance cost and benefits while securing jobs of the employees.Secondly it is recommended to make necessary arrangements to improve performance of the employees in office through rewarding and motivation until new staff is recruiting with high performance. The third recommendation is to take steps for enhancing competencies of the employees for better performance. Here it is essential to analyze what are the competencies required for executing public services and decide methods of improving them. One method is to train the staff for gaining knowledge and skills.

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