

FIELD OFFICERS' ADAPTATION TO LABOUR ADMINISTRATION ELECTRONIC CASE MANAGEMENT SYSTEM IN SRI LANKA

Samarasinghe TD^{1*}, Ginige TNDS¹, Abeygunawardana RAB²

¹ Faculty of Graduate Studies, University of Colombo, Sri Lanka

² Department of Statistics University of Colombo, Sri Lanka

Abstract: Adapting an information system by its intended users is compulsory for the success of that information system. This study focuses on the Labour administration, one of the most critical public functions in any country that secures enforcing the legal provisions relating to work conditions and workers' protection. Labour Administration Electronic Case Management System (LAECMS) is an information system that facilitates labour administration. LAECMS helps and aids field officers in their routine inspection activities. Although, the problem is that field officers' adaptation level is considerably low towards LAECMS in Sri Lanka. That is the motivation behind this systematic review to find associations between the most widely affected characteristics and adaptation. Most of the currently published literature only discusses system-side adaptation. This study bridges the gap by prioritizing user-side adaptation and considering the relevant characteristics. This study relied on a sample of 220 field officers of the Department of Labour (DoL) Sri Lanka. This research investigates the associations between seven primary factors extracted through the reviewed relevant literature and adaptation by using mainly non-parametric tests. The findings of the analysis revealed that digital competency, senior management support, legal framework, user training, perceived usefulness, and perceived ease of use associated with field officers' adaptation to LAECMS. Among the investigated determinants, user training and perceived usefulness appear to have the most significant association with adaptation. Among them, the impact was strongest in perceived usefulness. Nevertheless, the field officers' age, gender, and work experience did not associate with their adaptation to LAECMS. The findings of this study would be helpful for the labour law enforcing institutes in any country to understand the successful adaptation to LAECMS has its advantages for the organization as well as for the field officers.

Keywords: information system, adaptation, field officers, electronic case management system

Introduction

An adaptation to an information system (IS) by its intended users is compulsory for the success of that IS. Employee pushback is one of the most significant barriers to IS adaptation in the Government organizations of Sri Lanka. Understanding as to why users accept or reject the IS has proven to be a challenging issue.

*Corresponding Author's Email: tanalidilushika@gmail.com



The Department of Labour (DoL) is the regulatory body for labour administration in Sri Lanka. And the department is a digitally-transforming organization with around 400 field officers. The Department obtained a significant milestone by becoming the first in South Asia to launch the Labour Administration ECMS called Labour Administration System Application (LISA) in 2007 that enables case management, reporting, data analytics, and inspection planning (The First South Asian Labour Inspection System Launched in Sri Lanka, 2013).

But, according to the thematic performance evaluation conducted by the United States Department of Labour (USDOL), that system has failed due to the poor adaptation of field officers (Wark & Olivares, 2020). And at the time of the study, the current Labour Administration ECMS also handled by users who were not the intended users. That is the research problem, and by identifying the association between the impactable characteristics and adaptation makes it easy to plan successful delivery of the system.

The development and expansion of information and communication technology (ICT) have had far-reaching consequences on how field officers manage and deliver services in worldwide. The global pandemic situation has significantly sped up the pace of workplace digitalization by embracing and utilizing ICT and digitizing labour administration-related services. Travel restrictions, lockdowns, and social isolation measures led labour administration to be disrupted in ways that had never been seen before. Field officers relied on the information from ISs because they were sometimes unable to be physically there (Gallo & Thinyane, 2021). Therefore, the successful adaptation to Labour Administration ECMS by field officers is crucial for labour administration digitalization.

Methods

Characteristics affect the IS adaptation.

Ayumi et al. (2019) reviewed 257 research papers and extracted several factors as mentioned in Table 1 which were affecting IS adaptation under five categories such as Technology, Organizational, Competency, Personal and Environmental/Social.

Table 1: Factors in IS adaptation models (Source: Ayumi et al., 2019)

Category	Factors in IS adaptation models
Technology	work and technology alignment, complexity, resources/infrastructure, usefulness of social work performance, perceived compatibility, ease of use, technology integration

Organizational	organizational use policy, organizational culture, knowledge strategy, organizational structure, employee freedom in corporate decision-making, organization commitment, organization management, management support
Competency	experience with distributed system development, technology competence, knowledge exchange amongst employees, knowledge sharing
Personal	age, individual factor/behaviour, private social software experience, gender
Environmental/Social	competitor pressure, customer pressure, social influence, reputation, perceived critical mass, collaboration norms, community ties, the voluntariness of use, supplier power

After carefully considering the above factors, the present research extracted the following characteristics mentioned in Table 2 based on the past literatures and the author's assumptions that suit the domain.

Table 2: List of utilized instruments.

Variable Name	Item No	Item Measured	Reference
Personal User Characteristics	1	Demographics	(Meepage, 2014) (Dong & Zhang, 2011) (Zabadi, 2016) (Batara et al., 2017) (Shaouf & Altaqqi, 2018) (Soja & Soja, 2020) (Namabira & Mtawa, 2022)
	2	Digital Competency	(Gunawardhana & Perera, 2015) (Murawski & Bick, 2017) (Majer et al., 2021)
Organizational Characteristics	3	Senior Management Support	(Chen & Hsiao, 2012) (Gunawardhana & Perera, 2015) (Zabadi, 2016) (Lutfi, 2022)
	4	User Training	(Zabadi, 2016) (Majer et al., 2021)
	5	Legal Framework	(Batara et al., 2017)
System-related User Characteristics	6	Perceived Ease of Use	(Antonius et al., 2014) (Zabadi, 2016) (Kashada et al., 2020)
	7	Perceived Usefulness	(Antonius et al., 2014) (Zabadi, 2016)

			(Al-Mamary, 2019) (Kashada et al., 2020) (Namabira & Mtawa, 2022)
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Personal User Characteristics

The present research considers two characteristics under personal user characteristics: field officers’ demographics and digital competency.

a) Age

Age is a demographic attribute that is collected in almost every research. The present research will evaluate the field officers’ age as a personal characteristic of Labour Administration ECMS adaptation.

