

# PAPER 008

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## WITH JOB SATISFACTION OR NOT? THE ROLE OF JOB SATISFACTION IN THE RELATIONSHIP BETWEEN TRAINING AND REWARDS ON EMPLOYEE PRODUCTIVITY

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### ABSTRACT

With a harmonious pattern between the workforce and the company, job satisfaction will result. East Kalimantan is very popular for its abundant natural resources, including mining. Referring to the terminology above, this paper focuses on the causality between training and rewards on employee productivity by involving job satisfaction as a mediator. The focus of this paper is one of the largest companies operating in the mining sector located in the Balikpapan area. The assessment was carried out by distributing an open questionnaire to 346 employees who worked at the company. The quantitative approach is implemented in Smart-PLS, where the output is two schemes (outer model and inner model). In general, the statistic analysis finds that training and rewards have direct implications for employee job satisfaction and productivity. At the same time, job satisfaction does not have direct implications for employee productivity. Unfortunately, job satisfaction is unable to mediate the relationship between training and rewards on employee productivity. In essence, although training and rewards function in stimulating job satisfaction and employee productivity, they have not been proven optimal in encouraging employee productivity which is mediated by job satisfaction. Therefore, companies need to prioritize job satisfaction with more comprehensive proportions.

**Keywords:** training; reward; job satisfaction; employee productivity; SmartPLS

## 1. INTRODUCTION

In the context of risk, mining is an industry that has high consequences in terms of governance, supervision, and profit sharing mechanisms. and its effect on environmental pollution (Dou et al., 2023; Haddaway et al., 2022; Ismail et al., 2021). Even so, mining commodities have a crucial essence for the economic engine in the majority of developing countries that rely on natural resources (World Bank, 2013). The contribution of the labor market to the mining industry reflects the urgency of human resource management in synergy with professional mining management levels, especially safety factors. So far, the success of private companies and public organizations under the auspices of the State has depended heavily on the creativity of the workforce, which is a valuable asset for achieving profits. Cayrat & Boxall (2023) and Šebestová & Popescu (2022) reveal that capital such as investment in HR not only grows short-term profits for the company, but also paves the way for the long-term existence of the organi-

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zation. A strong organization cannot be separated from holistic HR investment (Subramonya et al., 2021). This is an important part of building employee motivation to achieve competitive advantage (Akkermans et al., 2019). Substantially, competitive advantage will describe the extent to which workforce productivity can understand, implement and utilize all the potential they have to work optimally.

Some scientific works say that job satisfaction can influence employee productivity because when job satisfaction grows, it strengthens their enthusiasm to work accurately (Abdelwahed & Al Doghan, 2023; Kowalski et al., 2023; Memon et al., 2023; Utami et al., 2020). Theoretically, Rachman (2021) articulates job satisfaction as a feeling of comfort among employees in facing and carrying out their duties within the company. As is known, job satisfaction is one of the main pillars in organizational management about the formation of behavior. Job satisfaction has a close relationship to achieving productivity (Arnold et al., 2016). Apart from job satisfaction, employee productivity is also determined by programs such as training. Through training activities, organizations can create a more relaxed atmosphere for employees in channeling expression, bringing out hidden talents and innovation. With a positive atmosphere, it allows them to have a sense of concern for the organization. In turn, employee happiness from the work they are engaged in increases (Basir & Wahjono, 2014; Halilintar & Sobirin, 2022).

The orientation of training relates to a program designed to increase knowledge, abilities and capabilities. Generally, training procedures are carried out by learning and are scheduled according to the company's capacity to obtaining certain benefits. Elnaga & Imran (2013) explained that training has its own tactics in determining the quantity or quality of productivity. From several studies, empowering workforce human resources through training can encourage job satisfaction in a positive direction (Bercu, 2017; Jabak, 2023; Kanapathipillai & Azam, 2020; Kosteads, 2023). Similarly, Seol et al. (2023) emphasized that training is a tool that helps accelerate human dexterity. Thus, the benefits of training contribute to training interactions and educating employees to make them sweeter. If training is packaged in a poorly structured manner, it can cause dissatisfaction at work.

The workforce, in this case the company's employees, determines the value of the organization. HR planning must be well-patterned to produce productivity. For this reason, companies must be committed to monitoring and introspection to measure employee productivity. One technique that can be integrated is stimulants in the form of incentives (Liu & Liu, 2022). Syarief et al. (2019) detected that there is an indirect effect between non-financial compensation on productivity through job satisfaction. On the other hand, Ibrahim & Abiddin (2023) actually investigated that there is a positive causality between rewards and employee productivity. The experiments of Manzoor et al. (2021) claim that companies that distribute rewards appropriately can increase employee productivity. It also provides an opportunity for employers to build rewards into the organizational framework, so that employees can be motivated. Specifically, there are strong indications that when incentives are implemented, employee productivity also increases (Robinson & Farkas, 2021; Sgarbossa et al., 2022). Then, we actually found that rewards can reduce job satisfaction. In line with that, Hadi (2023) also confirmed that there is no significant effect between rewards and job satisfaction.

Apart from punishment, to achieve human resource development, an organization needs to actualize rewards. The two corridors must be balanced and implemented side by side to reduce the element of uncertainty. One of the positive signals of employee productivity is through regular training. However, on the topic of HR management, there are few scientific manuscripts that highlight company policies through training and rewards on employee productivity and combining job satisfaction in the relationship between training and rewards to build employee

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productivity intensely, especially in companies operating in the mining sector. The target of this paper is to investigate the impact of training and rewards on employee job satisfaction and productivity. First, an explanation regarding the gap between the premise and existing phenomena, objectives and contributions. Second, talk about the theoretical basis. The ideas of this paper provide space for hypothesis development. The connections between variables are based on the experience of past papers addressing models that influence employee productivity, including: training, rewards, and job satisfaction, so seven hypotheses are proposed by considering the literature review. Third, the research method is presented as a guide in the study instrument. Fourth, the results confirm the hypothesis testing. Fifth, the discussion debates the study findings with theoretical arguments. Sixth, the conclusion justifies existing results, provides recommendations for practical policy, and future research directions.

## 2. REVIEW OF LITERATURE

### 2.1. EMPLOYEE PRODUCTIVITY

Basically, productivity is interpreted as a comparison between input and output (Caves, 1982). Productivity is to ensure the level of production input, for example the allocation of capital and labor to get a predetermined output. Another opinion from Okoye & Ezejiolor (2013) explains that productivity is an organization's effort to achieve efficiency and competition. Productivity can also be understood as a broad concern that is inseparably linked to organizational sustainability (Arraya & Pellissier, 2013).

Uka & Prendi (2021) argue that employee productivity is behavior that achieves certain targets. Meanwhile, productivity is formulated in a hierarchy based on each object (Mercanoğlu & Şimşek, 2023). Employee productivity is not solely focused on receiving large amounts of results, but rather improving the quality of performance. Implicitly, productivity is the key in dissecting performance and the format of responsibility for managing organizational human resources. Thanks to productive human resources, organizations can run effectively. Employee productivity can be assessed from the individual's sacrifices in completing their work. In other words, productivity is an individual's consistency in managing his work.

### 2.2. TRAINING

Nowadays, companies use training as an access to improve and increase the efficiency of old and new employees. Companies take the initiative to conduct training to teach employees about strategies in growing association, motivation and organizational performance (Jehanzeb & Bashir, 2013). Programmed training not only improves employee and organizational performance, but also expands partnerships. By initiating professional training, it enables bright business prospects for the company. Besides that, workers who quickly adapt to international networks are very useful for workplace continuity. Training development has been proven to improve the welfare of associations, but also plays a crucial role for the domestic workforce (Galaiti et al., 2023; Srija & Sanghi, 2018; Vuchkovski et al., 2023; Zirar et al., 2023). So, companies play a role in facilitating, involving and accommodating training services.

A productive workforce is reflected in productivity, where one of the ways companies support productivity is to schedule and carry out continuous training. Training techniques always transform over time. Some initiatives that an organization can take in planning and modifying training are assessment of training needs, leadership style, and training evaluation. The aim of this is to encourage employee productivity to be even better (Yimam, 2022).

Basically, the target of every business is to maximize profits and return on investment, have a productive workforce, and effective operational management. To follow up on these targets,

companies need to train employee skills, thereby producing quality human resources (Aparna & Ambikar, 2023). Also, Ngan & Duyen (2017) stated that the majority of companies involve training programs with the aim of obtaining quality human resources. In a systematic training process, there are several things that must be passed to build performance. The four phases include: training evaluation, training delivery style, training design, and training needs assessment (Kashif et al., 2020; Yimam, 2022).

A positive work environment is ensuring that employees feel satisfied in carrying out their duties (Zhenjing et al., 2022). The role of job satisfaction is very crucial in shaping employee productivity, where the process requires constructive training (Al Ali et al., 2018; Egenius et al., 2020; Juliadi et al., 2023; Kumar et al., 2023; Sitorus & Hidayat, 2023; Syahrani, 2021). Apart from training, there is also similar training but in a specific scope, such as non-managerial which must be studied by employees in order to boost technical skills for limited purposes. Technical training will simulate what strategies must be decided in preventing or resolving problems in the field. Referring to existing literature, below three hypotheses are offered as follows:

**Hypothesis 1:** Training plays a role in increasing job satisfaction.

**Hypothesis 2:** Training plays a role in increasing employee productivity.

**Hypothesis 6:** Training mediated by job satisfaction plays a role in increasing employee productivity.

### 2. 3. REWARDS

The system of using incentives (rewards) in measuring performance has developed since the era of the scientific management movement. Since then, the private sector has been actively involved in transferring this scheme into work methods to encourage employee performance and productivity (Caudill & Porter, 2014). Providing incentives is intended to motivate employees to work extra hard with good results. In practice, incentive programs are a tool for employers, both private and public, according to their workload. Alkandi et al. (2023), Ibrahim & Abiddin (2023), and Niguse & Getachew (2019) are of the view that facilities such as compensation in the form of distribution of rewards (salary, incentives and allowances) to employees working in the organization will have a positive impact. In reality, rewards are extrinsic and intrinsic (Munir et al., 2016). Intrinsic rewards distributed to employees include praise for completing work goals or projects, while extrinsic rewards are monetary and non-monetary or tangible. Compensation is also often distributed directly or indirectly depending on the situation. Compensation in direct form is carried out by the employer in exchange for benefits for work. On the other hand, indirect compensation is given to every employee who is part of the organization.

Alnsoura & Kanaan (2021), Daniel (2019), Haron & Khadijah (2023), Liu & Liu (2021), and Ogunmakin (2023) review the relationship between incentives and productivity in organizations. The results found that incentives play a vital role in increasing employee productivity in organizations. From a financial perspective, rewards determine employee satisfaction, so they can work with a sense of responsibility for the work they are given. Incentives, extra allowance, interpersonal awards, and promotions are attributes of rewards. Apart from monetary incentives, another element in motivating employees is to involve them in choosing the direction of the organization. The reason is, without good cooperation, the organization cannot run. Schraeder & Becton (2003) found a significant two-way relationship from reward systems to employee productivity and vice versa.

