

THE RELATIONSHIP BETWEEN JOB SATISFACTION AND EMPLOYEE MOTIVATION: AN EXAMINATION WITH META ANALYSIS METHOD

*Hüseyin Çiçeklioğlu (Orcid ID: 0000-0003-3922-6755)

**Ayşe Meriç Yazıcı¹ (Orcid ID: 0000-0001-6769-2599)

***Gökçe Akdemir Ömür (Orcid ID: 0000-0002-5327-8474)

*Osmaniye Korkut Ata University, Osmaniye/Türkiye

**Istanbul Gelişim University, Türkiye

***Istanbul University, Türkiye

ABSTRACT

In this study, the meta-analysis method was used to determine the relationship between job satisfaction and employee motivation. Within the scope of the purpose of the study, 12 studies that met the criteria in 25 empirical studies were identified and included in the meta-analysis. The analyses of the study were carried out with CMA 13 software (Comprehensive Meta Analysis 13.0). As a result of the meta-analysis performed with fixed effect model ($Z=25,71$; $p<0,05$) and random effect model ($Z=7,77$; $p<0,05$) to determine the relationship between job satisfaction and employee motivation, it was determined that the relationship between job satisfaction and employee motivation was statistically significant. According to the results of the Egger test in the studies examining the relationship between job satisfaction and employee motivation, it was determined that there was no effect of publication bias in the studies included in the research (Egger=4,631; $t=1,135$; $p>0,05$). This study's originality stems from its methodological sophistication, comprehensive scope, theoretical integration, and practical applicability. It advances the understanding of the intricate dynamics between job satisfaction and employee motivation, offering valuable insights for future research and organizational practice.

Keywords: Job Satisfaction, Employee Motivation, Systematic Review, Meta Analysis

INTRODUCTION

With globalization, competition is increasing rapidly in today's business world, and organizations are trying to make themselves stronger against rival organizations and gain sustainable competitive advantage with both the workforce components they have and the goods and services they offer. The most important part of these components is human resources. In other words, it is the employees of the organization who reveal, mobilize and share the concepts covered with dynamism such as innovation, creativity, entrepreneurship, talent, energy, and knowledge that are necessary for organizations. Anning-Dorson (2021) states that these elements are devoted through human resources within the organization and that they develop depending on the motivation provided by the organizational culture and prepare the way that leads organizations to success. In this context, organizations need to positively affect the attitudes and behaviors of employees to achieve targeted organizational success. No matter how unlimited the resources that organizations have, if they do not have a human resource that can coordinate and direct these resources in line with the objectives, these resources will not go beyond being idle capacity. Therefore, human resources should be seen as a serious investment element for organizations and should be continuously developed for organizations to achieve the targeted success.

Organizations that have the aim of ensuring profit maximization by maintaining their long-term existence and achieving sustainable competitive advantage need not only employees who fulfill the tasks expressed in their official job descriptions but also employees who can exhibit extra-role behaviors (Sohail et al., 2014). In today's competitive conditions, employees fulfilling only their role definitions and not exhibiting

¹ Corresponding author

extra-role behaviors leave them inadequate in line with the sustainable goals of organizations (Lent and Brown, 2006).

Warma (2017) states that all successful organizations are supported by a group of employees who are committed to them, and this commitment manifests itself as motivation and job satisfaction. The elements that organizations offer to their employees at the point of motivation and job satisfaction increase the performance, effectiveness, and efficiency of employees, while at the same time strengthening their belonging to the organization (Solhail et al., 2014). The ability of organizations to achieve their purpose of existence, to achieve the desired cyclical success, and to survive in today's industrial world where the intensity of competition is increasing directly depends on quality of their human resources. In other words, various factors such as the productivity and efficiency of organizations, their competitiveness, the quality of the products and services they offer depend on the skills, expertise, knowledge, motivation, and satisfaction of the human factor that uses the physical resources of the organizations (Mohammadabadi et al., 2013).

Motivation is a psychological process that helps to explain human behavior (Skaalvik and Skaalvik, 2017), as well as a concept that addresses the issues of providing information about individuals' expectations, wants and needs, goals, behaviors, and individual performances (Ahlstedt et al., 2023), as well as concepts such as purpose, desire, expectation, tendency, choice, preference, satisfaction and desire (Collie, 2023). Motivation is the desire of individuals for something at a level to take action to fulfill their wishes, expectations, and needs. For this reason, individuals need to go through various processes to be motivated, that is, to take action. These processes consist of four stages: need, arousal, behavior, and satisfaction (Uka and Prendi, 2021).

Employee motivation has always been considered a problem for leaders and managers from past to present. It is stated that employees with little or no motivation are likely to put little or no effort into their activities, try to avoid the organization as much as possible, produce low-quality work, and leave the organization whenever they have the opportunity (Ganta, 2014). Each employee has a different character trait. For this reason, the expectations, goals, and value judgments of employees from their workplace and work are different from each other. Therefore, the same motivational elements or the same conditions will not bring the desired success for all employees. In today's constantly changing conditions, ensuring employee satisfaction and motivation has become a common problem for organizations. According to Afif (2023), to ensure job satisfaction and motivation of employees, situational approaches should be taken into consideration, and variables related to the job, individual and system should not be ignored.

