# Factors Influencing Adoption of HR Analytics by Individuals and Organizations

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**Abstract:** In this paper, we explore the factors influencing the adoption of Human Resources (HR) Analytics by HR professionals in large Palestinian enterprises. A convenience sample of 151 HR professionals from the service and manufacturing sectors participated in a questionnaire-based survey. The study identified self-efficacy, performance expectancy, effort expectancy, resource availability, quantitative self-efficacy, data availability, and social influence as the most significant factors positively influencing individual acceptance and adoption of HR Analytics. Fear appeals, on the other hand, had no significant effect. The study proposes a conceptual framework to help policymakers in organizations understand how to adopt HR Analytics.

**Keywords:** HR Analytics, data availability, performance expectancy, self-efficacy, effort expectancy, resource availability, social influence, Palestine.

## 1 Introduction

The increasing market rivalry pressures alerted many successful organizations to adopt data analytics to identify new opportunities for promoting their products and services. Furthermore, 77% of large organizations consider data analytics as a necessary part of business execution [1]. Data analytics, it is argued, should be applied throughout the organization to obtain the desired impact on business performance [2]. Undoubtedly, this should include the Human Resources (HR) function as it is concerned with managing the organization's greatest asset, its 'people' [3]. Increasingly, managing people requires keeping up with continuous changes and innovations to be able to identify new market doors for businesses. Transforming to an innovative organization requires recreating traditional HR functions, promoting the processes that boost innovation, and recruiting and retaining innovators [4].

Traditionally, HR was referred to as the 'personnel department'; its primary function was merely hiring and firing employees. As the name has changed, the role of HR has also changed. HR is now seen as a strategic internal partner, helping the organization to identify talent needs, find and retain the right people, develop employee skills and capabilities, and plan for effective use of the organization's human resources. It is not new for HR to play the effective role of being a strategic partner in the organization, as many studies have investigated the potential for HR practices to be strategically important [5]. Internationally, HR Analytics are still in their infancy [6-9] and there is still plenty of room for researchers to conduct research in this field, such as the need for quantitative empirical studies and developing frameworks for testable hypotheses [10-12]. Current studies on HR Analytics have generally been undertaken in the developed countries of the USA, Australia, Canada, and Western Europe [7]. Within the Palestinian context, there is a paucity of research on the effectiveness of Human Resources Management (HRM) practices [13]. This study aims to identify the factors that influence the acceptance and adoption of HR Analytics from HR individual and organizational perspectives. It also aims to propose a conceptual framework describing innovation acceptance and adoption of HR Analytics as the basis to understand the current and future of HR Analytics implementation in large Palestinian

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enterprises.

Large Palestinian enterprises are chosen to be the research's target since they have more efficiency and growth indicators in the Palestinian economy than the small/medium organizations. HR being a labor-intensive domain, arguably replete with human capital issues, requires the use of HRM techniques to effectively contribute to organizational performance. This research is expected to guide HR professionals in large Palestinian enterprises in achieving their goals by providing a framework for proper adoption of the innovative HR Analytics technique. The paper is organized into six sections. Section one provides a general overview of this research. Section two reviews the literature regarding HR Analytics and formulates the research hypothesis. Section three displays the methodology adopted in this research. Section four presents the results of data analysis and hypothesis testing, and section five presents the study's conclusions.

## 2 Literature review

The exponential growth of business analytics is evident by the proliferation of its applications in various management discourses, such as marketing, supply chain management, information systems, finance, crises management, risk management, and human resources management [14]. It is not surprising for the human resources domain to join this new era of data revolution since HRM is solely tasked with managing people, the most significant asset of any organization. The centrality of the people's asset to the organization is recognized by prominent management authors, such as Armstrong [3], who referred to employees as people who individually and collectively contribute to the achievement of its objectives. The value of the people's asset is also manifested in its cost to the organization, as it is estimated at 60% of the variable costs; such a significant cost item would, arguably, benefit from applying analytical techniques for its effective management [15]. Aral et al. [16] argued that, in addition to measuring employees' performance, HR needs to link its data with the data of other systems in the organization to improve its function of engaging and aligning the goals of employees with the organization's business strategy. Achieving this, [5] suggest, can be obtained through analytics, as HR Analytics enhances the organization's capability to measure how HR decisions affect business outcomes.