Reward as an impulse to influence job satisfaction. This means that by providing rewards, employees have a strong desire to work optimally. Work done well will stimulate productivity (Imran et al., 2014; Mercy et al., 2021). The positive impact of implementing incentives on

productivity and job satisfaction, as described above, is an important illustration of preferences in this paper. Furthermore, the temporary hypothesis is written as follows:

*Hypothesis 3: Rewards play a role in increasing job satisfaction.*

*Hypothesis 4: Rewards play a role in increasing employee productivity.*

*Hypothesis 7: Rewards mediated by job satisfaction play a role in increasing employee productivity.*

## 2. 4. JOB SATISFACTION

As is known, job satisfaction is a pleasant positive emotional state that reflects work assessments of employee work experiences (Ilies & Judge, 2004; Tasios & Giannoul, 2017). The most commonly studied dimensions of job satisfaction are company and management, coworkers, supervision, work situation, benefits, recognition, promotion, and job classification (Montuori et al., 2022). Sypniewska et al. (2023) stated that structures that are more conducive to satisfaction include: supportive colleagues, inclusive working conditions, fair rewards, and mentally challenging work. This implies that to achieve increased employee satisfaction, good control is needed. Employees who are paid a decent standard, but are placed in an environment that is not conducive, are assigned to do work repeatedly, and are not appreciated according to the results of their work, will leave the workplace. This is triggered by a lack of genuine rewards, including employees who work in a supportive and interesting work environment, but feel dissatisfied with the rewards provided.

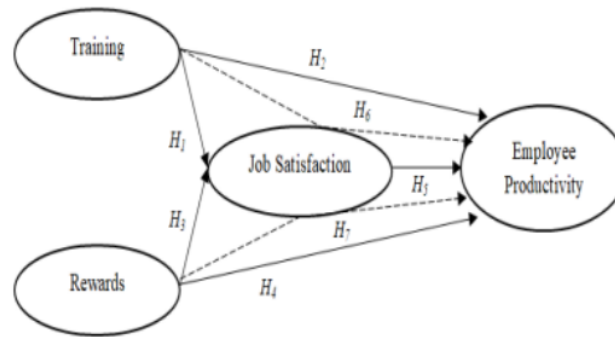
Some previous research related to job satisfaction for several cases is reviewed. As an illustration, Chen et al. (2022) who concluded that job satisfaction plays a moderating effect in the link between unsafe conditions and miners' workload. Then, continued by Chen et al. (2022) who found that job satisfaction decreases due to complex workloads. This decline was caused by extreme working conditions for miners which at any time had the potential to threaten their safety and health. To a certain extent, it can also have an impact on accidents while working, especially for employees who are placed in technical positions, such as operating heavy equipment. Another experiment stated that there is positive causality between job satisfaction and employee productivity. On the one hand, employee productivity will increase if supported by job satisfaction (Apridar & Adamy, 2018; Gutiérrez Vargas et al., 2023; Halkos & Bousinakis, 2010; Indrayani et al., 2024; Joewono et al., 2021; Saeed & Waghule, 2021; van der Voordt & Jensen, 2023). The next hypothesis is made as follows:

*Hypothesis 5: Job satisfaction plays a role in increasing employee productivity.*

## 2. 5. CONCEPTUAL FOUNDATIONS

The dedication of this paper is to diagnose the relationship between training and rewards on employee productivity through job satisfaction. Using existing theory and literature foundations, Figure 1 focuses on training and rewards as independent variables, the mediating variable is played by job satisfaction, and employee productivity is the dependent variable. Each main variable is operationalized and the links between the main variables are derived. Finally, from the pattern of relationships, hypotheses are presented in the previous subsection.

Figure 1. Conceptual framework



Source: Own author's

### 3. MATERIALS AND METHOD

#### 3. 1. RESPONDENTS

The respondents in the sample for this paper are employees who work at one of the well-known mining companies in Balikpapan City. The company is called PT Trubaindo Coal Mining (PT TCM). The scope of the company's exploration activities includes coal with construction involving coring and open holes. PT TCM was founded in 1990 by drilling professionals who provide punctuality and quality to provide drilling services for coal commodities. This company is owned by foreign investors with a domestic exploration level. Balikpapan is a large city located in East Kalimantan Province, Indonesia. Samples were taken from 95% of the existing population, which was addressed to 346 employees. The total population is 364. The sample was determined with a threshold or standard error of 5% (Sapra, 2022). This sample size is employees from all work units.

#### 3. 2. DATA AND STATISTICAL TECHNIQUES

The composition of primary data comes from field observations through direct interviews. Data is set using a quantitative approach. This approach analyzes hypothetical assumptions with data processing software. Questionnaires were distributed to respondents, then the data was collected into statistical tests. The employee's answer parameters are based on the indicators of each variable. The answer in question is a compilation of the respondent's perceptions expressed on a Likert scale. The respondents have the right to determine the alternative or option converted from the Likert scale. There are five scores on a Likert scale, including: strongly disagree (1); disagree (2); neutral (3); agree (4); and strongly agree (5). Researchers adopted scientific work from Ariani et al. (2023) about five respondent reactions in a Likert scale-based questionnaire.

After being tabulated, the data is tested first to confirm the indicators. Questionnaire data is entered into Smart-PLS. Indicators that meet the requirements refer to the loading factor on all indicators. The indicators created must be reliable and valid. Then, it continues with empirical recapitulation via Partial Least Square (PLS). The function of PLS is to project possible comparisons between response variables and explanatory variables. In principle, PLS is a covariance statistical method and includes structural equations or SEM (Abdi, 2010; Guan et al., 2022). The two scenarios in PLS are the inner model and the outer model (Nie et al., 2023).

### 3. 3. VARIABLES

According to its characteristics, each variable has a different operational definition. The existing variables were developed based on the latest publications. First, training is related to the development of knowledge, abilities and skills resulting from learning that is useful for work efficiency. Training has its own characteristics and is actualized to maximize productivity (Aragón et al., 2014; Masadeh, 2012; Milhem et al., 2014; Polo et al., 2018). Second, rewards, *i.e.* compensation for a benefit provided by an employer or superior in the form of money/cash, allowances, or promotions with the aim of encouraging employee joy in their work (Guzzo, 1979; Hareendrakumar et al., 2020; Marin, 2021; Manzoor et al., 2021; White, 2011). Third, job satisfaction focuses on workers' emotional responses to various components of work that produce pleasure, comfort, self-confidence, appreciation, personal growth and various positive opportunities, including mobility for recognition and achievement assessments. Job satisfaction is visualized when employees experience feelings of happiness for successfully completing work, are proud to be employees, and excel as individual workers or as members of a team (Ali, 2016; Alrefaei, 2020; Aziri, 2011; Fernández-Macias & Muñoz de Bustillo Llorente, 2014; Wang & Brower, 2019). A great level of satisfaction results from rewards that enable an employee to complete a task. Fourth, employee productivity is the employee's ability to produce compared to the input applied (Hanaysha, 2016a; Singh & Chaudhary, 2022).

Table 1. Key variables

Variable	Code/Label	Indicators
Employee productivity	EmpProduc1	Ability
	EmpProduc2	Increase achievement of results
	EmpProduc3	Spirit at work
	EmpProduc4	Self-development
	EmpProduc5	Quality
	EmpProduc6	Efficiency
Training	Training1	Type of training
	Training2	Material
	Training3	The method applied
	Training4	Participant qualifications
	Training5	Coach qualifications
	Training6	Time
Rewards	Reward1	Incentive
	Reward2	Additional allowances
	Reward3	Interpersonal appreciation
	Reward4	Promotion
Job satisfaction	JobSatisfctn1	Salaries
	JobSatisfctn2	Promotion
	JobSatisfctn3	Supervision
	JobSatisfctn4	Allowance
	JobSatisfctn5	Award
	JobSatisfctn6	Work procedures and regulations
	JobSatisfctn7	Work colleague
	JobSatisfctn8	Job suitability
	JobSatisfctn9	Communication

Source: Development and modification of previous studies.



In the labor context, productivity is articulated as the ratio of a company's output to hours worked or number of employees. Concretely, labor productivity can be increased by reducing working hours for the same output to show that workers are more productive and can complete tasks more efficiently (Hermanto et al., 2024). In a review of organizational business, Škufljić et al. (2018) state that productivity can be boosted by reducing the number of workers while maintaining the same output, which would reflect an increase in capital equipment through labor (Škufljić & Družić, 2016). Labor productivity also means increasing output with the same input (Junaidi et al., 2024). Productivity must be balanced with fair and equitable rewards, such as monetary value, including compensation.

Table 1 above groups the four variables explored in this paper including: training, rewards, job satisfaction, and employee productivity. In the specification, the independent variables are played by training and rewards, while employee productivity is the dependent variable, and job satisfaction is the mediating variable. Specifically, employee productivity and training consist of the same indicators (six indicators), while rewards consist of four indicators, and job satisfaction consists of nine indicators. Of the four key variables, the total indicators are twenty-five.

## 4. RESULTS

### 4.1. COMPANY IDENTITY

PT TCM is a foreign capital company founded in 1990 which concentrates on exploring mining commodities. Initially, the parent company was located in West Kutai Regency (East Kalimantan Province). Then, PT TCM expanded its exploration points, including in the Balikpapan area. PT TCM is under the auspices or subsidiary of PT Indo Tambangraya Megah Group (ITMG) as one of the largest mining company groups in Indonesia. Focusing on coal mining activities, this company has become one of the main contributors to the coal mining industry in Indonesia. PT TCM specializes in coal mining based on open pit mining methods.

Technically, PT TCM has a wide exploration area coverage with the help of modern mining machines and equipment. To produce quality finisher coal, PT TCM operates a crushing plant as a place for extracting crushed coal from mining products. From January 2013 to March 2013, down time in the first quarter reached 647.84 hours with a coal production volume of 1,773,918 tons. Based on observations in the field, Toha & Devy (2017) and Winarno et al. (2020) reported that the coal size distribution was greater than 50 mm with dredging settings between 21 and 38 mm.

PT TCM has a team consisting of experts who are experienced in the mining industry through a long selection process. This serves to ensure operational efficiency and safety. Regarding safety and protection in the workplace, the company has a strong commitment to responsible and sustainable mining performance (Triyanto, 2023). To minimize environmental risks that have a wide impact, PT TCM complies with all applicable operational regulations, in particular implementing a Quality Management System (QMS) which is centered on the International Organization for Standardization (ISO) 9001 to help organizations of all sizes in various sectors. PT TCM is also equipped with globally recognized certification, e.g the Occupational Health and Safety Management System (OHSMS) version 18001 as a management system for occupational health and safety. Both ISO and OHSMS are designed for security protection in the work environment. By adopting the two instruments above, PT TCM guarantees employee safety as the main priority in every exploration routine. This also applies to all visitors who come to the company. Rigorous awareness programs such as training can ensure every individual involved in mining operations understands the urgency of work safety.