Based on the analysis of Meepage (2014), the respondent's age was mainly affected by the adaptation to Judicial ECMS in Sri Lanka. When the respondent's age is high, the actual usage of the system gets lower in all independent variables. As per the author, the reason is that older respondents have more experience working with a paper-based system and do not have time to adapt to the new computerized environment, also the lack of knowledge of older workers for using computers. Soja & Soja (2020) examined how practitioners perceived challenges to successful enterprise software adaptation with employee age. The author concluded that older workers' perceptions of barriers are more complex and marked by a sense of responsibility for others and an organization. On the other hand, younger workers are more likely to perceive challenges with broadly understood technologies. The author’s findings imply that collaboration between various generations of employees is necessary due to ongoing work digitalization and an aging workforce.

b) Gender

Gender is a demographic attribute that is collected in almost every research. The present research will evaluate the field officers’ gender as a personal characteristic of Labour Administration ECMS adaptation.

Dong & Zhang (2011) presented theoretical explanations of gender differences in adapting information systems within the framework of planned behaviour theory. Data from four universities and one company in China were examined. It was discovered that male users were more carefully considered than female users when deciding whether to accept information systems. The authors compared earlier studies in the US. Chinese women specifically examined attitudes more, whereas subject norms heavily influenced males. The outcomes were consistent across prior experiences, ages, educational levels,

academic specializations, and job roles. The research also reveals the circumstances in which subject norms and perceived behaviour control are essential in China's adaptation to information systems.

Shaouf & Altaqqi (2018) systematically reviewed the literature from 2000 to 2017 on gender differences in IT adoption and six related behaviours and responses on preference for specific website designs, online shopping adoption, online trust, attitude and satisfaction with e-commerce, and information processing strategies. Despite some inconsistencies, the analysis results suggested that men are generally more likely than women to adapt to new technology. In general, males tend to evaluate websites more favourably than women. The review indicates that gender differences significantly moderate interactions between various influencing factors. Namabira & Mtawa (2022) evaluated the gender gap in the perception of the usefulness of e-HRM technologies. According to the authors, women have not found the HRM system helpful compared to men. Most past studies imply that men are generally more likely than women to adapt to information systems/ information technology.

c) Work Experience

Work experience is a demographic attribute that is collected in almost every research. The present research will evaluate the field officers' working experience in DoL as a personal characteristic of Labour Administration ECMS adaptation.

Zabadi (2016) confirmed that the user's working experience influences the PU and PEU. Batara et al. (2017) found that respondents' length of work experience appears to be a significant moderating variable when examining the association of technology acceptance variables to adopt e-government transformation. This transformation included using new technology systems in Indonesia and the Philippines.

Accordingly, the present research hypothesized:

H1: There is an association between the field officers' demographics and field officers' adaptation to Labour Administration ECMS in Sri Lanka

d) Digital Competency

Digital competency is a trending characteristic of IS adaptation domain, and it is somewhat uncommon, and only recent researchers evaluate it against the adaptation. A person (aged 5-69 years) is considered a digital competence person if they can use a computer, laptop, tablet, or smartphone independently.

The present study will evaluate the field officers' digital competency as a personal characteristic of Labour Administration ECMS adaptation.

Murawski & Bick (2017) defined the ability to use ICT and digital media to perform tasks, solve problems, communicate, manage information, collaborate, create and share content, and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, and reflectively for work, leisure, participation, learning, socializing, consuming, and empowering as digital competency. Hamalainen et al. (2020) defined the digital competencies of teaching professionals from the perspective of digital skills, attitudes toward digital technologies and knowledge of digital technologies.

According to the paper Labour administration and inspection: Challenges and perspectives (2011) of the international labour conference concerning labour administration and inspection, several countries have adopted innovative ways and approaches that combine traditional and modern means of labour inspection. Even so, the emergence of green occupations requires new inspection techniques and expertise. The paper highlighted that the recent trend in labour inspection is the expansion of the competencies given to labour inspectors to address labour inspection more efficiently. According to Gunawardhana & Perera (2015), developing countries have a more limited local skills base in a wide range of skills which involves computer literacy and knowledge of the western languages that dominate in computing, as well as the IS/ICT abilities of systems operation. Majer et al. (2021) examined the Integrated Financial Management Information System (IFMIS) adaptation to public finance management and service delivery in South Sudan. The authors advised the government of South Sudan to focus on staff competency for IFMIS operation. Accordingly, the present research hypothesized:

H2: There is an association between the Field officers' digital competency and field officers' adaptation to Labour Administration ECMS in Sri Lanka

The field officers of DoL would need digital competencies when successfully adapting to the Labour Administration ECMS. Therefore, the current study will determine the digital competency from the IT device usage ability and internet and email access frequency as DoL provided equipments, and internet facility to use the web-based Labour Administration ECMS.

Organizational Characteristics

The present research considers three organizational characteristics: senior management support, user training, and legal framework.

a) Senior Management Support

Senior management support is an organization-related attribute collected in IS-related research. The present research will evaluate the senior management support of DoL as an organizational characteristic of adaptation to Labour Administration ECMS.

Support from senior management refers to their willingness to commit the resources and authority required for an organization to adapt and implement IS successfully. However, there is a lack in the literature about how this component the organizational support would impact the IS adaptation.

