

THE OVERALL IMPACT OF MACHINE LEARNING ON THE RELATIONSHIP BETWEEN QUALITY OF WORK LIFE AND EMPLOYEE ENGAGEMENT

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Abstract

The human resources of a business are among its most significant assets and the primary factor contributing to the organization's ongoing success and progress. Because the performance of the organization's personnel is what will determine the organization's performance, the competitiveness of a firm or organisation is dependent on the efficiency with which its workers are able to complete the jobs that they are assigned. Because the efforts and output of an organization's workers are directly related to that organization's level of success, effective management of its human resources is essential to the timely and successful completion of projects and the accomplishment of business objectives. As a direct result of the ever-increasing levels of innovation and competition in the service industry today, modern firms need to be adaptable in order to continue existing. The efficiency of a business, which may also be referred to as its productivity, is one metric that can be used to assess how successful it is. Productivity, on the other hand, refers to the effectiveness with which products and services may be created. It is unavoidable that employees will be held to high standards in some element of the business; nevertheless, the available empirical data demonstrates that not all workers are able to successfully contribute and perform in accordance with the standards and expectations of the organisation.

As a result of the fact that the performance of individuals is the yardstick by which organisations are assessed, the degree to which a firm is able to compete is dependent on the dexterity with which its people accomplish the duties that have been delegated to them. to ensure that each company always puts in the amount of effort required to maintain the quality of its work or the quality of its relationships within its workforce, and to ensure that its business goals are always met as a result of this effort, which guarantees that each company will consistently exert the level of effort necessary. The goal of this study was to investigate and assess the function that job satisfaction performs as a mediator between the level of employee engagement and the performance of the workforce.

Keywords: Employee engagement, Quality of work life, Regression analysis

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Introduction

Employees' environment, habits, health, and quality of life on the job are all elements that might impact workplace performance. Workplace performance is connected with a multitude of characteristics (QWL). Job satisfaction, motivation, productivity, health, job security, safety, and well-being are all related with quality of life at work (QWL). Quality of life at work (QWL) comprises a safe work environment, occupational health care, appropriate working hours, and a sufficient compensation. As was mentioned at the outset, the scope of this idea extends to include the manner in which an individual's place of employment influences not only the degree to which that individual experiences pleasure while at work but also the degree to which that individual experiences happiness in general and a sense of subjective well-being. In addition, raising productivity will raise the quality of work life for workers as well as the quality of work life for the company as a whole. QWL [3] is the subject of ongoing and fruitful discussion in the cited literature, particularly with regard to its components and its various associations with metrics of non-economic performance, such as the satisfaction and fulfilment of physical conditions considered essential to ensure functionality, health, and safety in the workplace. In particular, this discussion focuses on QWL's components and its various associations with metrics of non-economic performance. The most intricate aspects of the QWL have an inextricable connection to the psychological and social-emotional requirements of workers, both of which are being investigated at the moment. Because of these features, the use of additional behavioural lenses is required in order to identify the factors that have the greatest potential to influence not just levels of productivity but also levels of job satisfaction and motivation in the workplace.

Research on the connection between QWL and productivity in the healthcare industry has in the past led to the proposal that effective techniques be devised to boost production within hospitals. This research was conducted earlier. However, it is not widely understood how the combination of QWL's behavioural and subjective components may potentially change an employee's perception of his or her own contribution to the organization's productivity. When taking into account a response variable of critical importance in the context of decreasing

resource investment and concurrent pressure to maximise results, i.e. productivity, there is still room for knowledge to be gained regarding the impacts of subjective aspects of QWL assessment on the performance of organisations. This is especially true when considering a response variable of critical importance in the context of decreasing resource investment and concurrent pressure to maximise results. In light of the aforementioned circumstances, it makes perfect sense to investigate the non-economic (irrational or behavioural) elements that encourage employees to work together for the purpose of increasing the efficiency of their business.

