

## Original Paper

# The Effect of Motivation Factors on Employee Performance: Performance Appraisal Using Data Mining

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### **Abstract**

*Intellectual capital is a company's most precious asset, and human resource management is responsible for how people are treated in businesses. The purpose of this article was to investigate the impact of motivating variables on employee performance in the higher education industry. A structured questionnaire was provided to 206 selected workers from public and private Lebanese institutions for the study. In this study, data mining techniques will be used to highlight the representational new forms where incentive influences the performance of personnel in institutions, must understand how to support management as well as engage with their staff. The results revealed a robust and statistically significant positive link between motivating variables and employee performance. A model is used in the study to elucidate the link between motivational elements and employee performance. As a result, the goal and challenge of staff development is to help individuals, teams, and organizational units acquire and adapt abilities and competencies.*

### **Keywords**

*human resource management, performance appraisal, data mining, motivation, job satisfaction, employee performance*

### **1. Introduction**

Referring to Lebanon, a barrier occurs when institutions of higher learning strive to stay up with emerging technology despite having low financial resources although having a well-educated labor population (UN country annual results report Lebanon, March 2021-2022). In postsecondary learning, the university, together with its human resources, play an important part in providing its students with a superior learning environment since they collaborate and strive to provide the best service possible (Runhaar, Bednall, Sanders & Yang, 2016, pp. 436-452). To attain such service quality, the university's human resources, particularly professors and scholars, must be capable of motivating their students and leading them toward their life objectives and expectations, as well as preparing them for the workplace. These days, humans are still attempting to interpret innovation and maintain with it and its development. Every firm has a Human Resources department, and this is especially true in the higher education industry, which is the focus of the author's research. However, there are several functions in Human Resources management, and performance evaluation is one of them. As the researcher can see, there are several difficulties for higher education sector to authorize such services, and as previously said, technology is always ready to provide answers to such problems. In this work, the most recent knowledge

engineering approach, particularly data mining, is used to depict a new defense system for human resource management system as a performance solution. Data mining, defined as the process of extracting valid, previously unknown, and ultimately comprehensible information from large databases and using it to make critical decisions, is widely used in the business sector to improve a company's market presence and differentiate its products and services (Chandrani & Arpita, 2010). This "mining" approach is gaining popularity in the educational sector as an extra tool for uncovering hidden links, new trends, and previously unnoticed patterns concealed inside a data source (Adebayo, Oluwafunmilola & Akeju, 2021, pp. 131-143). To figure out how to deal with the rapid evolution of the twenty-first century, universities, like other organizations, must reconsider how they function and create strong motivational factors in the context of changing environmental dynamic behavior and the sudden changes triggered by globalization, the experience and understanding economy, and the scientific innovations. The study's findings lead us to the conclusion that data mining offers great functional capabilities to help human resource management activities, particularly motivation assessment. The study's significance was to learn how to encourage people at institutions, particularly in Lebanon, to work hard and produce more. To do this, data analysis must use sophisticated technologies such as data and text mining to uncover correlations within the data.

Organizational human resource management relies heavily on performance assessment. Organizations utilize performance assessment (or performance evaluation) tools and processes to measure the level of performance of their personnel. Typically, this procedure entails monitoring employees' performance and offering them with feedback on the degree and quality of their performance. In businesses, the primary purpose of the performance appraisal is to increase employee performance. Three techniques might be used to attain this goal: the first technique is that performance appraisal information can be utilized to make administrative choices that relate graded performance to organizational incentives or punishments such as a salary rise, promotion, or dismissal. Second technique is that performance appraisal process entails provide performance feedback (i.e., information about the level of performance) to the employees who were evaluated, allowing them to adjust their performance strategies to match the desired performance; and finally, the performance appraisal process raises employee awareness of the fact that they are being measured. The simple knowledge that one is being studied or measured boosts performance and encourages cooperative behavior, as demonstrated by the Hawthorne investigations, and represented in the proverb "what gets measured gets done" (Van Dijk & Schodl, 2015, pp. 716-721). Ambitious employees are those who have made a deliberate choice to continue working to attain what they value. Individual people differ in terms of what is more meaningful to them. There are many methods for motivating workers, such as the threat of job loss, financial incentives, accomplishment targets, and the aims of the company or the organization's groups. It is believed that each employee will need a particular purpose, as well as a range of abilities, to complete their duty in the business (Ismajli et al., 2015). Besides that, no research evidence has been conducted to investigate the effect of motivational factors (full appreciation of work done, good working conditions, help with personnel problems, good wages, interesting work, promotion, and growth) on job satisfaction among employees in an educational environment, such as in Lebanese advanced degree associations. This review is unusual in that it expects to give proof on how the correlation of motivating elements would affect employee work satisfaction in Lebanese institutions. This review arose to provide insight into a critical theme for the advanced education sector in Lebanon, which is the topic of concern in human resources and motivation, as they are quite possibly the most important resource supposed to produce performance and creativeness, as