Chen & Hsiao (2012) found that top management support positively impacts perceived usefulness and ease of IS usage. According to Gunawardhana & Perera (2015), the management of an organization plays a crucial role in the field of ISs that have been identified as background factors with a significant impact on IS failures. Furthermore, Zabadi (2016) confirmed that management support influences employees' perceived usefulness and ease of using IS in firms like telecom corporations. Doni (2019) also found that top management support has a more significant impact on the success of information technology projects in the banking sector of Ethiopia. And found that top management can be supported more appropriately to complete information system projects effectively. But, Lutfi (2022) found that top management support has a significant and negative effect on the continuance intention of accountants to use an Accounting Information System (AIS). Accordingly, the present research hypothesized:

H3: There is an association between the senior management support and field officers' adaptation to Labour Administration ECMS in Sri Lanka

b) User Training

User training is an organization-related attribute that is collected in IS-related researches. The present research will evaluate the user training sessions conducted by DoL as an organizational characteristic of Labour Administration ECMS adaptation.

User training is crucial to an organization's effective adaptation to IS. End-user training is being used more frequently by organizations to develop a workforce that is competitive and more productive. End-user training programs frequently focus on usefulness and ease of use concerns. While training programs boost the user's confidence to use, training influences the user's belief toward the system.

According to the paper Labour administration and inspection: Challenges and perspectives (2011) of the International Labour Conference concerning labour administration and inspection, adopting new technologies in labour administration is still quite uneven among countries and highlights that more

staff training is required. Zabadi (2016) confirmed that end-user training effect employee PU and PEU of IS.

Majer et al. (2021) examined the Integrated Financial Management Information System (IFMIS) adaptation to public finance management and service delivery in South Sudan. The authors advised the government of South Sudan to focus on on-the-job training for IFMIS operations. Accordingly, the present research hypothesized:

H4: There is an association between the user training and field officers' adaptation to Labour Administration ECMS in Sri Lanka

c) Legal Framework

The legal framework would affect the adaptation to an IS as an organizational characteristic, especially for government ISs. The legal framework is a new organizational characteristic but can directly affect the ECMSs like Labour Administration ECMS. Because ECMS is a combination of IS and legal system. The past literature categorized legal framework as an environment factor. But the internal legal framework affecting the Labour Administration ECMS. Therefore, that is categorized under organizational characteristics.

According to the paper Labour administration and inspection: Challenges and perspectives (2011) of the International Labour Conference concerning labour administration and labour inspection, labour inspectorates, particularly those in developing nations, encounter several difficulties in creating and maintaining efficient systems. These include adapting already-existing laws and rules to a complicated and changing labour force. Due to these changes, inspectors have had to adjust to stay valuable and productive. But in the Sri Lankan context, as per Meepage (2014), the entire judicial system is being digitally transformed by the Ministry of Justice, supported by the Ministry of Technology. This project will initially digitize 100 courts as e-Courts. In Sri Lankan law, the Electronic Transactions Act No. 19 of 2006 (ETA) emphasizes the importance of a handwritten signature (agreeing verbally, electronically, or physically signing something). And under Section 21 of the ETA, e-signature solutions can be used to provide electronic records accepted as evidences to support contracts in court. Therefore, the legal foundation for ECMS already been established in Sri Lanka. According to Batara et al. (2017), for e-government transformation, city government officials and decision-makers should see that financial, technical, structural, and legal framework as the process requires legislative and executive actions to ensure the transformative efforts have lawful bases. Therefore, according to the system users, the legal

framework can still affect the adaptation to such a system. Accordingly, the present research hypothesized:

H5: There is an association between the legal framework and field officers' adaptation to Labour Administration ECMS in Sri Lanka

System-related User Characteristics

The present research considers system-related user characteristics: perceived usefulness and ease of use.

Well-known theories like TAM, C-TAM-TPB, and MM illustrate the relationship between perceived usefulness and ease of use. And TAM highlights the mediating effect of perceived usefulness and ease of use. The analysis of Chen & Aklikokou (2019) revealed that perceived usefulness and ease of use mediate citizens' adoption of e-government services in the Togolese context. Moreover Kim et al. (2008) proved that 'Perceived Ease of Use' positively influences the 'Perceived Usefulness' of the Hotel front office system. But, Antonius et al. (2014) do not accept that the perceived ease of use of Enterprise Social Software influences the perceived usefulness.

a) Perceived ease of use

Antonius et al. (2014) defined perceived ease of use as the degree to which a person thinks using a specific system will not require much physical and mental effort on their behalf. IS literature indicated that perceived ease of use positively affects employee behavioural intention to use the system.

Zabadi (2016) confirmed that perceived IS ease of use positively influences employee behavioural intention to use IS. According to Kashada et al. (2020), perceived ease of use directly affected the successful adoption of information systems in developing countries. Accordingly, the present research hypothesized:

H6: There is an association between the perceived ease of use and field officers' adaptation to Labour Administration ECMS in Sri Lanka

b) Perceived usefulness

Antonius et al. (2014) defined Perceived Usefulness as the degree to which an individual believes using a particular system would enhance their job performance.

Zabadi (2016) confirmed that Perceived usefulness positively influences employee behavioural intention to use IS. Al-Mamary (2019) indicates that perceived usefulness is found to have a significant and positive relationship with user satisfaction. User satisfaction is the user's best estimate of the match

between the requirements imposed on the system by their work and the system's capabilities. As per the author, increased user satisfaction should be positively associated with individual adaptation to IS.

According to Kashada et al. (2020), perceived usefulness directly affects developing countries' successful adaptation to information systems. According to Namabira & Mtawa (2022), the adaptation to human resource management systems is greatly influenced by the factors of perceived usefulness. Accordingly, the present research hypothesized:

H7: There is an association between the perceived usefulness and field officers' adaptation to Labour Administration ECMS in Sri Lanka

Research Philosophy, approach, and sampling

A system of beliefs and assumptions regarding improving knowledge in a given topic is referred to as research philosophy. Philosophy is crucial for research planning because it aids in understanding every part of the study and the overall methodology. Even if the knowledge you create does not seem as significant as a brand-new theory of human motivation, you are still creating new knowledge by finding a solution to a particular issue for a specific organization (Saunders et al., 2016). As the present research employs a mixed method to identify a specific problem in an organization based on assumptions and evaluate field officers' adaptation to Labour Administration ECMS, the philosophy belongs to positivism.