The theoretical foundations of job satisfaction were laid by Maslow's 'Hierarchical Theory of Human Needs' and Herzberg's 'Dual Factor Theory'. Locke (1976) defined satisfaction as a positive or pleasurable state that emerges as a result of individuals' evaluation of their work and work-related experiences' (Thangaswamy and Thiyagaraj, 2017). The concept of job satisfaction, which can be defined as the positive feelings that employees have towards their jobs, has been the subject of various research for many years. In addition to the assumption that high job satisfaction of individuals reveals high job performance (Zalewska, 1999), it is assumed that dissatisfaction hurts employee performance (Herliana et al., 2021).

While job satisfaction refers to the positive psychological states that enable individuals to do their jobs willingly as a result of their positive experiences towards work (Zehir et al., 2011; Çağlar, 2012; Karsikah et al., 2023), motivation is expressed by the concepts of motivation and motivation. To realize this motivation, a psychological or physiological need of individuals must be met (Bushi, 2021). In this direction, determining the factors that reveal job satisfaction gives clues to managers and leaders about the processes and enables the development of correct and effective motivation strategies.

The attitudes and behaviors of individuals within the organization have a significant impact on the overall performance of the organization. In the related literature, job satisfaction and motivation concepts are among the most discussed issues among the success factors arising from individual attitudes and behaviors. For this reason, job satisfaction and motivation concepts cannot be considered separately from each other and are considered phenomena that complement each other and interact with each other (Ayub and Rafif, 2011). Lambrou et al. (2010) stated that the concepts of motivation and job satisfaction act in coordination to increase the performance of individuals towards work, while Köse et al. (2013) stated that job satisfaction is effective on individuals' work motivation, while work motivation is effective on job satisfaction. Therefore, it can be interpreted that job satisfaction is a part of motivation processes (Ahmed, 2011) and

job satisfaction is achieved when employees are motivated to do work of their own volition (Hussain et al., 2012). Likewise, Lambrou et al., 2010; Maharjan, 2012; Shah, 2015; Pancasila, 2020; Pananrangi, 2020; Ha, 2020 found that there are significant relationships between motivation and job satisfaction in their study examining the possible effects of motivators on job satisfaction.

METHOD

In this study, the meta-analysis method was used to determine the relationship between job satisfaction and employee motivation. Meta-analysis can be described as one of the systematic synthesis methods and can be defined as the analysis of analyses that bring together the findings of surveys, correlational studies, experimental and quasi-experimental studies conducted on the same subject at various times and places and predict using quantitative techniques with larger samples and strong quantitative data (Shin, 2015; McKenzie et al., 2016; Ahn and Kang, 2018).

Within the scope of the purpose of the study, a systematic search was conducted on 'scholar.google' to reveal the studies to be included in the study. To find relevant studies, the keywords ['job satisfaction' AND 'motivation'] were used in the time interval after 2021. In the 25 empirical studies reached as a result of the search, the presence of 'correlation coefficient, sample size' or 'effect size' values, addressing the concept of motivation only in the context of 'work motivation', being an article and empirical study were determined as inclusion criteria. In the analyzed studies, correlation relationship with variables outside the scope of 'motivation to leave, academic motivation, etc.', theses, congress papers, literature reviews, or bibliometric method (non-empirical) were determined as exclusion criteria. Twelve studies that met the criteria were identified and included in the meta-analysis."

ANALYSING THE DATA

The analyses in this study were conducted using the Comprehensive Meta Analysis software (CMA, version 13.0). To evaluate the relationship between job satisfaction and employee motivation, pooled correlation coefficients, Fisher's Z transformation, Z statistics, and p-values were utilized. A significance threshold of $p < 0.05$ was adopted for all analyses. Prior to conducting the meta-analysis, checks for homogeneity and heterogeneity were performed. In cases where the included studies demonstrate homogeneity, similar weights are assigned to the studies, and a fixed-effects model is applied. Conversely, if heterogeneity is observed, adjustments are made to balance study weights, necessitating the use of a random-effects model. To determine the appropriate model, the Q statistic and I^2 statistic were employed as measures of homogeneity. A significant Q statistic ($p < 0.05$) combined with an I^2 value exceeding 74% indicates substantial variability, suggesting heterogeneity (Borenstein et al., 2019).