well as to improve performance and innovativeness as well as gaining competitive advantages. Employing data mining to identify user demands as a component of the development and assessment methods is an exciting field of study that might lead to the identification of recommendations for designing systems that effectively meet the requirements of individual users. The primary goal of this special issue is to promote this extremely promising avenue of study. The theoretical underpinning of the investigation and the formulation of hypotheses will be covered in the second half of this article. The technique, data collecting, and analysis procedure are all covered in the third part. The data analysis and outcomes are presented in the fourth part. The effort will assist Lebanese universities to achieve the motivational factors necessary for the satisfaction of employee's performance with a view to accomplish business objectives. Finally, the comments and future recommendations are included in the final section.

## **2. Theoretical Background**

### *2.1 The Concept of Performance Appraisal*

Employee evaluation, talent evaluation, employee assessment, and more terms for performance appraisal exist. It is a methodical procedure of evaluating an employee's present and previous performance in relation to his or her performance standards. Employee performance should be evaluated based on organizational requirements as well as the employee's current results. The concept that accomplishable evaluation enhances employee performance is not modern, but it may be found in the origins of human evolution (Asanbe, Osofisan & William, 2016). When a person is taught about his or her actual performance and acknowledges his or her earlier faults, he or she becomes motivated. As appropriate, the performance evaluation procedure might be held yearly or weekly.

Almost every firm has some method of evaluating their staff. Performance appraisal is one of the most ancient, natural, and ubiquitous management processes. The primary goal of performance appraisal is to determine an employee's performance-related behavior and how it relates to organizational performance. It assists both employers and workers in understanding their roles in the business. The goal of any management is to create a highly competitive and friendly work environment that fosters healthy competition and provides employees and stakeholders with a sense of accomplishment. The performance assessment system is the appropriate tool for attaining the goals, either directly or indirectly. It strengthens the interpersonal relationships between employees and managers in the organization. It indicates an evaluative assessment of the features, attributes, and job performance of employees. It is a constant process to achieve not only the organization's but also the employees' desired aim. Some researchers mentioned (Ahmed, Rizaner & Ulusoy, 2016, pp. 137-142), "performance evaluation is the systematic, periodic, and unbiased grading of an employee's proficiency in subjects relevant to his current work and his potential for a better position". Performance evaluation is a systematic method of analyzing and rating an employee's performance over a specific time and preparing for his future.

### *2.2 Motivation and Motivational Factors*

Motivation is a psychological process that feeds and sustains an individual's behaviors in relation to his or her employment, duties, or projects. Motivation has a significant impact on employee productivity, and as one of the key components of the strategy implementation, leaders and executives must have a thorough awareness of the causes and dynamics that promote motivation. Employees that are motivated are expected to not only perform above expectations but also contribute to the achievement of company goals. Motivation was previously described (Vaibhav & Vasani, 2014) as the willingness, enthusiasm, and efforts to attain corporate goals and employee performance. Furthermore, motivation is a vital

component of labor potentials that individuals experienced at their jobs, which is highly related to employee productivity (Baird, Tung & Su, 2020). Motivation is an approach that focuses on individual strength, route, and resolve of efforts toward achieving goals and objectives.

Furthermore, motivational elements are job satisfaction variables, which are succinctly stated as follows: Awareness refers to the praise and rewards given to employees for their accomplishments; sense of achievement refers to the employees' emotional feeling of completing certain tasks with fulfilment and happiness; growth and opportunities refer to opportunities for employees to advance in their careers and personal development; responsibility refers to the employees' obligation to hold themselves accountable for their work and to recognize that they have responsibility (Zulqurnain, Babak & Aqsa, 2019, pp. 112-121).

### *2.3 Employees' Motivational Factors*

Employee motivation may be achieved through a variety of variables that assist worker motivation, and motivation will invariably affect employee productivity, which will drive corporate performance. Both business managers and recruiters have been involved in the game of workplace motivation, where financial compensation is the most significant motivating factor for professionals to enhance their organizational productivity in workplace; some other set of factors includes management connection, practice environment, employee's willingness, stability, equality, chance for career progress, and reasonable continuous assessment (Basalamah & Ajmal, 2021). These motivational aspects will boost staff morale and increase performance.