According to the productivity indices compiled by the Organization for Economic Co-operation and Development (OECD), there are substantial differences in productivity among different organisations. As a result, additional research is required to shed light on the "black box" of factors that influence internal productivity. Additional research is required to uncover the precise factors that have an impact on the production of an organisation. The Human Side of Productivity is a new initiative that was recently launched by the Global Forum on Productivity (GFP). Its purpose is to investigate how businesses can benefit from taking a multidimensional approach while also taking into account the contributions of key individuals working in such businesses. In recent years, research has been conducted in public higher education to determine the importance of quality of life in influencing the level of satisfaction experienced by internal stakeholders such as students and collaborators (e.g., administrative personnel, professors, and researchers). There is a gap in knowledge about the peculiarities of different organisational cultures in this kind of institution and how those cultures impact the perception of academic quality of life by internal and external stakeholders. This gap in knowledge presents a potential avenue for research. This raises the question of how the value of company culture can be better appreciated, as well as how different perspectives on the well-being of the company and its employees can be used to provide strategic direction for the development of new company policies. These should increasingly be founded on a defined set of values and beliefs that establish an organization's behavioural objectives and are consistent with the desired degree of self-efficacy in inspiring and managing employees. Increasingly, these should be founded on a defined set of values and beliefs.

The phrase "quality of work life" refers to the degree to which an individual is able to successfully contribute to the overall objectives of his or her employer. The concept is predicated on the idea that businesses should institute comprehensive policies to assist their employees in doing so. Both the efficient execution of business processes and the

enhancement of the health and happiness of employees are top priorities for the company, and both of these goals are included in the scope of this concept. It is also a way of thinking about personnel, operations, and businesses with the long-term goal of improving problem-solving and decision-making within an organisation. This way of thinking is known as "systems thinking." In the fields of building and infrastructure, the most significant factors that contribute to improved organisational problem-solving and decision-making are as follows: (Ka Wai, 2007)

Workers are paid an amount that is considered to be a "living wage" so that they are able to afford the essentials of life. The management takes responsibility for the health and safety of the employees by providing them with suitable working conditions. These conditions include safe working conditions, sufficient breaks during the workday, and a reasonable number of hours worked each week. (Walton's work from 1905) Assuring workers of their job stability and providing them with possibilities for professional development via training and other means may help them feel valued and appreciated by their employers. (Noor, 2012). The management of a company ought to promote employee creativity and autonomy in the workplace, while at the same time exercising sufficient monitoring to ensure the accomplishment of the organization's objectives. In order to recognise and reward workers for the contributions they have made to the success of the firm, as well as to foster the growth of greater initiative and self-discipline, management should establish formal methods to accomplish these goals.

Honoring an individual's personal rights may lead to more professional behaviour on the part of that individual's employer. Some examples of respecting personal rights include upholding the law, ensuring that everyone is treated fairly and equally, and allowing the right to privacy. (2010) (Hosseini). It has been observed that while assessing the quality of work life, the benefits to employees' health, safety, and happiness score highest. This has been the case for a long time. Due to the ever-present risks associated with working in the construction industry, it is of the utmost significance for businesses to take measures to protect the well-being of their workforce and improve the circumstances in which they do their jobs. Every industry is getting ready to improve their work environments in order to provide its employees benefits that aren't monetary in nature. This will help employees maintain their health over the long term, as well as satisfy the requirements of the law and move the organisation closer to achieving its goals. In order to prevent confrontations that might be harmful to both employees and management, the QWL is always trying to establish conditions in which all parties involved can benefit from one another. Employees who have a

greater sense of safety at their place of employment are more inclined to go above and beyond in their job. It is essential for every company to maintain a better level of work since it helps attract and retain personnel and motivates them to offer their absolute best. The city's flourishing economy, increasing population, and good prospects for attracting foreign investment are all factors that have contributed to the construction industry's rapid rise in recent years. As a result, it is essential to conduct a survey about the quality of life enjoyed by municipal construction employees.