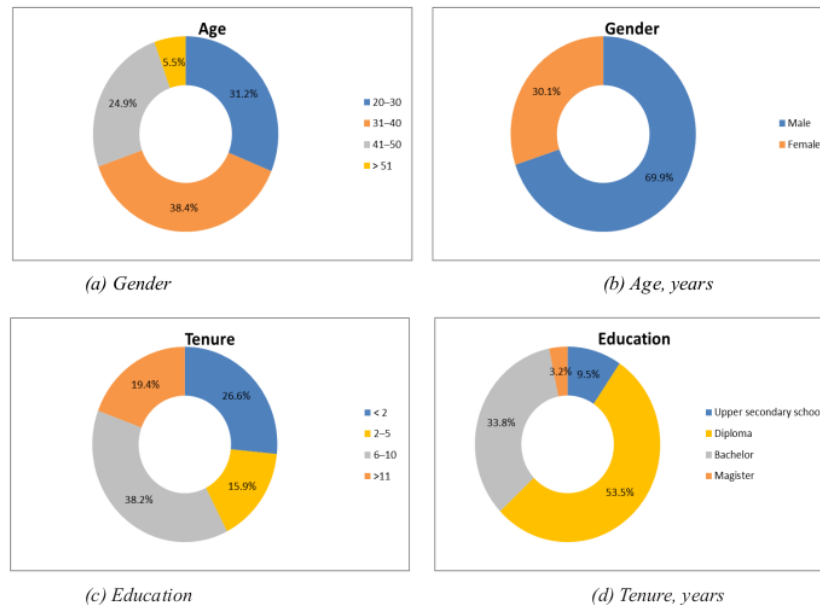
In other practices, PT TCM contributes to socio-economic development, such as maintaining

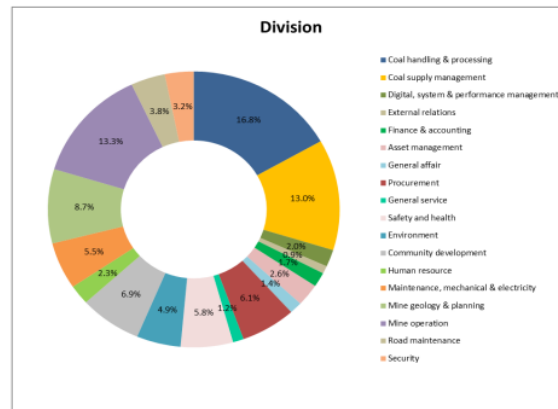
excellent ties with the surrounding community. The company also takes the initiative to preserve the environment by implementing regular environmental management and monitoring programs, including rehabilitation of ex-mining land to minimize the negative effects of mining activities. Additionally, PT TCM invests in technology as a way to optimize energy use and reduce emissions.

#### 4. 2. PROFILE OF RESPONDENT

The distribution of questionnaires from respondents based on four groups (gender, age, education, tenure, and division) is covered in Figure 2. It is described that from gender background, respondents who work in one of the well-known companies operating in the mining sector in Balikpapan are dominated by men (69.9%) than women (30.1%) with the majority aged 31–40 years at 38.4%. Apart from that, it was also detected that 5.5% of the respondents were over 50 years old, which is the lowest age of workers among the other age ranges. Administratively, most of the respondents work in the coal handling & processing division (16.8%), coal supply management (13%), and mine operations (13.3%). Technically, it is adjusted to the company's capacity and needs in placing employees based on their expertise. Interestingly, there are 0.9% of respondents who work in external relations positions. Even though this division is staffed with the smallest number of employees, it has a tough task with a focus on partnerships with external parties in expanding business networks or those related to empowering surrounding communities through Corporate Social Responsibility (CSR). Yet, for exemplary and outstanding employees, there is a rewards program provided by the company. For example, through job promotions. To focus on company sustainability, there are several special divisions that can be promoted based on performance assessments. In practice, the company also implements rotation paths for several divisions to anticipate high-performing employees leaving the company or moving to other companies.

Figure 2. Demographics of respondents





(e) Division

Source: Survey results

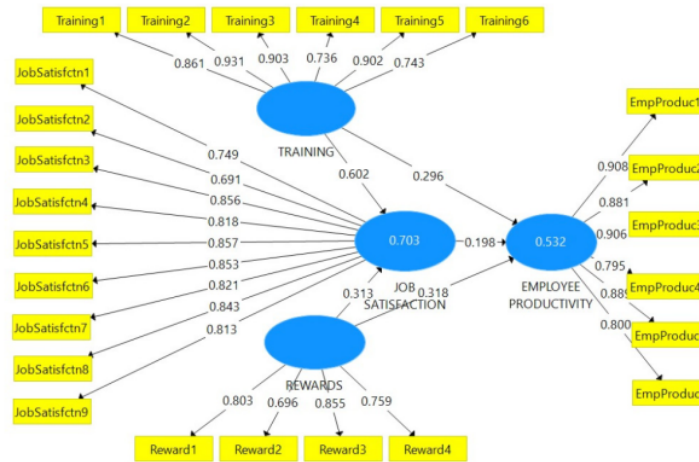
Even though educational background is important, for a small number of people in the informal sector it is considered not very essential. This is indicated for professions that require special skills and experience, including mining workers. Working as a mining employee is a technical profession that focuses on professionalism, results, and commitment. Through high skills and experience, employees can channel a broad perspective and influence on work in the mining sector. Generally, employees assigned to the field are those who also have certification in the mining sector. Therefore, it is proven by 9.5% of respondents with an educational background as graduates from upper secondary schools. This educational background is the lowest compared to others, such as Diploma (53.5%), Bachelor (33.8%), and Masters (3.2%). The company's persistence in retaining the best employees is also indicated by tenure. With a tiered tenure period, employees automatically have great loyalty. The tenure period is a fundamental part in determining the company's continuity in the future. In this case, it was indicated that 38.2% of respondents had professional experience of up to 6–10 years and 19.4% of respondents claimed to have been given a tenure of more than 11 years. For initial career development or a trial period, 26.6% of respondents were given a tenure of less than 2 years.

#### 4. 3. OUTER MODEL

In this session, the outer model was presented. The outer model, which is also known as formative reflective, aims to specify the relationship between latent variables and their indicators. In the context of this paper, the outer model contains validity tests and reliability tests. First, a validity test is used to evaluate each relationship between the indicator and the construct or latent variable.

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Figure 3. Outer loading factor



Source: Survey results

Figure 3 shows that the four variables (training, rewards, job satisfaction, and employee productivity) meet the criteria, i.e. all loading factors above 0.6. It is understood that testing in the next phase can be carried out to calculate the impact between training and rewards on employee productivity through job satisfaction.

Table 2. Validity test of Fomell-Larcker criterion version

	Employee Productivity	Job Satisfaction	Rewards	Training
Employee productivity	0.864			
Job satisfaction	0.659	0.813		
Rewards	0.648	0.701	0.781	
Training	0.660	0.803	0.644	0.849

Source: Survey results.

23 Table 2 shows that the root score of the Average Variance Extracted (AVE) between employee productivity and employee productivity is 0.864. The AVE root score between job satisfaction and job satisfaction is 0.813 or higher than the correlation value between job satisfaction and employee productivity which reaches 0.659. Uniquely, the AVE root score between rewards and job satisfaction is 0.781, which is smaller than the correlation requirement (0.7). On the other hand, the score at the root of AVE in the model between training and training is 0.849 and this value is higher than the correlation value in the reward-training relationship of 0.644. But, the status of the variable construct has good discriminant validity. Overall, Table 2 also concludes that the four latent variables have an AVE score above the minimum criterion, i.e. 0.5. Through existing authentic evidence, the measure of convergent validity can be said to be good if it meets convergent validity standards.

Second, the reliability test functions to prove the accuracy, consistency and suitability of the instrument in measuring the construct. There are three methods for predicting reliability in the PLS flow, including Cronbach alpha, rho\_A, and compsite reliability. Of these three measures, generally the reference is that all values must be more than 0.6. A model is classified as reliable if the indicators that have been determined are able to measure each latent variable (construct) well. In general, the four measurement models are reliable with two specifications, namely high

and very high. For the case study of this paper, Cronbach’s alpha was used on the grounds that if the correlation value between indicators is greater, the construct contained in the resulting model will be better.

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Table 3. Reliability test

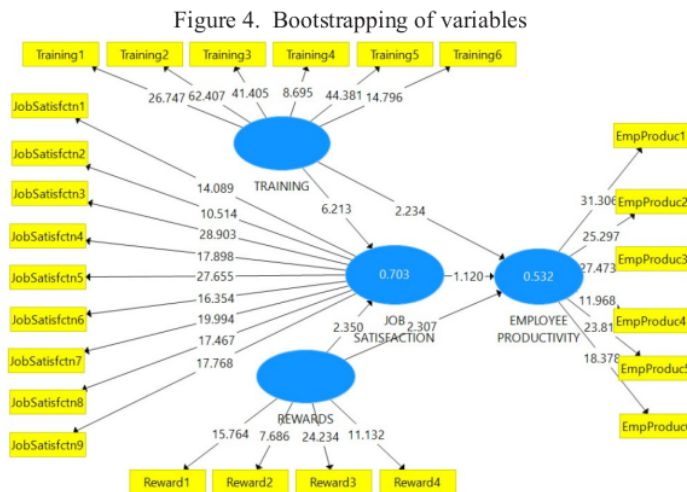
	Cronbach’s Alpha	rho_A	Composite Reliability
Employee productivity	0.932	0.932	0.946
Job satisfaction	0.935	0.943	0.946
Rewards	0.785	0.786	0.861
Training	0.921	0.926	0.939

Source: Survey results.

Table 3 above reports that the Cronbach’s alpha scores of the three constructs (employee productivity, job satisfaction, and training) are categorized as very high with respective achievements of 0.932, 0.935, and 0.921. Meanwhile, the Cronbach’s alpha score on the job satisfaction construct is 0.785 or relatively high. Apart from validity, the reliability results of the existing model also meet the requirements, so hypothesis testing can be continued.

#### 4. 4. INNER MODEL

Before testing hypotheses about causality between variables in the structural path, the measurement model for indicators and latent variables is first identified. Indicator reliability shows the closeness of the indicator variance that can be explained by latent variables. In indicator reliability, a reflective indicator must be eliminated from the measurement model with the threshold being that the loading score ( $\lambda$ ) must be above 0.4. Below are the loading ( $\lambda$ ) results obtained. The estimates using bootstrapping indicate that the training, rewards and job satisfaction variables have an impact on productivity.



Source: Survey results.

As presented in Figure 4, after the bootstrapping calculations were implemented, the constructs of all variables met the requirements. On the outer loading indicator, the score is above 0.6. Next, below is the R-Square test and Adjusted R-Square test. The R-Square coefficient looks at how strong the model is for forming employee productivity and job satisfaction variables, while

**1**  
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the Adjusted R-Square coefficient assesses how the independent variables explain the dependent variable, if the model is designed using more than two independent variables (see Table 4).

**Table 4. R-square and R-square adjusted**

	<b>R-Square</b>	<b>R-Square Adjusted</b>
Employee productivity	0.532	0.517
Job satisfaction	0.703	0.696

Source: Survey results.

Based on the variable development in this paper, Table 4 is focused on investigating the relevance of training and rewards to job satisfaction or training, rewards, and job satisfaction to employee productivity. It is noted that the R-Square coefficient for the first model is 0.532 and in the second model it is 0.703. In essence, the first model (job satisfaction) is determined by training and rewards by 53.2%. The second model (employee productivity) is formed by training, rewards and job satisfaction at 70.3%. The coefficient on the Adjusted R-Square is actually smaller when compared to the R-Square results. Job satisfaction supported by training and rewards reached 51.7%, while employee productivity supported by training, rewards and job satisfaction reached 69.6%.

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**Table 5. Model fit**

<b>Items</b>	<b>Saturated Model</b>	<b>Estimated Model</b>
SRMR	0.107	0.107
d_ ULS	3.707	3.707
d_ G	1.936	1.936
Chi-Square	849.341	849.341
NFI	0.674	0.674
rms Theta	0.194	-

Source: Survey results.

The ideal SRMR score is below 0.08. In reality, the SRMR score is 0.107. Likewise, the requirements for a normal NFI are a score of more than 0.90. For the existing case, the NFI score is 0.674. Then, the good rms\_Theta is close to zero, but the score of rms\_Theta reaches 0.194. Both SRMR, NFI, and rms\_Theta in the research model are categorized as marginal (see Table 5).

