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Identifying the Problems and Critical Analysis of Human Resource Management Information System in Punjab School Education Department

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Abstract

The HRMIS is a system used for defining targets, indicators and goals for a specific organization or sub-organization, as well as a method for managing their implementation through accountable practices. The researcher under study was trying to analyze the problems faced in utilization of Human Resource Management Information System (HRMIS) in Punjab School Education Department. For this purpose, 4 Chief Executive Officers (DEA), 12 District Education Officers, 40 Deputy District Education Officers, 891 Male and Female Head teachers and 3855 Male and Female secondary school teachers of public secondary and higher secondary schools of Sargodha Division were selected as the population. Multi stage sampling technique was used for the collection of data from targeted population. In first stage CEOs, DEOs and Deputy DEOs were considered as whole in selected sample and in second stage 58 head teachers (M&F) and 243 secondary school teachers (M&F) were selected as a proportionate of target population. Questionnaire is the tool of research study. Researcher personally visited the offices of concerned officers and schools to distribute the questionnaire among officers, head teachers and secondary school teachers. Later on, data was collected from respondents and analyzed through SPSS. Descriptive and inferential analysis was done. The results show that problems faced in utilization of HRMIS including personal profile modifications, Transfer and posting process, leave management, Personal Evaluation Reports and retirement procedures. The key observation of the study was the significant difference in the problems faced by male and female in relation to using the HRMIS. The results indicated that gender influenced the scope of the challenges, with female respondents reporting greater difficulties in assessing and

using HRMIS functions. This finding emphasis the need for a more inclusive and user-friendly system that adopts to the specific needs of all stakeholders.

Keywords: *HRMIS Implementation Challenges, System Inefficiency in Education Administration, Data Management and Accuracy Issues, Organizational and Technical Barriers, Governance and Accountability in HRMIS*

1 Introduction

Education is the road to national development. It creates sense of responsibility among the people. Education promotes economic development and consequently people become prosperous and play their respective roles in the overall national development[1] A unique approach was developed to change a new work culture based on organisational structure and function. They established a national HRM discipline. Human resource management was already strong in the commercial sector. They also hire the best personnel, invest in staff development, and provide competitive pay to compete with other industries for survival[2]. HRM is still being implemented in Pakistani educational institutions, with levels of acceptance varying between private and state-owned institutions[2]. However, it is believed that management, instructors, and students should be the main goals of any reform effort.[3]. An integral part of the educational process is the educational managers at various administrative entities. Collectively, they have the ability to formulate any policy and focus on creating high-quality education that is an integral part of every successful society[4], [5]. Many reforms were launched for the betterment of education system in Punjab. Efforts for reforms only be effective when all stakeholders come to a consensus and are reinforced to deliver change[6], [7] Utilizing ICT has become standard procedure in the School Education Department (SED), particularly in E- and Mobile Learning. These days, it serves as the main channel for reporting implementations, giving commands, and communicating information[7], [8], [9] Using the School Information System, head teachers are in charge of inputting a large amount of data every day (SIS application software). The school tablet is now used to update the student and teacher attendance, new enrollment, and school census forms on the school information system (SIS). In a similar manner, educators update their information on the Human Resource Management System and submit online leave requests of all kinds[10]. Research suggests that decentralized or independent school administration works in rich nations but not poor ones (WDR, 2018). Mutual trust, understanding, and reciprocity of responsibilities result in promotion and professional career development for employees and higher productivity for employers due to the psychological contract[11].

1.1 Implementation of HRM Practices in Higher Education

detect available positions, attract competent individuals, choose the appropriate candidate for the right job, shift the person on the job, give training, detect and remove performance gaps, and set job-based compensation[12]. Each organisation adopts specific HRM practices, yet while performing all HRM duties, they cannot apply all HRM standard practices. Recruitment finds and attracts candidates for job openings[10], [13] Advertisements are the main source of recruiting. Selection follows recruitment, and the best applicant is chosen. Organisations choose the best individuals from a broad pool to lead them to success. Organisational success depends on selecting the proper applicant for the role[14]. First, HRM practices must find and hire the

proper individual. Job identification involves characterising and specifying the job. Job definitions include roles, tasks, working circumstances, and anticipated abilities. Hiring new personnel requires HRM. Employees must be trained and socialised to fit within the firm. Second, Decenzo and Robbins' HRM section evaluates and motivates employees. (2002). Brown and Heywood (2005) found that performance appraisals assess candidates and identify gaps. Effective selection, training, pay, and communication with employees are tough organizational activities[10]. Qadeer, Ahmad, and Rehman (2011) found that Pakistani public and private organisations lack HRM integration. According to Iqbal, Arif, and Abbas (2011), HRM is still being implemented in Pakistani educational institutions, with levels of acceptance varying between private and state-owned institutions[2].

1.2 Government Schools in Punjab

Approximately 53,000 Punjabi schools exist. About 37,000 are in primary school, 8400 in middle school, and 6400 in high school (EMIS, 2016). This research examines each of the three kinds of government schools independently to see whether school leaders' behaviours, interactions, and autonomy vary. Variation is expected for these reasons:

1. Government primary school head-designates have no formal position. Head teachers have positions at primary and secondary levels.
2. Basic Pay Scales (BPS) of primary solo, middle, and high school heads have differences. Primary school heads' BPS is usually 9–14, middle school heads 16–17, and high school heads 16–19.
3. Different reporting structures for heads of the three government school kinds. As shown in the figure below, primary and middle school heads report to and are supported by Assistant Education Officers (AEO), while high school heads report to and are supported by District Education Officers (DEO) in chains that lead to the Chief Executive Officer (CEO) DEA and the Deputy Commissioner (DC) in the district education department.

The following may indicate that school heads in various government schools have distinct procedures, relationships, and autonomy. Leaders concentrate on student learning to accomplish school goals via leadership for learning. Organisational leadership occurs. Challenges and expectations inside and beyond the school shape it. Personal characteristics associated to the school organogram also impact it Leadership affects vary greatly with personal views, expertise, and experience Despite not affecting student learning, school-level variables determine its effect. The school environment affects leadership

2 Literature review

Policymakers might use the study's performance-oriented HRM framework findings to enhance other Pakistani public sector organisations. "Reshaping the Future of HR: Human Resource Analytics and Talent Management" investigates how HRA improves Pakistani corporate performance. It collects qualitative data from 24 interviews and quantitative data from 245 various industry respondents using mixed approaches. HRA alone does not predict OP; Talent Management mediates it. HRA supports strategic HR planning and organisational success by providing data-driven workforce acquisition, training, engagement, and retention insights [15]. Research shows that effective HRM improves library operations and satisfies organisational goals. Employee happiness and service quality are discussed in connection to recruitment, training, performance evaluation, and staff development. Both libraries include HRM initiatives including job rotation, training, and career development to

increase employee happiness. The report suggests library management and institutional HR departments collaborate to fill professional development shortages[16]. Even while government initiatives like Kamyab Jawan and Digital Pakistan Initiative encourage digital literacy, structural issues like underfunding and outdated curricula persist. The report suggests increased public-private partnerships, vocational training, and gender equality. These strategies aim to link education to labour market demands for Pakistan's economic growth and human capital development[17]. The research recommends Pakistani HEIs enhance faculty, modernise administrative procedures, and increase industry-government ties. New teaching methods and research collaborations may reduce performance gaps. Studies show that IC may help HEIs grow sustainably and compete worldwide in the information economy[18]. To fix problems, the study suggests specific exam facilities and better financial incentives. Results aim to increase PEC exam fairness and efficiency, boosting Punjabi education. Policymakers, educators, and administrators may utilise the data to enhance exams and education[19]. The government should promote digital transformation in all schools to guarantee equitable technology access, say proposals. Efficiency, paperwork reduction, and learning opportunities are long-term benefits of e-management. The research advocates a hybrid approach that combines traditional and digital management techniques and prioritises technology integration in Pakistan's education system to enhance resilience and adaptability to future crises[20]. It also emphasizes local policy adaptation to meet regional and national needs. Pakistan's higher education system can benefit from central-provincial HEC cooperation and faculty growth. To boost socioeconomic growth, the report advises policymakers and educators to link governance practices to national higher education strategies[14].