Review of Literature

The significant shift that has taken place from the conventional workforce to the contemporary workplace is illustrative of the degree to which organisational structures have been disrupted. Employee confidence, morale, and motivation have all suffered as a result of organisational changes, such as layoffs and outsourcing, which have also harmed job security. The Organization for Economic Co-operation and Development (OECD) believes that the most controversial topic in the workplace right now is one that concerns the safety of workers. The commitment of an employer to maintain consistent working conditions for their workers in spite of changes in the external environment is what job security demonstrates. For this reason, it is of the utmost importance to foster a feeling of safety, particularly in a line of work in which various responsibilities of the job may be outlined. After some time, this formulation was modified to incorporate both cognitive and behavioural aspects as separate components. The way in which employees now think about their jobs or their employers is reflected in the cognitive element. This may indicate that the person does not find their work to be challenging, interesting, or none of these. The employee's inherent inclinations, as they pertain to how they behave while on the job, are represented in the behavioural component of the evaluation. We take tremendous pleasure in our work, regularly go above and beyond customers' expectations, and are fully committed to the growth and prosperity of the organisation. We also have a positive mindset, which demonstrates that we take pleasure in the job that we do. On the other hand, unfavourable behavioural effects are a sign that an individual is unhappy with their current job circumstance. The necessity of ensuring employee happiness varies greatly according on the specifics of the role being filled. It's possible that some people need occupations that give incentives because they place a high value on the money and perks they might anticipate receiving from their employment. Previous research has shown a correlation between

employee satisfaction and factors related to the workplace, including remuneration, marketing, supervision, perks, peer support, and overtime hours. It has been established that boosting employee morale and productivity in the workplace may be accomplished by recognising the individuals' skills and respecting the possibility for development in those abilities. Learning is intrinsically linked to the development and use of one's talents (Shanmugam, 2017). This is especially true for positions that call for the use of more complex mental processes. Increased employee agency at work leads to improved learning outcomes because it encourages more active engagement in the process of obtaining and applying new information. The presence of such an environment is beneficial for the development of skills such as the capacity to solve problems, the capability to learn new knowledge, and an expanded awareness of the link between work and other organisational systems. Because they have acquired a cognitive and behavioural repertoire that enables them to anticipate, control, or manage ambiguous needs, workers in such an environment are less likely to experience a decline in quality of life. This is because of the cognitive and behavioural repertoire that they have acquired. When people have high expectations for bad work, they are more likely to have negative attitudes and concerns, which in turn leads to low-quality work. (2010) Koonmee

As a result of the fact that businesses in the manufacturing sector place a significant emphasis on enhancing the quality of life of their employees while they are on the job, more and more benefits of this kind are being made available to workers. This is a significant initiative with the main objective of improving the quality of life for individuals who work on construction sites as well as the overall safety of construction sites. The primary goal of the research is to understand what factors influence the likelihood that a firm can offer a good place of employment for its employees. It has been stated that the primary focus of the study is on enhancing the levels of job satisfaction, employee health, and overall productivity within the construction sector. Components of performance management include establishing, evaluating, and improving an individual's or group's performance, as well as aligning it with the strategic goals and objectives of the business [17,18]. The ideas that have been presented up to this point are excellent illustrations of why it is essential to get a deeper understanding of the psychological and behavioural factors that impact the link between organisational success and QWL. Despite this, the literature contains a large number of different performance management systems, each of which has its own unique set of benefits, such as increased confidence, greater manager insight into subordinates, more clearly defined organisational goals, less employee misconduct, easier organisational change, more employee

motivation to stay with the company, and increased employee engagement. In point of fact, data from performance management systems are incorporated into choices on things like salary, the distribution of resources, succession planning, and staffing plans. It is possible that one's behaviours, which are in turn impacted by one's emotional intelligence, will have a substantial impact on the results one achieves in their professional life. The expansion of enterprises in order to better satisfy the requirements of its staff members is one of the fundamental principles that underpin the QWL movement. The rise in QWL that results from productivity improvements has a multiplier effect, meaning that it leads to an even bigger increase in productivity gains. Because increasing productivity and performance are two of the most pressing political concerns for nations that are members of the European Union, it is imperative that QWL and performance be improved. There is an urgent need to increase labour productivity as a result of falling birthrates and an increasing proportion of elderly people in the population. The employment policy rules that have been created for the member states have the goal of raising the employees' overall quality of life. There is much evidence derived from earlier applied empirical research that links QWL not just to the performance of organisations but also to the level of satisfaction experienced by workers in their jobs. The idea of quality of life, which involves the assessment of social or communal well-being based on an in-depth investigation of individual or group circumstances, is difficult to pin down [29]. Research has shown a correlation between high levels of job productivity and a happy life. Because more people are becoming aware of the connection between the two, factors such as job strain, an effort-reward imbalance, the employment level, and shift work have all garnered more attention as a consequence. Lack of sleep, for instance, has been related to poor performance at work as well as large productivity losses for companies; hence, this is another issue that decreases quality of life.

