

The Strength of the Relationship of Self-Efficacy and Innovative Work Behavior:

A Meta-Analysis Study

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Abstract—Organizations that want to maintain their position at a competitive level need innovative behavior from their members. Innovative behavior is indispensable in overcoming the ongoing challenges facing organizations. Increased innovative behavior can be built through strengthening self-efficacy. Confidence in the self-ability of members of the organization has a close relationship with actions in exploring opportunities, generating ideas, promoting and realizing them and reflecting on their professional work. The relationship between self-efficacy and innovative behavior is discussed implicitly in scientific journals, but only a few directly link the two variables. This meta-analysis study was conducted to determine the strength of the relationship between self-efficacy and innovative work behavior by measuring effect sizes in 7 international journals published in the last 10 years. The results of the analysis using the Random Effect model show that there was a significant positive correlation between self-efficacy and innovative behavior ($z = 5.419$; $p < 0.001$; 95% CI [0.300-0.639]). The effect of self-efficacy on innovative behavior is included in the moderate category ($r = 0.469$). This finding proves that self-efficacy has a positive and significant correlation to work innovative behavior.

Keywords—self-efficacy, innovative work behavior, meta-analysis

I. INTRODUCTION

Innovative behavior and creativity are indispensable in facing challenges in the digital era [1, 2]. Change ideas in exploring future opportunities and challenges from organizational members become a key factor in the development or failure of an organization. Organizations that want to maintain their position at a competitive level of innovative work behavior of their members. Innovative behavior is something that is directed by someone in order to increase effectiveness as a contribution to organizational goals [3].

Innovative work behavior is a new phrase that comes from the word innovation. Innovation is a change using new practices through adoption and circulation carried out with the aim of increasing organizational effectiveness. The success or

failure of an organization in achieving competitive advantage will greatly depend on the innovation and creativity of the organization [4, 5]. Innovation is born from a creative and independent process. Independent humans usually have good creativity and produce innovations from the activities they do. With this concept, innovation can be interpreted as a change in a person's behavior and actions in the form of innovative thoughts and potential even though not all of these potentials can be fully developed. The embodiment of innovation action is called innovative work behavior.

Innovative work behavior can be described as a process by which new ideas are created, developed, implemented, generated, realized, and managed by employees to gain role performance benefits [6]. Innovative work behavior is a multi-stage process in which an individual recognizes the problems encountered so as to generate new ideas and solutions, then works to give confidence to others by promoting and building support for his ideas, and producing designs or models that can be implemented for use, that are beneficial to the organization within it [4, 7, 8]. Meanwhile, Prayudhayanti [9] suggests that the process of innovative behavior is divided into 3 phases, namely: 1) The idea generation phase, this phase is related to the involvement of individuals in forming and generating ideas to improve existing products, processes, and services so as to create products, new processes and services; 2) The idea harvesting phase, this phase is related to the involvement of people to collect existing ideas and then have their weaknesses and strengths, and 3) The idea development and implementation phase, this phase is the phase of developing ideas collected based on the evaluation results for can be implemented in the field.

Similar to findings in other areas of human behavior, self-efficacy plays an important role in individual and environmental factors. Therefore, more systematic research on innovative work behavior needs to pay attention to self-efficacy [6]. Self-efficacy is a conceptual framework that tries to explore one's potential according to beliefs. Bandura's theory states that self-efficacy refers to the belief in a person to organize and carry out the actions needed to manage a given

[10–13]. Self-efficacy is a person's belief or confidence to organize and carry out the actions needed to assess a given. Self-efficacy is a belief possessed by a person by first understanding the potential that exists within so that he has the urge to be able to complete certain challenges or tasks.

The position variable of self-efficacy is so important in increasing innovative work behavior. Several studies state that there is a positive and significant relationship between self-efficacy and innovative work behavior [14–19]. The results of these studies have been carried out in international journals. Therefore, it is necessary to organize data and analyze in more depth in order to obtain more comprehensive results. The results of this study are expected to be a reference for researchers who study similar themes in placing these variables based on the strength of the relationship.