2.1 Human Resource Management Information System

It is a systematic technique to save personnel data and information for planning, decision-making, and reporting to external agencies? Internal control, feedback, remedial action, and legislative requirement need information. Computerised HRMISs monitor, regulate, and influence human behaviour from the moment individuals join an organisation to the time they leave. Subsystems include recruiting, personal, personnel, payroll, and human resource statutory system. found that HRMIS utilisation has grown over time. Thus, if an organisation does not follow IT trends, it may have inefficient or ineffective HRMIS.

2.2 Concept of Human Resource Information System

HRMIS is a contemporary communication technology that links HRM operations with employee data. Human resource data in the HRMIS informs company decisions. Proper HRM allows organisations to deliver vital information that benefits the whole firm. HRMIS data base covers new hires, transfers, promotions, yearly leave, performance appraisals, compensation changes, training, attrition rates, and personal information[13].

3 Motivation and the problem statement

3.1 Motivation

HRMIS has gained attention for boosting administrative efficiency and decision-making in educational institutions, notably public sector departments. However, research on HRMIS implementation issues in the Punjab School Education Department is lacking. Several studies have examined HRMIS adoption and e-

government systems in public sector organisations [17], [21].but few have examined educational managers' perceptions, gender-based differences in HRMIS use, and Pakistan's unique educational challenges.

There is no empirical study on gender-based HRMIS problems for educational managers, including data input, leave management, transfers, and personal assessment reports. The Punjab School Education Department's HRMIS installation and uptake are unknown. Previous studies on HRMIS adoption in other sectors have been useful, but they have not adequately addressed Punjab's educational context and problems. Training, technology, and organisational culture have not been fully explored in connection to HRMIS in education. Understanding HRMIS user satisfaction, system acceptability, and efficiency requires these characteristics. Gendered HRMIS hurdles have not been extensively examined. Understanding how female educational administrators handle HRMIS activities like leave management and transfers differs from their male colleagues is crucial.

3.2 Problem Statement

The Punjab School Education Department implemented the Human Resource Management Information System (HRMIS) to improve administrative efficiency and accurately manage educational staff data, including personal profiles, transfers, leave management, performance evaluations, and retirement procedures. HRMIS's expected advantages have been hampered by its actual implementation. Educational leaders including CEOs, DEOs, Deputy DEOs, and Head Teachers struggle to use HRMIS efficiently. These concerns affect data input, leave management, transfer processes, personal assessments, and retirement, reducing system efficiency. Gender-based inequalities in HRMIS use among male and female stakeholders have not been adequately examined, creating a vacuum in understanding how these discrepancies influence system performance. This study examines Punjab School Education Department educational managers' HRMIS challenges to fill this gap. Data input, leave management, transfers, personal assessment reports, and retirement procedures are examined, as well as gender-based disparities in perception and response. Despite government investment in administrative processes, the HRMIS system is underutilised and inefficient, prompting this analysis. Few studies have examined the practical issues educational managers encounter while utilising HRMIS and the system's decision-making constraints. To improve educational HRMIS efficiency and effectiveness and fulfil all stakeholders' demands, these challenges must be understood. This quantitative study used a survey of Punjab School Education Department educational managers. A sample of CEOs, DEOs, Deputy DEOs, and Head Teachers completed a structured questionnaire, which was analysed using descriptive and inferential statistics. The investigation found that system complexity, inadequate training, and gender-based disparities in HRMIS perception and usage hinder HRMIS use. To enhance the HRMIS system's efficiency and make it inclusive and user-friendly, especially for female educational administrators, the research found these impediments must be addressed. The results suggest that the Punjab School Education Department needs focused HRMIS design, training, and assistance to improve its implementation.

4 Proposed Study:

This study employs a quantitative research method to assess the problems faced by stakeholders in utilizing the Human Resource Management Information System (HRMIS) in the Punjab School Education Department. The

quantitative approach allows for the collection of numerical data from a diverse group of stakeholders, including educational managers and teachers, to identify and analyze patterns in their experiences with HRMIS.

The research method involves:

- ✓ Data Collection through Surveys: A structured questionnaire will be used as the primary tool for data collection. The questionnaire will include both closed-ended and open-ended questions to gather quantitative data on the specific challenges faced in utilizing HRMIS, as well as qualitative insights on user perceptions.
- ✓ Data Analysis: The descriptive statistics will be used to summarize and present the frequency and distribution of the issues faced by the stakeholders.
- ✓ Inferential statistics (One-Way ANOVA and Independent t-tests) will be used to analyze any significant differences between groups (e.g., male vs. female stakeholders) regarding the challenges in HRMIS utilization. The data will be analyzed using SPSS software to ensure precise and reliable results.

The quantitative approach is appropriate for this study because it facilitates the measurement of the frequency and significance of the issues faced by various stakeholders, which can then be generalized to the broader population of educational managers and teachers in Punjab.

5 Research Design

The study adopts a descriptive research design to systematically describe and identify the problems stakeholders face in using HRMIS within the Punjab School Education Department. This design is ideal for understanding the current state of HRMIS utilization without manipulating variables, as it focuses on describing the existing phenomena.

i. Specific Features of the Research Design:

- ✓ Cross-Sectional Design: The research will collect data at a single point in time from different stakeholders, allowing for a snapshot of the current challenges in HRMIS utilization. This is suitable for addressing the research questions about the differences in HRMIS experiences across different stakeholder groups.

ii. Sampling Strategy:

- ✓ Multi-stage Sampling: The research employs a multi-stage sampling technique to select participants from the target population in the Sargodha division of Punjab.
- ✓ In the first stage, educational managers (CEOs, DEOs, Dy DEOs) will be selected.
- ✓ In the second stage, a proportionate sample of headteachers and secondary school teachers will be selected.
- ✓ This multi-stage approach ensures that the sample is representative of the different levels of educational management, allowing for a more comprehensive understanding of the challenges faced by various stakeholders in the HRMIS system.

iii. Ethical Considerations:

- ✓ Informed Consent: Participants will be fully informed about the study's purpose, their right to confidentiality, and their voluntary participation.

- ✓ Confidentiality and Anonymity: All data collected will be kept confidential, and participants' identities will remain anonymous.
- ✓ Expected Outcomes: The descriptive and inferential analyses will provide a clear understanding of the problems faced by stakeholders in using HRMIS, the differences in experiences based on gender and position, and the effectiveness of the system in improving HR management processes within the Punjab School Education Department.

iv. Rationale for the Chosen Design and Methodology:

- ✓ The quantitative research method combined with a descriptive, cross-sectional research design is ideal for this study because:
- ✓ It enables the researcher to gather comprehensive data on the extent of HRMIS utilization issues.
- ✓ It allows for the analysis of data from different stakeholder groups, comparing their experiences with the HRMIS system.
- ✓ The use of a multi-stage sampling technique ensures that a representative sample of the population is included, which enhances the generalizability of the results.

