

The Impact of Information Systems on Enhancing Employee Human Resource Performance Skills

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Abstract. With the emergence of the internet, the evolution of information and communication technology, and the growing digital transformation of organizations, it has become necessary to convert paper-based files and functions into electronic files. The human resource information system collects employee data, processes it, and produces accurate information that helps the human resource management monitor employee movement. From the beginning of their employment to their departure from the institution and everything related to them internally, enabling them to make more efficient and effective decisions, such as performance evaluation. A field study was conducted on several government organizations in Kurdistan to achieve the research objectives. This Research investigates the impact of information technology usage on developing human resource skills. The study relied on the descriptive method through the design of questionnaires distributed randomly to a sample of employees and managers to measure the impact of information technology systems on developing their performance skills. The study has found that information technology systems directly impact the efficiency and effectiveness of human resource performance. In addition, the use of information technology contributes to facilitating communication processes between different departments and divisions in a government organization. The study also showed that information technology provides necessary information for making timely decisions. The study recommends keeping up with the rapidly changing trends in using information technology for developing human resources in a government organization in Kurdistan.

Keywords: Kurdish region, Information Technology, HRIS, Information system, MIS, HR

1. Introduction

In recent times, there have been rapid developments and an increasing strength of computer technologies, coupled with a decrease in the cost of equipment and software(Andrade & Tumelero, 2022). Many advancements have appeared in various administrative, industrial, and economic fields, all of which are products of the dynamics experienced by the technological area, especially those related to information processing, also known as information technology(Tsaramirsis et al., 2022). As a result, there has been a growing trend toward its use and deployment in most human activities, with the emergence of the internet, the evolution of information technology, communication methods, and the transformation of jobs into electronic work, alongside the increasing digital transformation of organizations(Bikse et al., 2022). It has become necessary to convert paper-based files and functions into electronic files, and relationships between companies, employees, and customers are now conducted through Internet networks(Perera et al., 2022). Resource management requires an information system that provides current and future data for employees to plan, monitor, and make decisions(Wissemann et al., 2022). This system requires a set of procedures, information, operational methods, and data evaluation, as well as the users of the information(Gayialis et al., 2022). Human resource information systems are crucial for collecting, processing, and storing data required by decision-makers. They can perform all human resource functions, such as job analysis, recruitment, training, performance evaluation, compensation, incentives, and promotions. Therefore, these systems have become an essential tool for organizations. (Rodgers et al., 2023).

Human resources are the primary pillars of the basic information structure and the foundation for development processes(Saeidi et al., 2022). Human resources must be trained to use modern technology and information systems to keep pace with progress(Li, 2022). It is the primary driver and supporter of organizational processes and contributes to process flexibility and facilitation(Wibeck et al., 2022). It also creates employee participation in designing and implementing work focusing on production and quality(Botti et al., 2022; Gajdzik & Wolniak, 2022). Therefore, companies must develop their human resources by employing and utilizing information technology to improve their efficiency and performance levels, achieve employee satisfaction, strengthen their position, and achieve a competitive advantage(Alshurideh et al., 2022; Alzoubi, 2022). Hence, organizations have sought to introduce modern information technology and work on developing it and training employees to use it(AL-HASHIMI et al., 2017; Shakir, 2020). Human resources in government organizations are considered their most important resources, and they are the strategic tool that enables the organization to compete under changing and accelerating conditions(Banmairuoy et al., 2022). They are one of the most important assets possessed by the organization, and organizational goals cannot be achieved without the human resources that the organization must strive to care for(Banmairuoy et al., 2022). Therefore, organizations have been keen to use information technology systems to help them invest in developing the skills, efficiency, development, and motivation of human resources(Yu et al., 2023). And to use all the mechanisms and methods that improve their performance level, enabling them to achieve the organization's goals effectively and helping them face challenges(Berdik et al., 2021).

Human Resource Information Systems (HRIS) enhance the efficiency of human resource management (HRM) in organizations by offering tools and components that facilitate the collection and analysis of data(Satispi et al., 2023). Consequently, this results in making well-informed decisions, which is the fundamental aspect of implementing information systems in any domain(Panjaitan, 2023). Multiple studies conducted in settings comparable to the study environment have consistently demonstrated a robust correlation between HRIS (Human Resource Information Systems) and HRM (Human Resource Management). This connection is centered around establishing the essential technological framework to improve all facets of human resource management (HRM) in any firm(Gani et al., 2024; Handra & Sundram, 2023; Sawitri et al., 2023). To recap, the HRIS system proves crucial to enhancing organizational performance by enhancing several of the fundamental HR processes like talent acquisition and assessment, performance evaluation, training, motivation, compensation, and a

firm's adherence to regulations(Sharma et al., 2023). HRIS, or human resource information systems, are significant assets that provide further functionality to HRM and thus help in increasing the performance of the business in terms of human resources management adequately. The objective of this research is to examine the influence of Human Resource Information Systems (HRIS) on the performance of human resources in governmental organizations in Kurdistan. The research examines the relationship between training and communication in HRIS and its effects on the efficiency and effectiveness of human resource performance, as well as its influence on human resource development and organizational performance. According to this theory, HRIS is expected to improve operational efficiency and increase productivity by enhancing human resource management. This theoretical framework will be supported by evidence from previous literature that has shown similar impacts in other contexts, where relevant literature backgrounds related to the theoretical framework will be presented. The Kurdistan region of Iraq was chosen as the study environment because it is a newly formed region striving to establish and build its official institutions in ways that align with the region's nature.

The Kurdistan Region of Iraq is a newly formed administrative region where its administrative governmental systems actually began to form in the 1990s(Stansfield, 2003). This region enjoys its own management, systems, and laws within the Iraqi state(Kirmanj, 2013). Many studies have proven the importance of implementing HRIS in organizations and have highlighted the urgent need for studies that examine the impact of HRIS implementation in organizations in the Kurdistan Region of Iraq("A Comparative Study Related to Effect of Human Resource Information Systems on Implementation of HRA System in India and Kurdistan Region of Iraq,," 2021)(Mohammed, 2021)(Haji & Ahmed, 2017)(Abdulraheem et al., 2020)(Mohamed et al., 2023). In addition, the limited current resources that investigate specific details, such as the impact of information system on enhancing the performance of human resources in terms of efficiency and effectiveness, and their impact on employee performance, and consequently the performance of the organization as a whole. Therefore, this study aims to fill this research gap and shed light on important aspects of the functioning of governmental institutions in the Kurdistan Region. The problem of the study lies in determining the extent to which information systems are applied in developing human resources performance skills in government Organizations in Kurdistan. Hence, the Research aims to answer the research problem, which is represented in the following questions:

- 1) What is the reality of using information systems in government organizations in Kurdistan?
- 2) To what extent does the application of information technology systems affect the development of human resources performance skills in government organizations in Kurdistan?