To assess the potential bias in the obtained results, several tests were applied, including Egger's regression intercept, Duval and Tweedie's trim and fill, Begg and Mazumdar's rank correlation, Rosenthal's classic fail-safe N, and Orwin's fail-safe N tests. The Egger test evaluates bias by analyzing the relationship between precision and the standardized effect size. If the t-value of the Egger statistic is not significant ($p > 0.05$), it suggests that publication bias is not present. Duval and Tweedie's trim-and-fill method, designed to identify missing studies and estimate their influence on the meta-analysis, showed no discrepancy between observed and adjusted values (difference = 0), and no missing studies were detected, indicating that potential missing studies do not affect the meta-analysis outcomes. Similarly, Kendall's tau- b test, which examines whether the number of included studies influences the pooled correlation coefficient, found that a non-significant Z statistic ($p > 0.05$) means the results are robust and not affected by the number of studies. Finally, Rosenthal's classic fail-safe N test calculates how many additional studies would be required to nullify the observed effect size. This test determines the minimum number of studies needed to render the pooled correlation coefficient insignificant, alongside their respective critical and average correlation values (Borenstein et al., 2010).

FINDINGS

Descriptive Findings

The studies and sample numbers utilized in the research are shown in Table 1.

Table 1. Information about the Studies Included in the Study

Study Name	n	r
1-Mnyani et al. 2023	77	0,695
2-Thabetha&Munyeka 2023	124	0,617
3-Alanizan 2023	84	0,760
4-Grigoraş et al. 2023	150	0,698
5-Hussain et al. 2023	310	0,452
6-Sheraz et al. 2021	206	0,318
7-Aziz et al. 2022	194	0,432
8-Ibironke et al 2023	94	0,554
9-Genelza&Dequito 2022	132	0,842
10-Eğriboyun 2022	100	0,125
11-Barmanpek 2022	127	0,350
12-Yıldırım&Tengilimoğlu 2022	338	0,502
TOTAL	1936	0,528

Twelve studies examined the relationship between job satisfaction and employee motivation and 1936 samples in these studies were included in the analysis and the average correlation was determined as 0.528. The heterogeneity/homogeneity test results regarding which model will be used in the meta-analysis are shown in Table 2.

META ANALYSIS FINDINGS

Model Selection

The heterogeneity and homogeneity control Q and I^2 test results of the studies included in the research are given.

Table 2. The Results for Determining the Appropriate Model

		Value	df	SE / Variance	p	Result	Model
Test	Q	132,107	11		0,000	Heterogeneous	Random effect
	I^2	91,673	-		-	Heterogeneous	Random effect
	Tau^2 / Tau	0,071 / 0,267	-	0,071 / 0,036	-	Heterogeneous	Random effect

According to the Q ($Q=132,11$; $p<0,01$) and I^2 ($I^2=91,67>75$) tests for heterogeneity/homogeneity control of the studies included in the study, it was determined that there was a high level of variance (heterogeneity), so it was seen that it was appropriate to use the random effect model. Considering the expected value of the study weights included in the study ($100/12=8,333$), it was determined that the study weights were far from the expected value in the fixed effect model (between 3,89% and 16,16%), whereas the study weights were close to the expected value and more evenly distributed (between 7,77% and 8,87%) in the random effect model (Table 2; Figure 1).

META ANALYSIS RESULTS OF THE RELATIONSHIP BETWEEN JOB SATISFACTION AND EMPLOYEE MOTIVATION

Table 3 presents the meta-analysis results of the relationship between job satisfaction and employee motivation.

Table 3. Meta Analysis Results of the Relationship between Job Satisfaction and Employee Motivation

Model	Fixed Effect	Random Effect
N	1091	1091
r	0,530	0,558
r (Lower Limit)	0,497	0,439
r (Upper Limit)	0,561	0,658
Fisher's Z	0,590	0,630
SE	0,023	00081
Variance	0,001	0,007
Fisher's Z (Lower Limit)	0,545	0,471
Fisher's Z (Upper Limit)	0,635	0,789
Z	25,708	7,769
p	0,000	0,000

As a result of the meta-analysis performed with fixed effect model ($Z=25,71$; $p<0,05$) and random effect model ($Z=7,77$; $p<0,05$) to determine the relationship between job satisfaction and employee motivation, it was determined that the relationship between job satisfaction and employee motivation was statistically significant. According to the correlation mean ($r=0.558$) and Fisher's Z (Fisher's $Z=0.630$) statistics in the random effect model, which is valid due to heterogeneity, the effect of job satisfaction on employee motivation was determined at a large effect level ($R^2 = 0.311 > 0.25$) and the correlation magnitude was determined to be at the lowest level of 0.439 and the highest level of 0.658 at 95% confidence interval (Table 3, Figure 2).