By utilizing this method and design, the study will contribute valuable insights into the problems faced by stakeholders in HRMIS utilization, which will ultimately help improve the implementation of HRMIS in the Punjab School Education Department.

6 Population of the Study

A researcher's desired population is the group to which the study's findings can be applied[5]. According to Mugenda and Mugenda (2003) a research population is also known as a group of people who have similar characteristics therefore, all individuals or objects within a certain population usually have a binding characteristic or trait. The main focus is usually for scientific query. The description of the population has similar characteristics. The details about the target population were presented on the table 3.1.

There are 04 Chief Executive Officers (DEA), 12 District Education Officers (DEOs male and female), 40 Deputy District Education Officers (Dy DEOs male and female), 891 male and female Heads of Government High and Higher secondary schools, and 3855 Male and Female Secondary School Teachers/ Educators of Government High and Higher secondary schools in Sargodha Division. All the CEOs, DEOs, Dy DEOs, Head teachers of male and female Government High and Higher secondary schools and SST's/SSE's of Government High and Higher secondary schools was our target population. Table 3.1 indicates the target population.

Table 1 Target Population

District	CEOs Male	CEOs Female		Total	DEOs Male	DEOs Female	Total	DY DEOs Male	DY DEOs Female	Total	Heads Male	Heads Female	Total	SST/SSE Male	SST/SSE Female	Total	G Total
Sargodha		1		1	2	1	3	8	7	15	201	230	431	915	691	1606	2056
Khushab		1		1	2	1	3	5	4	9	86	77	163	424	354	778	952
Mianwali	1			1	2	1	3	4	3	7	104	63	167	443	218	661	841
Bhakhar	1			1	2	1	3	5	4	9	82	48	130	472	338	810	953
G.Total	2	2		4	8	4	12	22	18	40	473	418	891	2254	1601	3855	4803

6.1 Sampling Techniques and Proposed sample size

This is a subsection of the population representing the whole population. The information obtained from the sample can be generalized back to the population. A sampling frame contains a geometric identifier for particular individuals within a population, in addition to other classifying information about the population characteristics that facilitate analysis by allowing for the division of the population into further frames for an in-depth analysis. For sample size determination Krejcie and Morgan table as shown below was used and proportionate stratified random sampling will be used for each strata of sample size.

Table 2: Morgan Table for Determining Sample Size

Determining Sample Size of a known Population									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368

60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
so	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384
Note: N Population Size; S Sample Size					Source: Krejeix & Morgan, 1970				

According to above table 2 if the population is 950 the sample size will be 274.

Formula for determining sample size

$$s = \frac{X^2 NP(1-P) + d^2(N-1) + X^2 P(1-P)}{d^2}$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Source: Krejcie & Morgan, 1970

Using above mentioned formula sample size of said population is as follows.

$$S = \frac{3.84 * 4803 * 0.5 * 0.5}{(0.05)^2 * 4803 + 3.84 * 0.5 * 0.5}$$

$$S = 357$$

Following table shows the sample size.

Table 3: Sample Size

District	CEOs Male	CEOs Female	Total	DEOs Male	DEOs Female	Total	Dy DEOs Male	Dy DEOs Female	Total	Heads Male	Heads Female	Total	SST/SSE Male	SST/SSE Female	Total	G Total
Sargodha		1	1	2	1	3	8	7	15	13	15	28	58	43	101	148
Khushab		1	1	2	1	3	5	4	9	6	5	11	27	22	49	71

Mianwali	1		1	2	1	3	4	3	7	7	4	11	28	14	42	66
Bhakkar	1		1	2	1	3	5	4	9	5	3	8	30	21	51	72
G. Total	2	2	4	8	4	12	22	18	40	31	27	58	143	100	243	357

Population Breakdown:**Educational Managers:**

- 4 Chief Executive Officers (CEOs)
- 12 District Education Officers (DEOs)
- 40 Deputy District Education Officers (Dy DEOs)
- Teachers:
 - 891 Male and Female Head Teachers
 - 3855 Male and Female Secondary School Teachers

This population is targeted to provide a comprehensive understanding of the utilization challenges faced by both management-level and operational staff in the Punjab School Education Department.

Table 4:Example Table: Breakdown of Population

Stakeholder Group	Number of Individuals
Educational Managers	
Chief Executive Officers (CEOs)	4
District Education Officers (DEOs)	12
Deputy District Education Officers	40
Teachers	
Head Teachers (Male and Female)	891
Secondary School Teachers (Male & Female)	3855

Demographic Analysis**Table 5:Frequency Distribution of Participants' Gender**

Gender	<i>n</i>	%
Male	206	57.7
Female	151	42.3

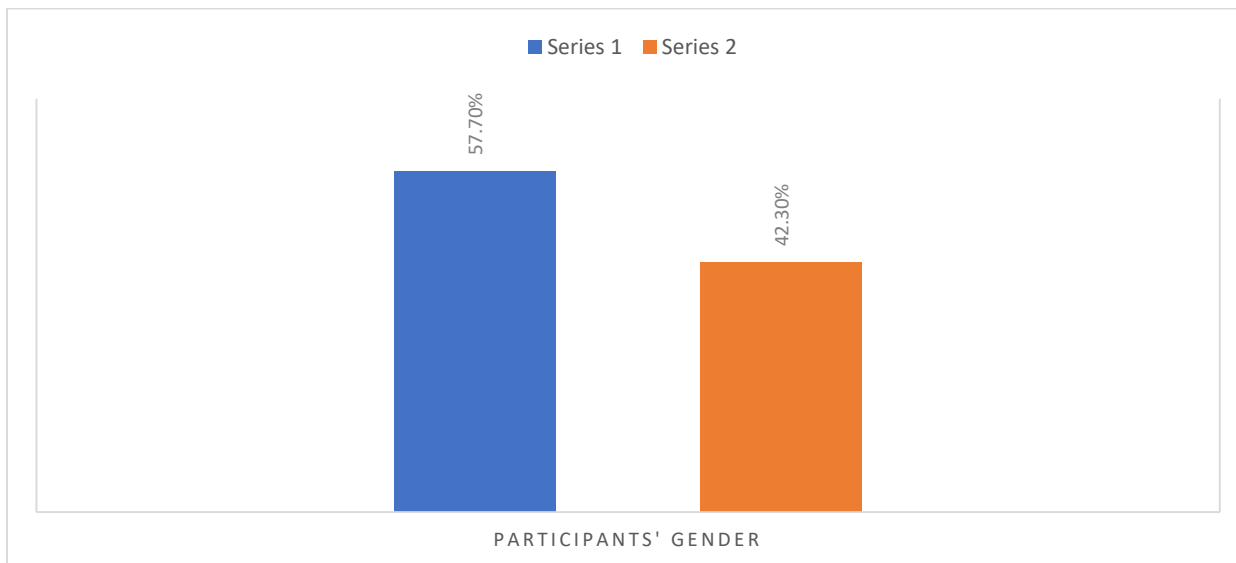


Figure 1: Chart Showing Participants' Gender

Table 6: Frequency Distribution of Participants' Locality

District	<i>n</i>	%
Sargodha	148	41.5
Khushab	71	19.9
Mianwali	66	18.5
Bhakkar	72	20.2