In the same context, the research objectives of this study can be identified as follows:

To shed light on the readiness of government organizations in Kurdistan to apply information systems in managing human resources and developing their skills.

- 1) To measure the impact of applying information systems on developing the performance skills of human resources in government organizations in Kurdistan.
- 2) To evaluate the human resources information system in government organizations in Kurdistan.
- 3) To provide recommendations on applying information system in human resources management in government organizations and suitable proposals to enhance its application and benefit from its advantages.

Therefore, based on the stated objectives, the following hypotheses can be deduced to shed light on the research approach that will be followed in this study. These hypotheses are as follows:

Hypothesis 1: Implementing HR information systems in government organizations in Kurdistan will directly and positively impact the efficiency and effectiveness of human resource performance.

Hypothesis 2: Effective HRIS communication facilitated by information technology systems between departments and upper management will lead to better organizational performance in government organizations in Kurdistan.

Hypothesis 3: The lack in training of government organization managers in Kurdistan regarding electronic information systems for human resources negatively impacts employee and organizational performance.

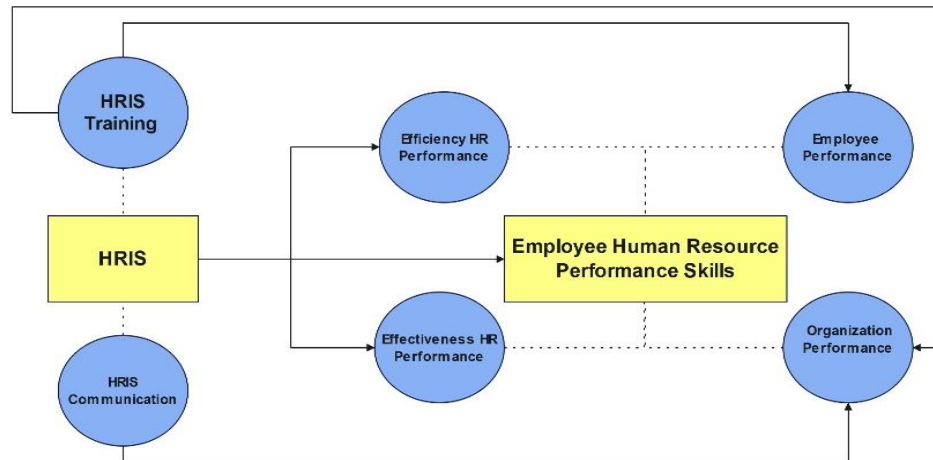


Fig. 1: Theoretical Model

2. Literature review

In this section, we will discuss some definitions given to information technology systems and then mention the characteristics that distinguished them and were the reason for their spread and penetration into various fields of life. Information technology is merging computer and communication technology to create a suitable technology for information processing, storage, protection, transmission, and retrieval (Bastas & Altinay, 2019; Eldow et al., 2018). Information systems involve studying, designing, and developing systems related to computer science. The aim is to use the latest technologies to transform, store, protect, process, transmit, and retrieve data. These systems provide efficient information management and networking solutions for companies related to all aspects of life, whether political, economic, social, or otherwise (Storey, 2023). The information system captures, processes, stores, retrieves, and transmits information in various forms, such as sound, text, or image. Information technology uses modern technology to capture, process, store, retrieve, and transmit information through digital data, text, sound, or image (Pawar et al., 2022). There are many areas where adopted information systems, and one of these areas is human resources management.

2.1. The Concept of Human Resources Management

The success of an organization depends on its ability to utilize its human resources, which are entrusted with implementing the organization's strategy and achieving sustainable competitive advantage (Burrichter et al., 2022). Therefore, it requires specialized management that sets goals, develops strategies, and employs policies related to human resources, known as "human resources management" (Chowdhury et al., 2023). Human resources management is "the activities undertaken to attract, develop, and retain effective employees (Fahmi & Ali, 2022). Human resources development is a process or action based on knowledge, experience, productivity, and short- or long-term satisfaction (Chaudhary & Bhaskar, 2016). This process or activity aims to benefit individuals, groups, teams, organizations, communities, or even at the human level. Resources management encompasses activities designed to provide the required workforce with the necessary expertise and to maintain and develop these competencies, motivating them to achieve the organization's goals efficiently and effectively (Jackson et al., 2006). Information technology systems in human resources management have become necessary to keep up with the ever-changing technological advancements and improve human

resources management processes(Pillai & Paul, 2023; Tawafak et al., 2021). Therefore, studying human resources management requirements under information technology systems is crucial to achieving the organization's goals and ensuring employees' satisfaction and development.

2.2. Human Resource Information System

The Human Resource Information System interacts with various resources such as people, data, processes, and information technology to develop and improve performance and support decision-makers, whether managers or system users, by providing timely information(Cai & Rodriguez, 2023). The system converts data into information and then generates reports for users, such as employee records, benefits, compensation, employee relations, training, job positions, salaries, and wages. Based on this, the Human Resource Information System can be defined as a system that involves collecting, organizing, and analyzing data related to human resources and converting it into decision-making centers for timely human resource planning(Panjaitan, 2023; Sawitri et al., 2023). In addition, it supports and assists management in managing human resources in the organization as an administrator. It is also known as a technology-designed system for activities such as recruitment, job description, training, development, motivation, performance evaluation, retention, and updating of employee data at all administrative levels through support in human resource planning for strategic level, supporting middle management decision-making and analyzing the site for technical level navigation, documenting, organizing, and supporting the completion of all individual operations in the organization(Ahmed, 2023; Sharma et al., 2023).

2.3. Human Resource Information Systems (HRIS) Job

Human resource information systems offer many important jobs. These jobs are essential in developing the work environment in government organizations, especially in Kurdistan government organizations. The following is a summary of the main tasks:

- Inventorying and registering job expectations and monitoring them through detailed and summary data or information by creating centralized public files, individual detailed files for each employee, and files for previous events and activities.
- Reviewing, classifying, and analyzing data, information, and facts in preparation for use in various areas of human resource management.
- HRIS can produce clear and accessible administrative reports that benefit human resource managers significantly. These reports are designed to support decision-making and are based on predictive data files that estimate future institutional needs and trends. I use scheduling and human resource management software programs to create these reports.
- HRIS can automatically generate the job satisfaction rate for employees across various aspects. In addition, professional implementation of such systems enables identifying and resolving issues before they escalate, thereby contributing to maintaining employee productivity levels within the organization.