This meta-analysis was conducted to determine the relationship between job satisfaction and employee motivation and significant results were obtained by using both fixed effect model and random effect model. The mean correlation and Fisher's Z statistics obtained according to the random effect model show that the effect of job satisfaction on employee motivation is at a large effect level. These findings support the findings in the literature regarding the strong relationship between job satisfaction and employee motivation (Mendoza and Maldonado, 2014). Job satisfaction is a concept that expresses the extent to which employees are satisfied with their jobs and plays an important role in employee motivation (Kitsios and Kamariotou, 2021; Iriani et al., 2023). There are many findings in the literature that employee motivation is also high when job satisfaction is high (Ali and Anwar, 2021; Hajiali et al., 2022; Wang et al., 2024). In this study, the correlation between job satisfaction and employee motivation is at the lowest level of 0.439 and the highest level of 0.658 at 95% confidence interval, indicating a strong relationship between these two variables.

The $R^2=0.311$ value found in the random effect model reveals that the effect of job satisfaction on employee motivation is large and this effect is similarly reported in the literature. For example, Nindyati and Ulfia (2024) found similar high correlation values in their meta-analyses between job satisfaction and job performance. This suggests that job satisfaction affects not only employee motivation but also overall job performance.

In addition, the findings of this study are consistent with Hackman and Oldham's (1976) Job Characteristics Model. According to this model, job satisfaction increases employee motivation through basic job characteristics such as job meaningfulness, sense of responsibility, and knowledge about job outcomes. This study supports this model by showing that job satisfaction has a great effect on employee motivation.

The results of this study provide clues for managers and human resource professionals. Developing strategies to increase job satisfaction can increase employee motivation and thus job performance. For example, measures such as improving feedback mechanisms for employees, reviewing reward systems and making the work environment more attractive can increase job satisfaction, which in turn can positively affect employee motivation. In conclusion, this meta-analysis supports the existing findings in the literature by revealing a strong and significant relationship between job satisfaction and employee motivation. Increasing job satisfaction can be an effective strategy to improve employee motivation and overall job performance.

FINDINGS RELATED TO BIAS

The results of the meta-analysis on how many studies are needed to refute the findings on publication bias, the effect of missing potential studies on meta-analysis, pooled correlation and Fisher's Z statistics are shown in Table 4.

Table 4. Findings Related to Bias

Test	Statistic	Value	Result
Egger	Value	4,631	No publication bias
	SE	4,077	
	t	1,135	
	p (1-tailed)	0,141	
	p (2-tailed)	0,282	
Duval and Tweedie's Trim and Fill	Point estimate (Observed Values)	0,53042	(Observed values - Adjusted values =0) Possible missing studies have no effect on the meta-analysis
	Point estimate (Adjusted Values)	0,53042	
	Lower limit (Observed Values)	0,47136	
	Lower limit (Adjusted Values)	0,47136	
	Upper limit (Observed Values)	0,78947	
	Upper limit (Adjusted Values)	0,78947	
	Q (Observed Values)	132,107	
Tau <i>b</i>	Q (Adjusted Values)	132,107	The results in this study were not affected by the number of articles used
	Value (Without continuity correction)	0,212	
	Value (With continuity correction)	0,197	
	Z (Without continuity correction)	0,960	
	Z (With continuity correction)	0,891	
	p (1-tailed) (Without continuity correction)	0,168	
	p (1-tailed) (With continuity correction)	0,186	
	p (2-tailed) (Without continuity correction)	0,337	
Classic Fail-Safe N (Rosenthal)	p (2-tailed) (With continuity correction)	0,373	The number of studies is 2081 required to bring the P value > alpha.
	Observed Z	25,884	
	Observed p	0,000	
	Alpha	0,050	
	Tails	2	
	Z	1,959	
Orwin's Fail-Safe N	Number of Observed Studies	12	-
	Observed r	0,589	
	Criterion for a "trivial" correlation	0,000	
	Mean correlation in missing studies	0,000	

The Egger test results for studies exploring the relationship between job satisfaction and employee motivation indicated no evidence of publication bias in the included studies (Egger = 4.631; $t = 1.135$; $p > 0.05$) (Table 4). Similarly, Duval and Tweedie's trim-and-fill method, applied to assess the impact of potentially missing studies on the meta-analysis, revealed no difference between observed and adjusted values to account for publication bias ($0.530 - 0.530 = 0.000$). This result suggests that missing studies did not influence the meta-analysis findings (Table 4).

Kendall's Tau-*b* test, used to examine the relationship between the number of studies and effect size, showed that the number of studies included had no significant impact on the effect size derived from the analysis (Tau-*b* = 0.197; $Z = 0.891$; $p > 0.05$) (Table 4). Additionally, the fail-safe N tests by Rosenthal and Orwin were employed to calculate the number of studies required to invalidate the effect size observed in this study. It was determined that 2,081 additional studies would be needed for the pooled correlation

coefficient to lose significance ($p > 0.05$). Given that the trivial correlation coefficient is 0 ($r = 0.000$), the pooled correlation in these 2,081 studies would also need to be 0.000.

When the results related to publication bias in Table 4 are considered collectively, it is evident that the meta-analysis findings in this study are free from the influence of publication bias. In this study, when the meta-analysis examining the relationship between job satisfaction and employee motivation is evaluated in terms of publication bias, the results obtained provide important findings that increase the reliability and validity of the research. According to Egger test results (Egger=4,631; $t=1,135$; $p>0,05$), it was determined that there was no effect of publication bias. This shows that there is no systematic bias in the studies included in the study and the results are based on an objective basis.