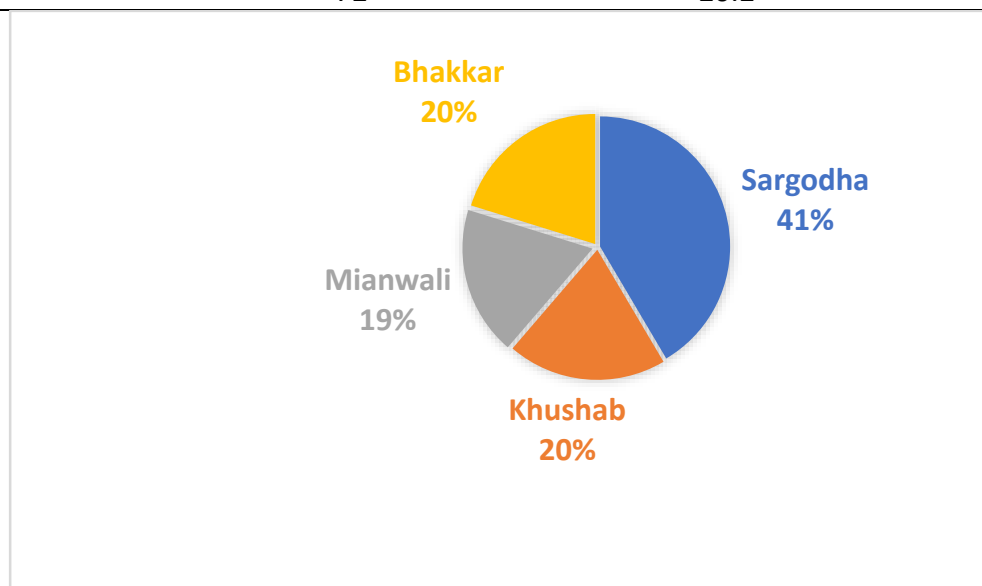
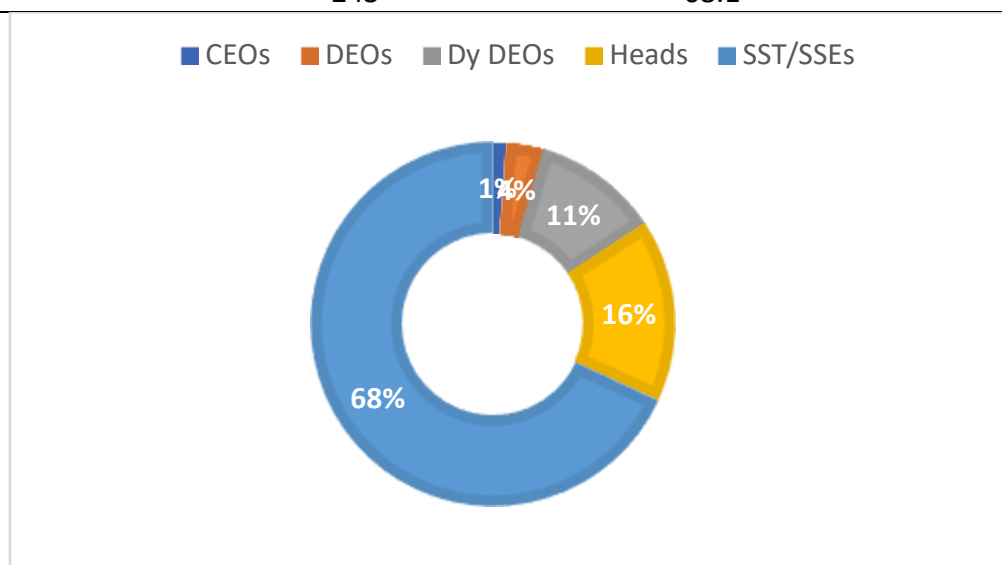


Figure 2: Chart Showing Participants' Locality

Table 7: Frequency Distribution of Participants' Professional Status

Professional Status	<i>n</i>	%
CEOs	4	1.1
DEOs	12	3.4
Dy DEOs	40	11.2
Heads	58	16.2
SST/SSEs	243	68.1

**Figure 3: Chart Showing Participants' Professional Status**

6.2 Descriptive Analysis

Table 8: Frequency Distribution for the Variable Personal Profile (PP)

Sr.	Statements	SA		A		U		D		SD	
		f	%	f	%	f	%	f	%	f	%
PP1	Uploading of personal profile data is user-friendly.	59	16.5	71	19.9	14	3.9	137	38.4	76	21.3
PP2	Personal information is properly updated through HRMIS.	35	9.8	86	24.1	11	3.1	174	48.7	51	14.3
PP3	Personal data of employees is secure on HRMIS.	17	4.8	91	25.5	8	2.2	177	49.6	64	17.9

PP4	Current professional status of employees is reflected through HRMIS.	31	8.7	80	22.4	9	2.5	141	39.5	96	26.9
PP5	Personal profile section facilities to access previous/historical data like positions and trainings of employees.	30	8.4	74	20.7	15	4.2	113	31.7	125	35.0
PP6	Personal profile section facilities employees to express their achievements on HRMIS.	27	7.6	89	24.9	25	7.0	134	37.5	82	23.0
PP7	Personal profile section allows to edit data every time.	30	8.4	80	22.4	28	7.8	152	42.6	67	18.8

Table 8 presents the frequency distribution and percentages of participants' responses regarding the usability and security of the HRMIS personal profile section. For *PP1*, *PP2*, *PP3*, *PP4*, *PP5*, and *PP6* having responses on strongly agreed SA, agreed A, undecided U, disagreed D and strongly disagreed SD respectively. The overall responses indicate a general dissatisfaction with the HRMIS personal profile section, particularly regarding data security, update accuracy, and editing flexibility.

Table 9: Frequency Distribution for the Variable Transfer or Posting (TP)

Sr.	Statements	SA		A		U		D		SD	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
TP1	Request for transfer on HRMIS is easy for employees.	20	5.6	96	26.9	15	4.2	116	32.5	110	30.8
TP2	It is easy to track the status of transfer.	51	14.3	60	16.8	23	6.4	115	32.2	108	30.3
TP3	HRMIS provides clear criteria for transfer according to institution requirement.	39	10.9	70	19.6	23	6.4	147	41.2	78	21.8
TP4	HRMIS facilities coherent transfer process that minimizes irregularities.	28	7.8	81	22.7	20	5.6	145	40.6	83	23.2
TP5	HRMIS facilities authority to reject or approve the transfer request due to suitable reasons.	37	10.4	74	20.7	9	2.5	178	49.9	59	16.5

TP6	HRMIS provides equal opportunities for transfer to male and female employees.	31	8.7	78	21.8	23	6.4	171	47.9	54	15.1
TP7	HRMIS prefer transfer on the basis of previous performance.	30	8.4	76	21.3	12	3.4	154	43.1	85	23.8

Table 9 presents the frequency distribution and percentages of participants' responses regarding the transfer or posting (TP) process through HRMIS. For the statement *TP1*, *TP2*, *TP3*, *TP4*, *TP5* *TP6* and *TP7* having responses on strongly agreed SA, agreed A, undecided U, disagreed D and strongly disagreed SD respectively.