2.4. Human Resource Information Systems (HRIS) in Government Organization in Kurdistan, Iraq

Government organizations in Iraq face numerous challenges when managing their human resources(Hassan et al., 2023). One of the most pressing issues is the lack of effective and efficient information systems for collecting employee data(Hadi et al., 2023). Without proper data management systems, government organizations struggle with employee record-keeping, performance monitoring, and payroll management, which can lead to human resources inefficiencies(Lidia, 2023). Implementing a Human Resources Management Information System (HRMIS) could help government organizations in Kurdistan, Iraq, overcome these challenges (Chabani, 2020). A well-designed HRMIS can centralize all employee data, automate HR processes, and provide real-time data analytics, enabling government organizations to make data-driven decisions and optimize their human resources utilization(AL-

MAHAIRAH et al., 2022). However, implementing an HRMIS in government organizations in Kurdistan, Iraq, presents several challenges. One of the most significant obstacles is these organizations' lack of technical expertise and infrastructure (Mohammadali et al., 2019). Many government organizations in Kurdistan, Iraq, lack the technical expertise to implement and maintain an HRMIS and may not have the infrastructure or budget to support such a system (Mousa et al., 2019).

Additionally, cultural barriers may hinder the implementation of an HRMIS, as many organizations may be resistant to change or may not see the value in investing in HR technology (Koziarski & Kalyal, 2021). Despite these challenges, the benefits of implementing an HRMIS in government organizations in Kurdistan, Iraq, can be significant. With the proper resources and support, government organizations can leverage HR technology to improve their human resources management and drive organizational success.

3. Research Methods

The primary methodology employed in this study involves the utilization of a questionnaire derived from previous research, with slight adjustments made to suit the specific research context (Hasan, 2022; Tallon et al., 2019) (Mohammed, 2021). This structured questionnaire was utilized to collect quantitative data aimed at addressing the research inquiries. These questionnaires were distributed in printed form within the Kurdistan region of Iraq. This approach was chosen due to the limited access of organizations to public internet networks. To ensure the acquisition of pertinent data, the sample selection concentrated on two principal groups within the smaller targeted organizations: Human Resources (HR) department managers and their respective employees. The analysis primarily employs descriptive data analysis techniques, including mean rate computation and the utilization of the Pearson correlation coefficient to examine the questionnaire responses. For an in-depth understanding of the research methodology employed in this study, refer to Figure 2, which delineates the framework utilized.

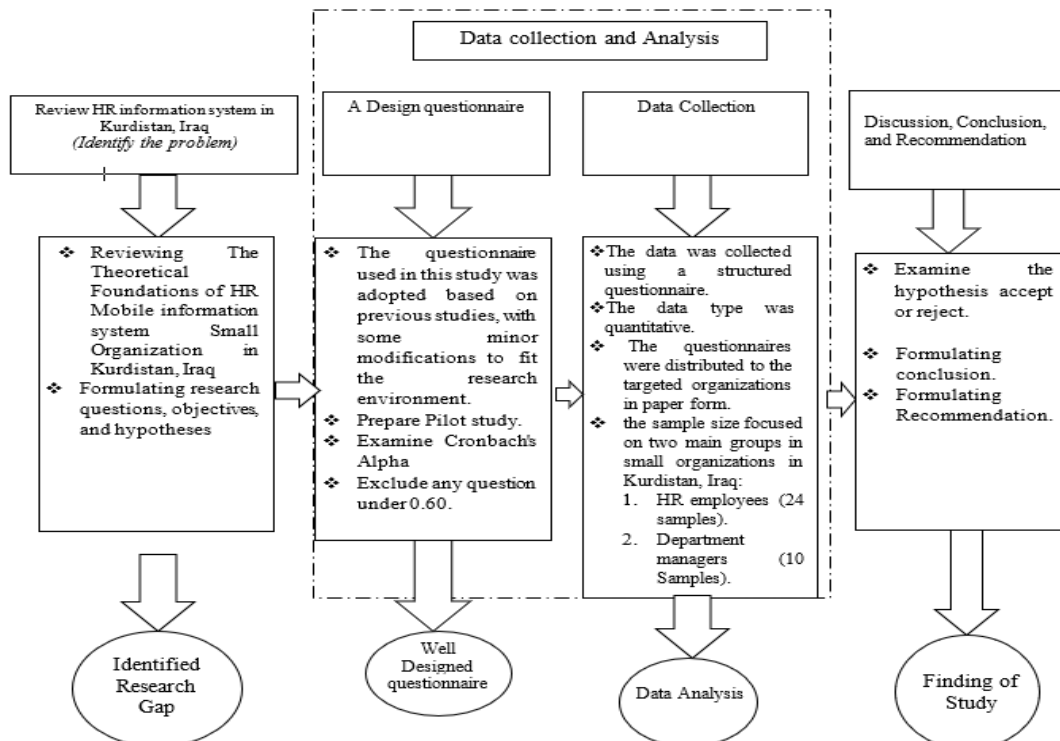


Fig. 2: Research Methodology

3.1. Participants and Procedure

A selection of civil government departments in the Kurdistan Region of Iraq was made for this study. The researchers deliberately avoided sovereign or security-related government departments due to their highly sensitive nature. Employees and managers working in municipalities, schools, the Ministry of Higher Education, and the Ministry of Health were chosen. Managers were defined as those holding a fourth-grade position or higher and those occupying the position of department head or higher. Others were selected as regular employees. All governmental entities in the Kurdistan Region of Iraq work under a unified centralized administrative structure and are bound by same rules and legislation. The only distinction between them is in the inherent characteristics of the work conducted by each organization. Therefore, all samples were considered as one group during the analysis. As is well known, obtaining a large number of samples is not easy, especially since this research focused on a purposive sample rather than a random one. The researcher selected employees and managers working exclusively in the human resources department, as they are the targeted sample in this research and have sufficient experience that can be relied upon for any future conclusions drawn from the responses of the targeted sample. The questionnaire was sent to the specific government organizations in Kurdistan, Iraq, in hard copy format, as the majority of government organization lack access to a public internet network, and most government organizations depend on individual subscriptions for their personnel. The questionnaire consisted of closed-ended questions to facilitate quantitative analysis of the gathered data. In order to collect useful data for the study, the sample size was specifically directed towards two primary categories within the government organizations being targeted: HR department managers and their workers. The study employed a descriptive technique, in which a questionnaire was prepared and sent to 13 managers in government organizations in Kurdistan. In addition, a total of 24 questionnaire forms were given to employees. The responses from the questionnaire are subjected to an exploratory data analysis utilizing the mean rate and the Pearson correlation coefficient. The comprehensive research methodology for this study is fully explained in Figure 2 above.

3.2. Measures

The statistical methodology employed in scientific research utilizes computer approaches to collect, arrange, and analyze information derived from data. Scientific research methods utilize many statistical terms and measurements to effectively obtain the required outcomes and draw conclusions that contribute to the attainment of the research aim (*Users Acceptance of Electronic Personal Synthesis Behavior (EPSB): An Exploratory Study* | SpringerLink, n.d.). In order to analyze the gathered data and accomplish the goals of this study, the researcher utilized many statistical techniques, including Pearson Correlation, Cronbach's Alpha Coefficient, as well as percentages and frequencies. The Pearson correlation coefficient (r) is well recognized as a prominent approach for measuring linear correlation. Correlation is a statistical metric that measures the strength and direction of the relationship between two variables. The numerical number representing it ranges from -1 to 1. In addition, we utilized Cronbach's Alpha Coefficient to evaluate the dependability of the study instrument. Cronbach's alpha coefficient was utilized to ascertain the uniformity and coherence of participants' replies across all aspects of the questionnaire. Ultimately, we utilized percentages and frequencies to analyze the features of the study sample. The use of percentages was particularly helpful in understanding the statistical ratios.