II. METHODS

This study uses a meta-analysis study. Meta-analysis is a statistical technique used to describe the results of two or more similar studies so that a quantitative blend of data is obtained [20]. The meta-analysis study was carried out by summarizing research data, reviewing and analyzing data from previous research articles [21, 22]. Based on the search results, the

researchers found 7 verified journals that discuss the relationship between self-efficacy and innovative work behavior and contain the total respondents (N) and the correlation results (r). The effect size value is calculated using the formula $z = 0,5 \times \ln \frac{1+r}{1-r}$ with the standard error calculated using the formula $v_z = \sqrt{\frac{1}{n-3}}$. Furthermore, to calculate the significance of the effect size, it is calculated using the JASP (Jeffreys's Amazing Statistics Program) program. The significance test criteria are seen based on the z value in the coefficients table, where the effect size has a significant relationship if the p value < 0.001 at the 95% confidence level.

III. RESULTS AND ANALYSIS

This research focuses on 7 verified journals that discuss the relationship between self-efficacy and innovative work behavior. These journals have research loci in several countries, namely China, Pakistan, the Netherlands, and Indonesia. The number of samples in each article varies from 103 to 2385 samples. Meanwhile, the types of respondents in the study consisted of teachers, nurses, and employees. Complete data regarding the results of research searches are shown in the Table 1.

TABLE I. RESEARCH DATA SEARCH RESULTS

Author and Year	Research Title	Sample Size (N)	Correlation (r)	Locus	Characteristics
Li, M., Liu, Y., Liu, L., & Wang, Z. (2016) [14]	Proactive Personality and Innovative Work Behavior: the Mediating Effects of Affective States and Creative Self-Efficacy in Teachers.	352	0,49	China	Teacher
Afsar, B., & Masood, M. (2017) [15]	Transformational Leadership, Creative Self-Efficacy, Trust in Supervisor, Uncertainty Avoidance, and Innovative Work Behavior of Nurses	117	0,46	Pakistan	Nurse
Klaeijns, A., Vermeulen, M., & Martens, R. (2017) [16]	Teachers' Innovative Behaviour: The Importance of Basic Psychological Need Satisfaction, Intrinsic Motivation, and Occupational Self-Efficacy	2385	0,46	Dutch	Teacher
Newman, A., Tse, H. H. M., Schwarz, G., & Nielsen, I. (2018) [17]	The effects of employees' creative self-efficacy on innovative behavior: The role of entrepreneurial leadership	346	0,16	China	Employee
Suendarti, M., Widodo, W., & Hasbullah, H. (2020) [18]	Demonstrating the Effect of Grit and Creativity on Innovative Behavior of Teacher's Natural Science: Mediating by Self-Efficacy	386	0,19	Indonesia	Teacher
Hassan, R., & Ali, M. (2020) [19]	Impact of Managerial Coaching on Innovative Work Behaviors through Affective Supervisory Commitment: Moderating Role of Self-Efficacy	500	0,545	Pakistan	Employee
Septriani, S. (2021) [23]	Transformational Leadership Style and Innovative Behavior with Sel-Efficacy as a Mediator	103	0,68	Indonesia	Employee

TABLE II. HETEROGENEITY TEST

Fixed and Random Effects			
	Q	df	p
Omnibus test of Model Coefficients	29.371	1	< .001
Test of Residual Heterogeneity	99.324	6	< .001

Note. p -values are approximate.

The results of the analysis showed that the 7 effect sizes analyzed had an average of 0.47 and were heterogeneous (Q = 99.324; p < 0.001) (Table 2). Thus, the Random Effect model is more suitable for estimating the mean effect size of the 7 analyzed studies. The results of the analysis also indicate that there is potential to investigate moderating variables that influence the relationship between self-efficacy and innovative work behavior.

TABLE III. SUMMARY EFFECT/MEAN AFFECT SIZE

Coefficients					95% Confidence Interval	
	Estimate	Standard Error	z	p	Lower	Upper
intercept	0.469	0.087	5.419	< .001	0.300	0.639

Note. Wald test.

