Análisis de autoeficacia de entrenadores extracurriculares de artes marciales de escuelas secundarias de Yogyakarta: género y nivel de licencia de entrenador

Self efficacy analysis of Yogyakarta middle school extracurricular martial arts trainers: gender and coaching license level

*Universitas Negeri Yogyakarta (Indonesia), **Osaka Sangyo University (Japan)

Abstract. Trainers are incredibly influential persons who help to produce exceptional athletes in school's extracurricular martial arts programs. Self-efficacy is a key indicator of trainer competence in the process of training extracurricular martial arts sports. The objectives of this study are to 1) determine the differences in the levels of self-efficacy of martial arts trainers in secondary schools in the Special Region of Yogyakarta based on gender, and 2) determine the differences in the levels of self-efficacy of martial arts trainers in secondary schools in the Special Region of Yogyakarta based on training licenses. This research is a comparative study. This study involved 56 martial arts trainers who taught extracurricular martial arts in secondary schools in the Special Region of Yogyakarta. This study's data was collected via a questionnaire. A questionnaire was utilized to collect data on martial arts trainers' self-efficacy. The questionnaire consists of ten statements with responses on a range of 1 to 5. Experts reviewed the questionnaire, which was empirically validated for validity and reliability. The independent sample t test was used to analyze the data, which was preceded by data precursor tests such as the Shapiro-Wilk normality test and the Levene's Test of variance homogeneity. The independent sample t test analysis of self-efficacy levels based on gender resulted in a significant value of 0.946 > 0.05. These findings suggest that there is no difference in self-efficacy between male and female trainers. The Independent sample t-test study of self-efficacy based on training licenses results in a significance value of 0.032 < 0.05. These findings indicate there is a difference in self-efficacy levels between trainers with national and local licenses. These findings may assist trainers, administrators, and policymakers establish better training programs.

Keywords: Self efficacy, extracurricular, martial arts, gender, coaching license

Resumen. Los entrenadores son personas increíblemente influyentes que ayudan a producir atletas excepcionales en los programas extracurriculares de artes marciales de la escuela. La autoeficacia es un indicador clave de la competencia del entrenador en el proceso de entrenamiento de deportes extracurriculares de artes marciales. Los objetivos de este estudio son 1) determinar las diferencias en los niveles de autoeficacia de los entrenadores de artes marciales en las escuelas secundarias de la Región Especial de Yogyakarta en función del género, y 2) determinar las diferencias en los niveles de autoeficacia de los Entrenadores de artes marciales en escuelas secundarias de la Región Especial de Yogyakarta según licencias de entrenamiento. Esta investigación es un estudio comparativo. En este estudio participaron 56 entrenadores de artes marciales que enseñaban artes marciales extracurriculares en escuelas secundarias de la Región Especial de Yogyakarta. Los datos de este estudio se recopilaron mediante un cuestionario. Se utilizó un cuestionario para recopilar datos sobre la autoeficacia de los entrenadores de artes marciales. El cuestionario consta de diez afirmaciones con respuestas en un rango de 1 a 5. Los expertos revisaron el cuestionario, cuya validez y confiabilidad fue validada empíricamente. Para analizar los datos se utilizó la prueba t de muestra independiente, que fue precedida por pruebas precursoras de datos como la prueba de normalidad de Shapiro-Wilk y la prueba de homogeneidad de varianza de Levene. El análisis de la prueba t de muestra independiente de los niveles de autoeficacia según el género arrojó un valor significativo de 0,946 > 0,05. Estos hallazgos sugieren que no hay diferencias en la autoeficacia entre entrenadores masculinos y femeninos. El estudio de prueba t de muestra independiente de autoeficacia basado en licencias de formación arroja un valor de significancia de 0,032 < 0,05. Estos hallazgos indican que existe una diferencia en los niveles de autoeficacia entre los formadores con licencias nacionales y locales. Estos hallazgos pueden ayudar a los formadores, administradores y formuladores de políticas a establecer mejores programas de capacitación.

Palabras clave: Autoeficacia, extracurricular, artes marciales, género, licencia de entrenador

Tri Ani Hastuti
tri_anihastuti@uny.ac.id

Introduction

Self-efficacy is an important quality that a martial arts trainer must possess in order to attain the training process's objectives. The ability to have self-efficacy is an essential aspect, and have a positive impact on other factors (Hazizah, Rusdinal, Ismaniar, Handrianto, & Rahman, 2024). Self-efficacy for task performance has been identified as a key predictor of success (Weight, Lewis, & Harry, 2020). Self-efficacy relates to a trainer's belief in his or her ability to impact his or her athletes' learning and performance (Myers et al., 2017). Bandura defines self-efficacy as "people's beliefs about their ability to produce a certain level of performance that gives them control over events in their lives" (Thomas & Jayesh, 2022). The achievement of athletes is a sign of the beneficial effects of a trainer's self-efficacy. High levels of self-efficacy are associated with more effective trainers (Boardley, 2018). One of the variables influencing achievement is self-efficacy, both high and low (Bacti, 2020). According to research in the field of education, teacher self-efficacy positively affects student academic achievement (Shahzad, Khurram; Naureen, 2017). It also positively correlates with student academic adjustment, teacher behavior patterns and practices linked to classroom quality, and other factors that contribute to teachers' psychological health, such as dedication, professional happiness, and personal success (Zee & Koomen, 2016). Self-efficacy and self-esteem have a significant impact on a person's success or failure. They have an impact on how hard people work to achieve their goals. People with strong self-efficacy are
more likely to attempt to accomplish a task compared to those with low self-efficacy. Kevin (2020).