Table 10:Frequency Distribution for that Variable Leave (LV)

Sr.	Statements	SA		A		U		D		SD	
		f	%	f	%	f	%	f	%	f	%
LV1	Leave management system is easy to apply leave on HRMIS.	37	10.4	86	24.1	7	2.0	152	42.6	75	21.0
LV2	HRMIS provides update status of leaves of employees.	63	17.6	76	21.3	21	5.9	122	34.2	75	21.0
LV3	HRMIS facilities authority to approve or reject the application due to suitable reasons.	43	12.0	84	23.5	13	3.6	158	44.3	59	16.5
LV4	HRMIS properly handles the all types of leaves like medical leaves, ex-Pakistan leave, maternity leave, earned leave etc.	22	6.2	82	23.0	11	3.1	182	51.0	60	16.8
LV5	HRMIS provides any option for authority when an employee is absent from institute.	33	9.2	77	21.6	16	4.5	142	39.8	89	24.9
LV6	HRMIS allows delegation of powers properly for sanction any type of leave.	42	11.8	74	20.7	26	7.3	112	31.4	103	28.9
LV7	HRMIS provides clear rules for authority for all types of leaves.	32	9.0	91	25.5	33	9.2	123	34.5	78	21.8

Table 10 presents the frequency distribution and percentages of participants' responses regarding the leave management system on HRMIS. For the statement LV1, LV2, LV3, LV4, LV5 and LV6, having responses on strongly agreed SA, agreed A, undecided U, disagreed D and strongly disagreed SD respectively.

Table 11: Frequency Distribution for the Variable Personal Evaluation Reports (PER)

Sr.	Statements	SA		A		U		D		SD	
		f	%	f	%	f	%	f	%	f	%
PER1	HRMIS provides proper instructions for reported officers for evaluation.	41	11.5	81	22.7	25	7.0	140	39.2	70	19.6
PER2	HRMIS facilities reported officers for fair assessment of employees.	31	8.7	72	20.2	18	5.0	170	47.6	66	18.5
PER3	PER section on HRMIS is secure and only accessible to authority.	28	7.8	72	20.2	13	3.6	172	48.2	72	20.2
PER4	HRMIS provides proper space to reported officer for self-comments	35	9.8	84	23.5	10	2.8	189	52.9	39	10.9
PER5	HRMIS is transparent in its criteria for evaluating performance of employees.	22	6.2	85	23.8	4	1.1	180	50.4	66	18.5

Table 11 presents the frequency distribution and percentages of participants' responses regarding the Personal Evaluation Reports (PER) system on HRMIS. For the statement PER1, PER2, PER3, PER4 and PER5, having responses on strongly agreed SA, agreed A, undecided U, disagreed D and strongly disagreed SD respectively.

Table 12: Frequency Distribution for the Variable Retirement (RT)

Sr.	Statements	SA		A		U		D		SD	
		f	%	f	%	f	%	f	%	f	%
RT1	HRMIS provides proper guidance for retirement process.	40	11.2	62	17.4	18	5.0	175	49.0	62	17.4
RT2	HRMIS provides proper steps and requirements to upload the retirement application.	33	9.2	82	23.0	21	5.9	138	38.7	83	23.2
RT3	HRMIS facilities employees to track retirement application.	21	5.9	73	20.4	15	4.2	161	45.1	87	24.4

RT4	HRMIS provides proper details about retirement benefits like pension, G.P. Fund, assistance etc.	36	10.1	78	21.8	11	3.1	153	42.9	79	22.1
RT5	HRMIS facilities retiring person to calculate and estimate their retirement benefits.	29	8.1	76	21.3	14	3.9	174	48.7	64	17.9
RT6	HRMIS facilities retiring personal to communicate with HR personnel	23	6.4	86	24.1	5	1.4	188	52.7	55	15.4
RT7	HRMIS facilities authorities with options about advisory services.	20	5.6	74	20.7	17	4.8	156	43.7	90	25.2

Table 12 presents the frequency distribution and percentages of participants' responses regarding the retirement (RT) process through HRMIS. For the statement RT1, RT2, RT3, RT4, RT5, RT6 and RT7 having responses on strongly agreed SA, agreed A, undecided U, disagreed D and strongly disagreed SD respectively.

6.3 One-Way ANOVAs

H1: There is a significant difference in the challenges faced by educational managers and teachers in utilizing HRMIS

Table 13: One-way ANOVA for Respondents' Problems in Modifying Personal Profile (PP)

			95% Confidence Interval				F(352)	p	Post-Hoc
	M	SD	LBCI	UBCI	Mini	Maxi			
CEOs	2.0714	.34007	1.5303	2.6126	1.71	2.43	1.724	.145	1>2<3<4>5
DEOs	1.8690	.81146	1.3535	2.3846	1.14	4.29			
Dy DEOs	2.4107	1.00558	2.0891	2.7323	1.00	4.43			
Heads	2.6355	1.10533	2.3448	2.9261	1.43	4.43			
SST/SSE	2.6020	1.12998	2.4592	2.7448	1.00	4.71			

Table 13 presents the results of a one-way ANOVA analysis on respondents' problems in modifying their personal profiles (PP) across different professional roles. The mean (M) and standard deviation (SD) for each group indicate variations in difficulty levels. CEOs reported the lowest mean difficulty (M = 2.0714, SD = 0.34007), with a 95% confidence interval ranging from 1.5303 to 2.6126. DEOs had a slightly lower mean (M = 1.8690, SD = 0.81146), while Dy DEOs experienced greater difficulty (M = 2.4107, SD = 1.00558).

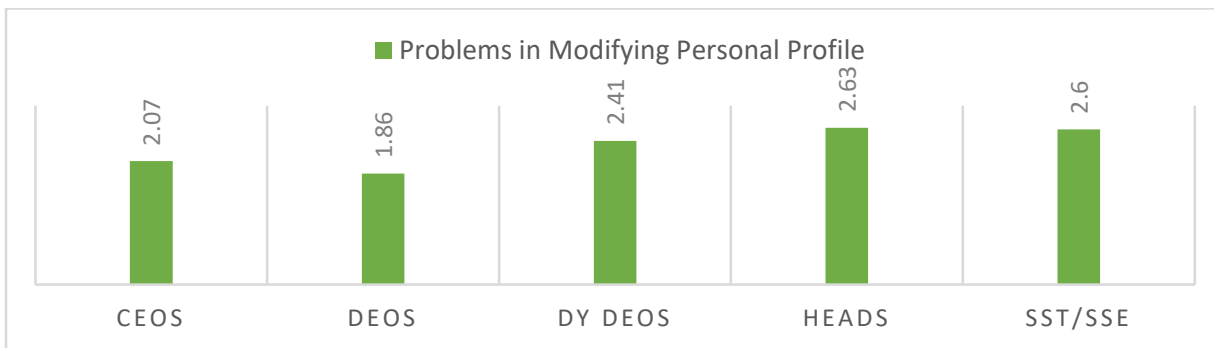


Figure 4: Chart Showing Respondents' Problems in Modifying Personal Profile

Heads reported a mean of 2.6355 (SD = 1.10533), and SST/SSEs had a similar level of difficulty (M = 2.6020, SD = 1.12998). The ANOVA test yielded an F-value of 1.724 with a p-value of .145, indicating no statistically significant difference among the groups. The post-hoc comparison suggests a pattern where some groups faced more challenges than others (1>2<3<4>5). The findings indicate that while there are variations in modifying personal profiles, no significant differences were found across professional roles.