HR Analytics contributes to the management of HR in different ways, such as using HR data to collect insights about a specific function or department of an organization and take some improvement decisions regarding these insights (see e.g., [17]). These decisions maybe related to turnover rate among employees or to performance measures that might lead to a new specific training program for the staff. However, as Marler and Boudreau's [11] review of the HR Analytics literature reveals, this topic is still in its infancy; inviting researchers to investigate its many unexplored facts to develop adequate understanding of the topic and statistically test the findings that emanate from this understanding.

### 2.1. Hypotheses development

Research in social psychology aimed at understanding and predicting motivational influences on behavior, has thrown several models of individual technology acceptance and adoption. In the discipline of information technology, the theoretical approaches that have been used include: the theory of reasoned action, technology acceptance model, theory of planned behavior, social cognitive theory, diffusion of innovation theory, and the motivation model [18]. However, the unified theory of acceptance and use of technology (UTAUT) has been developed and used as the primary model in many types of research and in different technologies [19]. This is, it is argued, because UTAUT integrates elements of most of the other models and proves its effectiveness in the adoption of technology at the individual level [20]. UTAUT also offers different factors that might influence technology acceptance and adoption, such as social influence, resource availability, data availability, fear appeal, effort expectancy, performance expectancy, self-efficacy, and quantitative self-efficacy [21]. This paper aims to study the factors taken from the UTAUT model that might affect the individual and organizational acceptance and adoption of HR Analytics by HR professionals.

### 2.1.1 Social influence

It has consistently been shown that social factors significantly affect user behavior (e.g., [22-24]). Generally, social influence refers to the degree to which members of a social group influence each other's behavior in the adoption process of new ideas or new technologies ([8,25,26]). Countless studies point to the existence of a positive relationship between social influence and the acceptance of an innovation [9,27]. However, few studies which examined influencers' behavior concerning the individual adoption of innovation of information systems reported no common response to acceptance (e.g., [21]). Also, many HR professionals are not excited about the use of analytics despite its proved effectiveness [28]. Nevertheless, many researchers found that social influence would be a factor in adopting new technology, including data analytics (e.g., [9,29]). This leads us to propose the first hypothesis:

H1: Social influence positively affects the individual acceptance and adoption of HR Analytics.

### 2.1.2 Resource availability

Resource availability is concerned with having all the resources needed to adopt the HR Analytics process (see e.g., [9,30]). These resources include required systems and software; appropriate skills compatible with these systems; ability to collect and deal with data from reliable resources; and cleansing, analyzing, and interpreting the data in a proper manner [8]. Nowadays, technology and the web revolution provide HR functions with different Human Resource Information systems (HRIS) that changed the direction of managing people [31]. In addition to the technological tools, individuals with relevant specific technical skills and knowledge are needed to accomplish the implementation and use of HR Analytics [31]. Organizations should also ensure that there is coordination between HRIS and other information systems in different departments to guarantee effective HR Analytics and decision-making in the entire organization [32]. Furthermore, special attention should be given to resource availability as it is a factor that can influence the acceptance and adoption of HR Analytics. In this context, many studies suggest that the lack of resources and inappropriate resources are a significant reason for poor organizational performance [33]. Accordingly, we can propose the following hypothesis.

H2: Resource availability positively affects the individual acceptance and adoption of HR Analytics.

### 2.1.3 Data availability

Data availability refers to the process of securing the availability of data needed to perform what is required. The term data availability refers to the degree of accessibility to obtaining the required data. This is related to the internal IT that combines all different departments within an organization. [32] advised organizations to increase their attention to the integration of IT from various departments to make the process of data transformation easier. In the same vein, [34] found that many organizations store their data in different and various systems, making it harder for HR professionals to make a proper usage and interpretation of data when they need to connect HR data analysis with different departments. Data also stems from the administrative process within the HR department and normally consists of reporting and benchmarking; these are the two activities most used in HR metrics and analytics in any efficient HR administrative process [31]. There are also different sources of data collection, such as simple spreadsheets that display administrative metrics, and other data that comes from the internal information system. There is thus a need to be aware of where the data comes from to ensure the accuracy and the efficiency of the results based on the analysis of this data [35]. From the foregoing discussion, and as data collection and availability is the first step of any analysis process, we can propose that data availability is likely to be a factor that affects the acceptance and adoption of HR Analytics.