3.3. Pilot Study

According to Creswell (2008), conducting a pilot test of research instruments enables researchers to determine whether respondents can complete the questionnaire and comprehend the posed questions. It also allows them to evaluate the appropriateness of the scientific terms and research methodology [46]. The primary aim of the pilot study is to assess the questionnaire items' acceptance, usage, and feasibility. The pilot study holds significant importance in gauging the level of comprehension, clarity, and understanding among the targeted sample, thereby avoiding including unclear or misunderstood

questions or elements among participants. In the current study, a pilot study was conducted involving three managers and five employees. The pilot study was also used to gain a deeper understanding of the data collection procedures and to ascertain the extent of the targeted sample's understanding of the questions. The preliminary results of the pilot study indicated that only minor adjustments were needed for one question, which was subsequently excluded from the questionnaire. Composite reliability measures were utilized to evaluate the reliability of the questionnaire items. The Cronbach's Alpha results showed that most questions were clear and acceptable to the targeted sample, with a Cronbach's Alpha coefficient of 0.984. This supports the acceptability of the questions.

Table 1: Convergent validity

Cronbach's Alpha
0.984

4. Data Collection and Analysis

The study relied on the descriptive methodology, where a questionnaire was prepared and distributed to 4 government organizations. We revived questionnaires from 3 organizations' questionnaire forms distributed to government organization managers in Kurdistan . Due to an insufficient response from the municipalities department, it was excluded from the study. To determine the extent of organizations' readiness and the availability of the necessary material and human resources for implementing electronic human resource information systems.

4.1. Questionnaire Form Addressed to Government Organizations Employees in Kurdistan

In this section, the targeted sample comprised employees of civil government organizations in the Kurdistan region. The sample was classified based on their job grades, with all respondents ranging from the fifth job grade downward to lower job grades. There were 31 respondents, but seven were excluded due to either providing blank responses, not answering some questions, or giving multiple responses to the same questionnaire. Consequently, the approved sample for the survey consisted of 24 official civil employees in the Kurdistan region. The questionnaire was structured with five Likert scale questions, and the data collected were quantitative, and the neutral value had been considered.

Table 2: Employee Satisfaction with Human Resource Management in the Workplace

Q1: Do you feel satisfied with the Human Resource Management in the organization you work for?	
Mean	3.0833
Median	3.0000
Mode	3.00
Std. Deviation	1.21285
Variance	1.471
Skewness	-.172

Based on table (2) above, the data reflects participants' opinions regarding their organizational satisfaction with Human Resource Management. The relative distribution of responses indicates variability in participants' opinions. The "Neutral" category is the most common, with a count of 8, indicating a lack of apparent inclination towards either a positive or negative direction. In contrast, the "Agree" and "Disagree" categories, with counts of 4 and 6, respectively, signify a clear divide between those who agree and those who disagree with the Human Resource Management in the organization. Additionally, three counts were in the "Strongly Agree" and "Strongly Disagree" categories, illustrating variance in the vital positions between strong agreement and strong disagreement. In a related context, the Mean value of 3.0833 suggests a moderate level of satisfaction with Human Resource Management

among the respondents. The Median and Mode values of 3.0000 indicate that most responses gravitated towards satisfaction with HR management. The Standard Deviation of 1.21285, along with a Variance of 1.471, reflects a moderate level of variability or dispersion in the responses from the mean. The Skewness value of -0.172 suggests a slight negative skew, indicating a minor lack of symmetry in the distribution of responses, albeit very close to a normal distribution. This distribution suggests a lack of consensus among participants regarding their satisfaction with Human Resource Management in the organization. The overwhelming majority tends not to lean towards satisfaction or dissatisfaction, highlighting apparent variability in opinions and inconsistent responses.

Table 3: Employee Training Initiatives Assessment in the Organization

Q2: Does the organization conduct training courses for its employees?	
Mean	3.0833
Median	3.0000
Mode	3.00
Std. Deviation	1.21285
Variance	1.471
Skewness	-.172

Referring to the data in Table (3), respondents' opinions regarding whether the organization provides employee training courses appear relatively aligned. A substantial number of responses fall under the "Disagree" category, followed by the "Neutral" category, and then "Agree." There is a tendency towards negative views as the combined count of negative responses ("Disagree" and "Strongly Disagree") totals 10, surpassing the count of positive responses (8 between "Strongly Agree" and "Agree"). This suggests that many respondents hold skeptical or negative views about the organization's provision of training courses. Additionally, a notable number of respondents (6) selected the "Neutral" response, possibly indicating uncertainty or insufficient information about the organization's training programs. Regarding the statistical analysis, the arithmetic mean (average) for this data is 3.1250, the median is 3.0000, and the mode (most frequent value) is 4.00. The standard deviation, measuring data spread around the mean, is 1.19100, indicating some variance in responses. The variance of the standard deviation is 1.418, highlighting data variability. A higher variance value signifies wider divergence among responses. The skewness of the standard deviation is -.092, indicating a distribution around the mean without significant skewness (value close to zero). The standard error of skewness, at .472, represents the potential error in measuring the standard deviation.

Table 4: Impact of HRIS on Interdepartmental Communication

Q3: Does using HRIS facilitate communication between different departments and administrations?	
Mean	3.0833
Median	3.0000
Mode	3.00
Std. Deviation	1.21285
Variance	1.471
Skewness	-.172

The above table (4) indicates the use of the Human Resources Information System (HRIS) and its impact on communication between departments and administrations. The table demonstrates that most respondents either agree or strongly agree that using HRIS facilitates communication among various departments and administrations. A significant number of respondents, 15 in total, strongly agreed, while eight others agreed. Only one respondent expressed a neutral stance, and no respondents opposed or strongly opposed this idea. In this question, the data illustrates the effectiveness of Human Resources Information Systems (HRIS) in enhancing communication across diverse departments and

administrations. The statistics derived from the data were as follows: Mean = 1.4167, Median = 1.0000, and Mode = 1.00. These metrics suggest that the central tendencies - mean, median, and mode - tend to cluster around a high degree of agreement (Strongly Agree), reflecting a prevailing positive direction, likely indicating a specific viewpoint regarding HRIS and communications. Additionally, the Standard Deviation of 0.58359 and Variance of 0.341 suggest the dispersion and variability within the dataset. The relatively low standard deviation indicates that responses are closer to the mean, implying a consensus in the data. Furthermore, the Skewness Measure of 1.067 and Standard Error of Skewness of 0.472 suggest a positively skewed distribution, indicating a tail towards higher ratings, signifying a propensity towards positive responses regarding the role of HRIS in enhancing interdepartmental communication. Regarding interpreting the results, the mean value of 1.4167 indicates an overall inclination towards affirming that HRIS enhances communication between departments and administrations. The mean and mode at 1.00 reinforce this trend towards a positive perspective. However, the considerable skewness value of 1.067 suggests a moderate rightward skew, indicating that a significant proportion of responses lean towards more positive views regarding the effectiveness of HRIS in facilitating interdepartmental communication.