The present research is adhered to the deductive approach, as this develops a hypothesis about the characteristics which effect the adaptation and builds the conceptual framework based on the existing literature, collects the data, analyze them to proves whether the hypothesis is accepted or not accepted. The present research uses a mixed method-sequential exploratory research strategy per the steps below.

- Initial discussions were held with the commissioner general and additional commissioner general to gain essential contextual data. These data were analysed qualitatively to get an overall idea of the organizational issues with ISs.
- Then, Individual structured interviews were held with ten management-level staff called deputy commissioners. These answers were analysed qualitatively—this aided in refining the problem statement and determining the questionnaire's content.
- Then, the questionnaire was created and given to the representative sample of field officers. The quantitative data produced were analysed statistically.
- Presentations of questionnaires were made to field officers of several zones, particularly those whose language was difficult to understand. This ensured anonymity while enabling thoughtful

responses to field officers' inquiries. Additionally, it enabled the author to explain the meaning of some questions in the questionnaire.

The present research does not mean observing the characteristics of a population over time. Therefore, this research was cross-sectional. It only gathers data through questionnaires and structured interviews based on the perception of the field officers in a single time frame.

In the present study, the sample was selected from the DoL Sri Lanka. Because there is only one Labour Administration ECMS for Sri Lanka, and the entity responsible for the system operation and maintenance is DoL. 11 zonal offices are operating under DoL. And, under the supervision of each zonal office, there are district labour offices, and there are sub-labour offices under some of the district labour offices. The present study used stratified random sampling. The population was separated into homogeneous groups according to their zonal distribution, and then a random sample was needed to get from each zone. The results are then combined to make inferences about the target population. The total size of the population was 486. Concerning Morgan's table determining the sample size from the given population, the sample size should be 215 (Krejcie & Morgan, 1970). After adding a 20% non-response rate, the sample size is 258. This is under 95% of the confidence level and 5% of the margin of error. This sample size was divided among the zones according to the population proportion within each zone.

Conceptual Framework

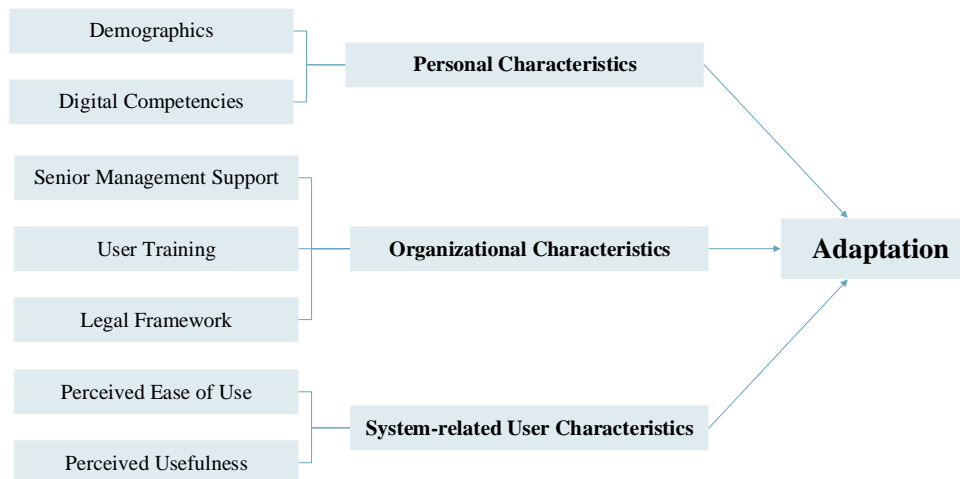


Figure 1: Developed Conceptual Framework (Author Compiled)

The framework in Figure 1 designed explicitly for Labour Administration ECMS in Sri Lanka by the author of the present study after carefully considered relevant theories and literatures. As the external validity being justified this framework can be generalised to other relevant research.

In the present research, the author referred to construct validity and content validity. Construct validity will be tested by conducting a factor analysis. And, content validity was ensured through the measurement scales which were taken from scientific journals/ publications/ reports, and the statements were modified to make them contextually relevant with the assistance of experts' advice. Table 3.4 depicts the standardized measurement scales used to analyse the present research's unobserved variables.

Table 3: The measures that adopted in this study

Variable	Measurement scales	Source
Senior Management Support	<ol style="list-style-type: none"> 1. Senior Management is aware of the benefits that can be achieved with the use of the system 2. Senior Management always encourages me to use the system 3. Senior Management provides the necessary resources to use the system 4. Senior Management provides the necessary awareness to use the system 5. Senior Management helps me to resolve system-related issues 6. I am satisfied with the organizational senior management support towards using the system 	(Al-Mamary, 2019)
User Training	<ol style="list-style-type: none"> 1. User training sessions increase my awareness of the system 2. User training sessions increase my knowledge about the benefits of the system 3. User training sessions provide sufficient hands-on practice to operate the system 4. User training sessions strengthen my IT skills and associated competencies to operate the system 5. User training sessions boost my self-confidence in the system platform 6. I am satisfied with the user training sessions 	Derived from IS Training Feedback Form
Perceived Usefulness	<ol style="list-style-type: none"> 1. The system enables me to accomplish tasks more quickly 2. The system improves my job performance 3. The system increases my productivity on the job 4. The system enhances my effectiveness on the job 5. The system makes it simpler to do my job 6. I think the system is helpful in job 	(Antonius et al., 2014)

Perceived Ease of Use	1. Learning to operate the system would be easy for me	(Antonius et al., 2014)
	2. I would find the system easy to operate	
	3. My interaction with the system would be clear and understandable	
	4. I would find the system to be flexible to interact with	
	5. I would find the system easy to be skilled	
	6. I think the system is easy for me to use and access	
Adaptation	1. I think using the system is a good idea	(Kim et al., 2008)
	2. I think using the system is advisable	
	3. I think using the system is a pleasant idea	
	4. I enjoy using the system	
	5. I use the system in the field inspections	
	6. I am satisfied with using the system	

Descriptive data analysis describes the visible characteristics of the dataset based on the variable type, such as numerical and categorical. Hypotheses (Cronk, 2020). In the present research, descriptive analysis will be conducted to examine the central tendency measures (mean, median, and mode), dispersion measures (standard deviation), and the distribution of scores (skewness).

