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Systematic Literature Review: Research on Martial Arts Competition Using Vos Viewers in the 2018-2022 Google Scholar Database

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Abstract Martial arts competition is a sport of self-defense skills that employs the ability to defend oneself, repel attacks and ultimately attack enemies, with or without weapons. This study uses a descriptive quantitative method with a bibliometrics approach. The research data used for scientific journals or articles spanning 2018-2022 is sourced from the Google Scholar database. A search for scientific articles was carried out using the Publish or Perish application with the keyword "Martial arts competition" in the article title, category, abstract, key words. The map for the development of the Martial arts competition scientific publication model was analyzed using the VOSViewer application. From the search results using the Publish or Perish application, the maximum number of searches used is 1000 articles, limited to 100 article publications according to the keywords entered, then by type filtering using articles there are 100 papers written in article form. Based on the results and discussion, it can be concluded that there has been a decline every year. In 2018 there were 23% who researched martial arts competition, while in 2019, 2020 and 2021 in the 20% category then in 2022 it will decrease to 17%. on the publication of articles with the keywords Martial Arts Competition in the 2018-2022 period on the Google scholar database.

Keywords: Martial Arts Competition; Vos Viewers; bibliometrics



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INTRODUCTION

Silat is the essence of martial arts for physical self-defense and cannot be used for performance (Oong Maryono, 2000). Silat is a self-defense movement that is closely related to spirituality, so that it revives instincts, moves the human conscience and surrenders to God Almighty. According to (Suharso, 2005) pencak is a game (expertise) to defend oneself with cleverness to fend off evasion and so on.

Meanwhile, Silat is the art of fighting with the agility of attacking and defending oneself. Pencak silat is an indigenous Malay martial art form that populates the lands and islands of Southeast Asia (Kumaidah, 2012). Pencak Silat as an Indonesian culture is a martial art that has high philosophical teachings (Suryo & Hisham, 2016). The official Indonesian dictionary published by Balai Pustaka (1989), defines pencak silat as a performance (skill) of self-defence that employs the ability to defend oneself, fend off attacks and ultimately attack enemies, with or without weapons (Barley et al., 2018)

The sport of pencak silat is usually defined as hand-to-hand combat: a form of combat or defense with punches, sweeps, and throws, kicks,

parries and throws. The meaning of pencak silat is philosophically distinguished based on two component words. First, pencak is a method of self-defense training, consisting of various body movements controlled and directed for that purpose; while silat is the application of the training to the actual fighting method. Therefore, there is no silat without pencak; likewise pencak without silat skills is of no benefit (Ediyono & Teguh, 2019).

In ancient times the ancestors of Indonesia already had a way of self-defense aimed at protecting themselves and maintaining the survival of their lives, families and groups (Sudayana & Luh Sepyanawati, 2017). pencak silat has existed since the glory of the Srivijaya kingdom, as evidence they have warriors and prajuri who are adept at self-defense.

Pencak silat has an artistic element that is quite prominent, especially when viewed from the developmental or interest elements of pencak silat and the fighting element of pencak silat has become an achievement sport that is contested. With the strengthening of the IPSI XII National Conference that pencak silat is an achievement sport which consists of four

categories, namely the category of sparring, singles, doubles and team (Munas XII IPSI, 2007: ii).

An athlete competing in the sparring category requires good technique, tactics, mentality and stamina. The sparring category is a category for pencak silat competitions featuring 2 (two) fighters from different camps. Both of them face each other using elements of defense and attack, namely parrying/ dodging/ attacking/ avoiding the target and dropping the opponent.

Use of tactics and fighting techniques, endurance stamina and fighting spirit, using rules and patterns of steps that take advantage of the wealth of stance techniques, get the most points (Rios et al., 2018).

The single category is a category of pencak silat competition that features a fighter demonstrating his proficiency in a single standard style correctly, precisely, and steadily, full of soulfulness with empty hands and armed (Lubis & Wardoyo, 2016).

The double category is a category that features 2 (two) fighters from the same team, demonstrating the proficiency and wealth of attack and defense techniques owned. The attack

and defense movements are displayed in a planned, effective, aesthetic, steady, and logical manner in a number of regular series, starting from empty hands and continuing with weapons and are subject to the rules and regulations that apply to the double category (Setyo, 2015).