Self-efficacy research is critical to the development of sport. Self-efficacy theory is one of the most well researched conceptual frameworks in sport and exercise psychology (Feltz, Short, & Sullivan, 2008). It is a challenge for sport psychology (Romero, Guzmán, & Vázquez, 2022). This urgency is heightened by recommendations from research findings to perform additional self-efficacy research (Myers et al., 2017). Several relevant studies were found that explored self-efficacy in relation to coaches, including self-efficacy training for high school trainers (Villalon & Martin, 2020), Sources of Self-Efficacy for Youth Recreational Sports Coaches (Saville et al., 2014). Research suggests that self-efficacy is important for gender analysis in entrepreneurship (Mozahem, 2021), as well as in futsal and football (Aragão e Pina et al., 2021). There is still a significant amount of research including (Boardley, 2018; Kevin, 2020; Lirgg, Dibrezzo, & Smith, 2016; Myers et al., 2017; Villalon & Martin, 2020; Weight et al., 2020). However, not enough study has been conducted to investigate the self-efficacy of martial arts trainers, particularly in Indonesia.

The purpose of this study is to analyze martial arts trainers’ self-efficacy based on their gender and training license level. This study is distinctive in that it is more focused on martial arts trainers and examines two variables, gender and training level. It is intended that the findings of this study would reinforce existing relevant research findings and serve as a consideration for interested parties in developing policies aimed at developing martial arts sports from the standpoint of trainer self-efficacy.

Materials and methods

Methods

This research is a comparative study. The purpose of this study is to 1) determine the differences in the level of self-efficacy of martial arts trainers in secondary schools in the Special Region of Yogyakarta based on gender, and 2) determine the differences in the levels of self-efficacy of martial arts trainers in secondary schools in the Special Region of Yogyakarta based on training licenses.

Participants

The participants in the research subjects were martial arts trainers who taught extracurricular martial arts at secondary schools in the Special Region of Yogyakarta. The research sample was determined using the cluster random sampling approach. This study drew responses from 56 coaches. Table 1 summarizes the trainer demographics as follows:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Amount</th>
<th>License</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>43</td>
<td>National license</td>
<td>18</td>
</tr>
<tr>
<td>Women</td>
<td>13</td>
<td>Local license</td>
<td>38</td>
</tr>
</tbody>
</table>

Table 1. Trainer Demographics

Procedure

This study’s data was collected via a questionnaire. A questionnaire was utilized to collect data on martial arts trainers’ self-efficacy. The questionnaire consists of ten statements with responses on a range of 1 to 5. The questionnaire was developed after consulting with specialists and was empirically tested, resulting valid and reliable results. Tables 2 and 3 provide explanations for the validity and reliability test results.

Data Analysis

An independent sample t test was used to analyze differences in self-efficacy levels among martial arts trainers based on gender and licenses. The Shapiro-Wilk normality test and Levene’s Test of Variance Homogeneity were used to perform data prerequisite tests.

Result

Prerequisite Test

The Shapiro-Wilk normality test was used for the first prerequisite test. If Sig. > 0.05, the data is normally distributed; otherwise, if Sig. < 0.05, the data is not normally distributed. Tables 4 and 5 below show the normality test results obtained using SPSS 26 program.

Table 4 shows that the data on men and women’s self-efficacy levels is normally distributed, with a sig value greater than 0.05. Men have a Shapiro-Wilk value of 0.593 and a degree of self-efficacy of 0.515. Table 5 indicates that the data on the level of self-efficacy of trainers with national and local licenses is normally distributed, with a sig value greater than 0.05. Men have a Shapiro-Wilk value of 0.125,
and their level of self-efficacy is 0.919.

The second precondition test utilizes Levene’s Test of Homogeneity of Variance, with the constraint that if Sig. > 0.05, the data is homogeneously distributed; otherwise, if Sig. < 0.05, the data is not homogeneous. The results of the homogeneity test were achieved using the SPSS 26 software, as shown in the table below.

**Table 6.** Homogeneity based on gender

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>3.82</td>
<td>0.539</td>
</tr>
</tbody>
</table>

**Table 7.** Homogeneity based on training license

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>1.11</td>
<td>0.440</td>
</tr>
</tbody>
</table>

Tables 6 and 7 indicate that the data on men’s and women’s self-efficacy levels are homogeneous, with sig values of 0.539 or greater than 0.05. The data on the self-efficacy levels of trainers with national and local licenses is also homogeneous, with a sig value of 0.740 or higher than 0.05.