According to the results of Duval and Tweedie's cut and add test, the lack of difference between the observed values and the adjusted values to correct for the effects of publication bias ($0.530-0.530 = 0.000$) indicates that there is no effect of missing potential studies on the meta-analysis. This finding supports the robustness and validity of the meta-analysis results. Rosenthal & Orwin's reliable N tests reveal that 2081 studies are required to refute the meta-analysis result and the pooled correlation coefficient of these studies should be 0.000. This result shows that the meta-analysis findings are quite strong and reliable.

These findings are in line with other studies in the literature. For example, in a meta-analysis conducted by Homberg et al. (2015), it was reported that there was no publication bias in the studies examining the relationship between job satisfaction and job performance. Similarly, the absence of publication bias in this study supports that the relationship between job satisfaction and employee motivation is real and generally valid.

Kendall's Tau b test results show that the number of studies has no effect on the effect size value (Tau $b=0.197$; $Z=0.891$; $p>0.05$). This means that the number of studies included in the meta-analysis does not change the effect size obtained and the results are reliable. This is in line with the meta-analysis methodology put forward by Van Assen et al. (2015), since the minimal effect of study size on effect size increases the generalisability of meta-analysis results.

In conclusion, this study found that the relationship between job satisfaction and employee motivation is strong and statistically significant. Publication bias tests show that the results are robust and reliable and provide findings consistent with similar studies in the literature. This suggests that the relationship between job satisfaction and employee motivation is generally valid and that interventions in this area can have positive effects on employee motivation. These findings provide important clues that organizations and human resources management should develop strategies to increase job satisfaction.

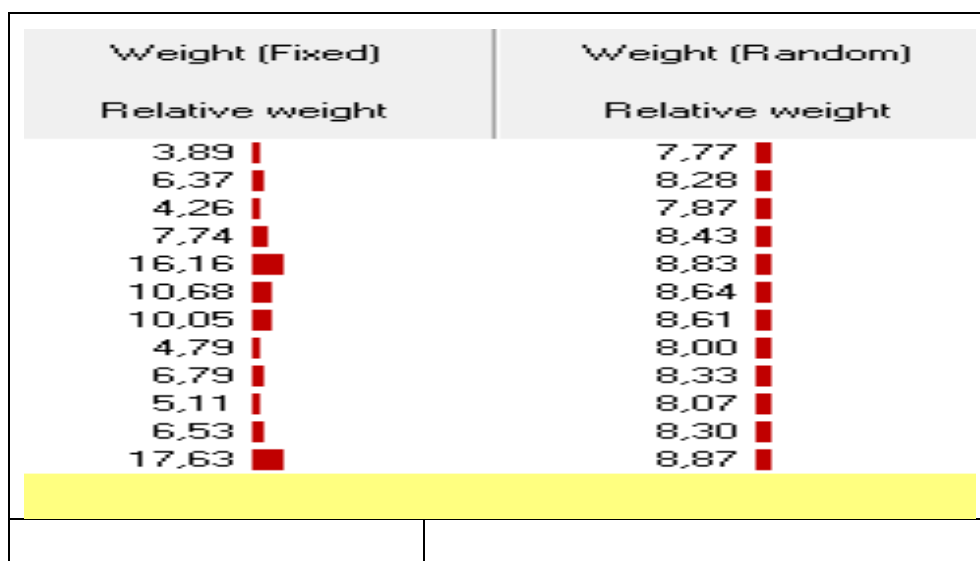


Figure 1. Study Weights Plot for the Relationship between Job Satisfaction and Employee Motivation

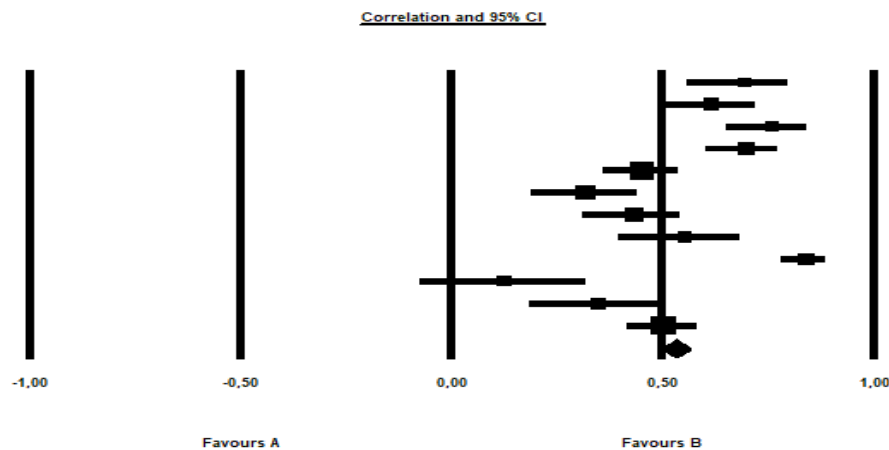


Figure 2. Effect Size Graph At 95% Confidence Interval

CONCLUSION

This meta-analysis was conducted to examine the relationship between job satisfaction and employee motivation. The findings show that there is a strong and positive relationship between job satisfaction and employee motivation. In this context, the main results of the study can be summarised as follows:

This meta-analysis examined the relationship between job satisfaction and employee motivation and obtained significant findings. Both fixed effect model ($Z=25.71$; $p<0.05$) and random effect model ($Z=7.77$; $p<0.05$) results show that job satisfaction has a strong and positive effect on employee motivation. The average correlation ($r=0.558$) and Fisher's Z (Fisher's $Z=0.630$) in the random effect model revealed that this relationship is at a large effect level. In addition, according to the random effect model, which is considered more valid due to heterogeneity, it was determined that the effect of job satisfaction on employee motivation was large ($R^2=0.311$). According to these results of the meta-analysis, there is a statistically significant and strong positive correlation between job satisfaction and employee motivation. This result shows that employees who are satisfied with their jobs have higher motivation levels.

Publication bias tests also support the reliability of this meta-analysis. Egger's test results (Egger=4.631; $t=1.135$; $p>0.05$) showed that there was no effect of publication bias. According to the results of Duval and Tweedie's cut and add test, the difference between the observed values and the adjusted values was 0.000, indicating that there was no effect of missing potential studies on the meta-analysis. Rosenthal and Orwin's safe N tests showed that 2081 studies were required to invalidate the meta-analysis result and the pooled correlation coefficient of these studies should be 0.000. This further reinforces the robustness and validity of the meta-analysis results.

The findings of this study provide important clues to managers and human resources professionals. Developing strategies to increase job satisfaction can increase employee motivation and thus job performance. For example, improving employee feedback mechanisms, reviewing reward systems and making the work environment more attractive may increase job satisfaction, which in turn may positively affect employee motivation. In conclusion, this meta-analysis revealed a strong and statistically significant relationship between job satisfaction and employee motivation. Publication bias tests and reliable N tests indicate that these findings are robust and reliable. These findings provide important contributions to both academic research and applied business management and emphasise the positive effects of increasing job satisfaction on employee motivation. Developing strategies to increase job satisfaction will positively affect employees' motivation levels and thus their job performance. These findings provide important contributions to studies in the field of human resource management and organizational behavior.

LIMITATIONS

Practical Limitations

The time period of the studies used in the meta-analysis may cover a wide range. However, job satisfaction and motivation dynamics may change over time. Therefore, analyses made with old data may not fully reflect current trends. The measurement tools and methods used in different studies may vary. This may make it difficult to assess the relationship between job satisfaction and motivation in a consistent manner. In particular, the use of subjective measurements may cause deviations in the results.

Theoretical Limitations

The definitions and dimensions of job satisfaction and employee motivation may differ in the literature. Conceptual incompatibilities between studies may affect the consistency of meta-analysis results. This is especially important in the evaluation of sub-dimensions such as intrinsic and extrinsic motivation. Meta-analyses may be limited in determining the direction of the relationship between job satisfaction and employee motivation. Although correlation shows that there is a relationship between two variables, it does not provide definitive information about causality. Therefore, it is not clear whether job satisfaction increases motivation or motivation affects job satisfaction. The effects of the interventions used in the studies may vary. For example, an intervention to increase job satisfaction in one study may be different from the intervention used in another study. This may make it difficult to interpret the results obtained in the meta-analysis and create limitations in understanding the overall intervention effects.

RECOMMENDATIONS FOR FUTURE RESEARCH

This meta-analysis reveals a positive relationship between job satisfaction and employee motivation. However, several suggestions for future research can be made to further increase the body of knowledge in this area and generalise the findings in a broader context:

Future research should include employees in different sectors and geographical regions. In particular, studies conducted in developing countries and in various cultural settings will contribute to understanding the universality and cultural differences of the relationship between job satisfaction and motivation. Longitudinal studies should be conducted to understand the dynamics of the relationship between job satisfaction and employee motivation over time. Such studies can reveal the long-term effects of changes in job satisfaction on motivation and identify causal relationships more clearly. The consistency and validity of the instruments used to measure job satisfaction and motivation are important. Future research should use standardised and validated scales to measure these concepts. In addition, a more comprehensive assessment can be made by combining subjective and objective measures. In future studies, the differences between intrinsic and extrinsic motivation should be addressed in more detail. Examining the relationships between job satisfaction and different types of motivation may help to develop more targeted and effective motivational strategies. The effects of cultural factors on job satisfaction and motivation should be investigated in more depth.