Inferential data analysis makes predictions or generalizations about a larger dataset based on a sample of those data. Before inferential data analysis, the researcher must carefully analyse the conceptual framework and hypotheses (Cronk, 2020). Table 3.6 represents the variables of the conceptual framework of the present research according to their types and measurement scales.

The inferential analysis will be conducted to test the developed hypotheses using non-parametric and parametric statistical techniques. To be subjected to a parametric test, the dependent variables must typically be measured on an interval or ratio measurement scale and have a roughly normal distribution. But non-parametric tests do not make that assumption. Therefore, present research prioritize non-parametric methods such as Chi-Square, Spearman's rank correlation, Mann–Whitney U test, and Kruskal–Wallis test, and also uses parametric procedures such as Linear regression.

- The chi-Square test will examine the association between the sample variables. It was commonly used to compare observed data with data that would expect to obtain according to a specific hypothesis (Cronk, 2020).
- If a relationship exists between two ordinal variables, Gamma will be used to measure the strength of the relationship. Gamma value of 0.00 reflects no association when a Gamma value of 1.00 reflects a positive perfect relationship between variables. If the value is;
 - between 0.00 and 0.30 is weak

- between 0.30 and 0.60 is moderate
- greater than 0.60 is strong (Cooper & Schindler, 2014).
- Spearman rank-order correlation coefficient will be used to measure the strength and direction of the association (Cronk, 2020).
- Mann–Whitney U test will be conducted to test whether or not two independent samples are from the same distribution (Samuels, 2016).
- Kruskal–Wallis test will be conducted to test whether or not several independent samples come from the same population (Samuels, 2016).
- Linear regression analysis will examine the relationship between two or more variables, in other words, examine the influence of one or more independent variables on a dependent variable (Cronk, 2020).

Results

The primary objective of this study is to evaluate the field officers' adaptation to Labour Administration ECMS in Sri Lanka. Based on the study's objectives, the sample was taken from the field officers attached to the DoL Sri Lanka. The survey was conducted island-wide, consisting of 486 of the population, and a questionnaire was distributed among the sample representatives. Descriptive analyses were performed to describe the basic features of the data in a study. Then, the developed hypotheses were tested using statistical tests, such as non-parametric and parametric tests, as part of the study. The primary data was analyzed using IBM SPSS Statistics (version 26.0) and Microsoft Excel softwares.

Overview of the sample

The 258 questionnaires were distributed among the potential respondents representing the 11 strata. Out of 258 questionnaires, 220 respondents replied. Therefore, 220 questionnaires were subjected to the study. Zonal offices have been used as strata, and sample allocations were done as same as the population proportions. Concerning the 11 zones, the distribution of respondents in the sample based on their designation is illustrated in Table 4 below.

Table 4: Sample overview

		Designation			Total
		LO	SL O	AC L	
Zonal office to which the workplace belongs	Zonal Office, Central	22	4	5	31
	Zonal Office, Eastern	12	1	3	16
	Zonal Office, Northern	12	2	2	16
	Zonal Office, North Central	8	1	1	10
	Zonal Office, Sabaragamuwa	29	2	3	34
	Zonal Office, Southern	27	3	3	33
	Zonal Office, Uva	9	1	1	11
	Zonal Office, North Western	7	0	4	11
	Zonal Office, Western I	20	0	4	24
	Zonal Office, Western II	7	0	3	10

Zonal Office, III	Labour Western	21	0	3	2 4
Total		174	14	32	2 2 0

Distribution of age with respect to the gender

Figure 4.18 shows the distribution of respondents' age with respect to respondents' gender in the present study.

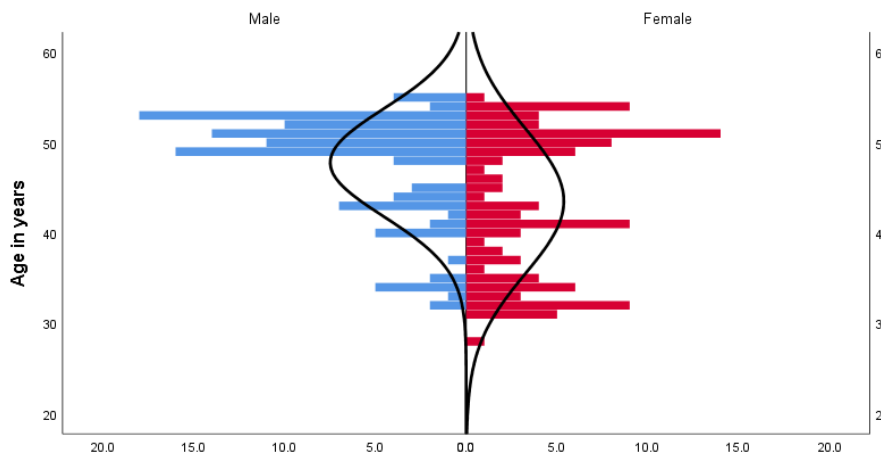


Figure 2: Distribution of age by gender

According to Figure 2, both age curves for males and females showed left-skewed distribution. But, the peak value of the male curve is taller and left-skewed than the female curve. Three significant clusters of age groups in this sample can be observed. Also, it can be assumed that, there was a considerable number of older male field officers comparatively in the sample.