H2 - There is a significant difference in the challenges faced by male and female stakeholders in utilizing HRMIS.

Table 14: One-way ANOVA for Respondents' Problems in Transfer/Posting (TP)

	M	SD	95% Confidence Interval				F(352)	p	Post-Hoc
			LBCI	UBCI	Mini	Maxi			
CEOs	2.1071	.31677	1.6031	2.6112	1.71	2.43			
DEOs	1.9048	.72673	1.4430	2.3665	1.14	4.00			
Dy DEOs	2.2750	.98624	1.9596	2.5904	1.14	4.29	1.953	.101	1>2<3<4>5
Heads	2.6034	1.08039	2.3194	2.8875	1.14	4.43			
SST/SSE	2.5932	1.12820	2.4506	2.7357	1.00	4.86			

The results presented in Table 14 analyze respondents' problems in transfer and posting (TP) through the Human Resource Management Information System (HRMIS) in the Punjab School Education Department using a one-way ANOVA. The mean (M) and standard deviation (SD) show variations in the level of difficulties faced by different stakeholders. CEOs reported the lower mean difficulty (M = 2.1071, SD = 0.31677) with a 95% confidence interval ranging from 1.6031 to 2.6112.

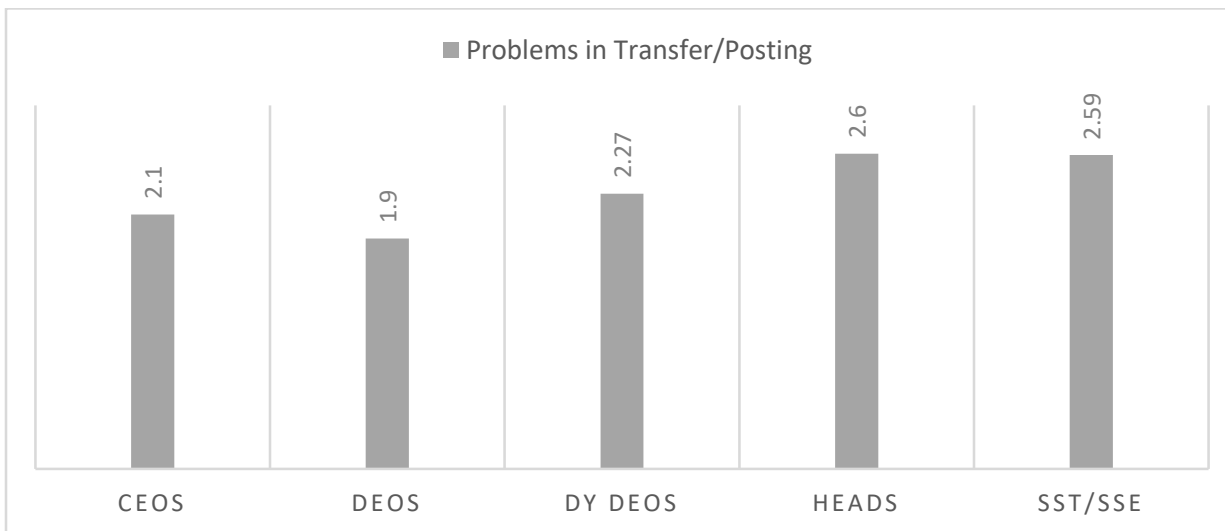


Figure 5:Chart Showing Respondents' Problems in Transfer/Posting

DEOs had the lowest mean ($M = 1.9048$, $SD = 0.72673$), indicating greater issues. Dy DEOs also faced similar difficulties ($M = 2.2750$, $SD = 0.98624$), while Heads reported even higher difficulty ($M = 2.6034$, $SD = 1.08039$). The SST/SSE group also exhibited similar difficulties ($M = 2.5932$, $SD = 1.12820$). The ANOVA test resulted in an F-value of 1.953 and a p-value of .101, suggesting no statistically significant differences among the stakeholder groups. However, the post-hoc comparison ($1 > 2 < 3 < 4 > 5$) indicates that DEOs faced greater challenges in transfer/posting through HRMIS. These findings suggest that while challenges exist across all groups, they are not significantly different based on professional roles.

The study's findings reveal that stakeholders in the Punjab School Education Department encounter significant challenges when utilizing the Human Resource Management Information System (HRMIS) for transfer and posting (TP) processes. This aligns with existing literature indicating that digital HR systems in public sectors often face usability and integration issues.

H3 - Educational managers face more significant challenges than teachers in utilizing HRMIS.

Table 15:One-way ANOVA for Respondents' Problems Related to Leaves (LV)

			95% Confidence Interval						
	M	SD	LBCI	UBCI	Mini	Maxi	F(352)	p	Post-Hoc
CEOs	2.0357	.33756	1.4986	2.5728	1.57	2.29			
DEOs	2.0833	.75705	1.6023	2.5643	1.29	4.29			
Dy DEOs	2.5036	.88359	2.2210	2.7862	1.29	4.43	1.544	.189	1<2<3<4>5
Heads	2.7512	1.02338	2.4821	3.0203	1.43	4.57			
SST/SSE	2.6408	1.05948	2.5069	2.7747	1.00	4.71			

Table 15 presents the **One-way ANOVA results for respondents' problems related to leaves (LV)** in utilizing the Human Resource Management Information System (HRMIS) in the Punjab School Education Department. The

findings suggest that **CEOs (M= 2.0357, SD = 0.33756) and DEOs (M = 2.0833, SD = 0.75705) face the most challenges** in managing leaves through HRMIS.

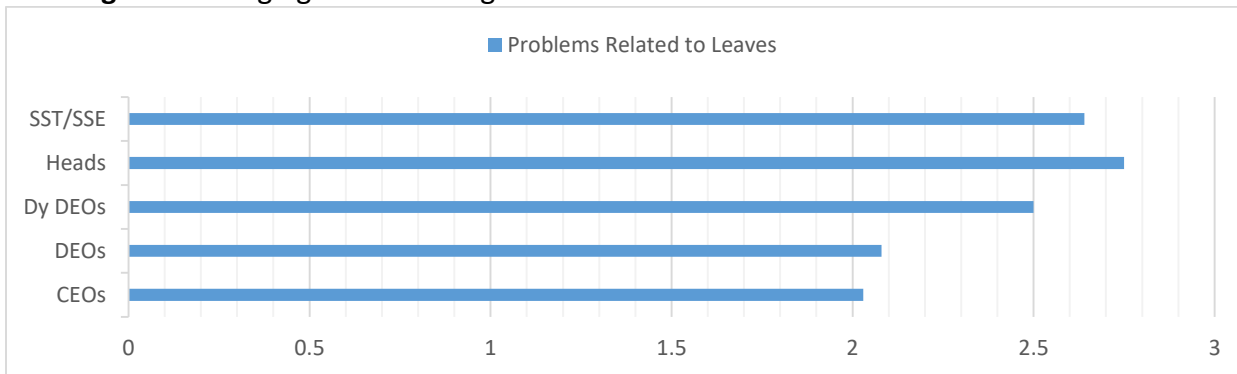


Figure 6:Chart Showing Respondents' Problems Related to Leaves

Dy DEOs (M = 2.5036, SD = 0.88359) experience moderate difficulties, while **Heads (M = 2.7512, SD = 1.02338) and SST/SSEs (M = 2.6408, SD = 1.05948) report fewer problems.** The ANOVA test ($F(352) = 1.544$, $p = .189$) is **not statistically significant**, indicating that the differences among the stakeholder groups are not substantial. The post-hoc comparison follows the pattern $1 < 2 < 3 < 4 > 5$, reinforcing that CEOs and DEOs struggle the most, whereas Heads and SST/SSEs face comparatively fewer challenges in utilizing the HRMIS for leave-related processes.