Table 5: Influence of HRIS on Workplace Transparency Metrics

Q4: Does the use of HRIS contribute to achieving transparency in the workplace?	
Mean	1.9583
Median	2.0000
Mode	1.00 ^a
Std. Deviation	1.16018
Variance	1.346
Skewness	1.363

Table (5) above displays statistics related to HRIS impact on transparency in the workplace. The provided data relates to analyzing the extent to which the use of Human Resources Information Systems (HRIS) contributes to achieving transparency in the workplace. The responses revealed that Strongly Agree was 10, Agree was 10, Neutral was 3, Disagree was 1, and there were 0 responses for Strongly Disagree. The majority of respondents, totaling 20 between "Strongly Agree" and "Agree," indicate significant agreement, reflecting a positive perception regarding HRIS's contribution to enhancing transparency in the workplace. Only a few respondents (1) disagreed, and there were no strong disagreements. In addition, the statistical values associated with this data are as follows: Mean = 1.9583, Median = 2.0000, Mode = 1.00, Standard Deviation = 1.16018, Variance = 1.346, Skewness = 1.363, and Standard Error of Skewness = 0.472. The mean of the data reflects a value of approximately 1.9583, while the median (middle value) equals 2.0000, and the mode (most frequent value) is calculated as 1.00. These values suggest a tendency towards either a positive opinion or a deviation towards agreement, with values leaning towards the lower end of the spectrum. The estimated standard deviation of 1.16018 and variance of 1.346 signify the spread and variance within this dataset. The relatively low standard deviation value implies a clustering around the mean value, indicating a specific trend but with some variability. Moreover, the standard deviation value and right skewness (1.363) indicate a larger distribution towards higher values, suggesting a trend towards a positive opinion in the data. Finally, the standard error of the standard deviation (0.472) denotes the potential precision in measuring the standard deviation.

Table 6: Effectiveness of HRIS in Enhancing Work Flexibility

Q5: Does using HRIS in human resource management achieve greater work flexibility?	
Mean	2.0417
Median	2.0000
Mode	2.00

Std. Deviation	1.08264
Variance	1.172
Skewness	1.257

According to table (6), the provided data pertains to evaluating the extent of Human Resource Information System (HRIS) utilization in human resource management and achieving greater work flexibility. The results indicate that 19 individuals strongly agreed or agreed that using HRIS achieves work flexibility. In comparison, two individuals expressed a neutral stance, and opinions diverged between two disagreeing and one strongly disagreeing. The statistical values associated with this data are as follows: Mean: 2.0417, Median: 2.0000, Mode: 2.00, Standard Deviation: 1.08264, Variance: 1.172, Skewness: 1.257, and Standard Error of Skewness: 0.472. The mean suggests an average response of around 2.0417, with the median and mode at 2.00, indicating a tendency towards the higher end of the scale. Statistical values like standard deviation and variance demonstrate relative dispersion and variability within the dataset. With a relatively high standard deviation, this indicates substantial variability among responses, suggesting widespread differences in opinions regarding the effectiveness of HRIS in achieving flexibility in human resource management. The skewness value indicates a tendency towards the higher end of the scale, suggesting a favorable opinion of the effectiveness of HRIS in enhancing flexibility in human resource management.

Table 7: Effectiveness of Information Systems in Employee Information Accessibility

Q6: Does using information systems lead to faster and more accurate access to employee information?	
Mean	1.3333
Median	1.0000
Mode	1.00
Std. Deviation	.63702
Variance	.406
Skewness	1.794

In table (7) above, the data pertains to analyzing the impact of using information systems on the speed and accuracy of accessing employee information. The results indicate that most individuals (18) strongly agreed that using information systems leads to faster and more accurate access to employee information. Four individuals agreed, while two remained neutral. At the same time, no one strongly disagreed or disagreed with the statement. The statistical values for this data show a mean of 1.3333, a median of 1.0000, and a mode of 1.00. These values indicate a positive response trend, leaning towards the lower values within the range. The low standard deviation (0.63702) and estimated variance (0.406) reflect less dispersion and homogeneity within the dataset. A low standard deviation implies the responses were closer to the mean, suggesting relative agreement among opinions. The high skewness value (1.794) indicates a significant deviation towards higher values, implying a positive inclination towards opinions regarding information systems and rapid, accurate access to employee information. Overall, the general pattern of responses reveals that utilizing information systems effectively leads to quicker and more accurate access to employee information. The vast majority of the surveyed sample confirmed that the implemented information systems in their organizations facilitated easy access to the organization's data for relevant employees. Consequently, this accelerated task completion and enhanced job performance, positively impacting the organization's overall performance.

Table 8: Analysis of the Organization's Commitment to Equipment Technical Specifications Enhancement

Q7: The organization is committed to updating its equipment's technical specifications according to the work's requirements and development.	
Mean	2.4583
Median	3.0000

Mode	3.00
Std. Deviation	1.02062
Variance	1.042
Skewness	.256

From Table (8), the data pertains to the organization's commitment to updating technical equipment specifications according to work requirements and development. The results indicated that 11 individuals opted for a neutral stance, while six agreed and five strongly agreed with the organization's commitment to updating technical equipment specifications. Conversely, one person disagreed, and another strongly disagreed with this idea. The statistical values for this data indicate that the mean was approximately 2.4583, while the median and mode were 3.0000 and 3.00, respectively. These values suggest a tendency toward leaning toward higher values within the range. The low standard deviation (1.02062) and variance (1.042) reflect limited spread and variance within the dataset. The low standard deviation indicates the responses were close to the mean, signifying a relative consensus among opinions. The low skewness value (0.256) indicates a weak deviation towards higher values, suggesting a tendency towards favorable opinions regarding the organization's commitment to updating technical equipment specifications.

4.2. Questionnaire Form Addressed to Government Organizations Managers in Kurdistan:

The tables below outline the descriptive data collection results for the targeted sample of managers working in official institutions in the Kurdistan Region of Iraq. Each employee from grade four upwards was categorized as having previously held a department head position or higher, identifying them as managers. The total count was 13 managers distributed solely within civil official departments. The researcher consciously excluded any sample inclusion from non-civil institutions due to their sensitivity, which might impact the reliability of responses received from the intended sample. Additionally, three managers were excluded due to unclear responses in specific questionnaire fields. All questions adhered to a unified format where strong agreement was considered a positive indicator, while strong disagreement denoted a negative indicator, aiming to facilitate the data analysis. The questionnaire type was quantitative, consisting of structured questions based on five criteria, ranging from strongly agree to disagree strongly, incorporating a neutral value, as per the table below (9). Upon observing the results of the first question, which aimed to assess the clarity of the organization's information systems and communication technologies across all three primary management levels (executive, managerial, and operational), the mean response rate for the targeted sample was 1.600.