Cultural differences may affect the relationship between these two variables and comparing the findings obtained in different cultural contexts may contribute to the identification of universal and culture-specific factors. The effects of demographic variables (age, gender, educational level, work experience, etc.) on job satisfaction and motivation should also be examined. Employee diversity can provide more information on how it shapes the relationship between job satisfaction and motivation and help to develop more specific strategies in this context. The effects of interventions to increase job satisfaction and motivation should be examined more systematically. By identifying which types of interventions are more effective, such research can provide employers and managers with more effective implementation strategies.

REFERENCES

- Afif, M., Mariyanti, T., Septiani, N., & Dolan, E. (2023). Factor affecting employee motivation to increase performance of Sharia bank in Indonesia on Islamic perspective. *APTISI Transactions on Management*, 7(2), 128-136.
- Ahmed, I. (2011). Relationship between motivation and job satisfaction: a study of higher educational institutions. *Journal of Economics and Behavioral Studies*, 3(2), 94- 100.
- Ahlstedt, C., Moberg, L., Brulin, E., & Nyberg, A. (2023). Do illegitimate tasks matter for registered nurses' work motivation? A cross-sectional study based on a nationally representative sample of Swedish nurses. *International Journal of Nursing Studies Advances*, 5, 100159.
<https://doi.org/10.1016/j.ijnsa.2023.100159>
- Ahn, E., & Kang, H. (2018). Introduction to systematic review and meta-analysis. *Korean journal of anesthesiology*, 71(2), 103.
- Ali, B. J., & Anwar, G. (2021). An empirical study of employees' motivation and its influence job satisfaction. *International Journal of Engineering, Business and Management*, 5(2), 21-30.
- Anning-Dorson, T. (2021). Organizational culture and leadership as antecedents to organizational flexibility: implications for SME competitiveness. *Journal of Entrepreneurship in Emerging Economies*, 13(5), 1309-1325.
- Ayub, N., & Rafif, S. (2011). The relationship between work motivation and job satisfaction. *Pakistan Business Review*, 13(2), 332-347.
- Borenstein, M., Hedges, L.V., Higgins, J.P., & Rothstein, H.R. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research synthesis methods*, 1(2), 97-111.
- Borenstein, M., Cooper, H.M., Hedges, L.V., & Valentine, J.C. (2019). Heterogeneity in meta-analysis. *The handbook of research synthesis and meta-analysis*, 3, 453-470.
- Bushi, F. (2021). An overview of motivation theories: The impact of employee motivation on achieving organizational goals. *Calitatea*, 22(183), 8-12.
- Collie, R.J. (2023). Teachers' work motivation: Examining perceived leadership practices and salient outcomes. *Teaching and Teacher Education*, 135, 104348.
- Çağlar, E. S. (2012). Work engagement, empowerment and leadership styles: Analyses from cultural perspectives in hotel management. *Journal of Global Strategic Management*, 6(1), 17-31.
- Ganta, V.C. (2014). Motivation in the Workplace to Improve the Employee Performance. *International Journal of Engineering Technology, Management and Applied Sciences*, 2(6).
- Ha, H.K., Jun, K.S., & Bae, G.K. (2020). The Effects of Motivation on Job Satisfaction: Focused on Self-Actualization. *Culinary Science & Hospitality Research*, 26(9), 52-59.
- Hackman, J.R., & Oldham, G.R. (1976). Motivation through the design of work: Test of a theory. *Organizational behavior and human performance*, 16(2), 250-279.
- Hajiali, I., Kessi, A.M.F., Budiandriani, B., Prihatin, E., & Sufri, M.M. (2022). Determination of work motivation, leadership style, employee competence on job satisfaction and employee performance. *Golden Ratio of Human Resource Management*, 2(1), 57-69.
- Herliana, N.F., Handaru, A.W., & Parimita, W. (2021). The Effect of Job Satisfaction and Work-Life Balance on Employee Turnover Intention in Real Estate Industry. *Jurnal Dinamika Manajemen Dan Bisnis*, 4(2), 45-68.
- Homberg, F., McCarthy, D., & Tabvuma, V. (2015). A meta-analysis of the relationship between public service motivation and job satisfaction. *Public Administration Review*, 75(5), 711-722.
- Hussain, R.I., Usman, S., Sarmad, S.M., & Haq, I.U. (2012). Effect of Work Motivation on Job Satisfaction in Telecommunication Sector of Pakistan-A Case Study of Pakistan Telecommunication Company Limited (PTCL). *International Journal of Asian Social Science*, 2(11), 1925-1933.