H4 - There is a significant positive correlation between the ease of use of HRMIS and user satisfaction.

Table 16:One-way ANOVA for Respondents' Problems Related to Personal Evaluating Reports (PER)

	M	SD	95% Confidence Interval				F(352)	p	Post-Hoc
			LBCI	UBCI	Mini	Maxi			
CEOs	2.2000	.43205	1.5125	2.8875	1.80	2.80	1.410	.230	1>2<3<4>5
DEOs	2.0667	.78779	1.5661	2.5672	1.40	4.40			
Dy DEOs	2.3550	.87880	2.0739	2.6361	1.60	4.40			
Heads	2.6586	1.14249	2.3582	2.9590	1.40	4.60			
SST/SSE	2.6140	1.08558	2.4768	2.7512	1.40	4.80			

Table 18 presents the one-way ANOVA results for respondents' problems related to Personal Evaluating Reports (PER) in the utilization of the Human Resource Management Information System (HRMIS) within the Punjab School Education Department. Since a lower mean (M) score indicates greater difficulties, the results suggest that DEOs faced the most challenges (M = 2.0667, SD = 0.78779), followed by CEOs (M = 2.2000, SD = 0.43205) and Dy DEOs (M = 2.3550, SD = 0.87880).

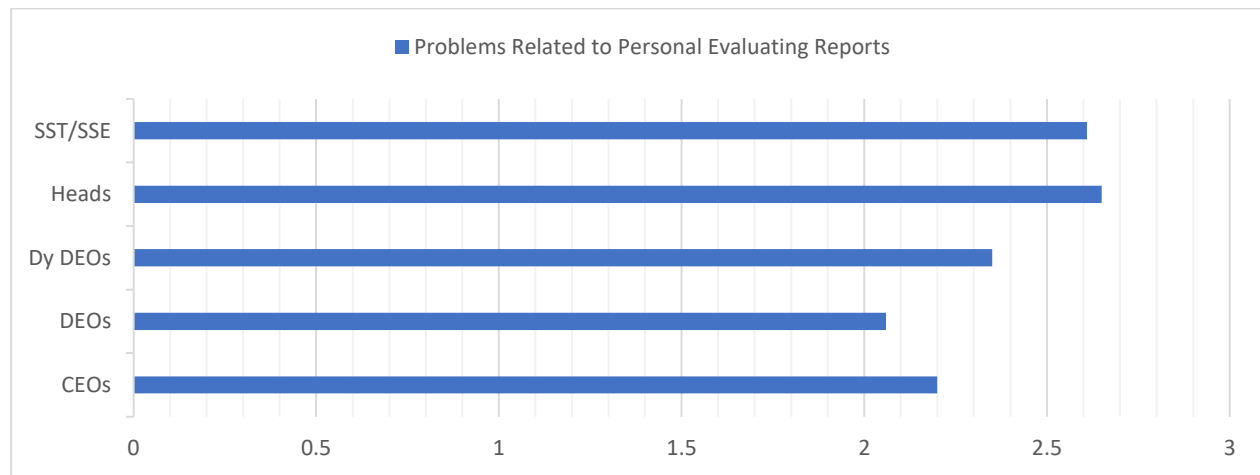


Figure 7:Chart Showing Respondents' Problems Related to Personal Evaluating Reports

Heads ($M = 2.6586$, $SD = 1.14249$) and SST/SSEs ($M = 2.6140$, $SD = 1.08558$) reported relatively fewer difficulties. The confidence intervals further support these differences, with DEOs and CEOs having the lowest lower-bound confidence intervals (LBCI), indicating greater struggles. The ANOVA test resulted in an F-value of 1.410 and a p-value of .230, signifying no statistically significant differences among the professional groups. However, the post-hoc comparison ($1 > 2 < 3 < 4 > 5$) suggests that DEOs and CEOs experience the most difficulties in handling PERs through HRMIS, whereas Heads and SST/SSEs face relatively fewer challenges. These findings highlight that administrative-level stakeholders may struggle more with personal evaluation report management than teaching staff.

H5 - There is a significant difference in HRMIS challenges based on the level of training received by stakeholders.

Table 17:One-way ANOVA for Respondents' Problems Related to Retirement (RT)

			95% Confidence Interval		Mini	Maxi	$F(352)$	p	Post-Hoc
	M	SD	LBCI	UBCI					
CEOs	2.1786	.35714	1.6103	2.7469	1.71	2.57	2.094	.081	$1 > 2 < 3 < 4 > 5$
DEOs	1.8571	.68647	1.4210	2.2933	1.00	3.86			
Dy DEOs	2.2643	.94846	1.9610	2.5676	1.14	4.43			
Heads	2.6182	1.04718	2.3429	2.8936	1.43	4.57			
SST/SSE	2.5473	1.06216	2.4131	2.6815	1.00	4.57			

Table 17 presents the one-way ANOVA results for respondents' problems related to retirement (RT) in utilizing the Human Resource Management Information System (HRMIS) within the Punjab School Education Department. Since a lower mean (M) score indicates greater difficulties, DEOs reported the most challenges ($M = 1.8571$, $SD = 0.68647$), followed by CEOs ($M = 2.1786$, $SD = 0.35714$) and Dy DEOs ($M = 2.2643$, $SD = 0.94846$).

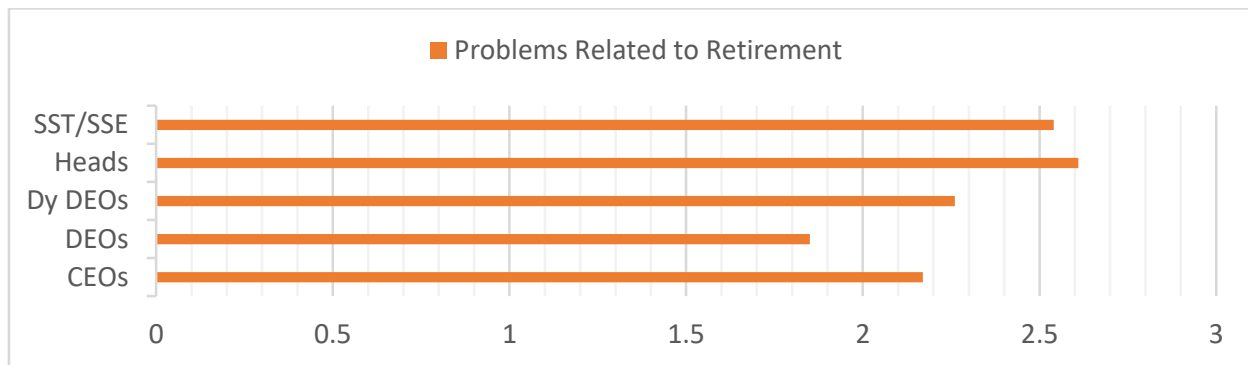


Figure 8: Chart Showing Respondents' Problems Related to Retirement

Heads ($M = 2.6182$, $SD = 1.04718$) and SST/SSEs ($M = 2.5473$, $SD = 1.06216$) reported relatively fewer difficulties. The confidence intervals further reinforce these differences, with DEOs having the lowest lower-bound confidence interval ($LBCI = 1.4210$), indicating the greatest struggles. The ANOVA test resulted in an F-value of 2.094 and a p-value of .081, suggesting no statistically significant difference among the stakeholder groups. However, the post-hoc comparison ($1 > 2 < 3 < 4 > 5$) indicates that DEOs and CEOs experience more difficulties in handling retirement-related processes through HRMIS compared to Heads and SST/SSEs. These findings suggest that administrative-level staff, particularly DEOs, face more challenges in navigating HRMIS for retirement-related matters than teaching staff.