Table 9: Effect of Information Technology on Workplace Conflict Rates

Q1: Does using information technology contribute to reducing conflict rates within the workplace?	
Mean	1.6000
Median	1.0000
Mode	1.00
Std. Deviation	.84327
Variance	.711
Skewness	1.001

Based on the presented results in question 2 (see table (10) below), most participants strongly support using information technology systems to enhance human resources' understanding of job responsibilities. Seven individuals expressed strong agreement (Strong agree), with one person in agreement (Agree), another neutral (Neutral), and one dissenting (Disagree) from this opinion. In addition, the Mean is 1.6000 - Signifying a tendency towards agreement in responses. Median: 1.0000 - Revealing that half of the responses were less than or equal to 1.00, indicating the majority opted for

solid agreement on this question. And Mode: 1.00 - Highlighting strong agreement as the most frequently recurring value in the data. In a related context, a Standard Deviation of 0.84327 - Indicates the variation of responses from the mean; a lower value suggests less variability and a Variance of 0.711 - Represents the data's variance. Skewness: 1.001 - Indicates a slight deviation from a normal distribution.

Table10: The Impact of Information Technology Systems on Employee Understanding of Job Duties

Q2: Do you believe using information technology systems increases human resources' knowledge of job duties?	
Mean	1.6000
Median	1.0000
Mode	1.00
Std. Deviation	1.07497
Variance	1.156
Skewness	1.691

In the other context, based on the identified results in Table (11) below, it is evident that most survey participants expressed a positive impression regarding their clear understanding of the information technology systems related to human resources. Five individuals strongly agreed, one agreed, two were neutral, one disagreed, and another strongly disagreed. The mean value of 2.2000 indicates moderate agreement among respondents regarding their understanding of information technology systems for human resources. The median and mode values of 1.5000 and 1.00, respectively, suggest that many responses leaned towards agreement. The standard deviation of 1.47573 reflects the degree of variation or dispersion of responses from the mean value, indicating a notable level of diversity in the participants' opinions. The positive skewness (0.871) indicates that the distribution of responses is slightly skewed towards higher values, indicating a tendency towards agreement or more robust agreement. Based on the respondents' answers to the above question, it is evident that the majority understand the concept of information systems in human resources. Therefore, their opinions and assessments regarding the study subject are built on a knowledgeable basis, holding valuable evaluations that can be relied upon.

Table11: Understanding of Information Technology Systems for Human Resources

Q3: Do you understand the concept of information technology systems for human resources?	
Mean	2.2000
Median	1.5000
Mode	1.00
Std. Deviation	1.47573
Variance	2.178
Skewness	.871

Based on the provided data in table 12 below, it appears that most participants expressed a high level of agreement that using information technology systems contributes to facilitating the supervision and monitoring process in government organizations in Kurdistan. Four individuals strongly agreed (strongly agree), two individuals agreed (Agree), two individuals were neutral (Neutral), one person disagreed (disagreed), and one person strongly disagreed (strongly disagreed). In addition, supervision and monitoring processes are crucial and fundamental operations within any administrative system. It aims to identify any deviation from any institution's policies, systems, and laws. Based on the provided data, the use of information technology systems demonstrates a positive role in facilitating supervision and monitoring processes within governmental organizations in Kurdistan. According to the results, the mean was 2.3000, the median was 2.0000, and the mode was 1.00, indicating that most responses ranged

from moderate to agreement levels regarding the role of information technology systems in facilitating supervision and monitoring. The statistical analysis suggests moderate diversity in opinions, including a standard deviation of 1.41814, a variance of 2.011, and a skewness of 0.801. This indicates a preference for supporting the role of information technology systems in these processes. It can be concluded that most responses strongly endorsed the idea that information systems significantly improve supervision and monitoring processes.

Table12: Impact of Information Technology Systems on Supervision and Monitoring

Q4: Does the use of information technology systems contribute to facilitating the supervision and monitoring process in government organizations in Kurdistan?	
Mean	2.3000
Median	2.0000
Mode	1.00
Std. Deviation	1.41814
Variance	2.011
Skewness	.801

The data in Table 13 below reflects the lack of everyday use of electronic interviews and exams in the recruitment processes within government institutions in the Kurdistan region. Based on the distribution of responses, there appears to be a variation in opinions on this matter, as the numbers indicate an equal number of responses in different categories, especially in the "Neutral," "Disagree," and "Strong Disagree" categories. This diverse distribution suggests a lack of clear consensus among individuals regarding the prevalence of using these technologies in governmental recruitment processes in Kurdistan. Furthermore, the Median and Mode have central values of 3.0000 and 3.00, respectively, indicating that most responses were neutral. The Standard Deviation and Variance also show a certain degree of variability in the data, with a slight bias towards skewed distribution. The Skewness value (-.280) and the Standard Error of Skewness, being close to zero, imply an almost balanced data distribution. Therefore, it can be inferred from these results that institutions do not heavily rely on information systems.

Table13: Prevalence of Electronic Interviews and Exams in Recruitment

Q5: Is using electronic interviews and exams in recruitment common in government organizations in Kurdistan?	
Mean	3.3000
Median	3.0000
Mode	3.00
Std. Deviation	1.25167
Variance	1.567
Skewness	-.280

The provided data reflects a survey regarding employee performance evaluation through information technology systems in government institutions in the Kurdistan region. In Table 14 below, the distribution of responses indicates a significant variance in opinions, with a majority leaning towards neutrality (Neutral), comprising eight responses. There was one positive response (Agree) and one negative response (Disagree), while no responses were recorded in the Strong Agree or Strong Disagree categories. In a related context, the Mean, Median, and Mode have identical values of 3.0000, suggesting a central tendency of responses towards a moderate level. The low Standard Deviation of .47140 and Variance of .222 indicate a relatively small degree of variability or dispersion in the dataset, signifying that responses are closely grouped around the mean. The Skewness value of .000 denotes a symmetrical distribution of responses without any skewness. Based on this data, the varied distribution of responses suggests a substantial diversity in viewpoints regarding evaluating employee performance using information technology systems in government institutions.