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**Table 6. Summary of hypothesis evidence**

<b>Linkages (→)</b>	<b>Hypothesis</b>	<b>Original Sample</b>	<b>Sample Mean</b>	<b>Standard Deviation</b>	<b>T-Statistics</b>	<b>p values</b>
Direct	Hypothesis 1	0.602	0.610	0.090	6.659	0.000
	Hypothesis 2	0.296	0.249	0.144	2.060	0.042
	Hypothesis 3	0.313	0.315	0.127	2.463	0.016
	Hypothesis 4	0.318	0.306	0.119	2.673	0.009
	Hypothesis 5	0.198	0.258	0.192	1.029	0.306
Indirect	Hypothesis 6	0.119	0.153	0.113	1.057	0.293
	Hypothesis 7	0.062	0.090	0.085	0.726	0.470

Source: Survey results.

Using a significance threshold of 5%, the proposed hypothesis can be accepted if the probability is less than 5% ( $p < 0.05$ ) and the proposed hypothesis is rejected if the probability is above 5% ( $p > 0.05$ ). Sequentially, the first to the fourth hypotheses are accepted, but the fifth to the sev-

enth hypotheses are rejected. There is a significant partial relationship between training on job satisfaction ( $\rho = 0.000$ ), training on employee productivity ( $\rho = 0.042$ ), rewards playing a role in increasing job satisfaction ( $\rho = 0.016$ ), and rewards for employees ( $\rho = 0.009$ ). In contrast, a partial relationship was not significantly shown by job satisfaction on employee productivity ( $\rho = 0.306$ ). In the two indirect relationships, it is proven that training ( $\rho = 0.293$ ) and rewards which are mediated by satisfaction do not have a significant effect on job satisfaction ( $\rho = 0.470$ ). Overall, Table 6 also finds that among the seven relationships, training and job satisfaction is the most dominant.

## 5. DISCUSSION

### 5. 1. TRAINING ON JOB SATISFACTION

The first hypothesis states that training plays a role in increasing job satisfaction and the existing statistical output shows that when training is increased, job satisfaction increases significantly. Trainer qualifications are in high demand among employees to support and empower their skills. This is in line with several studies which conclude that training is very urgent because employees need to adapt to the work environment.

Nuhu et al. (2018) stated that organizations that implement training efficiently will gain immediate and long-term benefits for the continuity of employee human resources. Continued by Nauman et al. (2020) stated that HR investment is a preference that can be used by companies to improve workforce performance, organizational productivity, optimize profitability, and achieve long-term competitive advantage. Not all company management prioritizes training as the foundation for forming employee job satisfaction. Research from Diantari & Putri (2023), Kostea (2023), and Sesen & Ertan (2022) actually found that limited training will reduce job satisfaction. Through training, employees have the opportunity to build work motivation, develop creativity, collaborate with colleagues, and create new innovations that the company needs.

### 5. 2. TRAINING ON EMPLOYEE PRODUCTIVITY

The second hypothesis states that training plays a role in increasing employee productivity and the existing statistical output shows that when training is increased, it stimulates employee productivity significantly. As a mining company employee, training is very necessary to increase employee productivity. It should be noted that training is an important part of boosting employee competency. Good job competition will increasingly trigger positive competitiveness to make contributions. In the end, employees will be motivated to give their best abilities.

Talking about the relationship between training and employee productivity, there are different points of view which explain that training can increase employee work productivity and vice versa. For example, the manuscript from Hosen et al. (2014), Landa (2018), and Mangkunegara & Waris (2015) explain that job training plays a role in influencing employee productivity. Implementing automatic training can expand soft skills for participants, especially employees. In line with its main function, regular scale training will overcome the crisis of employee confidence. More specifically, training is the best way to implement new ways of working using realistic strategies. A good organization must prioritize more efficient work procedures. At the same time, employees also need professional development. Through proactive involvement, the organization takes the initiative to eliminate employee misperceptions and interpretations of procedures that have been carried out. By holding training, companies can also introduce new work methods for employees to follow to achieve the desired productivity.

There are several empirical studies that contradict this paper which prove that job training actually has an insignificant impact on employee productivity. For example, Al Khawaldeh (2023),

Hanaysha (2016b), and Sendawula et al. (2018) argue that training activities packaged through inadequate skills development further reduce employee performance in the workplace. Training is channeled into programs that are not supported by good facilities, so employees' technical abilities are less relevant to today's challenges. Ideally, the most effective tool for maintaining worker productivity is technical skills. In fact, training is a refresher for employees and helps organizations achieve various goals, for example increasing work morale, a sense of security, and competencies needed to make work easier. Through training, there is a transition in evaluating performance to transform better.

### 5. 3. REWARDS ON JOB SATISFACTION

The third hypothesis states that rewards play a role in increasing job satisfaction and the existing statistical output shows that when rewards are increased, job satisfaction increases significantly. Generally, employees' response is that they want additional benefits as compensation for their love of work. When linked based on gender, male employees are more dominant than female. Considering that the majority of employees in this company are men, it makes sense that as heads of households they have a higher burden than women in being responsible for supporting their families. Thus, rewards are very necessary for employees as well as increasing work enthusiasm. The analytical review above is in line with other studies which conclude that the distribution of rewards can encourage job satisfaction.

For the third hypothesis, like the article presented by Danish & Usman (2010), Fareed et al. (2013), Mercy et al. (2021), and Terera & Ngirande (2014) that employee job satisfaction is reflected by appropriate rewards. Organizations such as companies that provide rewards permanently or according to employees' skills can unite employee behavior to care more about their work. Too to training, employees are given annual allowances and club memberships, stimulating their motivation, especially satisfaction at work. Besides that, contrary to several findings, there is no positive relationship between rewards and job satisfaction (Muthuswamy & Almoosa, 2023; Shafagatova et al., 2023; Suherman et al., 2023; Ur Rehman et al., 2010). Employees will experience dissatisfaction if they receive unfair rewards based on workload.

### 5. 4. REWARDS ON EMPLOYEE PRODUCTIVITY

The fourth hypothesis states that rewards play a role in increasing employee productivity and the existing statistical output shows that when rewards are increased, employee productivity increases significantly. Basically, employees want additional benefits in wages, so they try to be more productive. If it is related to the level of education, it is very natural for employees to want additional benefits. Those who have a Diploma, Bachelor's and Master's educational background, especially those equipped with professional classifications or certifications in certain skills, will certainly feel comfortable working if they are given appropriate rewards. Rewards will be a satisfaction for them, so they work more optimally.

The results of the investigation are in line with some articles which reveal that incentives have a partial effect on employee productivity. Rewards are one of the company's authorities to improve the welfare of its employees, in order to stimulate work productivity. Rewards also create opportunities for employers to use rewards as a motivational assessment based on employee expectations and company goals (Chan & Hooi, 2023; Ibrar & Khan, 2015; Janardhanan & Raghavan, 2017; Tarigan et al., 2022). However, Hussain et al. (2019) and Noorazem et al. (2021) clarified that there is an insignificant direct influence between rewards distributed through incentives and rewards on employee work productivity. Discriminatory non-financial compensation can influence performance in a negative direction.



## 5. 5. JOB SATISFACTION ON EMPLOYEE PRODUCTIVITY

The fifth hypothesis states that job satisfaction plays a role in increasing employee productivity and the existing statistical output shows that when job satisfaction is increased, employee productivity further reduces or is in a path that is not significant. This is interesting, because the test results show that job satisfaction has no effect on employee productivity. If we look at the alternative answer of respondents regarding job satisfaction, *i.e* benefits, then rewards should play a role in directly influencing productivity.

The primary problem is that rewards are still short term according to work contracts. In other words, there are still feelings of anxiety among employees at work. The desire to work optimally is not fully carried out regularly. This is clarified by studies presented by Halkos & Bousinakis (2021), Hoboubi et al. (2017), Inayat & Khan (2021), and Javed et al. (2014), where job satisfaction has no direct effect on employee productivity. The emergence of anomalies in the form of work dissatisfaction due to poor internal factors such as salary, promotion, supervision, pocket money, work procedures and regulations, coworkers, job suitability, and communication, increasingly has implications for productivity levels. Likewise, Badrianto & Ekhsan (2020), Böckerman & Ilmakunnas (2012), Fassoulis & Alexopoulos (2015), and Navale (2018) highlighted that job satisfaction influences employee productivity. One of the elements of satisfaction (in this case is salary) has a positive effect on employee performance productivity.

## 5. 6. TRAINING ON EMPLOYEE PRODUCTIVITY THROUGH JOB SATISFACTION

The sixth hypothesis states that training plays a role in increasing employee productivity which is mediated by job satisfaction and the existing statistical output shows that when training is increased through job satisfaction, it further reduces employee productivity or in an insignificant way. It was concluded that the proposed hypothesis above was confirmed by statistical testing, where job satisfaction failed to mediate training on work productivity.

Training is always synonymous with company values in developing employee human resources. Training is also useful for instilling motivation, building solidarity among employees, and evaluating previous work to avoid work mistakes in the future. Gumasing & Ilo (2023), Hadaitana & Iqbal (2023), Ingsih et al. (2021), Lee & Kim (2023), Suryani et al. (2023), and Suryaputra (2023) actually stated that if the implementation of training is not balanced with learning material or acceptance of the material provided is weak, it will trigger double interpretations. Employees are deliberately trained to broaden their horizons about the workload given. Yet, on the contrary, strategic mechanisms to improve chosen job performance do not encourage job satisfaction. As a result, low job satisfaction further reduces employee productivity. On the one hand, training plays a positive role in employee work productivity through job satisfaction (Eliyana et al., 2019; Haryadi et al., 2021; Hanaysha & Tahir, 2016). Factors that can influence a person's level of job satisfaction include: level of salary and benefits, perceived fairness of promotion, quality, leadership, and social relationships. Job satisfaction really depends on what method is applied. Then, job satisfaction can also determine employee productivity.

## 5. 7. REWARDS ON EMPLOYEE PRODUCTIVITY THROUGH JOB SATISFACTION

The seventh hypothesis states that rewards play a role in increasing employee productivity which is mediated by job satisfaction and the existing statistical output shows that when rewards are increased through job satisfaction, it further reduces employee productivity or in an insignificant way. In the context of this paper, the rewards designed by the company are not fully optimal. Meanwhile, rewards that are not followed by positive job satisfaction further trigger

a decline in productivity levels.

Several publications have found that rewards driven by job satisfaction can increase employee productivity, but there are also previous studies that explain that job satisfaction does not play a significant role in the relationship between rewards and employee productivity. Job satisfaction functions as a mediator in the relationship between incentives and performance (Liu & Liu, 2022). It should be noted, with increased incentives and rewards, their involvement has become a priority for the company, so that employees will be encouraged and take the initiative to build company goals (Depedri et al., 2010; Tetteh et al., 2015). As revealed by Abd et al. (2022) that non-financial compensation influences work productivity through job satisfaction.

Furthermore, Carbonell & Rodríguez-Escudero (2016) actually prove that job satisfaction fails to play a moderating effect in efforts to reduce workers' workload. Chi et al. (2023) emphasized that companies must ensure high employee satisfaction among workers, because rewards are a prerequisite for supporting productivity. The reward position given by a company should be able to fulfill employee desires, so that satisfaction will have a positive impact on employee work productivity. In the eyes of employees, rewards are not always about quantity, but also about quality based on objectivity. It can be understood that job satisfaction is not successful in mediating rewards to increase productivity because the realization of rewards is not on target (Stater & Stater, 2019).