Distribution of ability to work with devices

The majority of the respondents used smartphones, and it is 85% of the sample. But there were, 15% of the field officers not having smartphones. Mainly, DoL has distributed tablets for field officers to use Labour Administration ECMS in fields. But, most respondents, 61% of the sample, did not use tablets, which was a significant issue to address. An approximately equal number of respondents used laptops and desktops, respectively 45% and 49% of the sample. Figure 3 shows the distribution of respondents' ability of working with the devices mentioned. The ability defined as 5 scale ranking order from weak to excellent.

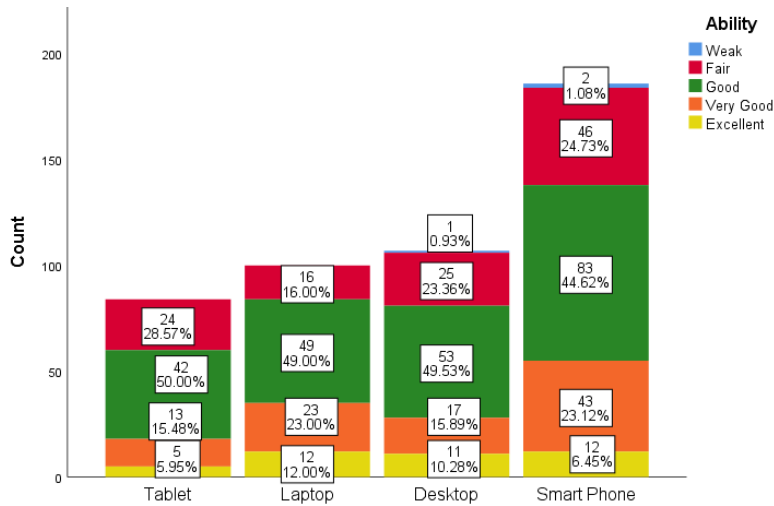


Figure 3: Distribution based on ability to work with devices

According to Figure 4.10, only 1% of desktop and smartphone users were weak in using the device. At the same time, the highest excellency was shown by laptop users (12%), followed by desktop users (10%). Only around 6% of smartphone and tablet users show excellency in device handling.

Validity and Reliability of the Research Instrument

The dependent variable of the research was an adaptation, and the main independent variables were demographics, digital competency, senior management support, user training, legal framework, perceived usefulness, and perceived ease of use. Among them, a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) was used to measure below variables mentioned. And each variable has 6 response items.

- Senior Management Support (SM)
- User Training (UT)
- Perceived Usefulness (PU)
- Perceived Ease of Use (PEU)
- Adaptation (AD)

To begin the analysis, the initial data has been cleaned by removing the extreme cases and outliers. Six cases can be considered outliers. Boxplots have been generated to identify the outliers, and from that, the author removed those cases from the initial data frame as they affected results. Then, the external validity of the questionnaire was tested by using factor analysis, and internal reliability was tested by using Cronbach's Alpha test.

Tests for Validity

Construct validity was tested by conducting a factor analysis on the above interest variables. All indicators developed for operationalizing the respective variables, were included in the test. The first step in factor analysis is determining if the data has the required characteristics. For that purpose, KMO and Bartlett’s test was performed. The KMO and Bartlett’s test evaluates all available data together.

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	9740.821
	df	435
	Sig.	.000

According to Table 5, the KMO value of 0.904, over 0.5, and a significance level for Bartlett’s test below 0.05 suggests the variance is homogeneous, and data is ready for further calculations (Cronk, 2020).

Therefore, the factor analysis can be applied to see the external validity of the groups the author will create, and the results can be acceptable. Table 6 shows the rotated factor matrix.

Table 6: Rotated Factor Matrix

	Factor				
	1	2	3	4	5
SM01			.616		
SM02			.754		
SM03			.820		
SM04			.774		
SM05			.775		
SM06			.838		
UT01	.833				
UT02	.861				
UT03	.852				
UT04	.909				
UT05	.818				
UT06	.833				
PU01					.687
PU02					.738
PU03					.809
PU04					.660
PU05					.632

PU06		.550
PEU01	.796	
PEU02	.833	
PEU03	.835	
PEU04	.784	
PEU05	.783	
PEU06	.741	
AD01		.658
AD02		.716
AD03		.689
AD04		.744
AD05		.658
AD06		.746

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 7 iterations.

According to Table 6, all the above indicators carry a value greater than 0.5. Cronk (2020) has mentioned that a value greater than 0.5 is accepted. Therefore, all the above indicators were considered strong and accepted from a validity perspective. Also, based on the grouping order of the factors, we can say user training group was the strongest group (factor 1), and perceived usefulness was the weakest group (factor 5).

Tests for Reliability

The reliability of a measure indicates the extent to which a given measure can be free from error and ensures a consistent measurement across time. To test the internal consistency of the respondents' answers to all of the items in a measure, the reliability of the study was tested using Cronbach's Alpha test.

The Cronbach's Alpha test results indicate the strength of the inter-correlations of the items used where the values lie between 0 and 1 where a value of 0 indicates no internal consistency, while a value of 1 indicates perfect internal consistency. Generally, a value of 0.7 or higher is acceptable for research purposes. This means the items in the measure are highly correlated and measure the same construct or concept.

Table 7: Results of the Reliability Analysis

Variable Type	Dimensions	Cronbach's Alpha
Independent Variable	Senior Management Support	0.950
	User Training	0.978
	Perceived Usefulness	0.960
	Perceived Ease of Use	0.973
Dependent Variable	Adaptation	0.931

According to Table 7, Cronbach's Alpha score of senior management support, user training, perceived usefulness, perceived ease of use, and adaptation were higher than 0.7, which means those determinants were highly reliable and that the items pertaining to each of these variables were more appropriate to cover the dimension.

Up to now, the author have tested the hypothesis of the relationship between the dependent variable (Median adaptation) with the seven different independent variables extracted from past literatures using the chi-square test, which can be considered a non-parametric test. Table 8 summarizes the results as follows.