H3: Data availability positively affects the individual acceptance and adoption of HR Analytics.

### 2.1.4 Fear appeals

De Hoog et al. [36] described fear appeal as a convincing method that depends on arousing fear to change behavior by the impendence of risk or threat. Fear appeal is used very much in the health sector and advertising as a strategy to persuade an audience to change an attitude, make a specific action or buy a particular product through the urge of fear. A fear appeal is effective in changing behavior toward specific action [37]. In general, data analysis needs specific mathematical, statistical, and problem-solving skills, and there is a shortage of these skills among HR professionals. This requires organizations to fill the positions that need such skills with qualified employees [38]. Furthermore, HR professionals may have some fear of losing their jobs to more qualified employees who have the required skills [8]. This resulting fear may negatively affect the acceptance and adoption of HR Analytics among the organization's HR professionals, giving rise to the following hypothesis.

H4: Fear appeals negatively affects the individual acceptance and adoption of HR Analytics.

### 2.1.5 Effort expectancy

Venkatesh et al. [39] defined effort expectancy as the degree to which a system is easy to use; they argue that effort expectancy is one of the significant factors affecting behavioral intention towards the acceptance of a new technology. They further pointed out that employees take into consideration both time and effort when they decide whether to accept and use new technology. Studies also suggest that women are more concerned about effort expectancy than men (15,40,41). This research investigates whether HR professionals are focusing on the degree of ease related to the use of HR Analytics as a new technology before deciding on its acceptance and adoption. Hypothesis five is thus proposed to test this factor.

H5: Effort expectancy positively affects the individual acceptance and adoption of HR Analytics.

## 2.1.6 Performance expectancy

Performance expectancy is the extent to which users believe using a specific system assists or enhances their job performance [39]. Venkatesh et al. [20,39] and other studies view performance expectancy as a robust foreteller of behavioral intention to use new technology. This research investigates to what extent HR professionals are considering performance expectancy [42] as a factor affecting their acceptance and adoption of HR Analytics as new technology. It is also argued that HR analytics can cause better performance [16,43], giving rise to the following hypothesis.

H6: Performance expectancy positively affects the individual acceptance and adoption of HR Analytics.

## 2.1.7 Self-efficacy

In this research, Bandura's [44] self-efficacy concept is used as a factor dependent on HR professional expectancy about their capabilities. Self-efficacy, [44] argues is about individuals' belief in their skills to succeed and obtain the desired performance. He points out that individuals may have prior expectations about whether or not they gain successful results in whatever tasks they may be performing [45]. Chau [46] found that attitudes affect the perceived ease of use of a computer system. Self-efficacy, it is further argued, has a prospective effect on whether HR professionals accept and adopt HR analytics and to what extent, especially whether it influences future performance strategies [47]. The above studies thus suggest that the following relationship can be formulated.

H7: Self-Efficacy positively affects the individual acceptance and adoption of HR Analytics.

## 2.1.8 Quantitative self-efficacy

In this research, mathematical self-efficacy refers to quantitative self-efficacy. Quantitative self-efficacy is considered an upgraded level of general self-efficacy. Ozgen [48] points out that some studies, such as [45] and [49], recognize that individuals who have a higher level of self-efficacy may work better on learning activities. Similarly, [48] and [50] suggest that individuals who integrate mathematics into their real-life problems, enhance their performance in math and simultaneously can benefit from their mathematics skill at work.

As mentioned earlier in this paper, the definition of HR Analytics contains the use of metrics and statistical tools in conducting the required analysis. From the foregoing, hypothesis 8 may be proposed.

H8: Quantitative self-efficacy positively affects the individual acceptance and adoption of HR.