### *2.4 Promotion and Employee Performance*

Career advancement, as an incentive, has a significant impact on the working environment and the consequence of employee happiness in the workplace. It was addressed to one of the frequently missed issues of intentionally connecting employees with people who would challenge them to achieve in unpredictable ways and, as a result, develop full, purposeful lives of development, greatness, and influence. These can be disciplinary instructors, innovators, entrepreneurs, and corporate, cultural, and public leaders. Employees might be affected and inspired by specific persons rather than by generic professions (Yamin, Sakawati & Putri, 2019, pp. 327-334). The effects of establishing a career advancement strategy that concentrates on constructive criticism and training to boost individual and, eventually, employee effectiveness was explored. Some researchers have outlined the perfect job atmosphere for a good career path and work-life balance. Job promotion is a crucial function for any employee, especially if it is a long-held desire. If workers have the possibility to be promoted based on the principles of fairness and objectivity, they will be inspired to work harder, be more passionate, disciplined, and achieve work so that organizational goals may be met ideally. Organizations require high-performing personnel, while people require feedback on their performance to direct their future activities. The availability of promotional objectives makes employees feel appreciated, cared for, needed, and acknowledged by their organization's work abilities, causing them to create high results and boost organizational morale. This is also supported by study (Yen, 2020, pp. 8-15) titled "The Effect of Job Promotion and Work Discipline on Employee Performance", which found that the promotion variable has a favorable and substantial influence on employee performance.

### *2.5 Interesting Work and Employee Performance*

An investigator study of nurses discovered that both hygienic and motivational elements, such as the job itself, salaries, working environment, supervisors, and co-workers, influenced nurses' job satisfaction. Another study on nurses discovered that achievement, recognition, the work itself, and prospects for promotion all contribute to job satisfaction as motivating factors. Research of the principles and effects of job happiness in Taiwanese hotel enterprises showed that job satisfaction contributed significantly to the psychological repercussions of organizational effectiveness (such as emotional and continuance commitment, less intent to leave from work). In some ways, the relevant organizational and vocational variables are motivating (Gunawan & Amalia, 2015, pp. 349-353). When the amount of these characteristics matches their expectations from the job and working environment, it boosts employee motivation and, consequently, job satisfaction.

### *2.6 Working Conditions and Employee Performance*

Workplace circumstances such as room layout, lighting, cleanliness, air control, and job security have a significant impact on employee performance. This arrangement is inherent in the design of buildings and workplaces; hence it is of a technological character. It should also be emphasized that the costs paid for these goals should not be inflated, which means that expenditures or actions must be altered to improve performance (Muhammad, Mahum, Rabab & Amna, 2014). This is consistent with studies that suggests that a pleasant work atmosphere might improve employee performance. Workability is based on balancing one's resources and job expectations. Workability is founded on health and functional capability, but it is also determined by professional knowledge and competence, values, attitudes, and motivation, and the job itself.

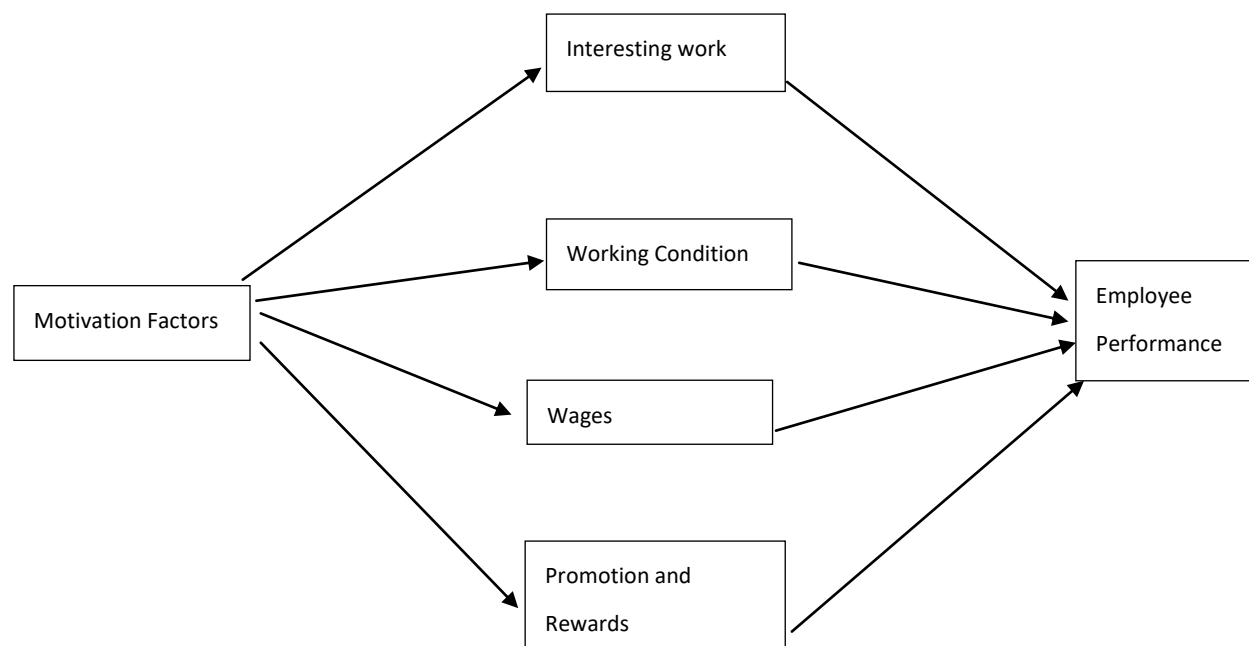
### *2.7 Wages and Employee Performance*