Table14: Evaluation of Employee Performance via Information Technology Systems

Q6: Is employee performance evaluated through information technology systems in the government organizations in Kurdistan?	
Mean	3.0000
Median	3.0000
Mode	3.00
Std. Deviation	.47140
Variance	.222
Skewness	.000

Identifying the human resource training needs through electronic training methods in government organizations in Kurdistan. The data in Table 15 below, the distribution indicates a varied perspective among respondents. Neutral responses dominate with a count of 5, suggesting uncertainty or an absence of a definitive viewpoint. There's an equal count of positive (Agree) and negative (Disagree) responses, each with two and one response in the Strong Agree and Strong Disagree categories. In addition, the Mean, Median, and Mode values, all around 3.0, imply a moderate tendency in responses toward this issue. The Standard Deviation of 1.10050 and Variance of 1.211 indicate a relatively moderate spread or dispersion of data around the mean, signifying some diversity in opinions among respondents. The negative Skewness value (-.238) suggests a slight left-leaning skewness in the distribution of responses, indicating a slight concentration of responses towards the higher end of the scale. The skewness analyses show that the variables are almost normally distributed slightly left skewed since skewness equals -0.238, suggesting the fact for having a tiny leftward inclination it is not equal distribution and does not follow symmetrical parabolic model. In other words, there are a few response options – including ‘No’ or ‘Disagree’ that are slightly more likely to correspond to the lower values, but the difference is not very significant. Approximation to Zero: Given that the value is in close proximity to zero, it may be inferred that the distribution is not significantly skewed and is approaching a normal distribution. This indicates that the majority of replies are scattered in a rather uniform manner around the average value. This means that when pointing to the answer to the question “Are the training needs of human resources identified using electronic training methods in the government organizations in Kurdistan?” this slightly negative skewness may suggest a slightly negative reaction – disagreement with this statement or some level of doubts/Concerns or uncertainty regarding the effectiveness of the use of information technology systems in the process of employee training in the government organizations in Kurdistan.

Table15: Utilization of Electronic Training Methods for Identifying Human Resource Training Needs

Q7: Are the training needs of human resources identified using electronic training methods in the government organizations in Kurdistan?	
Mean	3.1000
Median	3.0000
Mode	3.00
Std. Deviation	1.10050
Variance	1.211
Skewness	-.238

4.3. Hypothesis Testing

This research investigates the influence of Human Resource Information Systems (HRIS) on improving human resource performance capabilities in governmental organizations in Kurdistan. The researchers devised many hypotheses pertaining to the study issue, and this part will elucidate whether these hypotheses are accepted or rejected. The primary goal of formulating these hypotheses is to support the researchers' views by providing recommendations based on empirical evidence within the scope of their research, which focused on civil governmental institutions in the Kurdistan Region of Iraq. The

preliminary results of the hypotheses indicate the acceptance of all hypotheses. Additionally, Pearson correlation between the variables is predominantly positive, though it tends to be weakly positive. For the first hypothesis, the correlation coefficient between the variables is 0.569, indicating a weak positive relationship in official institutions in the Kurdistan Region of Iraq concerning the relationship between the use of information systems and the efficiency of human resource management. The results also showed that government institutions in Kurdistan that adopted the integration of information systems with human resource systems had higher staff performance levels compared to those that did not adopt this mechanism. Consequently, the overall productivity of those institutions increased. However, there are some obstacles preventing the achievement of the desired level. The results of the second hypothesis (0.522) highlight the need to develop communication mechanisms between senior management and lower-level employees. Therefore, the integration of information systems in governmental institutions in the Kurdistan Region should be accompanied by appropriate communication systems to enhance the overall performance of human resources. Another significant barrier can be inferred from the correlation coefficient of the third hypothesis, where the correlation coefficient (0.422) indicates a critical need for official institutions in Kurdistan to adopt employee training systems and provide a series of developmental workshops for employees in the field of information technology. The personnel working in the government sector are adversely affected by their lack of technical expertise in information technology, which hampers their comprehension of specific dangers, especially in the areas of cybersecurity and safe management of information systems. The lack of this essential element has resulted in weaknesses that have the potential to impact the institution's functioning.

Table 16: Hypothesis Testing

Hypothesis	Status
Hypothesis 1: Implementing HR information systems in government organizations in Kurdistan will directly and positively impact the efficiency and effectiveness of human resource performance.	Accept
Hypothesis 2: Effective HRIS communication facilitated by information technology systems between departments and upper management will lead to better organizational performance in government organizations in Kurdistan.	Accept
Hypothesis 3: The lack in training of government organization managers in Kurdistan regarding electronic information systems for human resources negatively impacts employee and organizational performance.	Accept

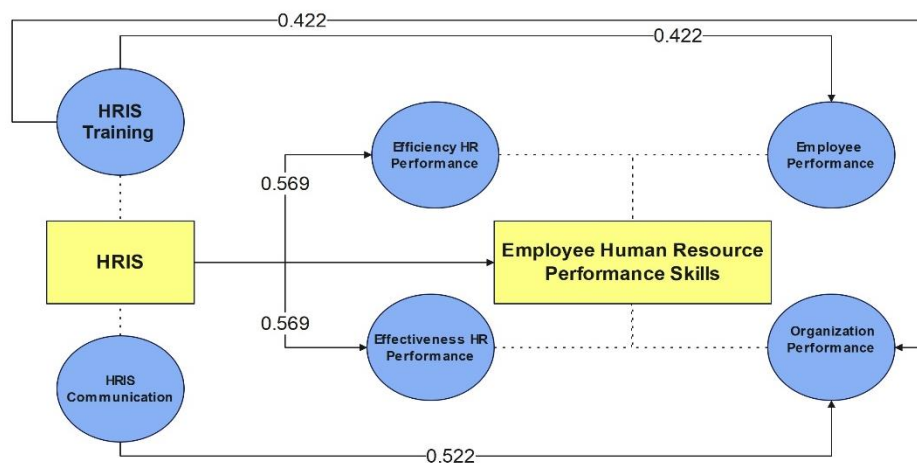


Fig. 3: Hypothesis Testing Results

5. Discussion

In this section, the authors will detail the findings obtained from the questionnaire analysis and link these results to the research objectives presented at the beginning of the study. As researchers know,

research objectives stem from research questions, which are formulated based on the research problem that the authors in this study aim to address. Therefore, it is crucial to highlight the research objectives and connect them with the findings as follows:

Objective 1: To measure the impact of applying information systems on developing the performance skills of human resources in government organizations in Kurdistan.

The questionnaire conducted among government organization employees in Kurdistan highlighted several important aspects of the organizational environment, management practices, and the use of Human Resource Information Systems (HRIS). The study revealed that the participants exhibited a modest degree of contentment with the Human Resource Management (HRM) practices used in their respective companies. The data distribution mostly focused on the satisfaction level, however small deviations indicated some inconsistencies in responses. In order to enhance employee satisfaction, the study indicates that implementing modern HRM policies is recommended. Extensive research has shown a robust association between employee contentment and productivity, highlighting the critical significance of happiness in attaining organizational success. Moreover, the results underscored the need to enhance the focus on educational programs in formal establishments in Kurdistan. The findings showed significant variation in responses on staff training, highlighting the need for the implementation of comprehensive and continuous training programs that align with advanced information systems. The training programs have a significant impact on employee performance, especially in important areas such as cybersecurity and intelligent systems, which are essential in many businesses.