The team category is a category of pencak silat competitions featuring three fighters from the same camp, demonstrating their skills in standard team moves in a correct, precise, steady, full of spirit and compact with bare hands and subject to the rules and regulations that apply to this category (Matthews et al., 2019).

The rapid development of pencak silat abroad, so in 1980 the International Pencak Silat Federation was formed which involved 4 countries, namely: Indonesia, Malaysia, Singapore and Brunei Darussalam under the name Pencak Silat Association between Nations (Persilat), the first persilat president until now was H. Eddy M. Nalapraya from Indonesia (Agung Nugroho, 2004).

The development of pencak silat in Indonesia has now spread to schools, both elementary schools, junior schools, high schools and universities as a

preservation of Indonesian culture (Kostikiadis et al., 2018).

METHOD

This study uses a descriptive quantitative method with a bibliometric approach. According to (Reitz, 2002) Bibliometrics is a mathematical and statistical method used to study and identify patterns of material use and analyze the development of a particular literature, especially for authorship, publication and use. When bibliometrics is used to review a scientific journal, an overview of the journal such as journal quality, journal maturity, journal productivity and so on will be obtained (Saleh & Sumarni, 2016). The research data used in this study are journals or scientific articles with a range of 2018-2022 sourced from the Google Scholar database. A scientific article search was carried out using the Publish or Perish application with the keyword "Martial Arts Competition" in the article title, category, abstract, keywords. The map for the development of the Martial Arts Competition scientific publication model was analyzed using the VOSViewer application.

RESULTS AND DISCUSSION

From the search results using the Publish or Perish application, the

maximum number of searches used is 1000 articles, there are 100 published articles according to the keywords entered, then by type filtering using articles there are 100 papers written in the form of articles.

Research on Martial Arts Competition in the 2018-2022 period on the Google Scholar database has decreased every year. In 2018 there were 23% who researched martial arts competition, while in 2019, 2020 and 2021 in the 20% category then in 2022 it will decrease to 17%. With 2018 being the highest number of publications regarding Martial Arts Competition with 23 articles or 23% of the total data.

Table 1.

Percentage of Number of Publications

Year of Publication	Number of Articles	Percentage
2018	23	23%
2019	20	20%
2020	20	20%
2021	20	20%
2022	17	17%

Research on Martial Arts Competition has decreased, where the highest percentage of article declines will occur in 2022. This shows that topics regarding Martial Arts Competitions are not consistent for research every year.

Table 2 contains the 8 studies with the most citations in the 2018-2022 period.

Table 2.
Research Based on the number of citation

Title	Cites/Year
The Effect of Short-Term Sport-Specific Strength and Conditioning Training on Physical Fitness of Well-Trained Mixed Martial Arts Athletes (IN Kostikiadis, S <u>Methenitis</u>)	157/2018
Health benefits of hard martial arts in adults: a systematic review (S Origua Rios, J Marks)	67/2018
Case Study: Extreme Weight Making Causes Relative Energy Deficiency, Dehydration, and Acute Kidney Injury in a Male Mixed Martial Arts Athlete (AM Kasper, B. Crighton)	54/2019
The Magnitude of Rapid Weight Loss and Rapid Weight Gain in Combat Sport Athletes Preparing for Competition: A Systematic Review (JJ Matthews, EN Stanhope, MS Godwin)	51/2019
Mixed Martial Arts Induces Significant Fatigue and Muscle Damage Up to 24 Hours Post-combat (G Nihel, T Montassar)	43/2019
Weight Regain, but not Weight Loss, Is Related to Competitive Success in Real-Life Mixed Martial Arts Competition (G Nihel, T Montassar)	42/2019
Differences by Ending Rounds and Other Rounds in Time-Motion Analysis of Mixed Martial Arts: Implications for Assessment and Training (M Blanca, B Ciro, M Danilo G)	41/2019
Weight Loss Strategies in Combat Sports and Concerning Habits in Mixed Martial Arts (OR Barley, DW Chapman, and CR Abbiss)	38/2018

The publication development map using the keyword Martial Arts Competition in the VOSViewers application has several clusters of discussion items which can be seen in the following table 3.