One of the goals of a person working for a corporation is to make money in the form of salary or compensation. Wages were received to cover basic requirements such as food, clothes, and shelter. Every firm must be realistic in deciding the quantity of wages provided to the employee, so that the lowest salary that is given to fulfil the demands of their lives. Some economists have opinions on the significance of wages. According to Milesian theory, a rise in job opportunities can only occur if employees get lower nominal salaries (Záradsk ý, Hitka & Potk ány, 2015). Wages become an essential component of being effective when they are strongly tied to performance. Wage remuneration is the industry's most onerous responsibility, but it is also the most significant portion for employees, because the amount of earnings shows the magnitude of the worth of their labor among workers, their families, and communities. Wages are important for businesses because they symbolize the industry's efforts to preserve human resources to retain high levels of loyalty and devotion to the sector. An effective pay plan is meant to contribute to the viability of the workforce, realization of the vision and purpose, and achievement of performance objectives.

### 3. Methodology

This section discusses the research techniques used to carry out the study, allowing the researcher to fulfil the paper's goal of analyzing how motivational factors impact on employee performance in Lebanese institutions. It also covers the study's measures and variables, as well as the data collection and interpretation methods. The writers chose a quantitative strategy to fulfil the paper's goals and address its difficulties. The quantitative approach can identify trends in the study, which can then be utilized to build facts based on measurable evidence; hence, primary data was acquired using a questionnaire. This approach is beneficial and extensively used in managerial studies because it allows researchers to get quantitative knowledge about the policies and practices that organizations use and embrace without having to modify these policies and practices (Vlasekov á& Mura, 2017, pp. 111-130).

Based on the assumptions and research questions, the proposed research model was created. There are several ways to do research, however all investigation should consist of a set of responsibilities. A questionnaire is employed as a quantitative tool in this article. The primary goal of this article is to determine the elements that influence employee motivation in Lebanese higher education sector. Researchers assess the performance of employees at ten public and private universities in North Lebanon employing motivational factors and their relationship with employee's performance. Secondary and primary sources were used in the article (Tria & Rahmat, 2018, pp. 101-112). A systematic questionnaire was used to obtain primary data. Secondary data was gathered from publications, textbooks, internet papers, journals, and other sources. Structured questions were utilized to obtain data from participants in this study. The questions were designed to elicit respondents' feelings on their assessment motive. Data was analyzed using a statistical program, including SPSS and WEKA. In the study, questionnaires developed from different research with good validity and reliability ratings were utilized to collect data and perform statistical analysis using a quantitative technique (Kirimi & Moturi, 2016) which displays the relationships between various variables, the concept proposed by universities to promote employee work satisfaction suggests the influence of motivating variables on employee performance. It was considered that whether institutions use motivating elements predicts how well the institution will treat its employees. The higher education business in Lebanon employs 19,186 academic workers, according to the analytical research (BankMed-Market and Economic Research Division. Analysis of Lebanon's Education Sector, 2014). In Lebanon's higher education sector, Lebanese University employed 32.1 percent of these academic personnel (6153 teachers) (LU). The study's target population was academic and administrative workers from 10 private and one governmental institution, with a margin of error of 5 percent and 95 percent confidence levels. A total of 206 individuals were chosen from university branches throughout the north. It is worth mentioning that no private institution has a national standard for the number of employees. As a result, the study initially looked at employee work satisfaction in terms of motivating factors in the Lebanese higher education industry (see Figure 1).