A person's quality of life may be affected by a wide variety of circumstances, including their mental and physical health, the environment in which they work, and the accessibility of essential resources and infrastructures. These are only few of the numerous elements. It has been shown that the subjective qualities of trust, devotion, satisfaction, and control, among others, considerably boost productivity when policies and guidelines are designed with each employee's specific requirements in mind. [Citation needed] [Citation needed] However, further study is required in order to get a complete understanding of the dynamic relationship that exists between the subjective and behavioural aspects of QWL.

One such measure of quality of life in occupational performance that has been found is social support, which represents an individual's integration into a social group. Another indication

of quality of life in occupational performance is physical activity. The infrastructures in which people work may have a significant impact on both the well-being of their workplaces and, by extension, the quality of their lives. It has been claimed that increasing the quantity of green space in an office building may enhance morale by encouraging workers to spend more time outdoors and socialise with one another. This would be accomplished by increasing the amount of green space in the building. It has been noticed that working rotating shifts lowers a person's quality of life. [Citation needed] It has been observed that appropriate job performance assessments and favourable contacts with supervisors have an immediate impact on QWL [34]. [Citation needed] Cooperative decision making, appropriate recognition, and helpful supervisors are also considered to be crucial components of quality work life (QWL).

Research objectives

The main objective of the study are stated as follows:

To analyse the impact of machine learning approaches towards quality of work life in enhancing job satisfaction among the employees

To understand the critical application machine learning approaches on employee engagement in addressing the well-being of the employees

To apprehend the critical understanding of machine learning approaches on employee productivity.

Methodology

The 125 people who took part in the study were all entry-level construction workers in the sector, and their involvement in the research was entirely coincidental. In order to quantify the demographic data, the chi-square test and the analysis of percentage rate distributions are used. On the other hand, regression analysis is utilised in order to evaluate the hypothesis that is stated in the next section.

Data Analysis

To understand the critical application machine learning approaches quality of work life

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	108	86.4	86.4	86.4

Female	17	13.6	13.6	100.0
Total	125	100.0	100.0	
Age				
	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 30 years	37	29.6	29.6	29.6
31 - 40 years	42	33.6	33.6	63.2
41 - 50 years	15	12.0	12.0	75.2
Above 50 years	31	24.8	24.8	100.0
Total	125	100.0	100.0	
MaritalStatus				
	Frequency	Percent	Valid Percent	Cumulative Percent
Married	82	65.6	65.6	65.6
Unmarried	43	34.4	34.4	100.0
Total	125	100.0	100.0	
Type of Family				
	Frequency	Percent	Valid Percent	Cumulative Percent
Nuclear Family	78	62.4	62.4	62.4
Joint Family	47	37.6	37.6	100.0
Total	125	100.0	100.0	
Annual Income (Include the dependent)				
	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 2 Lakhs	93	74.4	74.4	74.4
2 - 3 Lakhs	31	24.8	24.8	99.2
Above 3 Lakhs	1	.8	.8	100.0
Total	125	100.0	100.0	
Total years of work experience				
	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 3 years of experience	35	28.0	28.0	28.0
3 - 5 years	30	24.0	24.0	52.0
5 - 7 years	19	15.2	15.2	67.2

7 - 10 years	9	7.2	7.2	74.4
Above 10 years	32	25.6	25.6	100.0
Total	125	100.0	100.0	

According to the percentages, 86.4% of the respondents were male, 33.60% of them were between the ages of 31 and 40, 65.6% of them were married, 62.4% of them were brought up in nuclear households, 74.4% of them earned less than 2 lakhs a year, and 25.66% of them had more than 10 years of experience.

Regression analysis

The following part shows the regression analysis based on the data collated from the respondents who are the individuals working in multinational companies

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.374 ^a	.140	.119	.89546

a. Predictors: (Constant), productivity, jobsatisfaction, wellbeing

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.776	3	5.259	6.558	.000 ^b
	Residual	97.024	121	.802		
	Total	112.800	124			

a. Dependent Variable: QWL

b. Predictors: (Constant), productivity, jobsatisfaction, wellbeing

The ANOVA table demonstrates that the independent factors have a significant influence on the dependent variable, which is measured by work life quality. The p value for this relationship is 0.00, which is lower than the significance threshold of 0.05.