## 6. CONCLUSION

The aim of the paper is to investigate the relationship between training and rewards on employee productivity through job satisfaction from one of the largest mining companies in Balikpapan City. The results show that both training and rewards play a significant effect in increasing job satisfaction and productivity. Job satisfaction influences employee productivity insignificantly. What is striking from this paper is that job satisfaction has not played an optimal role as a mediating variable in bridging the connection between training and rewards on employee productivity. Training and rewards can directly increase employee job satisfaction and productivity. But, job satisfaction does not increase employee productivity. In an indirect relationship, job satisfaction has not been able to mediate training and rewards to increase employee productivity.

From these findings, it appears that employee productivity in the research object is not supported by conducive job satisfaction. Likewise with the mediating effect of job satisfaction in the relationship of training and rewards to employee productivity, where the results are contradictory. The main problem in this paper is job satisfaction. To break the chain of problems such as job satisfaction requires open acceptance between company superiors and employees and vice versa. Management decision makers can consider suggestions for future agendas. Reputable companies tend to feature programs such as comprehensive training and rewards. A good work atmosphere is a shared desire to generate positive attention, for example through rewards that are not only formal and emphasize monetary aspects, but also prioritize career continuity. Considering that the profession as a worker in the mining sector sometimes has an exclusive stigma, employees are faced with various complexities, especially in the production division. The heavy workload in the field can trigger relatively high levels of conflict. Apart from carrying out existing training, there must be a separation of training according to work. The qualifications possessed by employees are an important concern. Technically, it is possible for companies to adopt an apprenticeship program for candidate employees with the scheme of existing employees as trainers and new employees tasked with supervising. That way, companies can save costs. Training and rewards are also key in handling employee productivity issues. Productivity will be achieved if it is balanced with training and rewards that are in sync with each other. If one of the two components is marginalized or overlaps, it will be difficult for employees to

adapt to work responsibilities.

This paper is a valuable lesson for other studies that want to review the factors driving job satisfaction and employee productivity in similar companies and cases in other places. In the future, the hope based on the findings from the paper is not only to focus on training and rewards, but also other aspects. Job satisfaction can be a suitable mediation for employee productivity with the consideration that training and rewards must be carried out optimally. The weakness of this paper is that training competency and reward capacity are not optimal, so it does not guarantee employee happiness. Employees who feel happy will work with high loyalty. By building high loyalty, employees form a team spirit. Training and rewards that are carried out in an integrated manner provide a driving force for increasing employee job satisfaction and productivity. Moreover, future study directions could focus on the same divisions, thereby having insight into the entire company ecosystem. This is because the perceptions of respondents extracted using a Likert scale at different times, locations and work units can determine biased analysis results. Additional empirical work could verify the effectiveness of the method applied to different organizational settings. By highlighting the association relationships between variables intensively, it is possible for reliability and validity criteria to be met. By updating the test, it will also be seen whether there has been a shift in data quality or vice versa

By looking at existing trends, apart from contributing to the company's internal efforts, the findings can provide important lessons for external sustainability. Based on the spillover effects from mining exploration which have a social impact, PT Trubaindo Coal Mining is expected to take part more actively in CSR distribution with a focus on health, infrastructure, economic assistance and education for local residents.

## REFERENCES

- Abd, M. W., Mahmood, N. S., & Mohammed, T. Z. (2022). Incentives in achieving job satisfaction a study of a sample of employees working in the general directorate of education, Diyala Governorate. *Route Education and Social Science Journal*, 9(6), 380–402.  
<https://doi.org/10.17121/ressjournal.3303>
- Abdelwahed, N. A. A., & Al Doghan, M. A. (2023). Developing employee productivity and performance through work engagement and organizational factors in an educational society. *Societies*, 13(3), 65. <https://doi.org/10.3390/soc13030065>
- Abdi, H. (2010). Partial least squares regression and projection on latent structure regression (PLS regression). *WIREs Computational Statistics*, 2(1), 97–106. <https://doi.org/10.1002/wics.51>
- Akkermans, J., Tims, M., Beijer, S., & De Cuyper, N. (2019). Should employers invest in employability? examining employability as a mediator in the HRM - Commitment relationship. *Frontiers in Psychology*, 10, 717. <https://doi.org/10.3389/fpsyg.2019.00717>
- Al Ali, R. A. A. M., Md Yusoff, R., Ismail, F. B., & Kazi, A.G. (2018). The effect of training on employees' productivity in public organizations in U.A.E. *International Journal of Entrepreneurial Research*, 1(1), 15–18. <https://doi.org/10.31580/ijer.v1i1.135>
- Al Khawaldeh, E. D. (2023). The impact of training on improving employee performance: A case study on employees in the directorate of education of Ma'an District. *International Journal of Professional Business Review*, 8(10), e03520. <https://doi.org/10.26668/businessreview/2023.v8i10.3520>
- Alkandi, I. G., Khan, M. A., Fallatah, M., Alabdulhadi, A., Alanizan, S., & Alharbi, J. (2023). The impact of incentive and reward systems on employee performance in the Saudi primary, secondary, and tertiary industrial sectors: A mediating influence of employee job satisfaction. *Sustainability*, 15(4), 3415. <https://doi.org/10.3390/su15043415>
- Ali, W. (2016). Understanding the concept of job satisfaction, measurements, theories and its significance in the recent organizational environment: A theoretical framework. *Archives of Business Research*, 4(1), 100–111. <https://doi.org/10.14738/abr.41.1735>
- Alnsoura, A. S., & Kanaan, O. A. (2021). The effects of financial and non-financial incentives on job tenure. *Management Science Letters*, 11(3), 729–736. <https://doi.org/10.5267/j.msl.2020.10.036>
- Alrefaei, F. (2020). Job satisfaction: Analysis of the institute of public administration. *International Journal of Managerial Studies and Research*, 8(12), 80–83. <https://doi.org/10.20431/2349-0349.0812008>
- Aparna, A., & Ambikar, Y. V. (2023). Profitability from training and development programmes. *World Journal of Advanced Research and Reviews*, 19(1), 1166–1174.  
<https://doi.org/10.30574/wjar.2023.19.1.1445>
- Apridar, A., & Adamy, M. (2018). The effect of job satisfaction and work motivation on organizational commitment and organizational citizenship behavior in BNI in the working area of Bank Indonesia Lhokseumawe. *Proceedings of MICoMS 2017 (Emerald Reach Proceedings Series, Vol. 1)*, Emerald Publishing Limited, Leeds, pp. 1–5. <https://doi.org/10.1108/978-1-78756-793-1-00063>
- Aragón, M. I. B., Jiménez, D. J., & Valle, R. S. (2014). Training and performance: The mediating role of organizational learning. *BRQ Business Research Quarterly*, 17(3), 161–173.  
<https://doi.org/10.1016/j.cede.2013.05.003>
- Ariani, M., Hadiyatno, D., Tamara, D., Arraywibowo, I., & Yasmin, F. D. S. (2023). Employee performance: The role of compensation, motivation, and discipline as intervening in the era of the industrial revolution 4.0. *MIX: Jurnal Ilmiah Manajemen*, 13(3), 636–652.  
[http://dx.doi.org/10.22441/jurnal\\_mix.2023.v13i3.008](http://dx.doi.org/10.22441/jurnal_mix.2023.v13i3.008)
- Arnold, A. E., Coffeng, J. K., Boot, C. R. L., van der Beek, A. J., van Tulder, M. W., Nieboer, D., & van Dongen, J. M. (2016). The relationship between job satisfaction and productivity-related costs. *Journal of Occupational and Environmental Medicine*, 58(9), 874–879.  
<https://doi.org/10.1097/JOM.0000000000000831>

- Arraya, M., & Pellissier, R. (2013). Productivity measurement in a sports organization. *Southern African Business Review*, 17(1), 98–127. [https://www.researchgate.net/publication/256615370\\_Productivity\\_measurement\\_in\\_a\\_sports\\_organisation](https://www.researchgate.net/publication/256615370_Productivity_measurement_in_a_sports_organisation)
- Aziri, B. (2011). Job satisfaction: A literature review. *Management Research and Practice*, 3(4), 77–86. <https://mrp.ase.ro/no34/f7.pdf>
- Badrianto, Y., & Ekhsan, M. (2020). Effect of work environment and job satisfaction on employee performance in PT Nesinak Industries. *Journal of Business Management and Accounting*, 2(1), 85–91. <https://media.neliti.com/media/publications/322984-effect-of-work-environment-and-job-satis-76ff9018.pdf>
- Basir, N. M., & Wahjono, S. I. (2014). The effectiveness of training towards job satisfaction with job performance as a mediating variable at agricultural agency: Evidence from Malaysia. *Balance Economics, Bussines, Management and Accounting Journal*, 11(2), 51–62. <https://journal.um-surabaya.ac.id/balance/article/view/628>
- Bercu, A.-M. (2017). Impact of employees' training programmes on job satisfaction. *Current Science*, 112(7), 1340–1345. <https://doi.org/10.18520/cs/v112/i07/1340-1345>
- Böckerman, P., & Ilmakunnas, P. (2012). The job satisfaction-productivity nexus: A study using matched survey and register data. *ILR Review*, 65(2), 244–262. <https://doi.org/10.1177/001979391206500203>
- Carbonell, P., & Rodríguez-Escudero, A. I. (2016). The individual and joint effects of process control and process-based rewards on new product performance and job satisfaction. *BRQ Business Research Quarterly*, 19(1), 26–39. <https://doi.org/10.1016/j.brq.2015.04.001>
- Caudill, H. L., & Porter, C. D. (2014). An historical perspective of reward systems: Lessons learned from the scientific management era. *International Journal of Human Resource Studies*, 4(4), 127–142. <https://doi.org/10.5296/ijhrs.v4i4.6605>
- Caves, D. W., Christensen, L. R., & Diewert, W. E. (1982). Multilateral comparisons of output, input, and productivity using superlative index numbers. *The Economic Journal*, 92(365), 73–86. <https://doi.org/10.2307/2232257>
- Cayrat, C., & Boxall, P. (2023). The roles of the HR function: A systematic review of tensions, continuity and change. *Human Resource Management Review*, 33(4), 100984. <https://doi.org/10.1016/j.hmr.2023.100984>
- Chan, A. J., & Hooi, L. W. (2023). Rewards and recognition on employee motivation and employee performance: A study of a manufacturing company in Malaysia. *International Journal of Management Practice*, 16(3), 267–283. <https://doi.org/10.1504/IJMP.2023.130352>
- Chen, L., Li, H., Zhao, L., Tian, F., Tian, S., & Shao, J. (2022). The effect of job satisfaction regulating workload on miners' unsafe state. *Scientific Reports*, 12(1), 16375. <https://doi.org/10.1038/s41598-022-20673-y>
- Chen, S., Xu, K., & Yao, X. (2022). Empirical study of employee loyalty and satisfaction in the mining industry using structural equation modelling. *Scientific Reports*, 12(1), 1158. <https://doi.org/10.1038/s41598-022-05182-2>
- Chi, H., Vu, T.-V., Nguyen, H. V., & Truong, T. H. (2023). How financial and non-financial rewards moderate the relationships between transformational leadership, job satisfaction, and job performance. *Cogent Business & Management*, 10(1), 2173850. <https://doi.org/10.1080/23311975.2023.2173850>
- Daniel, C. O. (2019). Effects of incentives on employees productivity. *International Journal of Business Marketing and Management*, 4(1), 41–48. <https://www.ijbmm.com/paper/Jan2019/2129710494.pdf>
- Danish, R., & Usman, A. (2010). Impact of reward and recognition on job satisfaction and motivation: An empirical study from Pakistan. *International Journal of Business and Management*, 5(2), 159–167. <https://doi.org/10.5539/ijbm.v5n2p159>
- Depedri, S., Tortia, E. C., & Carpita, M. (2010). Incentives, job satisfaction and performance: Empirical evidence in Italian social enterprises. *Euricse Working Papers No. 012/10*. European Research Institute on Cooperative and Social Enterprises, Trento TN, Italia. <https://doi.org/10.2139/ssrn.1698598>