## 3  Research Methodology

### 3.1    Research population and sampling

The study population is HR professionals currently employed in the field of HR in large Palestinian enterprises, provided that these enterprises are using HRIS in managing their HR operations. This is because this research is about the integration and implementation of HRIS, and the latter is considered as a significant driver of HR analytics [31]. Enterprises in the West Bank are considered large if they contain 20 employees and more [51]. Applying these conditions, it was found that there are a total of 244 HR professionals working at large Palestinian enterprises in both the service and manufacturing sectors and in different domains. To obtain the appropriate sample size, [52] formula was used and resulted in a sample of size 150. This number is considered as a representative sample of the whole population, where the results can be generalized, and valid conclusions can be made about that population [53]. Table 1 illustrates the total sample details corresponding to each industrial sector and domain.

**Table 1:** Total sample details

| Strata name | Strata size | Required % | Sample size |
|---|---|---|---|
| Service Sector | 195 | 80% | 120 |
| Telecommunication | 60 | 31% | 37 |
| Banking | 74 | 38% | 45 |
| Insurance | 24 | 12% | 15 |
| Internet provider | 7 | 4% | 4 |
| Logistics | 3 | 2% | 2 |
| Electricity provider | 6 | 3% | 4 |
| Cars Trading | 10 | 5% | 6 |
| Hospitals | 11 | 6% | 7 |
| Manufacturing sector | 49 | 20% | 30 |
| Food industry | 17 | 35% | 10 |

| Pharmaceutical industry | 14 | 29% | 9 |
|---|---|---|---|
| Other industries (paper, aluminum, plastic) | 18 | 37% | 11 |
| Total | 244 | 100% | 150 |

185 questionnaires were distributed over two-months period to large enterprises, in different sectors located in various Palestinian cities. The survey was distributed in different forms based on each enterprise's preferences. Some enterprises preferred personal contact and, on the spot, filling out paper-based questionnaire, and others preferred to receive an electronic form via email. The total number of returned valid questionnaires responses was 151, with a response rate of 82%. Respondents were asked to check a five-point Likert scale to rank their perceptions about the importance of each statement [55]. The internal consistency method was used by applying the Cronbach's Alpha test to check the questionnaire's reliability. Using Minitab 18 software as a statistical analysis tool, all Cronbach's Alpha coefficients for the factors were checked. Table 2 displays Cronbach's Alpha coefficients for the factors affecting the acceptance and adoption of HR Analytics at the individual level. The results indicate that all coefficient values are greater than 0.7 and for all the questions is 0.89. These values are between (0.70-0.90), indicating a good internal consistency and a good level of reliability of the survey tool [55].

**Table 2:** Reliability statistics

| Factor | Cronbach's alpha |
|---|---|
| Social influence | 0.710 |
| Resource availability | 0.770 |
| Data availability | 0.800 |
| Fear appeals | 0.910 |
| Effort expectancy | 0.860 |
| Performance expectancy | 0.920 |

The research validity was also achieved as the questionnaire's statements were designed based on the literature, where the quality standards for the research tool regarding testing the validity and reliability are already guaranteed. Here, the questionnaire is revised, modified, and adjusted by different arbitrators and experts to assure the efficiency of the research tool in achieving the research objectives. Reliability of a research tool is a pre-request for its validity. The reliability of the questionnaire is guaranteed, as shown in the previous section, so is its validity.