**Figure 1. The Model Proposed to Study**

### 3.1 Measures

The literature on measuring motivational elements was extensive; nevertheless, most of the study was undertaken in a different sector, such as banking, and research conducted in higher education was rare. The questionnaire was developed that included five elements to be studied: complete appreciation of work done; decent working circumstances; good remuneration; exciting job; advancement and growth in the institution; and employee performance. To develop the responder profile, demographic questions were collected. Throughout broad, along with the other variables in this study, motivational factors were used to assess the effectiveness of the performance appraisal through the previously mentioned motivational factors, which also included questions about real appreciation of work done, reasonably good environments, support with employee issues, decent salaries, meaningful work, and questions about development and promotion, performance, and sense of achievement. They were evaluated on a standard five-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). As a result, the online questionnaire was employed as the primary quantitative data collection instrument in the study. The questionnaire, which was based on a job performance assessment (Zámečník, 2014, pp. 851-857), included 35 items in total. Non-probability quota sampling was utilized, to gain a deeper understanding of a population, the researcher will only need a sample, not the complete population. Furthermore, the researcher is interested in certain strata of the population. This is where quota sampling comes in to assist divide the population into strata or groups. This approach is the most utilized by researchers since it is extremely rapid, simple, and inexpensive. This sort of sampling is distinguished by the ability to obtain the required and acceptable information fast and at a cheap cost, which is why the researchers chose it. A cover sheet is included with the questionnaire. The goal of the research was explained to the responders. The survey was distributed through email to obtain permission to disseminate the questionnaire while guaranteeing that no internal information about the university or its personnel was necessary. The data will be gathered by administering a questionnaire that research approach to maintain confidentiality because it is regarded as the most independent and unbiased type of instrument for collecting information

for opinions, attitudes, beliefs, and values because participants have absolute autonomy without worry of the negative response of their higher authority or representatives. This closed-ended questionnaire has three sections, the first of which discusses the sample's demographics (age, gender, experience level, university degree, etc.). Even though the researcher was selecting a significant number of people from 10 institutions in North Lebanon, by the conclusion of the time, only 206 surveys had been received, which was sufficient for analysis. A Google Forms link was utilized to distribute it. The dataset would be generated using the SPSS program, AMOS and the data would be used in WEKA 3.8.6.

### *3.2 Data Analysis*

This study enlisted the help of professionals and academics from the higher education industry in North Lebanon. Participants in the quantitative study were either executives at the management level (specialized functions) or higher-level academic personnel. Despite certain challenges in obtaining enough responses in a large sample, large-scale surveys offer a solid approximation of the target population (Amberkar et al., 2020). Employees and professors from the higher education sector in North Lebanon were engaged. Participants included scientific and professional employees with a bachelor's, master's, or doctoral degree, ranging in experience (from less than five years to more than 16 years) and technical knowledge. The study chooses respondents randomly from professional and academic colleagues at the 10 institutions who matched the participation criteria. The acquired data were evaluated using the Cronbach  $\alpha$  test to see if the correlation of the components was acceptable, with a value of at least 0.70 (Gulse & Karakas, 2018, pp. 869-882). The Cronbach coefficient was 0.976, and all the items were more than 0.70, demonstrating the consistency of the global measurement and confirming the inquiry. In terms of quantitative data analysis, SPSS 23 used descriptive statistics to determine or demonstrate whether there were significant differences between populations, as well as calculating the degree of consistency of the data correlation through the participation of the mean and standard deviation. (Ma et al., 2019). The descriptive analysis of the well-distributed sample yielded 206 samples, the participants of which were predominantly between the ages of 36 and 45 (50 percent), with 129 females (62.6 percent) and 77 males (37.4 percent). As a result, the proportion of females was greater. The proportion of respondents with a doctorate was 114 (55.5 percent), followed by those with a master's degree (75.4 percent), and those with a bachelor's degree (17.3 percent). In terms of years of experience, the participants with more than 16 years of experience totaled 77 (37.4 percent), while those with 5 to 10 years of experience totaled 61 (29.6 percent), and those with 11 to 15 years of experience totaled 51 (24.8 percent). Academics made up 119 (57.8 percent), administrators made up 21 (10.2 percent), and those with both jobs made up 66 (32 percent). Finally, the greatest number of employees, 134 (65 percent), worked full-time, while 72 (35 percent), worked part-time.



#### 4. Results

The model's dependability must be demonstrated. This investigation's dependability was determined using Cronbach's alpha approaches. It was used to determine the underlying consistency and reliability of the structure. Cronbach's alpha levels of 0.7 or above are regarded as satisfactory. Cronbach's alpha (Hussain, Abdulaziz, Mutaher Ba-Alwib & Ribata, 2018, pp. 447-459), suggests. These records (see Table 1) have a high degree of practical dependability because they all exceed the rate of 0.7.