Table 8: Summary Table for Hypotheses

Alternative Hypothesis	Sub-hypothesis of Alternative Hypothesis (if available)	Pearson chi-square value	Decision on Alternative Hypothesis
H1 (Demographics)	H1a (Age)	0.815	Reject
	H1b (Gender)	0.212	
	H1c (Work Experience)	0.430	
H2 (Digital Competency)	H2a (Ability of working with ICT Equipments)	0.000	Do not reject
	H2b (Internet and email access frequency)	0.005	

H3 (Senior Management Support)	0.000	Do not reject
H4 (User Training)	0.000	Do not reject
H5 (Legal Framework)	0.001	Do not reject
H6 (Perceived Ease of Use)	0.000	Do not reject
H7 (Perceived Usefulness)	0.000	Do not reject

The final objective of the present research is to determine the importance of Labour Administration ECMS features to be introduced in the future, according to field officers in Sri Lanka. Five-point Likert scale, named 1- Low important, 2- Slightly important, 3- Neutral, 4- Moderately important, and 5- Extremely important, was deployed to obtain the respondents' views. An average above 3.0 indicates that the features are important, and an average below 3.0 indicates that these items were not considered to be so important, according to the respondents. Therefore, recorded on a three-point Likert scale named 1-Low important, 2- Neutral, and 3- High important.

Table 9: Response percentage for each system feature

	Low important	Neutral	High important
The system should integrate with other information systems (Ex: EPF monitoring system)	25.9%	14.5%	59.6%
The inspection report should be auto-generated, and alerts should send to field officers when follow-up actions are required	28.7%	20.9%	50.5%
Advanced-Data Analytics for predicting labour violations should be available	23.7%	26.4%	50.0%
Key performance indicators should be tracked, such as the number of inspections carried out on a day	22.7%	32.3%	45.0%

Data should be accessible in real-time as well as offline	26.9%	28.8%	44.3%
Voice and handwritten recognition should be available when inserting data into the fields	26.8%	34.5%	38.7%
The system should enable direct access to external users (Ex: Employers can update their details online)	33.2%	28.2%	38.6%

According to Table 9, most respondents marked all the features as important above average. Therefore, Labour Administration ECMS features are ordered based on the level of importance as mentioned.

Discussion and Conclusion

Discussion

The first objective of the research is to determine the current level of adaptation among field officers to Labour Administration ECMS in Sri Lanka. The outcomes of the interviews conducted with deputy commissioners of DoL implied that field officers' adaptation to Labour Administration ECMS was considerably low. Also, the results of the quantitative analysis of the present study, the current level of adaptation among field officers on Labour Administration ECMS was below the average level. The results further revealed that those who had the lower level of adaptation showed comparatively higher level of awareness regarding the Labour Administration ECMS. This justified the research problem and motivation behind conducting the research. The current level of adaptation showed variations depends on several conditions. The ACL group has higher adaptation, and the LO group has lower adaptation which means adaptation increases when promoted from junior to senior. Also, Southern Zone has mostly less adapted field officers. And those with ICT-related qualifications showed relatively similar and a higher level of adaptation. Therefore, the author can conclude that the first objective of the present research is successfully achieved.

The second objective of the research is to identify the association between personal user characteristics and field officers' adaptation to Labour Administration ECMS in Sri Lanka. Based on the previous findings of information system adaptation, two determinants were identified as essential personal user characteristics. Those are the demographics and their digital competency. To answer the relevant research question, a detailed survey distributing questionnaire was conducted among the field officers of DoL. Then the responses for each determinant were analyzed. Most past researches confirmed that

demographics such as age and gender significantly impact IS adaptation. But the present research provided a contradictory result. The results showed that there is no significant association between the field officers' adaptation and their demographics. The current research mainly considered age, gender, and work experience under demographics. Hence, there is no association between age, gender, or work experience and field officers' adaptation to Labour Administration ECMS. But the findings showed that there is a significant positive moderate association between digital competency and field officers' adaptation to Labour Administration ECMS. The study determined the digital competency from the IT device usage ability and internet and email access frequency of field officers. The field officers who were competent in device usage and familiar with internet and email showed more adaptation to Labour Administration ECMS. Also, among the devices like desktop, laptop, tablet, smartphone, field officers mostly use smartphones as smartphones have already become a critical management and communication tool. Therefore, the author can conclude that the second objective of the present research has been successfully achieved.

The third objective of the research is to identify the association between organizational characteristics and field officers' adaptation to Labour Administration ECMS in Sri Lanka. Based on the previous findings of information system adaptation, three determinants were identified as essential organizational characteristics. Those are senior management support, user training, and legal framework. To achieve this objective, a detailed survey distributing questionnaire was conducted among the field officers of DoL. Then the responses for each determinant were analyzed, and the results showed an association between organizational characteristics and field officers' adaptation. One of the vital elements in adapting information systems is senior management support. It will impact the IS adaption of government agencies like DoL, which has a slow digital transformation. The study's results confirmed a significant positive moderate relationship between senior management support and field officers' adaptation to Labour Administration ECMS. User training is crucial to an organization's effective adaptation to IS as it is a strategy that organizations are using more and more to develop a productive and competitive workforce. User training is frequently focus on usefulness and ease of use concerns. Also, training programs boost the self-confidence to operate IS while influence their belief in the system. The study confirmed a significant positive strong relationship between user training and field officers' adaptation to Labour Administration ECMS. An organization must abide by laws, rules, and specifications specific to its operations, which are reflected in the legal framework. More than the external law factors, the internal legal framework affects the adaptation to Labour Administration ECMS in Sri Lanka. The study's results confirmed a significant positive weak relationship between the legal framework and field officers' adaptation to Labour Administration ECMS. Therefore, the author can conclude that the third objective of the present research has been successfully achieved.