Objective 2: To evaluate the human resources information system in government organizations in Kurdistan.

The research emphasized the significance of HRIS in improving communication across different departments. Although there are some small variations, the moderate divergence from pessimistic perspectives highlights the recognized importance of HRIS in promoting efficient communication across different departments, suggesting its potential relevance in organizational structures. This management style enables top executives to promptly recognize and tackle difficulties, therefore minimizing organizational losses and maximizing operations. In relation to workplace transparency, most participants expressed a preference for the notion that HRIS (Human Resource Information System) improves company openness. The few negative attitudes expressed by the participants include indifference or lack of decisiveness on the part of participants with phrases such as 'I have no opinion'. This can be viewed as a sign that a common inclination towards the acceptance of the constructive implications of HRIS on the transparency of work environments is observed. Additionally, the findings from the questionnaire did indicate that all the respondents agreed that there were increased flexibility in achieving organization objectives through the application of HRIS. This perspective is consistent with the concept that using information technology in human resources boosts employee performance, hence enhancing organizational efficiency. However, the different viewpoints indicate a variety of opinions on the effectiveness of HRIS in achieving flexibility in HR administration. Furthermore, the responses indicated a reduced consensus on the organization's commitment to enhancing technical equipment standards in accordance with work and development requirements. Multiple observers noted that administrative disputes between Kurdistan and the central government had an adverse impact on official institutions, including impeding the procurement of necessary equipment. This hindrance therefore impacted the productivity of employees and the overall effectiveness of the government organizations in Kurdistan.

Objective 3: To provide recommendations on applying information system in human resources management in government organizations and suitable proposals to enhance its application and benefit from its advantages.

The questionnaire administered to managers in government organizations in Kurdistan revealed several critical insights into the use and effectiveness of information systems within these entities. The examination of answers revealed that managers had a high degree of knowledge and understanding of the characteristics of information systems, with a strong inclination towards consensus about their benefits. The statistical metrics, such as mode and mean, mostly indicated a significant consensus among the responders, demonstrating substantial agreement. The use of information systems has greatly improved workers' comprehension of their functional responsibilities, leading to enhanced overall performance and customer service delivery. Furthermore, the study revealed significant endorsement for the efficacy of IT systems in aiding oversight and surveillance inside governmental institutions in Kurdistan. While positive responses outnumbered opposing or neutral views, a significant percentage expressed dissatisfaction with the current systems, emphasizing the need to enhance and update them. This highlights the necessity for advanced systems to refine monitoring and supervision methods, thereby boosting the efficiency of the current infrastructure. However, regarding job interviews, the data implied that the current information systems in formal departments in Kurdistan need to be sufficiently proficient. Therefore, the study recommends modern systems capable of conducting job interviews to ensure transparency in the recruitment process.

The questionnaire also highlighted the need for further consensus about the effectiveness of information technology in evaluating employee performance. The observed variation underscores the need of adopting a transparent and inclusive employee evaluation system in the evaluated companies in Kurdistan. This variation has a detrimental impact on the reliability of the existing evaluation systems. Hence, it is necessary to establish equitable and transparent performance evaluation mechanisms inside formal organizations to guarantee impartial employee appraisals. The findings indicated a modest inclination towards using electronic training approaches for identifying human resources training requirements. Although there was considerable variation in views among participants, there was a minor tendency towards acknowledging the efficacy of electronic training techniques in detecting human resources training requirements in government organizations in Kurdistan.

6. Conclusion

Human Resource Information Systems (HRIS) enhance the efficiency of human resource management (HRM) in organizations by offering tools and components that facilitate the collection and analysis of data (Satispi et al., 2023). In this study, the main objective is to examine the influence of Human Resource Information Systems (HRIS) on the performance of human resources in governmental organizations in Kurdistan. The study examines the relationship between training and communication in HRIS and its effects on the efficiency and effectiveness of human resource performance, as well as its influence on human resource development and organizational performance. The questionnaire done on government organization workers in Kurdistan found that there is a modest level of satisfaction with Human Resource Management (HRM) in their organizations.

The results indicate that there is a need for contemporary HRM policies to enhance employee happiness and prioritize the significance of training systems. HRIS is believed to improve communication across departments, enabling senior management to promptly detect and resolve difficulties, hence reducing organizational losses and optimizing operations. Most responders agree that HRIS improves organizational transparency, resulting in more flexibility in job completion. Nevertheless, there is little agreement over the organization's dedication to revising technological equipment specifications in accordance with job demands and advancements. What emerged clearly with the government organizations of Kurdistan is that managers had a complete understanding of information systems, and there was always a unanimous agreement that the execution of these systems helped the employees understand their work descriptions better and thereby provided clients with improved services. The questionnaire also revealed a need for more consensus regarding the efficacy of information systems in employee performance evaluation. This disparity highlights the need for a

transparent employee evaluation system within questionnaire organizations in Kurdistan, adversely affecting the credibility of the existing evaluation mechanisms. Hence, there's a proposed need for developing fair and transparent performance evaluation systems in official organizations to ensure equitable employee assessments. Regarding HR training needs, the data reflected a moderate response toward using electronic training methods to identify these needs. While opinions were somewhat varied among participants, there was a slight inclination towards the effectiveness of electronic training methods in recognizing HR training needs in governmental organizations in Kurdistan.

In conclusion, the data from the study offers valuable insights and directions for refining various aspects of government organizations in Kurdistan. It underscores the significance of modern HRM policies, comprehensive training programs, and the effective integration of HRIS to enhance communication, transparency, flexibility, and organizational performance. Addressing administrative issues and equipment requirements emerges as key areas necessitating immediate attention for optimal organizational functionality and employee productivity. In addition, the analysis of responses from the questionnaire signifies a general acknowledgment of the benefits of information systems in enhancing various aspects of organizational operations. However, it also emphasizes the necessity for enhancements and modernizations in different areas, including monitoring and supervisory methods, recruitment processes, employee evaluation, and HR training, to elevate the efficiency and transparency of government organizations in Kurdistan.

7. Future Work

Upon concluding this study, the researchers put up a number of recommendations for future endeavors. An advisable recommendation is to undertake a forthcoming investigation, backed by the Kurdistan Regional Government, to tackle some obstacles, particularly the issue of sample size. The study encountered a significant challenge in the form of a limited sample size, since a substantial proportion of the recipients of the questionnaire did not provide a response. Furthermore, it is advisable for future researchers to investigate other facets, such as the influence of information systems on institutional excellence or the consequences of implementing information systems in mitigating corruption and abuse of power, while staying up to date with the notable advancements in information systems. Furthermore, implementing intelligent information systems with the ability to handle data in non-traditional methods has the potential to improve both employee productivity and organizational effectiveness.

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