## 4   Data analysis and results

### 4.1   *Demographic and descriptive statistics*

Analysis of the results shows that 55.6% of the respondents from the targeted enterprises were females while 44.4% were males. 64.90% of respondents were less than 35 years old, 29.14% between 35 and 45 years, and only 5.96% were more than 45 years. Regarding educational degrees, 80.13% of respondents had a bachelor's degree while 13.91% had a master's degree, and 5.96% had a diploma or below. Moreover, 84.11 % of the respondents did not have a certification in HRM while only 15.98% had such certification. Concerning the respondents' current position, 55.63% of the respondents held administrative roles in the HR department; 17.22% were in managerial positions, 13.91% of them heads of departments, 7.95% heads of units, and only 5.30% of the respondents were at a director position. Furthermore, the analysis shows that 36.42% of the respondents work in employee relations functional area within the HR department, 27.15% of them in training/development, 14.57% in insurance, 11.92% in payroll and 9.93% are in the functional area of data and information management. Regarding the period of the respondents' occupancy of their positions, 58.28% of them were in their positions for less than 5 years, 30.46% of respondents spent 5 to 10 years at their current position, and 11.26 % more than 10 years. Furthermore, 46.36% of the respondents had less than 5 years' experience in HR, 35.10% 5 to 10 years' experience in HR and 18.54% had more than 10 years' experience in HR. Concerning the industrial sector where the respondents work, 31.79% of respondents were from the banking sector, 26.49% from the telecommunication sector, 9.93% from insurance, 4.46% from hospitals, 3.97% from car trading, 2.65% from internet providers, 2.65% from electricity providers, 1.33% from logistics,7.95% from different industries including Paper, Aluminum, Plastic, 6.62 % from the food industry, and only 1.99% from the pharmaceuticals industry. Furthermore, 30.46% of the respondents were from enterprises that employ more than 1000 employees, 29.80% from enterprises with the size of 500-1000 employees, 23.84% from enterprises that contain from 100 to less than 500 employees, 14.57% from enterprises with size from 50 to less than 100 employees, and only 1.32% from enterprises having less than 50 employees. In relation to the use of data analytics at the respondents' enterprises, 95.36 % of respondents stated their enterprises apply data analytics while only 4.64% of respondents indicated that their enterprises do not apply data analytics.

## 4.2 Hypotheses testing

In this research, correlation analysis is used to test the research hypotheses.

### 4.2.1 Correlation analysis

Pearson correlation matrix and coefficients were used to determine if there was a significant relationship between the factors and whether they affect the acceptance and adoption of HR Analytics by HR Professionals in the studied enterprises. The results in Table 3 show the values of the Pearson correlation coefficient. The highest correlation is with self-efficacy, while the lowest correlation is with social influence. This table also displays the significant P-values, all the P-values are less than the significant level of 0.05 except for the factor fear appeals, indicating that there is no correlation between fear appeals and the individual acceptance and adoption of HR Analytics. All other seven factors have significant and positive correlations.

**Table 3:** Correlation coefficients of the factors (individual level)

| Factors | Pearson correlation | P-value | Result |
|---|---|---|---|
| Social influence | 0.202 | 0.013 | Positive |
| Resource availability | 0.335 | 0.000 | Positive |
| Data availability | 0.264 | 0.001 | Positive |
| Fear appeals | -0.118 | 0.149 | No correlation |
| Effort expectancy | 0.359 | 0.000 | Positive |
| Performance expectancy | 0.417 | 0.000 | Positive |
| Self-efficacy | 0.519 | 0.000 | Positive |
| Quantitative self-efficacy | 0.306 | 0.000 | Positive |

Note: correlation is significant at the 0.05 level (2-tailed)

Table 4 illustrates the results of the Pearson correlations matrix mainly between the independent variables and at the last row between these independent and dependent variables. The purpose of investigating the correlations between the independent variables is to ensure that there is no multicollinearity before developing the conceptual framework.

**Table 4:** The Pearson correlations matrix

| Factor | Social Influence | Resource Availability | Data Availability | Fear Appeals | Effort Expectancy | Performance Expectancy | Self-Efficacy | Quantitative Self-Efficacy |
|---|---|---|---|---|---|---|---|---|
| Resource availability | 0.293 0.000 | | | | | | | |
| Data availability | 0.131 0.110 | 0.551 0.000 | | | | | | |
| Fear appeals | 0.031 0.704 | -0.116 0.155 | -0.205 0.012 | | | | | |
| Effort expectancy | 0.087 0.286 | 0.342 0.000 | 0.144 0.078 | -0.081 0.325 | | | | |
| Performance expectancy | 0.269 0.001 | 0.350 0.000 | 0.283 0.000 | -0.252 0.002 | 0.625 0.000 | | | |
| Self-efficacy | 0.174 0.033 | 0.432 0.000 | 0.275 0.001 | -0.186 0.022 | 0.565 0.000 | 0.574 0.000 | | |
| Quantitative self-efficacy | 0.070 0.394 | 0.117 0.152 | 0.097 0.238 | 0.188 0.021 | 0.189 0.020 | 0.119 0.145 | 0.231 0.004 | |