The fourth objective of the research is to identify the association between system-related user characteristics and field officers' adaptation to Labour Administration ECMS in Sri Lanka. Based on the previous findings of information system adaptation, two determinants were identified as essential system-related user characteristics. Those are perceived usefulness and perceived ease of use. To achieve this objective, a detailed survey distributing questionnaire was conducted among the field officers of DoL. Then the responses for each determinant were analyzed. Then the results showed a significant positive strong relationship between perceived usefulness and field officers' adaptation and a significant positive moderate relationship between perceived ease of use and field officers' adaptation. As this study focused on user adaptation, these determinants explained an individual's attitude towards the Labour Administration ECMS. Therefore, the author can conclude that the fourth objective of the present research has been successfully achieved.

The fifth objective of the research is to determine the level of importance of Labour Administration ECMS features to be introduced in Sri Lanka. To achieve this objective, a thorough literature survey, interview with deputy commissioners, and a detailed survey by distributing questionnaires were conducted among the field officers of DoL. ILO need to implement standard Labour Administration ECMSs in their member states. Therefore, the system's structure should be similar, and workflow can differ slightly according to the countries. By exploring the international Labour Administration ECMSs, and according to interview outcomes with deputy commissioners, seven features currently not included in Sri Lankan Labour Administration ECMS were identified. Then the level of importance is checked from the field officer's perspective. More than half of the sample marked the features such as the system should integrate with other information systems, an inspection report should be auto-generated and alerts should be sent to field officers when follow-up actions are required, and advanced data analytics for predicting labour violations should be available as highly important. Therefore, to enhance the adaptation of field officers, DoL could implement those features in the near future. And DoL could consider that key performance indicator should be tracked, and data should be accessible in real-time and offline as the next step. But field officers believed that features such as voice and handwritten recognition should be available, enabling direct access to external users not much important. But, according to the deputy commissioners in DoL, voice and handwritten recognition would be much easier for field officers to enter inspection data and collect evidence in the fields. Finally, according to the results, DoL should consider integrating Labour Administration ECMS with other internal systems but not with external parties. Therefore, the author can conclude that the fifth objective of the present research has been successfully achieved.

Conclusion

Over the past few years, labour administration has rapidly progressed in implementing digital administration in most countries. It relates to how an environment with ISs, databases, smartphones, laptops, tablets have changed the traditional inspection mode and brought a faster, more direct, and agile inspections. Today, a field officer can visit a company and close an inspection onsite using a tablet through Labour Administration ECMS. Therefore, field officers' adaptation is an essential factor when talking about the successful functioning of the Labour Administration ECMS.

This research conducted a survey, and 220 users responded, including field officers representing 11 zones as mentioned previously. The present study constructed a conceptual framework by referring to previous research studies, while integrated adaptation characteristics under personal, organizational, and system-related perspectives. Then the developed hypotheses based on the conceptual framework were tested, and the results were presented with extra findings. Both reliability and validity were proved for the scales used for independent and dependent variables. According to the findings of this research, it has been revealed that some associations identified are considerably different from those identified in previous IS adaptation studies. Because field officers' demographics were not associated with their adaptation. But all other characteristics such as digital competency, senior management support, user training, legal framework, perceived ease of use, and perceived usefulness were associated with their adaptation. To conclude author can mentioned as more than 45% of the representative sample from total population contributed to the study, the results can be generalized to the population with minimize bias in the sample selection and maximize estimation precision within a given sample size.

The analysis and interview outcomes illustrate that DoL Sri Lanka should be more concerned about the areas below, when managing the Labour Administration ECMS to enhance the adaptation of field officers.

- The LO group has more respondents (79%) in the sample and the population. As per the analysis results, the LO group shows comparatively low adaptation. DoL should focus on enhancing the LO group's awareness to enhance their adaptation because analysis confirmed that adaptation increased along with the awareness.
- Nearly 60% of field officers in the sample believed user training is a more critical characteristic when enhancing adaptation. Therefore, DoL could be more concerned about using training and provide more training sessions to field officers.

- As ICT-related qualification is not compulsory in field officer jobs, 40% of the sample had no ICT-related qualification, and 38.64% had less than two years of computer experience. Therefore, DoL can provide basic ICT course to them as a part of their induction training.
- DoL should focus on the frequency of email access and encourage email usage. DoL management can ask field officers to email the inspection reports rather than provide hardcopy reports.
- Digital competency was a main characteristic of the research. Therefore, DoL should focus on enhancing staff competency as it will enhance the adaptation. DoL could focus on hands-on training to operate tablets while increasing internet usage.
- DoL should increase awareness of legal aspects mainly policies and laws bonded to the system as there is an association between the legal framework and field officers' adaptation. Then it will enhance the reliability of the system.
- DoL should focus on delivering the system as a mobile-app because most of the field officers were using smart phones in the fields. But hands-on training to access to the system via a mobile-app should be compulsory as WhatsApp/Viber usage was low in the sample.
- DoL can consider of providing smart phones, data packages to the field officers for office-use as majority of field officers were using smart phones and mobile data. As Labour Administration ECMS also a web-based system, it will indirectly increase the system adaptation.
- The variance of field officers' zone implied that DoL should mainly focus on Southern Zone as the respondents in Southern Zone showed low adaptation to the system. If DoL could facilitate more training sessions and awareness programs in Southern zone, considerable increase of the adaptation could be expected.
- DoL can reward field officers or inspection units that effectively use Labour Administration ECMS by providing incentives.

This study identified characteristics that could affect the field officers' adaptation from the existing literatures in the global context. This study was limited to just seven independent variables. Although relevant references are included, some aspects are mainly driven by the author's opinions. Therefore, scholars should focus on identifying new factors that could affect adaptation. As there is no model defined for Electronic Case Management Systems, scholars can work on that area by considering the conceptual framework of the present research. There are IS adaptation researches conducted for different fields, but there is a gap for different user types like field officers. Therefore, scholars can consider that also. Moreover, the study proposes further research on ECMSs and demographics.

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