**Table 1. The Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.976	.976	35

Moreover, the factor analysis test, which is employed to eliminate redundant variables from the statistical information, KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy), that also defines whether the answers provided with the sample are sufficient or not, has been used, and it should be close to 0.5 for acceptable quantitative study to continue. It was suggested (Hussain, Abdulaziz, Mutaher Ba-Alwib & Ribata, 2018, pp. 447-459) 0.5 (number for KMO) as a minimum level (acceptable), values between 0.7 and 0.8 as good, and values over 0.9 as excellent. According to the table (see Table 2), the KMO value is .922, which is widely recognized. The outcome of Bartlett's sphericity test was 8203.486 (P 0.01), indicating that the sample size was appropriate.

**Table 2. KMO Results**

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.922
Bartlett's Test of Sphericity Approx. Chi-Square	8203.486

Furthermore, the association between each motivational element and employee performance was investigated. The results of the correlation between interesting work and employee performance revealed a positive and highly significant relationship between the variables, indicating a Pearson correlation of .843 where the correlation coefficient range is greater than .75, which is referred to as a high degree of association. The second motivator was working conditions, which indicated the atmosphere and its influence on employee performance, according to Pearson correlation. .827 demonstrating a strong and positive association between the variables, with a correlation that was significant at the 0.01 level. Third, awards and employee performance showed a Pearson correlation of .859, showing a significant and favorable association. The last consideration was the Pearson association between excellent salaries and employee performance .801 has a strong and beneficial important association as well. Finally, the association between motivating elements and employee performance demonstrates a substantial and considerable productive relationship. The validity of the significant levels of indicators was assessed. To show convergence and discriminant validity, their Average Variances Extracted (AVE) and square roots were discovered. This was accomplished by

scanning each variable's indicator to determine whether it had adequate weight within the significant ranges (loading 0.3;  $p < 0.01$ ) and if the related AVE was equal to or greater than 0.5. The Composite Reliability (CR) score in Table 3 was all more than 0.7, implying that the scale's items were consistent. The AVE values were equal and greater above the cut-off threshold of 0.5, ranging between 0.588 and 0.629. Consequently, the model may be concluded to pass the convergence validity test. In addition, the square root of AVE was utilized to represent discriminant validity.

The study conclusions were presented, and Confirmatory Factor Analysis (CFA) was performed to identify which models was best matches to the model as a measurement. The fit values are  $\chi^2=3401.139$ , D.F.=550, CFI=0.650, TLI=0.621, values close to 1 indicate a very good fit. RMSEA=0,159, and PCLOSE=0. According to the data (see Table 3), there is a positive and significant association between each factor of motivation and employee's performance.

**Table 3. Covariance of Model**

	Estimate	S. E	C.R.	P
Employee Performance ← Interesting Work	.613	.093	6.572	***
Employee Performance ← Reward	.546	.089	6.119	***
Employee Performance ← Wages	.886	.114	7.769	***
Employee Performance ← Reward	.814	.106	7.679	***

Weka (Waikato Environment for Knowledge Analysis) Version 3.6.13 is used to analyze and implement the data. Weka includes data preparation, classification, regression, clustering, association rules, and visualization tools (Hussain, Abdulaziz, Mutaher Ba-Alwib & Ribata, 2018, pp. 447-459). The input data file must be in ARFF format. This file offers detailed information on the set of all characteristics as well as their values. The data for this study was kept in a Microsoft Excel file called "Relation.csv". The data was translated into ARFF format for ease of use, resulting in the file "Relation.arff" (arff extension). Weka was used to load the data, and the properties were identified. The dataset comprises 133 (64 percent) full-time employees and 73 (36 percent) part-time employees varying from professor to adjunct instructor. Weka methods were used to analyze the links between motivating factors and employee performance. Our findings also suggest that working conditions and remuneration were the variables that contributed the most to the performance of the lecturer in this study. According to the data, teachers with more job experience and a higher academic rank may perform better, data shows 196 (95.146 percent) shows Correctly Classified Instances and 10 (4.8544 percent) were incorrectly classified instances. Highest qualification is another essential component that effects instructors' performance favorably. Work that is exciting and well-appreciated has a favorable influence on employee performance. The assessment made use of the whole training data set. The J48 algorithm has a percentage accuracy of 97.1 percent. The (see Table 4) provides a thorough accuracy breakdown each class (see Table 5). This study's findings suggested that data mining techniques may be used to predict teacher performance. This study may be improved by using several classification methods and data mining approaches, such as the Nave Bayes classifier and the genetic algorithm, as well as data from other institutions. The data set can also be supplemented with extra distinguishing characteristics (such as topic expertise) to increase classification accuracy and make the process more resilient.