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- Diantari, A. A., & Putri, S. (2023). The effect of training and motivation on employee performance mediated by job satisfaction at the agriculture service of Tabanan District. *Jurnal Ekonomi dan Bisnis Jagaditha*, 10(1), 104–109. <https://doi.org/10.22225/jj.10.1.2023.104-109>
- Dou, S., Xu, D., & Keenan, R. J. (2023). Effect of income, industry structure and environmental regulation on the ecological impacts of mining: An analysis for Guangxi Province in China. *Journal of Cleaner Production*, 400, 136654. <https://doi.org/10.1016/j.jclepro.2023.136654>
- Egenius, S., Triatmanto, B., & Natsir, M. (2020). The effect of job satisfaction on employee performance through loyalty at credit union (CU) corporation of East Kutai District, East Kalimantan. *International Journal of Multicultural and Multireligious Understanding*, 7(10), 480–489. <http://dx.doi.org/10.18415/ijmmu.v7i10.1891>
- Eliyana, A., Ma'arif, S., & Muzakki, M. (2019). Job satisfaction and organizational commitment effect in the transformational leadership towards employee performance. *European Research on Management and Business Economics*, 25(3), 144–150. <https://doi.org/10.1016/j.iedeen.2019.05.001>
- Elnaga, A., & Imran, A. (2013). The effect of training on employee performance. *European Journal of Business and Management*, 5(4), 137–147. <https://core.ac.uk/download/pdf/234624593.pdf>
- Fareed, Z., Ul Abidan, Z., Shahzad, F., Umm-e-Amen, M., & Lodhi, R. N. (2013). The impact of rewards on employee's job performance and job satisfaction. *Management and Administrative Sciences Review*, 2(5), 431–442. [https://www.researchgate.net/publication/258081992\\_The\\_Impact\\_of\\_Rewards\\_on\\_Employee's\\_Job\\_Performance\\_and\\_Job\\_Satisfaction\\_By\\_Zeeshan\\_Fareed\\_Zain\\_Ul\\_Abidan\\_Farrukh\\_Shahzad\\_Umm-e-Amen\\_and\\_Rab\\_Nawaz\\_Lodhi](https://www.researchgate.net/publication/258081992_The_Impact_of_Rewards_on_Employee's_Job_Performance_and_Job_Satisfaction_By_Zeeshan_Fareed_Zain_Ul_Abidan_Farrukh_Shahzad_Umm-e-Amen_and_Rab_Nawaz_Lodhi)
- Fassoulis, K., & Alexopoulos, N. (2020). The workplace as a factor of job satisfaction and productivity: A case study of administrative personnel at the University of Athens. *Journal of Facilities Management*, 13(4), 332–349. <https://doi.org/10.1108/JFM-06-2014-0018>
- Fernández-Macias, E., & Muñoz de Bustillo Llorente, R. (2014). Job satisfaction. In: *Michalos, A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-0753-5\\_1568](https://doi.org/10.1007/978-94-007-0753-5_1568)
- Galaitis, S. E., Pinigina, E., Keisler, J. M., Pescaroli, G., Keenan, J. M., & Linkov, I. (2023). Business continuity management, operational resilience, and organizational resilience: Commonalities, distinctions, and synthesis. *International Journal of Disaster Risk Science*, 14(6), 713–721. <https://doi.org/10.1007/s13753-023-00494-x>
- Guan, T., Lin, Z., Groves, K., & Cao, J. (2022). Sparse functional partial least squares regression with a locally sparse slope function. *Statistics and Computing*, 32(2), 30. <https://doi.org/10.1007/s11222-021-10066-y>
- Gumasing, M. J. J., & Ilo, C. K. K. (2023). The impact of job satisfaction on creating a sustainable workplace: An empirical analysis of organizational commitment and lifestyle behaviour. *Sustainability*, 15(13), 10283. <https://doi.org/10.3390/su151310283>
- Gutiérrez Vargas, L. M., Alegre, J., & Pasamar, S. (2023). Explaining job satisfaction through the use of work–family benefits and their impact on the employee's family context. *International Journal of Manpower*, 44(9), 20–36. <https://doi.org/10.1108/IJM-01-2022-0055>
- Guzzo, R. A. (1979). Types of rewards, cognitions, and work motivation. *The Academy of Management Review*, 4(1), 75–86. <https://doi.org/10.2307/257405>
- Haddaway, N. R., Smith, A., Taylor, J. J., Andrews, C., Cooke, S. J., Nilsson, A. E., & Lesser, P. (2022). Evidence of the impacts of metal mining and the effectiveness of mining mitigation measures on social-ecological systems in Arctic and boreal regions: A systematic map. *Environmental Evidence*, 11(1), 30. <https://doi.org/10.1186/s13750-019-0152-8>
- Hadaitana, D., & Iqbal, M. A. (2023). The effect of training and development on employee performance with mediation of employee satisfaction. *International Journal of Advanced Multidisciplinary*, 1(4), 436–447. <https://doi.org/10.38035/ijam.v1i4.161>

- Hadi, L. (2023). The influence of workload and rewards on employee performance at the regional drinking water company in Depok city through job satisfaction as an intervening variable. *Journal of Law and Sustainable Development*, 11(12), e1857. <https://doi.org/10.55908/sdgs.v11i12.1857>
- Halilintar, R., & Sobirin, A. (2022). The influence of training and organizational commitment on employee performance through job satisfaction. *Selekta Manajemen: Jurnal Mahasiswa Bisnis & Manajemen*, 1(6), 1–22. <https://journal.uui.ac.id/selma/article/view/26507>
- Halkos, G., & Bousinakis, D. (2010). The effect of stress and satisfaction on productivity. *International Journal of Productivity and Performance Management*, 59(5), 415–431. <https://doi.org/10.1108/17410401011052869>
- Hanaysha, J. (2016a). Improving employee productivity through work engagement: Empirical evidence from higher education sector. *Management Science Letters*, 6(1), 61–70. <https://doi.org/10.5267/j.msl.2015.11.006>
- Hanaysha, J. (2016b). Testing the effects of employee empowerment, teamwork, and employee training on employee productivity in higher education sector. *International Journal of Learning and Development*, 6(1), 164–178. <https://doi.org/10.5296/ijld.v6i1.9200>
- Hanaysha, J., & Tahir, P. R. (2016). Examining the effects of employee empowerment, teamwork, and employee training on job satisfaction. *Procedia - Social and Behavioral Sciences*, 219, 272–282. <https://doi.org/10.1016/j.sbspro.2016.05.016>
- Hareendrakumar, V. R., Subramoniam, S., & Nizar Hussain, M. (2020). Redesigning rewards for improved fairness perception and loyalty. *Vision*, 24(4), 481–495. <https://doi.org/10.1177/0972262920946142>
- Haryadi, D., Prahiawan, W., Nupus, H., & Wahyudi, W. (2021). Transformational leadership, training, dan employee performance: Mediasi organizational citizenship behavior dan job satisfaction. *Ultima Management: Jurnal Ilmu Manajemen*, 13(2), 304–323. <https://doi.org/https://doi.org/10.31937/manajemen.v13i2.2311>
- Haron, H. I., & Khadijah, K. (2023). Effect of incentives on employees performance in the public sector, Ministry of Local Administration case- Study of Jordan. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, 18(1), 79–86. <https://www.riped-online.com/articles/effect-of-incentives-on-employees-performance-in-the-public-sector-ministry-of-local-administration-case-study-of-jordan.pdf>
- Hermanto, I. R., Widayari, L. A., & Darma, D. C. (2024). Digitalization impact on sustainable firm performance of small, medium, and large businesses. *Virtual Economics*, 7(1), 7–24. [https://doi.org/10.34021/ve.2024.07.01\(1\)](https://doi.org/10.34021/ve.2024.07.01(1))
- Hoboubi, N., Choobineh, A., Kamari Ghanavati, F., Keshavarzi, S., & Akbar Hosseini, A. (2017). The impact of job stress and job satisfaction on workforce productivity in an Iranian petrochemical industry. *Safety and Health at Work*, 8(1), 67–71. <https://doi.org/10.1016/j.shaw.2016.07.002>
- Hosen, S., Hamzah, S.R., Arif Ismail, I., Noormi Alias, S., Faiq Abd Aziz, M., & Rahman, M. M. (2023). Training & development, career development, and organizational commitment as the predictor of work performance. *Heliyon*, 10(1), e23903. <https://doi.org/10.1016/j.heliyon.2023.e23903>
- Hussain, S. D., Khaliq, A., Nisar, Q. A., Kamboh, A. Z., & Ali, S. (2019). Impact of employees' recognition, rewards and job stress on job performance: Mediating role of perceived organization support. *SEISENSE Journal of Management*, 2(2), 69–82. <https://doi.org/10.33215/sjom.v2i2.121>
- Ibrahim, I., & Abiddin, N. Z. (2023). The impact of incentives on employee productivity: Review of past literatures. *Journal of Business Administration Research*, 12(2), 19–28. <https://doi.org/10.5430/jbar.v12n2p19>
- Ibrar, M., & Khan, O. (2015). The impact of reward on employee performance: A case study of Malakand private school. *International Letters of Social and Humanistic Sciences*, 52, 95–103. <https://www.learntechlib.org/p/176708/>
- Ilies, R., & Judge, T. A. (2004). An experience-sampling measure of job satisfaction and its relationships with affectivity, mood at work, job beliefs, and general job satisfaction. *European Journal of Work and Organizational Psychology*, 13(3), 367–389. <https://doi.org/10.1080/13594320444000137>