*Cell contents
  Pearson correlation
  P-value

The results in Table 4 show that at the given significance level of 0.05, some of the independent factors are significantly correlated to each other and to a reasonable degree that does not affect the validity. The correlation coefficient values between the independent variables are less than 0.9, suggesting that there is no multicollinearity between these variables [56]. It is also important to note the effect of the studied factors on the organizational level of acceptance and adoption. Table 5 illustrates the correlation between the independent variables and organizational level. The results show that there is a correlation between the organizational level of acceptance and adoption and the factors of resource availability, data availability, effort expectancy, performance expectancy, self-efficacy, and quantitative self-efficacy. To some extent, these results are expected since the organization plays an essential role in enhancing the availability of

resources regarding adequate skills, systems, and software.

**Table 5:** Correlation coefficients of the factors (organisational level)

| Factor | Coefficient | P-value | Result |
|---|---|---|---|
| Social influence | 0.138 | 0.090 | No correlation |
| Resource availability | 0.322 | 0.000 | Positive |
| Data availability | 0.297 | 0.000 | Positive |
| Fear appeals | -0.047 | 0.570 | No correlation |
| Effort expectancy | 0.404 | 0.000 | Positive |
| Performance expectancy | 0.377 | 0.000 | Positive |
| Self-efficacy | 0.365 | 0.000 | Positive |
| Quantitative self-efficacy | 0.270 | 0.001 | Positive |

The organizational contribution may also affect the improvement of an existing general IT system and suggest its integration with HRIS to ensure proper data availability and facilitate the process of data analysis. Regarding effort expectancy, self-efficacy, and quantitative self-efficacy, the organization may also contribute to improving the skills of their HR professionals through training in different skills including analysis, statistical skills, as well as instituting continuous learning process and updating it with new technologies. The results also show that performance expectancy is correlated with the organization's level of acceptance and adoption. This is expected as this factor is associated with the effectiveness of work and organizational performance. On the other hand, there is no correlation between social influence and fear appeals since these factors are linked to individual behaviors. Again, this is expected as, to some extent, individuals are affected by the surrounding social environment, such as peers and managers, besides their ability to change their opinions and be convinced with something new.

Returning to the individual level of adoption, the hypotheses related to the factors of social influence, resource availability, data availability, effort expectancy, performance expectancy, self-efficacy, and quantitative self-efficacy, are all supported except the hypothesis related to the factor fear appeal, which is rejected (P-value = 0.149 > 0.05). Thus, the model reveals that H1, H2, H3, H5, H6, H7, and H8 are supported. While H4 is not supported. The affecting factors are:

Self-Efficacy. The results reveal that self-efficacy is the most significant factor that affects HR Analytics' acceptance and adoption. Hence, hypothesis 7 is supported, indicating that the extent to which individuals believe in their competencies to succeed and perform well at their positions through using HR Analytics affects their decision about the acceptance and adoption of HR Analytics. This finding concurs with Bandura's [45] finding and suggests that if HR professionals' beliefs are weak about their competencies of accomplishing their work in the best way using HR Analytics, they will not accept or adopt it.

Performance Expectancy. The results show that performance expectancy has a significant and positive effect among HR professionals on the acceptance and adoption of HR analytics. Hypothesis 6 is thus supported. This result agrees with the UTAUT theory which suggests that performance expectancy affects the behavior of individuals towards the acceptance and adoption of innovation ([20,39]). This result also indicates that HR professionals who consider HR Analytics as an innovative technology to enhance their job performance and reinforce their work effectiveness, will unconditionally accept and adopt this innovation.

Effort Expectancy. This factor has a significant effect on the individual acceptance and adoption of HR Analytics. Hence, Hypothesis 5 is supported, which suggests that HR professionals consider the degree of ease associated with using HR Analytics in deciding whether to accept and adopt this innovation. This result concurs with Venkatesh et al.'s [20] UTAUT theory which considers the effort expectancy as an important behavioral factor affecting the use of new technology.