6.4 Independent Sample t-test

Ho - There is no significant difference in problems faced by male and female stakeholders regarding utilization of Human Resource Management Information System in Punjab School Education Department.

Table 18: Mean Comparison of Perception of Male and Female as Stakeholders.

Variables	Male Stakeholders		Female Stakeholders		$t(355)$	p	Cohen's d
	M	SD	M	SD			
Personal Profile	2.28	.96	2.92	1.17	-5.63	.000	-0.59
Transfer/Posting	2.27	.96	2.87	1.17	-5.28	.000	-0.56
Leaves	2.37	.90	2.94	1.08	-5.37	.000	-0.57
Personal Evaluation Report	2.30	.91	2.92	1.15	-5.60	.000	-0.59
Retirement	2.24	.90	2.85	1.11	-5.70	.000	-0.60

Table 18 presents a mean comparison of the perception of male and female stakeholders regarding their problems in utilizing the Human Resource Management Information System (HRMIS) in the Punjab School Education Department. Since a lower mean (M) score indicates greater difficulties, the results suggest that **male stakeholders face more challenges** across all variables compared to female stakeholders.

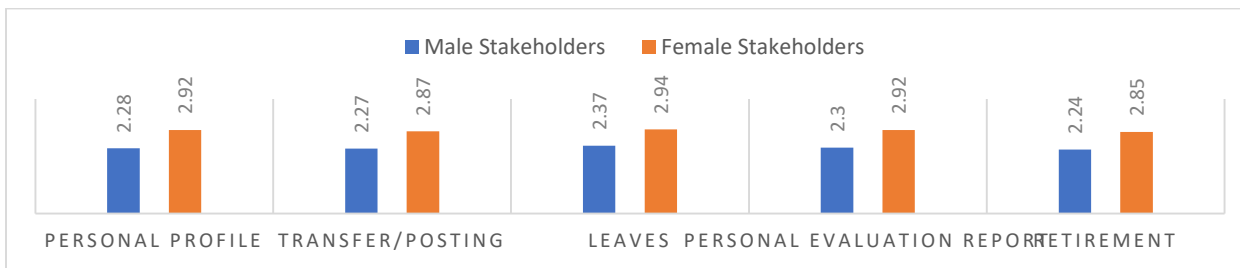


Figure 9: Chart Showing Mean Comparison of Perception of Male and Female as Stakeholders

For **Personal Profile**, male stakeholders reported a lower mean ($M = 2.28$, $SD = 0.96$) than female stakeholders ($M = 2.92$, $SD = 1.17$), with a statistically significant t -value of -5.63 and $p = .000$. A similar pattern is observed in **Transfer/Posting** ($M = 2.27$ for males, $M = 2.87$ for females, $t = -5.28$, $p = .000$), **Leaves** ($M = 2.37$ for males, $M = 2.94$ for females, $t = -5.37$, $p = .000$), **Personal Evaluation Reports** ($M = 2.30$ for males, $M = 2.92$ for females, $t = -5.60$, $p = .000$), and **Retirement** ($M = 2.24$ for males, $M = 2.85$ for females, $t = -5.70$, $p = .000$). The **Cohen's d values** (-0.56 to -0.60) suggest a moderate effect size, reinforcing that male stakeholders experience more difficulties than female stakeholders in using HRMIS. Since all **p-values are statistically significant**, the **null hypothesis (H_0) is rejected**, indicating a significant difference in the problems faced by male and female stakeholders, with **males experiencing greater difficulties**.

Research indicates that gender can influence technology acceptance and usage behaviours, often due to varying perceptions, experiences, and external influences.

7 Limitations and generalization

The study is limited to the Punjab School Education Department and the educational managers and staff within this department, specifically in the context of their use of the Human Resource Management Information System (HRMIS). Therefore, the findings of this research may not be generalizable to other provinces or educational departments in Pakistan or beyond.

Additionally, the study is confined to the specific problems faced by stakeholders related to personal profile management, leave management, transfers, performance evaluations, and retirement procedures within the HRMIS system. It does not cover other potential challenges within the system, such as data security concerns or the broader technological infrastructure.

The sample for the study was limited to CEOs, DEOs, Deputy DEOs, and Head Teachers from the Punjab region, and the responses were obtained through a self-reported questionnaire. This may introduce biases, as stakeholders may report their experiences differently based on personal perceptions or interests. Furthermore, the study focuses primarily on the operational and gender-based challenges in using HRMIS and does not explore deeper organizational or systemic issues, such as the role of administrative policies in shaping HRMIS utilization.

8 Conclusion and future work

The study investigated Punjab School Education Department stakeholders' HRMIS problems. The HRMIS has major issues with personnel profile updates, transfer and assignment, leave management, personal evaluation

reports (PERs), and retirement procedures. Each research hypothesis illuminated system functioning and stakeholder experiences.

The findings showed that stakeholders had trouble editing their HRMS profiles. Many users complained about the system's inflexibility, data update issues, and profile editing restrictions. Previous study reveals that public sector digital HR systems lack intuitive interfaces and effective support. The problems highlight the need for a more flexible and effective HRMS profile management solution.

The survey also found that stakeholders worried about HRMIS transfer and posting (TP) procedures. Most respondents disliked the system's fairness, openness, and efficiency. Users complained that the HRMIS-based TP system was confused and did not address their problems. Reviewing the transfer and posting mechanism is crucial for fair decision-making and successful execution.

Leave management in HRMIS was another major issue. The research found that stakeholders had difficulty applying for and managing leave. Delays in approval, unclear leave rules, and technological concerns that slowed operation were the most prevalent complaints. Leave management issues mirror HRMIS implementation difficulties in public sector organisations, as described in earlier work. System changes, training, and administrative assistance are needed to address these inefficiencies.

Personal evaluation reports (PERs) were also investigated, and many stakeholders found the assessment method confusing, unjust, and opaque. Biassed assessments, security, and performance tracking were problems. According to prior research, public sector HRMISs typically face opposition because to inadequate implementation and a lack of faith in their accuracy. Performance assessments must be transparent and fair to build stakeholder confidence and improve HRMIS effectiveness.

The research concluded that HRMIS presented major retirement process (RT) problems. The system's retirement protocols, monitoring, benefit calculation, and advising services disappointed stakeholders. Many respondents complained about retirement information's clarity and accessibility. These results complement studies showing that public sector HRMIS generally lacks complete support for long-term HR tasks like retirement planning. HRMIS retirement process improvement demands greater system integration, clear procedures, and an accessible advice service.

The research found substantial differences in HRMISM difficulties between men and women. Female respondents had more trouble utilising HRMISM functionalities. This highlights the need for a more inclusive and user-friendly system that meets all stakeholders' interred.

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