Table 3.
Tabel Jumlah Clusters

Clusters	Items
Cluster 1 (red)	Competition, martial art, training, athlete, sport, development, child
Cluster 2 (green)	Mixed martial art, combat sport, martial artist, boxing, fihhter
Cluster 3 (navy)	Weight, mixed martial arts athlete, rapid weight loss, competitive success, professional mixed martial art
Cluster 4 (yellow)	Analisis, combat, technique, application, assessment, martial arts athlete
Cluster 5 (purple)	Studi, taekwondo, cpmptitive level, comparison
Cluster 6 (blue)	Performance, dehydration

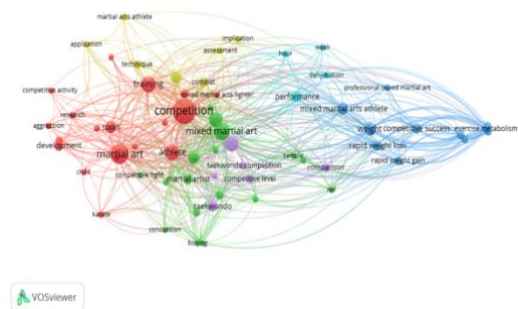


Figure 1. Visualization Martial Arts Competitio

From picture 1, development of publications using the keywords Martial Arts Competition has 6 clusters, of which cluster 1 has a red color with a focus on discussion on competition, martial art, training, athlete, sport, development, child 2 has a green color with a focus on discussion regarding mixed martial art, combat sport, martial artist, boxing, fighter 3 has a dark blue color with a focus on discussion on weight, mixed martial arts athlete, rapid weight loss, competitive success, professional mixed martial art, finally cluster 4 which has a yellow color with the focus of the discussion is on analysis, combat, technique, application, assessment, martial arts athlete, cluster 5 has a purple color with a focus on studies, taekwondo, competitive level, comparison and 6 has a light blue color with a discussion focus on performance, dehydration.

The trend of publications using the keyword Martial Arts Competition always changes every year which can be seen in the following table:

Table 4. Keyword density ranking

No	Keywords
1	Competition
2	Mixed Martial Art
3	Martial art

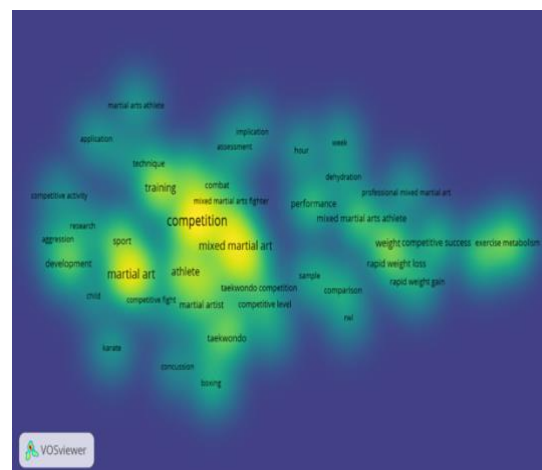


Figure 2. Density Visualization Martial Arts Competition

From the picture 2, it can be explained that the most used keyword is the keyword competition, where the next word with a slightly thicker density is the keyword martial art and mix martial art, apart from these three keywords having the same density.

CONCLUSION

Based on the results and discussion, it can be concluded that there has been a decline in 2022. In 2018 there were 23% who researched martial arts competition, while in 2019, 2020 and 2021 in the 20% category then in 2022 it has decreased by 17%. In 2018 IN Kostikiadis, S Methenitis, is the author who has the highest number of citations, with a total of 157 citations, an article written by IN Kostikiadis, S Methenitis entitled The Effect of Short-Term Sport-

Specific Strength and Conditioning Training on Physical Fitness of Well - Trained Mixed Martial Arts Athletes published in the journal Science and Medicine in Sport.

Based on bibliometric analysis using VOSViewers, Cluster data on keywords Martial Arts Competition is divided into 6 clusters, where keywords that are often used or become a different trend each year with the highest use of keywords overall are keywords Martial Arts Competition.

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