Resource Availability. The result of the hypothesis testing reveals that resource availability has a significant effect on individuals' decision to accept and adopt HR Analytics, supporting Hypothesis 2. This result suggests that conducting HR Analytics requires the availability of specific new technology related skills and tools. The result is also consistent with Carlson and Kavanagh's [31] argument that individuals with the requisite skills and competencies are a significant factor since they will need to know what data is required, how to collect and analyze the data, and interpret the results of the analysis for reporting purposes and decision making.

Quantitative Self-efficacy. This is another factor that was found to positively affect the individual acceptance and adoption of HR Analytics. Hypothesis 8 is thus supported. The result agrees with Ozgen's [48] finding; it suggests that HR professionals perceive that having quantitative skills, such as mathematical and statistical analysis skills increases the possibility of their acceptance and adoption of HR Analytics. This finding is expected since HR analytics is dealing mainly with data science techniques. The latter require specific skills in mathematical and statistical computation to

perform the analysis in a proper way that guarantees the achievement of the required objectives of the data analysis. The result also shows that individuals who can connect mathematics and real life to comprehend problems and find the best solutions will succeed and perform well at work. Moreover, having the ability to make a connection between computational skills and HR problems through using HR Analytics, enhances the solution to these problems.

Data Availability. The result of the correlation analysis shows that data availability positively affects the acceptance and adoption of HR Analytics at the individual level. This is a reasonable outcome; since data is a primary requirement to conduct HR analytics. This result is consistent with Van den Heuvel and Bondarouk's [57] finding which explored the opinions of HR Analytics practitioners about the future of this innovation. The study also indicates that data availability, the integration of different data sources, and the integration of IT systems are essential factors for HR Analytics to stay and develop.

Social Influence. the results show that social influence affects the individual acceptance and adoption of HR Analytics. Hypothesis 1 is thus supported. This finding suggests that HR professionals are influenced by the opinions of people in their social environment, such as their peers or supervisors. Consequently, they are likely to change their behaviors towards accepting and adopting HR Analytics. This result is consistent with the results of Talukder and Quazi, [26], and Vargas [8]. However, it appears that HR professionals in large Palestinian enterprises are yet to see the benefits of HR Analytics among their social influencers and emulate them in using this innovation [58].

Fear Appeals. The result of the analysis indicates that fear appeals factor had no significant effect on HR professionals' acceptance and adoption of HR Analytics. Hypothesis 4 is therefore not supported. The result suggests that individuals' fear of losing their jobs or being replaced with others having the essential skills to conduct HR Analytics does not influence these individuals' decision regarding the acceptance and adoption of this new technology. This result generally agrees with the finding of Rogers' [59] study which indicates that there is no common conclusion about the effect of fear appeals on conviction decisions, and that such a conviction depends on other factors such as the social environment or other existing situations.

### 4.3 The relationship between the individual and the organizational acceptance of HR Analytics

The results of the correlation analysis between the individual and the organizational acceptance and adoption of HR Analytics display a P-value = 0.000 < 0.05 and a Pearson correlation value = 0.678. This indicates that there is a significant relationship between the individual and organizational level of acceptance and adoption. The analysis of this simple regression model resulted in residuals that were not-normally distributed. Various outliers were subsequently removed from the data to improve the distribution of residuals. The final regression analysis produced normally distributed residuals in the model with P-value = 0.066 > 0.05. This developed model explained 73% of the variability in the acceptance and adoption of HR Analytics at the individual level ($R^2$ = 73.21%, Adjusted R2= 73.00%). The regression equation is given by:

$$IA = 0.904 + 0.788\ OA \tag{1}$$

Where IA is the "Individual adoption" and OA is the "organizational adoption"

ANOVA test for the regression model is presented in Table 6. Since the P-value = 0.000 < significance level of 5 %, the null hypothesis is rejected, and it concluded that the organizational level of acceptance and adoption can explain the variation in the response and influence it.