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---

- Imran, A., Ahmad, S., Nisar, Q. A., & Ahmad, U. (2014). Exploring relationship among rewards, recognition and employees' job satisfaction: A descriptive study on libraries in Pakistan. *Middle-East Journal of Scientific Research*, 21(9), 1533–1540. <https://doi.org/10.5829/idosi.mejsr.2014.21.09.21720>
- Inayat, W., & Khan, M. J. (2021). A study of job satisfaction and its effect on the performance of employees working in private sector organizations, Peshawar. *Education Research International*, 2021(1), 1751495. <https://doi.org/10.1155/2021/1751495>
- Indrayani, I., Nurhatsiyah, N., Damsar, D., & Wibisono, C. (2024). How does millennial employee job satisfaction affect performance?. *Higher Education, Skills and Work-Based Learning*, 14(1), 22–40. <https://doi.org/10.1108/HESWBL-01-2023-0004>
- Ingsih, K., Riskawati, N., Prayitno, A., & Ali, S. (2021). The role of mediation on work satisfaction to work environment, training, and competency on employee performance. *Journal of Applied Management*, 19(3), 469–482. <http://dx.doi.org/10.21776/ub.jam.2021.019.03.02>
- Ismail, S. N., Ramli, A., & Aziz, H. A. (2021). Research trends in mining accidents study: A systematic literature review. *Safety Science*, 143, 105438. <https://doi.org/10.1016/j.ssci.2021.105438>
- Jabak, H. (2023). The effect of training & development on job satisfaction: The mediating effect of co-worker support. *Journal of Positive School Psychology*, 7(6), 379–386. <https://journalppw.com/index.php/jpsp/article/view/17009/10772>
- Janardhanan, S., & Raghavan, S. (2017). The influence of rewards in enhancing employee performance through psychological empowerment. *International Journal of Business and Management*, 1(2), 106–111. <https://doi.org/10.26666/rmp.ijbm.2017.2.16>
- Javed, M., Balouch, R., & Hassan, F. (2014). Determinants of job satisfaction and its impact on employee performance and turnover intentions. *International Journal of Learning & Development*, 4(2), 120–140. <https://doi.org/10.5296/ijld.v4i2.6094>
- Jehanzeb, K., & Bashir, N. A. (2013). Training and development program and its benefits to employee and organization: A conceptual study. *European Journal of Business and Management*, 5(2), 243–252. [https://www.researchgate.net/publication/274704136\\_Training\\_and\\_Development\\_Program\\_and\\_Its\\_Benefits\\_to\\_Employee\\_and\\_Organization\\_An\\_Conceptual\\_Study](https://www.researchgate.net/publication/274704136_Training_and_Development_Program_and_Its_Benefits_to_Employee_and_Organization_An_Conceptual_Study)
- Joewono, T. B., Rizki, M., & Syahputri, J. (2021). Does job satisfaction influence the productivity of ride-sourcing drivers? A hierarchical structural equation modelling approach for the case of Bandung City ride-sourcing drivers. *Sustainability*, 13(19), 10834. <https://doi.org/10.3390/su131910834>
- Juliadi, E., Syafri, M., & Hidayati, N. (2023). The effect of training and development on employee productivity in the digital age. *West Science Journal Economic and Entrepreneurship*, 1(10), 258–263. <https://doi.org/10.58812/wsjee.v1i10.289>
- Junaidi, A., Kustiawan, A., Busari, A., & Darma, D. C. (2024). Uncovering of productivity and wages: An evidence from Indonesia. *International Journal of Financial Management and Economics*, 7(2), 07–15. <https://doi.org/10.33545/26179210.2024.v7.i2.322>
- Kanapathipillai, K., & Azam, S. M. F. (2020). The impact of employee training programs on job performance and job satisfaction in the telecommunication companies in Malaysia. *European Journal of Human Resource Management Studies*, 4(3), 1–17. <http://dx.doi.org/10.46827/ejhrms.v4i3.857>
- Kashif, A. R., Shafiq, M., Tahir, A. H., Wahid, S., & Ahmed, S. (2020). Impact of on job training, training design and training delivery style on organizations performance. *Foundation University Journal of Business & Economics*, 5(2), 31–41. <https://doi.org/10.33897/fujbe.v5i2.444>
- Kosteas, V. D. (2023). Job satisfaction and employer-sponsored training. *British Journal of Industrial Relations*, 61(4), 771–795. <https://doi.org/10.1111/bjir.12741>
- Kowalski, K. B., Aruldoss, A., Gurumurthy, B., & Parayitam, S. (2022). Work-from-home productivity and job satisfaction: A double-layered moderated mediation model. *Sustainability*, 14(18), 11179. <https://doi.org/10.3390/su141811179>



- Kumar, T. S., Rao, S. K., Chakravarty, H., Thyagaraju, N., & Soman, S. M. (2023). Examining the effect of training and development programs on employee productivity and organizational success. *Journal of Survey in Fisheries Sciences*, 10(1S), 6255–6267. <https://sifisheriessciences.com/journal/index.php/journal/article/view/2130/2194>
- Landa, E. (2018). Influence of training on employees performance in public institution in Tanzania. *International Journal of Human Resource Studies*, 8(2), 324–336. <https://doi.org/10.5296/ijhrs.v8i2.13136>
- Lee, M., & Kim, B. (2023). Effect of employee experience on organizational commitment: Case of South Korea. *Behavioral Sciences*, 13(7), 521. <https://doi.org/10.3390/bs13070521>
- Liu, W., & Liu, Y. (2022). The impact of incentives on job performance, business cycle, and population health in emerging economies. *Frontiers in Public Health*, 9, 778101. <https://doi.org/10.3389/fpubh.2021.778101>
- Mangkunegara, A. P., & Waris, A. (2016). Effect of training, competence and discipline on employee performance in company (case study in PT Asuransi Bangun Askrida). *Procedia - Social and Behavioral Sciences*, 211, 1240–1251. <https://doi.org/10.1016/j.sbspro.2015.11.165>
- Manzoor, F., Wei, L., & Asif, M. (2021). Intrinsic rewards and employee's performance with the mediating mechanism of employee's motivation. *Frontiers in Psychology*, 12, 563070. <https://doi.org/10.3389/fpsyg.2021.563070>
- Marin, R. (2021). Rewards management in organizations: A retrospective on what organizations have set out and achieved in order to identify future actions. *Journal of Organizational Management Studies*, 2021, 642473. <https://doi.org/10.5171/2021.642473>
- Masadeh, M. (2012). Training, education, development and learning: What is the difference?. *European Scientific Journal*, 8(10), 62–68. [https://www.researchgate.net/publication/279480522\\_TRAINING\\_EDUCATION\\_DEVELOPMENT\\_AND\\_LEARNING\\_WHAT\\_IS\\_THE\\_DIFFERENCE](https://www.researchgate.net/publication/279480522_TRAINING_EDUCATION_DEVELOPMENT_AND_LEARNING_WHAT_IS_THE_DIFFERENCE)
- Memon, A. H., Khahro, S. H., Memon, N. A., Memon, Z. A., & Mustafa, A. (2023). Relationship between job satisfaction and employee performance in the construction industry of Pakistan. *Sustainability*, 15(11), 8699. <https://doi.org/10.3390/su15118699>
- Mercanoğlu, A. O., & Şimşek, K. Y. (2023). The impact of employee recreation on their respective productivity. *SAGE Open*, 13(3), 1–15. <https://doi.org/10.1177/21582440231196967>
- Mercy, E. U., Imhonopi, D., Jegede, A. E., Mercy, O. I., Isibor, A., & Olawale, O. Y. (2021). Reward system: A strategy for academics job satisfaction and retention. *Academy of Strategic Management Journal*, 20(5), 1–8. <https://www.abacademies.org/articles/Reward-system-a-strategy-for-academics-job-satisfaction-and-retention-1939-6104-20-S5-073.pdf>
- Milhem, W., Abushamsieh, K., & Pérez-Aróstegui, M. N. (2014). Training strategies, theories and types. *Journal of Accounting, Business and Management*, 21(1), 12–26. <https://journal.stie-mce.ac.id/index.php/jabminternasional/article/view/178>
- Montuori, P., Sorrentino, M., Samacchiaro, P., Di Duca, F., Nardo, A., Ferrante, B., D'Angelo, D., Di Sarno, S., Pennino, F., Masucci, A., Triassi, M., & Nardone, A. (2022). Job satisfaction: Knowledge, attitudes, and practices analysis in a well-educated population. *International Journal of Environmental Research and Public Health*, 19(21), 14214. <https://doi.org/10.3390/ijerph192114214>
- Munir, R., Lodhi, M. E., Sabir, H. M., & Khan, N. (2016). Impact of rewards (intrinsic and extrinsic) on employee performance with special reference to courier companies of Faisalabad City. *European Journal of Business and Management*, 8(25), 88–97. <https://core.ac.uk/download/pdf/234627487.pdf>
- Muthuswamy, V. V., & Almoosa, O. A. (2023). Impact of rewarding and recognition on job satisfaction. *Przeźrzenie Społeczna*, 23(1), 120–147. <https://socialspacejournal.eu/menu-script/index.php/ssj/article/view/165>
- Nauman, S., Bhatti, S., Jalil, F., & Bint E. Riaz, M. (2020). How training at work influences employees' job satisfaction: Roles of affective commitment and job performance. *International Journal of Training Research*, 19(1), 61–76. <https://doi.org/10.1080/14480220.2020.1864444>

With job satisfaction or not? The role of job satisfaction in the relationship between training and rewards on employee productivity

- Navale, D. S. (2018). The impact of job satisfaction on job performance an empirical analysis. *International Journal of Yogic, Human Movement and Sports Sciences*, 3(1), 709–711. Retrieved from <https://www.theyogicjournal.com/pdf/2018/vol3issue1/PartM/3-1-143-652.pdf>
- Ngan, V. H., & Duyen, D. T. H. (2017). Human resources training effectiveness of enterprises in the digital content industry in Vietnam. *Management & Prospective*, 34(3), 19–46. <https://doi.org/10.3917/g2000.343.0019>
- Nie, B., Du, Y., Du, J., Rao, Y., Zhang, Y., Zheng, X., Ye, N., & Jin, H. (2023). A novel regression method: Partial least distance square regression methodology. *Chemometrics and Intelligent Laboratory Systems*, 237, 104827. <https://doi.org/10.1016/j.chemolab.2023.104827>
- Niguse, G. T., & Getachew, H. (2019). The effect of reward system on employee creativity. *Journal of Higher Education Service Science and Management*, 2(1), 1–20. <https://www.joherd.com/journals/index.php/JoHESM/article/view/12/7>
- Noorazem, N. A., Sabri, S. M., & Nazir, E. N. M. (2021). The effects of reward system on employee performance. *Jurnal Intelek*, 16(1), 40–51. <https://myjms.mohe.gov.my/index.php/intelek/article/view/15947>
- Nuhu, M. S., Salisu, F. B., Abubakar, S. L., & Abdullahi, M. S. (2018). Effects of training on job satisfaction among academic staff of Bayero University, Kano Nigeria. *Noble International Journal of Social Sciences Research*, 3(11), 90–96. [https://www.researchgate.net/publication/332843202\\_Effects\\_of\\_Training\\_on\\_Job\\_Satisfaction\\_among\\_Academic\\_Staff\\_of\\_Bayero\\_University\\_Kano\\_Nigeria](https://www.researchgate.net/publication/332843202_Effects_of_Training_on_Job_Satisfaction_among_Academic_Staff_of_Bayero_University_Kano_Nigeria)
- Ogunmakin, A. A. (2023). Effect of financial incentives on employee morale and motivation of small and medium scale enterprises in Ekiti State. *American Journal of Industrial and Business Management*, 13(6), 465–484. <https://doi.org/10.4236/ajibm.2023.136030>
- Okoye, P. V. C., & Ezejiofor, R. A. (2013). Effect of human resource development on organizational productivity. *International Journal of Academic Research in Business and Social Sciences*, 3(10), 250–268. <http://dx.doi.org/10.6007/IJARBS/v3-i10/295>
- Polo, F., Cervai, S., & Kantola, J. (2018). Training culture: A new conceptualization to capture values and meanings of training in organizations. *Journal of Workplace Learning*, 30(3), 162–173. <https://doi.org/10.1108/JWL-01-2018-0024>
- Rachman, M. M. (2021). The impact of work stress and the work environment in the organization: How job satisfaction affects employee performance?. *Journal of Human Resource and Sustainability Studies*, 9(2), 337–354. <https://doi.org/10.4236/jhrss.2021.92021>
- Robinson, M., & Farkas, M. (2021). The effect of monetary incentives on task attractiveness, effort and performance. *Journal of Applied Accounting Research*, 22(5), 761–779. <https://doi.org/10.1108/JAAR-01-2021-0018>
- Saeed, O. A., & Waghule, S. N. (2021). Exploring the association between job satisfaction and productivity: Empirical evidence from India. *Studies in Economics and Business Relations*, 2(1), 60–71. <https://doi.org/10.48185/sebr.v2i1.301>
- Sapra, R. L. (2022). How to calculate an adequate sample size?. In: *How to Practice Academic Medicine and Publish from Developing Countries?*. Springer, Singapore. [https://doi.org/10.1007/978-981-16-5248-6\\_9](https://doi.org/10.1007/978-981-16-5248-6_9)
- Schraeder, M., & Bret, B. J. (2003). An overview of recent trends in incentive pay programs. *The Coastal Business Journal*, 2(1), 18–27. <https://digitalcommons.coastal.edu/cbj/vol2/iss1/3>
- Šebestová, J. D., & Popescu, C. R. G. (2022). Factors influencing investments into human resources to support company performance. *Journal of Risk and Financial Management*, 15(1), 19. <https://doi.org/10.3390/jrfm15010019>
- Sendawula, K., Kimuli, S. N., Bananuka, J., & Muganga, G. N. (2018). Training, employee engagement and employee performance: Evidence from Uganda's health sector. *Cogent Business & Management*, 5(1), 1470891. <https://doi.org/10.1080/23311975.2018.1470891>