Based on the analysis it is noted that the regression equation is briefly stated as follows:

Y (Quality of work life) = 0.784 + 0.153 (Job satisfaction) + 0.515 (Well being) + 0.031 (Productivity)

Hypothesis

The next step is to test the hypothesis using chi square test

Hypothesis 1

There is no significant difference between job satisfaction and quality of work life

jobsatisfaction * QWL Crosstabulation

Count

		QWL				Total
		Disagree	Neutral	Agree	Strongly Agree	
jobsatisfactio n	Neutral	1	2	3	1	7
	Agree	6	8	12	7	33
	Strongly Agree	5	13	33	34	85
Total		12	23	48	42	125

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.763 ^a	6	.187
Likelihood Ratio	8.707	6	.191
Linear-by-Linear Association	7.436	1	.006
N of Valid Cases	125		

The findings of the aforementioned chi-square test indicate that there is not a significant difference between job satisfaction and quality of work life. The p value for this test is 0.187, which is greater than the significance threshold of 0.05, so the null hypothesis is accepted, and it is possible to assert that there is no significant difference between the two.

Hypothesis 2

There is no significant difference between employee well-being and quality of work life

wellbeing * QWL Crosstabulation

Count

		QWL				Total
		Disagree	Neutral	Agree	Strongly Agree	
wellbeing	Neutral	2	0	2	1	5
	Agree	7	13	21	6	47
	Strongly Agree	3	10	25	35	73
Total		12	23	48	42	125

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.096 ^a	6	.001
Likelihood Ratio	24.502	6	.000
Linear-by-Linear Association	16.381	1	.000
N of Valid Cases	125		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .48.

Because the p value for the chi-square test indicated above is 0.001, which is lower than the significance threshold of 0.05, one can infer that there is a significant difference between employee well-being and quality of work life. This is because the significance threshold for chi-square tests is 0.05. As a result, we conclude that the alternative hypothesis is more plausible than the null hypothesis.

Hypothesis 3

Null hypothesis: There is no significant difference between productivity and quality of work life

Productivity enhancing the y * QWL Crosstabulation

Count

	QWL				Total
	Disagree	Neutral	Agree	Strongly Agree	
Neutral	1	3	7	4	15
Agree	8	14	30	14	66
Strongly Agree	3	6	11	24	44
Total	12	23	48	42	125

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.927 ^a	6	.030
Likelihood Ratio	13.772	6	.032
Linear-by-Linear Association	4.217	1	.040
N of Valid Cases	125		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 1.44.

According to the results of the chi-square test, which are shown above, there is a significant difference between productivity and quality of work life, with a p value of 0.030. (more than the 0.05 threshold for significance). As a direct result of this, the alternative hypothesis is chosen to be true, whereas the null hypothesis is found to be false.

Conclusion

Researchers have discovered what they consider to be necessary antecedents for WE, and it has been argued that putting greater effort into the cultivation of these antecedents may encourage and maybe assist the formation of such positive behaviour among workers. It is heartening to see that this is being done in addition to the significant efforts that companies are currently doing to enhance employee enthusiasm while they are on the job. According to the findings of the research, "human resource policies like flexible work arrangements, training programmes, and incentive remuneration can also be vital for engagement." [Citation needed] In a similar line, there is a lack of understanding of the causes for employee engagement as well as the other factors that drive the growth of WE. The current study is

based on the idea that firms may improve the engagement of their workforce by using different kinds of management practises or other kinds of measures. These ways of improving the workplace need to be comprehensive, well-organized, and include a broad variety of facets of the working environment. We believe that QWL has the potential to be an effective strategy given that it has a number of important aspects that, if handled, might lead to increased levels of employee engagement. This is founded on the concept that QWL is a purposeful workplace arrangement that increases employees' well-being as well as their appreciation for the job that they do. In the meanwhile, it helps organisations achieve their highest possible level of operational efficiency.

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