- Iriani, N.I., Suyitno, S., Sasongko, T., Rifai, M., Indrihastuti, P., & Yanti, D.A.W. (2023). Leadership style, compensation and competence influence on employee performance through job satisfaction. *Journal of Business and Management Studies*, 5(1), 38-49.
- Karsikah, R.K., Ramdansyah, A.D., & Haryadi, D. (2023). Determinants of Job Satisfaction : Internal Communication Relationships in Improving Employee Performance. *Enrichment: Journal of Management*, 12(6), 4692–4697.
- Kitsios, F., & Kamariotou, M. (2021). Job satisfaction behind motivation: An empirical study in public health workers. *Heliyon*, 7(4).
- Köse, S., Kartal, B., & Kayalı, N. (2013). Örgütsel vatandaşlık kavramı ve tutuma ilişkin faktörlerle ilişkisi üzerine bir araştırma. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 20, 1-19.
- Lambrou, P., Kontodimopoulos, N., & Niakas, D. (2010). Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital. *Human resources for health*, 8(1), 1-9.
- Lent, R.W., & Brown, S.D. (2006). Integrating person and situation perspectives on work satisfaction: A social-cognitive view. *Journal of Vocational Behavior*, 69(2), 236-247.
<https://doi.org/10.1016/j.jvb.2006.02.006>
- Locke, E. (1976). *The nature and caused of job satisfaction in Dunnette*. (2nd Ed.). Chicago IL 1297-349: Rand-McNally.
- Maharjan, S. (2012). Association between work motivation and job satisfaction of college teachers. *Administration and Management Review*, 24(2), 45-55.
- McKenzie, J.E., Beller, E.M., & Forbes, A.B. (2016). Introduction to systematic reviews and meta-analysis. *Respirology*, 21(4), 626-637.
- Mendoza, M.L., & Maldonado, C.O. (2014). Meta-analytic of the relationship between employee job satisfaction and customer satisfaction. *Suma de negocios*, 5(11), 4-9.
- Mohammadabadi, A.J., Ghasemabad, A.H., Naji, M., & Zahirabadi, A.J. (2013). The role of motivation in achieving management goals. *European Online Journal of Natural and Social Sciences*, 2(3), 1706-1710.
- Nindyati, A.D., & Ulfia, N. (2024). The role of organizational justice as mediator in the relationship between Islamic work ethics and work engagement. *Humanitas: Indonesian Psychological Journal*, 21(1), 53-64.
- Pananrangi, M., Lewangka, O., & Sudirman, I. (2020). The Influence of Motivation and Job Satisfaction on Employee Performance in PT. Son Karella Mare. *Hasanuddin Journal of Applied Business and Entrepreneurship*, 3(2), 20-32.
- Pancasila, I., Haryono, S., & Sulistyono, B.A. (2020). Effects of work motivation and leadership toward work satisfaction and employee performance: Evidence from Indonesia. *The Journal of Asian Finance, Economics, and Business*, 7(6), 387-397.
- Shah, S. (2015). Impact of organizational culture on job satisfaction: A study of steel plant. *Pranjana: The Journal of Management Awareness*, 18(1), 29.
- Skaalvik, E.M., & Skaalvik, S. (2017). Motivated for teaching? Associations with school goal structure, teacher self-efficacy, job satisfaction and emotional exhaustion. *Teaching and Teacher Education*, 67, 152-160. <https://doi.org/10.1016/j.tate.2017.06.006>
- Shin, W.J. (2015). An introduction of the systematic review and meta-analysis. *Hanyang Medical Reviews*, 35(1), 9-17.
- Sohail, A., Safdar, R., Saleem, S., & Azeem, M. (2014). Effect of Work Motivation and Organizational Commitment on Job Satisfaction: (A Case of Education Industry in Pakistan). *Global Journal of Management and Business Research: Administration and Management*, 14(6), 1-7.

Thangaswamy, A., & Thiyagaraj, D. (2017). Theoretical Concept of Job Satisfaction - A Study. *International Journal of Research - Granthaalayah*, 5(6), 464-470.
<https://doi.org/10.5281/zenodo.822315>

Uka, A., & Prendi, A. (2021). Motivation as an indicator of performance and productivity from the perspective of employees. *Management & Marketing*, 16(3), 268-285.

Van Assen, M.A., van Aert, R., & Wicherts, J.M. (2015). Meta-analysis using effect size distributions of only statistically significant studies. *Psychological methods*, 20(3), 293.

Wang, Q., Gan, K.P., Wei, H.Y., Sun, A.Q., Wang, Y.C., & Zhou, X.M. (2024). Public service motivation and public employees' turnover intention: the role of job satisfaction and career growth opportunity. *Personnel Review*, 53(1), 99-118

Warma, C. (2017). Importance Of Employee Motivation & Job Satisfaction For Organizational Performance. *International Journal of Social Science & Interdisciplinary Research*, 6(2), 10-20.

Zalewska, A.M. (1999). Job Satisfaction and Importance of Work Aspects Related to Predominant Values and Reactivity. *International Journal of Occupational Safety and Ergonomics*, 5(4), 485-511.

Zehir, C., Erdogan, E., & Basar, D. (2011). The relationship among charismatic leadership, ethical climate, job satisfaction and organizational commitment in companies. *Journal of Global Strategic Management*, 10(5), 49-59.