- Sesen, H., & Ertan, S. S. (2022). The effect of the employee perceived training on job satisfaction: The mediating role of workplace stress. *European Journal of Training and Development*, 46(9), 953–973. <https://doi.org/10.1108/EJTD-01-2021-0014>
- Seol, J., Lim, N., Nagata, K., & Okura, T. (2023). Effects of home-based manual dexterity training on cognitive function among older adults: A randomized controlled trial. *European Review of Aging and Physical Activity*, 20(1), 9. <https://doi.org/10.1186/s11556-023-00319-2>
- Sgarbossa, F., Glock, C. H., Grosse, E. H., Calzavara, M., & de Koster, R. (2022). The impact of monetary incentives and regulatory focus on worker productivity and learning in order picking. *International Journal of Operations & Production Management*, 42(11), 1793–1816. <https://doi.org/10.1108/IJOPM-11-2021-0730>
- Shafagatova, A., Van Looy, A., & Shamasbi, S. M. (2023). Uncovering the combined impact of process characteristics and reward types on employees' job satisfaction: A European quantitative study. *SAGE Open*, 13(1), 21582440231. <https://doi.org/10.1177/21582440231160125>
- Singh, S., & Chaudhary, N. (2022). Employee productivity: An analysis of dimensions and methodology through systematic literature review. *Empirical Economics Letters*, 21(4), 183–204. [https://www.researchgate.net/publication/363919302\\_Employee\\_Productivity\\_An\\_Analysis\\_of\\_Dimensions\\_and\\_Methodology\\_through\\_Systematic\\_Literature\\_Review](https://www.researchgate.net/publication/363919302_Employee_Productivity_An_Analysis_of_Dimensions_and_Methodology_through_Systematic_Literature_Review)
- Sitorus, S. L., & Hidayat, A. (2020). The effect of compensation and job satisfaction on employee productivity. *Journal of International Conference Proceedings*, 6(4), 12–24. <https://doi.org/10.32535/jicp.v6i4.2608>
- Škuflić, L., & Družić, M. (2016). Deindustrialisation and productivity in the EU. *Economic Research-Ekonomska Istraživanja*, 29(1), 991–1002. <http://dx.doi.org/10.1080/1331677X.2016.1235505>
- Škuflić, L., Mlinarić, D., & Družić, M. (2018). Determinants of construction sector profitability in Croatia. *Zbornik radova Ekonomskog fakulteta u Rijeci*, 36(1), 337–354. <https://doi.org/10.18045/zbefri.2018.1.337>
- Srija, A., & Sanghi, S. (2018). Skill development and productivity of the workforce. *Working Papers ID: 12788*. eSocialSciences. <https://digitalcommons.unl.edu/qicwdtips/4/>
- Stater, K.J., Stater, M. (2019). Is it “just work”? The impact of work rewards on job satisfaction and turnover intent in the nonprofit, for-profit, and public sectors. *The American Review of Public Administration*, 49(4), 495–511. <https://doi.org/10.1177/0275074018815261>
- Suryaputra, N. (2023). Impact analysis of work environment mediated by job satisfaction on employee performance (case study Asuransi Siap). *International Journal of Current Science Research and Review*, 6(4), 2612–2631. <https://ijcsrr.org/single-view/?id=10119&pid=9853>
- Suryani, N. K., Santanu, G., & Karwini, N. K. (2023). Enhancing employee retention in the education sector: The role of training and satisfaction. *Jurnal Siasat Bisnis*, 27(2), 208–218. <https://doi.org/10.20885/jsb.vol27.iss2.art6>
- Syahrani, S. (2021). Determining employee performance and work satisfaction dimensionals in multi-finance company using structural equation model approach. *International Journal of Science, Technology & Management*, 2(4), 1346–1352. <https://doi.org/10.46729/ijstm.v2i4.257>
- Syarief, T. A., Falih, S., & Windijarto, W. (2019). The effect of non-financial compensation on work productivity through work satisfaction as intervening variable in employees of regional government business agency of East Java Province: A study at PT Kasa Husada Wira Jawa Timur. *Russian Journal of Agricultural and Socio-Economic Sciences*, 4(88), 12–18. <https://doi.org/10.18551/rjoas.2019-03.02>
- Sypniewska, B., Baran, M., & Klos, M. (2023). Work engagement and employee satisfaction in the practice of sustainable human resource management – Based on the study of Polish employees. *International Entrepreneurship and Management Journal*, 19(3), 1069–1100. <https://doi.org/10.1007/s11365-023-00834-9>

With job satisfaction or not? The role of job satisfaction in the relationship between training and rewards on employee productivity

- Subramony, M., Guthrie, J. P., & Dooney, J. (2020). Investing in HR? Human resource function investments and labor productivity in US organizations. *The International Journal of Human Resource Management*, 32(2), 307–330. <https://doi.org/10.1080/09585192.2020.1783343>
- Suherman, J., Fauziah, A. L., Wahyuningrum, S. A. N., Nurpadilah, S. T., & Wahyuni, W. D. (2023). Effect of reward, punishment and performance on work satisfaction at gojek drivers (go ride drivers) in Bandung. *Baltic Journal of Law & Politics*, 16(3), 1698–1709. <https://doi.org/10.2478/bjlp-2023-00000140>
- Tarigan, J., Cahya, J., Valentine, A., Hatane, S., & Jie, F. (2022). Total reward system, job satisfaction and employee productivity on company financial performance: Evidence from Indonesian generation Z workers. *Journal of Asia Business Studies*, 16(6), 1041–1065. <https://doi.org/10.1108/JABS-04-2021-0154>
- Tasios, T., & Giannouli, V. (2017). Job descriptive index (JDI): Reliability and validity study in Greece. *Archives of Assessment Psychology*, 7(1), 31–61. <https://www.assessmentpsychologyboard.org/journal/index.php/AAP/article/view/109>
- Terera, S. R., & Ngirande, H. (2014). The impact of rewards on job satisfaction and employee retention. *Mediterranean Journal of Social Sciences*, 5(1), 481–487. <https://doi.org/10.5901/mjss.2014.v5n1p481>
- Tetteh, K. I., Fentim, D. B., & Dorothy, A-A. (2015). The relationship between employees' incentives and performance at Ghana oil company limited in the Southern Zone of Ghana. *Advances in Social Sciences Research Journal*, 2(2), 229–238. <https://doi.org/10.14738/assrj.22.952>
- Toha, G., & Devy, S. D. (2017). Hydrogeology premining coal blocks 28, 29, 30 PT. Trubaindo Coal Mining Damai District, West Kutai Regency, East Borneo Province. *Jurnal Teknologi Mineral FT UNMUL*, 5(2), 23–28. <https://core.ac.uk/download/pdf/268075188.pdf>
- Triyanto, T. (2023). Profil PT Trubaindo Coal Mining, perusahaan tambang batu bara di Indonesia. <https://www.mininginsider.id/education/10278975518/profil-pt-trubaindo-coal-mining-perusahaan-tambang-batu-bara-di-indonesia>
- Uka, A., & Prendi, A. (2023). Motivation as an indicator of performance and productivity from the perspective of employees. *Management & Marketing*, 16(3), 268–285. <https://doi.org/10.2478/mmcks-2021-0016>
- Ur Rehman, M. z., Khan, M. R., Ziauddin, Z., & Lashari, J. A. (2010). Effect of job rewards on job satisfaction, moderating role of age differences: An empirical evidence from Pakistan. *African Journal of Business Management*, 4(6), 1131–1139. <https://doi.org/10.5897/AJBM.9000238>
- Utami, P. P. H., Widiatna, A. D., Ariani, A., & Karyati, F. (2020). Job satisfaction and work productivity: An empirical approach. *Systematic Reviews in Pharmacy*, 11(12), 1243–1249. Retrieved from <https://www.sysrevpharm.org/articles/job-satisfaction-and-work-productivity-an-empirical-approach.pdf>
- van der Voordt, T., & Jensen, P. A. (2023). The impact of healthy workplaces on employee satisfaction, productivity and costs. *Journal of Corporate Real Estate*, 25(1), 29–49. <https://doi.org/10.1108/JCRE-03-2021-0012>
- Vuchkovski, D., Zalaznik, M., Mitreĝa, M., & Pfajfar, G. (2023). A look at the future of work: The digital transformation of teams from conventional to virtual. *Journal of Business Research*, 163, 113912. <https://doi.org/10.1016/j.jbusres.2023.113912>
- Wang, T. K., & Brower, R. (2019). Job satisfaction among federal employees: The role of employee interaction with work environment. *Public Personnel Management*, 48(1), 3–26. <https://doi.org/10.1177/0091026018782999>
- White, N. M. (2011). Reward: what is it? How can it be inferred from behavior?. In *J. A. Gottfried (Ed.), Neurobiology of Sensation and Reward*. CRC Press/Taylor & Francis. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK92792/#:~:text=In%20everyday%20use%20the%20word,is%20contingent%20on%20the%20behavior>
- World Bank. (2013). Mining: Sector results profile. <https://www.worldbank.org/en/results/2013/04/14/mining-results-profile>

- Winarno, T., Ali, R. K., & Langit, W. R. (2020). Potential of acid mine formation in PIT 3000, Toraja Block, PT Trubaindo Coal Mining based on geochemical and mineralogical characteristics study of overburden and underburden rocks. *Jurnal Presipitasi: Media Komunikasi dan Pengembangan Teknik Lingkungan*, 17(1), 52–61. <https://doi.org/10.14710/presipitasi.v17i1.52-61>
- Yimam, M. H. (2022). Impact of training on employees performance: A case study of Bahir Dar University, Ethiopia. *Cogent Education*, 9(1), 2107301. <https://doi.org/10.1080/2331186X.2022.2107301>
- Zhenjing, G., Chupradit, S., Ku, K. Y., Nassani, A. A., & Haffar, M. (2022). Impact of employees' workplace environment on employees' performance: A multi-mediation model. *Frontiers in Public Health*, 10, 890400. <https://doi.org/10.3389/fpubh.2022.890400>
- Zirar, A., Ali, S. I., & Islam, N. (2023). Worker and workplace artificial intelligence (AI) coexistence: Emerging themes and research agenda. *Technovation*, 124, 102747. <https://doi.org/10.1016/j.technovation.2023.102747>

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