**Table 4. Detailed Accuracy**

TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
1.000	0.005	0.941	1.000	0.970	0.968	0.999	0.978	1
0.914	0.012	0.941	0.914	0.928	0.913	0.992	0.964	2
0.960	0.026	0.923	0.960	0.941	0.922	0.991	0.959	3
0.944	0.015	0.971	0.944	0.957	0.935	0.994	0.985	4
0.971	0.006	0.971	0.971	0.971	0.965	0.936	0.993	5
Weighted Avg.	0.951	0.015	0.951	0.951	0.936	0.994	0.976	

**Table 5. Confusion Matrix**

	a	b	c	d	e	classified as
16	0	0	0	0	0	a = 1
1	32	2	0	0	0	b = 2
0	0	48	2	0	0	c = 3
0	1	2	67	1	0	d = 4
0	1	0	0	33	0	e = 5

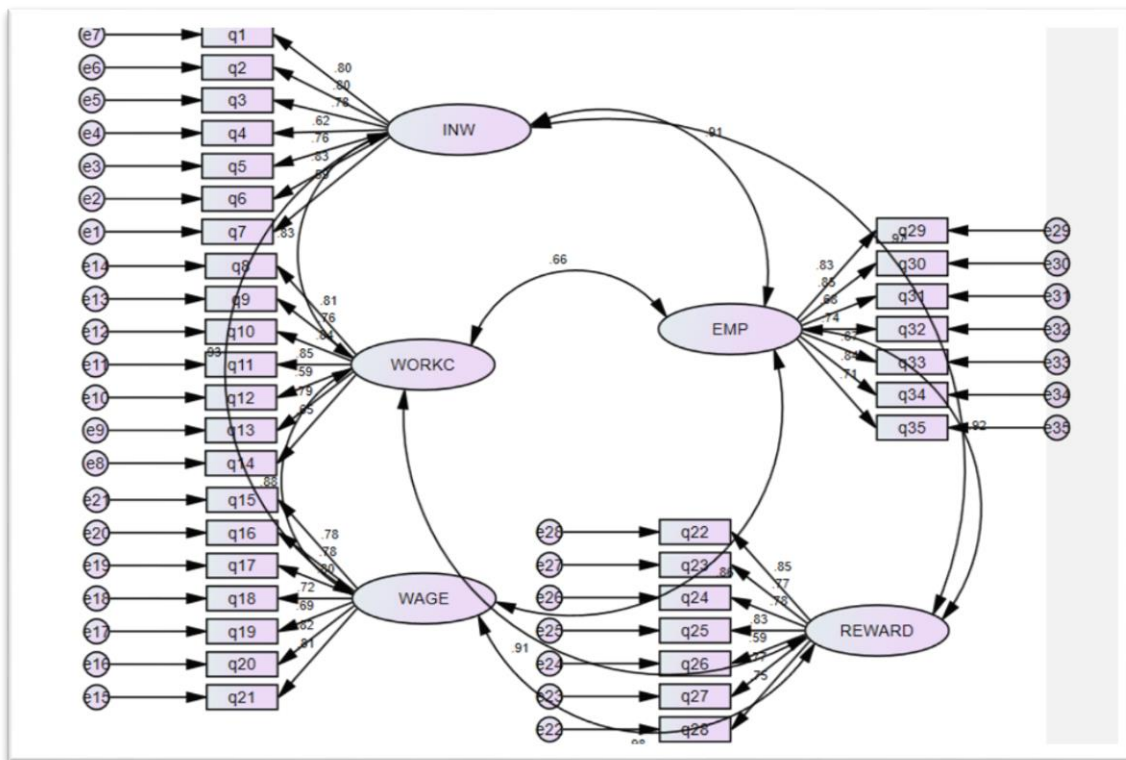


Figure 2. The Structured Model

5. Discussion and Conclusion

5.1 Discussion

Given the effects of globalization, technology, and other factors on the economy and management system, as well as the need to regulate and promote motivational factors systems to achieve competitive advantages in the market, it has become increasingly important to review performance appraisal in terms of its definition and how best it can be attained in institutions. Previous study believed that motivational variables and employee performance had a favorable influence on employee satisfaction (Mbiti, Arasa & Kinyili, 2019), with a significant positive relationship between complete appreciation of work done and job happiness. Such studies have mostly concentrated on theoretical perception. Several studies have indicated that the higher the employee’s job happiness, the higher their ambitions and willingness to share knowledge with others. Four types of professionals were examined at East Carolina University to assess their motivation and discovered that a reasonable income and recognition from management were the most critical elements that would encourage them.

Previous study has indicated that activities such as socializing and celebrating with co-workers may put people in a good mood. Furthermore, these findings are comparable with those of (Erin & Fluegge, 2014, pp. 682-705), who discovered that communicating and sharing pleasant occurrences with others increased individual positive affect. Furthermore, fun at work and work engagement were positively connected, lending credence to the idea that workplace fun might serve as a job resource for individuals, allowing them to “charge up” and remain focused at task.