**Table 6:** Regression coefficients

| Term | Coefficient | SE coefficient | T-value | P-value |
|---|---|---|---|---|
| Constant | 0.904 | 0.175 | 5.160 | 0.000 |
| Organizational Acceptance and adoption | 0.789 | 0.042 | 18.630 | 0.000 |

There are various resources that the organization can use to support individual HR professionals in ensuring proper acceptance and adoption of HR Analytics. These may encompass integrating and continuously updating developed HRIS tools with other IS in the organization; training employees to improve their skills and competencies to perform HR Analytics; and providing continuous support for HR professionals who have the willingness and capability to perform HR Analytics; as well as, incorporating HR into the organization's strategy to improve its performance.

Based on the results, a conceptual framework can be proposed showing the general structure of proper acceptance and adoption of HR Analytics by HR professionals in large Palestinian enterprises (see Figure 1). The proposed framework was one of these research objectives.
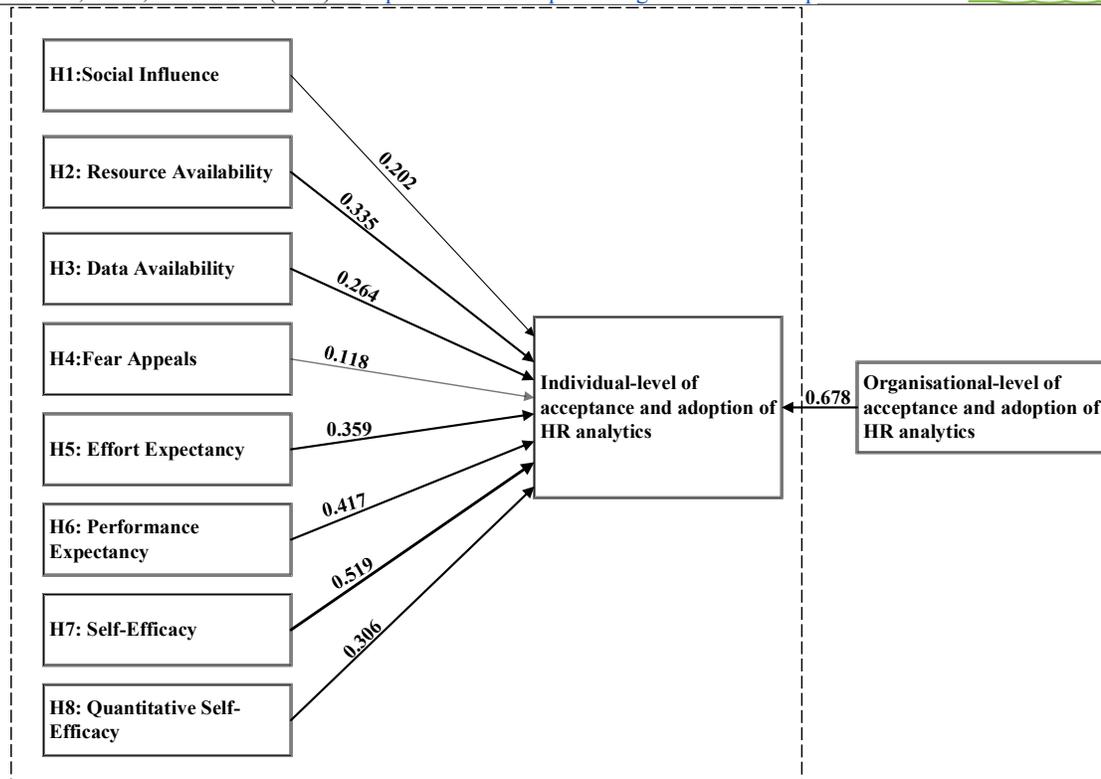
**Fig. 1:** The acceptance and adoption of HR Analytics conceptual framework

## 5   Conclusions and Recommendations

In conclusion, it is found that self-efficacy, performance expectancy, effort expectancy, resource availability, quantitative self-efficacy, data availability, and social influence are key factors affecting individual acceptance and adoption of HR Analytics in large Palestinian enterprises, while fear appeals have no significant impact. The study also reveals a strong correlation between individual and organizational variables and proposes a conceptual framework for the factors affecting individual acceptance and adoption of HR Analytics. Organizational factors facilitate individual acceptance by ensuring the availability of necessary resources. The study suggests further research on the extent of adoption, practical benefits, difficulties, and business outcomes of HR Analytics.

### Conflicts of Interest Statement

*The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.*

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