The results of the analysis using the Random Effect model show that there is a significant positive correlation between self-efficacy and innovative work behavior. This is evidenced by the value of z = 5.419 where the value has p < 0.001 with a significance level of 95% (CI [0.300; 0.639]) (Table 3). The relationship between self-efficacy and innovative behavior is included in the moderate category (r = 0.469). Meanwhile, from the forest plot (Figure 1), it can be observed that the effect size of the analyzed studies varies between 0.16-0.83.

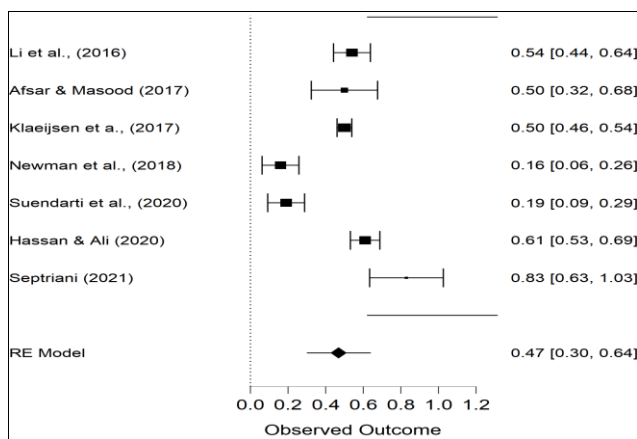


Fig. 1. Forest plot.

The results of the analysis using the Random Effect model show that there is a significant positive correlation between self-efficacy and innovative work behavior in the moderate category. The results of this study provide information that self-efficacy has an important position in shaping innovative work behavior. Self-efficacy is an excellent predictor of various types of human behavior, one of which is innovative work behavior [6]. Individual belief in the potential and strength to complete work tasks will be seen from their behavior in capturing existing opportunities, generating ideas, promoting ideas, and realizing ideas. Individual innovative behavior requires high confidence in their ability to complete their work effectively and efficiently. Innovative work behavior can be built through the belief of a person that he is capable of such behavior. Without self-confidence, it is impossible for the person to realize innovative work behavior [24]. High levels of self-efficacy with generality characteristics related to task difficulty and strengths related to one's stability to his beliefs can stimulate high innovative work behavior [18].

In the studies that have been carried out, self-efficacy has many roles as a mediator variable [14–16, 18, 19]. This condition shows that self-efficacy is a determining factor in the strength of the relationship between an independent variable and innovative work behavior. Self-efficacy is a mediator variable that can strengthen the relationship between an independent variable and innovative work behavior. Efficacy plays a very important role in everyday life. A person will be able to use his potential optimally if self-efficacy supports it [25]. Strong self-confidence will bring an individual to increase his fighting power in achieving the desired goal. One's self-confidence will lead to persistence and tenacity, and an unyielding spirit. The visualization of getting results causes the growth and awakening of the sense or affective aspects that lead to hope for success. This hope of success then becomes energy to raise enthusiasm [26].

People use efficacy beliefs to guide their lives so that they become independent, proactive, self-regulating, and self-reflective. This condition indicates that a person can regulate their own behavior through self-motivation, thought processes, affective states, and actions or change environmental conditions based on their beliefs and beliefs. Perceived self-efficacy provides guidelines that allow people to exert influence on how they live their lives. High self-efficacy allows a person to choose challenging settings, explore their environment, and create new environments if needed [11].

IV. CONCLUSION AND SUGGESTION

There is a positive and significant relationship between self-efficacy and innovative work behavior based on an analysis of the results of research published in journals. This is evidenced by the z value of 5.419, which value has p < 0.001 with a significance level of 95%. The relationship between self-efficacy and innovative behavior is included in the moderate category with a value of r = 0.469. The results of this study provide information that self-efficacy has an important position in shaping innovative work behavior. The better a

person's self-efficacy, the more innovative work behavior will be. The results of this study can be used as a reference for researchers who examine the theme of innovative work behavior.

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