Prior research found that the combination of work motivation and work discipline had a significant impact on the performance of employees at the Bogor City Regional Secretariat. The implementation is done by combining work incentive and work discipline to deliver higher performance improvement (Maryani et al., 2018). This study's findings provide a unique viewpoint on the workplace, considering the work environment and colleague relationships.

A study has mentioned the wage disparity has a negative influence on consumer entrepreneurship and client attitude, which leads to lower customer satisfaction. By demonstrating that salary disparity has a negative impact on customer satisfaction via customer-directed opportunism, report advocates for identifying the causes of employee misconduct (Bamberger, Homburg & Wielgos, 2021, pp. 24-43). Wage disparity, as expected, stimulates internal rivalry for promotions, which employees attempt to win by deceiving, misrepresenting facts, or cheating clients in order to promote the business and their own career, which spirals out of control by leaving people disappointed. The study's findings demonstrated a strong and substantial association between decent salaries and employee productivity.

Financial incentives, skill development, and workplace independence were shown to be sources of motivation for knowledgeable professionals in Japan financial sector, according to academics. Individual success, communication with co-workers, and new opportunities, according to various experts, are occurs predominantly for service people. Previous study indicates that a decent working atmosphere, cleanliness, and teamwork result in higher job satisfaction among employees (Bamberger, Homburg & Wielgos, 2021, pp. 24-43; Islami, Mulolli & Mustafa, 2018, pp. 94-108; Aworemi, J. R., & Abdul-Azeez, 2011).

Researchers have developed motivational characteristics for the workforce by combining internal and external forces. Extrinsic motivation rewards are regular employment-related features that employees expect at their workplace, but intrinsic motivation advantages are obtained enjoyment from one's own stance. Self-assurance, independence, trustworthiness, and association are examples of internal motivators, whereas external motivators include high-power inducements, thankfulness, advancement, and stability. A research investigation was conducted that thoroughly examined the positioned validity of employee motivational variables at the working population of a Serbian university, and he discovered that a secure and safe employment situation with good compensation is essential for creating a higher level of workforce ambition (Bouskila & Kluger, 2011, pp. 137-147).

As a result, given the scarcity of empirical research in this sector, this study intends to contribute to the issue of motivation variables and employee performance by assessing each element and its influence on worker satisfaction. The goal of this study was to look at the influence of motivational elements on employee performance in Lebanese universities, such decent working conditions, good salaries, interesting job, and development and improvement. The created theoretical model was empirically evaluated by gathering data from academic and administrative staff in public and private institutions to study the connection between the independent and dependent variables. The study's findings have enriched the literature on performance evaluation by analyzing the influence of motivating variables on employee performance. Previous research in the performance literature has demonstrated the significance of numerous variables in motivating factors, but it has not explored the individual components that assess the organization's goals. The study's empirical implementation was carried out in the higher education sector in northern Lebanon, and the study results indicated a substantial link between employee motivation and job satisfaction, which has a favorable influence on employee performance. Finally, some investigations (Rahimli, 2020, pp. 467-473) have found that promotion and

growth have a favorable and substantial influence on employee performance. The findings of this study have enhanced the validity of this relationship, and institutions will profit from instituting methods to increase employee work satisfaction. Employee results, particularly satisfaction, are positively related to motivational variables. Any institution that incorporates these techniques into its culture will prosper. However, the most important findings of this study, which set it apart from others, are that there is a strong partial and indirect communication link between motivational activities and employee happiness.

### 5.2 Conclusions

Numerous organizations have realized the value of motivating factors in improving their performance within a specific sector, standing out from rival organizations, and maybe gaining a competitive edge. Investigating the effects of motivational variables on employee performance and satisfaction in Lebanon's education sector was the study's main goal. Our results showed a correlation between employees' key motives and job satisfaction. The study's motivating elements included fascinating work, working conditions, awards and promotions, and compensation, all of which had a substantial and beneficial influence on employee performance. The link between the use of data mining techniques and organizations' ability to raise employee performance is emphasized in this article. Workers must adapt their motivators in a changing environment if higher education institutions wish to recruit, develop, and retain talent to boost employee happiness.

## 6. Limitations and Future Recommendation

The study's sample was influenced by Lebanon's present severe financial situation, as well as the immigration of young smart graduates. This study's findings are based on universities in Northern Lebanon. The same concepts may be applied to various colleges and cultures/countries. A quantitative research plan was developed. Future research should use a mixed-method approach, such as a qualitative technique combined with questionnaires as a quantitative method. The author also proposes research strategies such as open-ended inquiries and employee focus interviews. The researcher suggests that another study be conducted in the future to assess other motivating elements, such as assisting with personal concerns.

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