**Independent sample t test**

The independent sample t test was carried out after the normality and homogeneity tests were completed. This study utilized an independent sample t test to see if there were any changes in the level of self-efficacy of high school extracurricular martial arts trainers in the Special Region of Yogyakarta based on gender (men and women) and training license (national or local). In the Independent sample t test, if the Sig value is less than 0.05, Ho is rejected and Ha is accepted. If the Sig value is greater than 0.05, Ho is accepted and Ha is rejected. With the help of SPSS 26 software, the findings of the independent sample t test explained as follows.

**Table 8.** T-test Self Efficacy based on Gender

<table>
<thead>
<tr>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>.068</td>
<td>54</td>
<td>.946</td>
<td>10912</td>
<td>1.59739</td>
<td>-3.69345</td>
<td>3.11770</td>
</tr>
</tbody>
</table>

According to the results of the independent sample t test analysis, the level of self-efficacy by gender has a significant value of 0.946 > 0.05. These findings indicate that men and women trainers had the same level of self-efficacy. These results imply that the hypothesis that there is a difference in the level of self-efficacy between men and women trainers is rejected, because the value is more than 0.05.

**Table 9.** T-test Self Efficacy based on Training Licence

<table>
<thead>
<tr>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.196</td>
<td>54</td>
<td>.032</td>
<td>3.03801</td>
<td>1.38169</td>
<td>.26387</td>
<td>5.81215</td>
</tr>
</tbody>
</table>

The Independent sample t test analysis reveals a significant value of 0.032 < 0.05 for self-efficacy related to training licenses. These findings could indicate that there is a difference in the level of self-efficacy between trainers with national and local licenses. The results indicate that there is a significant difference in self-efficacy levels between trainers with national and local licenses (p-value < 0.05).

**Discussion**

The first study’s findings revealed that male and female trainers had the same level of self-efficacy. Women trainers have an average self-efficacy score of 40.1, which is similar to men trainers’ score of 40.2. Several investigations came to the same conclusion about the level of self-efficacy with various subjects. A survey of 80 teachers found that there was no difference in self-efficacy between men and women. Of the 80 research subjects, 25 exhibited poor levels of self-efficacy, including 5 men and 20 women. Meanwhile, 3 men and 15 women made up the 18 teachers with strong self-efficacy (Septianisa & Caninsti, 2016). Male and female professors participated in a study (Almonacid et al., 2023), the results of the study showed similar scores in the level of self-efficacy, no significant differences are observed in the total scores by factor according to gender. The same study found no significant difference in psychological capital between men and women primary school teachers (Junita & Mulyana, 2021). This study used a psychological capital scale that corresponds to the fundamental ideas of psychological capital, including self-efficacy, hope, optimism, and resilience. There are no gender differences in self-efficacy, which is consistent with the findings of a study of 191 basketball players (Everhart & Chelladurai, 1998), which included 94 men and 97 women. Other studies have found no significant differences in self-efficacy and self-confidence among teenagers of both genders (Thomas & Jayesh, 2022).

Similar findings were obtained in the study of gender variations in self-efficacy in entrepreneurship. Gender inequalities occur in some scale subdomains, but they are minor (Mozahem, 2021). A study of 693 Ghanaian teachers found that teacher’s gender had no affect on their teaching beliefs or self-efficacy beliefs in applying the new curriculum (Agormedah et al., 2022). Other studies’ findings and conclusions demonstrate that the level of self-efficacy is influenced by factors other than gender, requiring a more in-depth investigation of other determining factors.

The findings of this study, as well as the conclusions of the preceding studies, support the notion of gender equality in the sports training profession. The social movements around feminism and sexual diversity have positioned the gender approach worldwide as one of the great challenges facing education in the 21st century (Mujica-Johnson, Concha López, Peralta Ferroni, & Burgos Henríquez, 2024). According to a study on the leadership of female martial arts trainers (Gándara, Mushlin, Maryati, & Nur, 2020), the local cultural view of women as gentle in their actions is not an impediment to exercising leadership in implementing good training programs for both men and women.
women. Gender equality is one of the Sustainable Development Goals (SDG) targets. Gender equality and women’s engagement are crucial for achieving sustainable development goals (Martínez-Martínez et al., 2021).

The second study found that trainer self-efficacy varies depending on the level of training license. This theory is further confirmed by the self-efficacy averages for each category, which include trainers with a national license (42.2) and local trainers (39.1). Based on the averages of each group, trainers with national licenses have better self-efficacy than trainers with local licenses. These findings are consistent with study findings that show that the most important difference between certified and non-certified coaches is in game strategy and self-efficacy, which is higher among qualified trainers (Lee, Malete, and Feltz, 2002).

According to the data and discussion above, it is crucial to develop trainer self-efficacy through structured programs. For example, the National Training Certification Program in Canada is an adult education program that gives education to persons active in sports training. Kloos, K, & Edwards, J. (2022). Training education programs that promote trainers’ self-efficacy must also be developed or changed (Weller & Weller, 2013). The results showed that online professional development experiences boosted self-efficacy. Participants’ self-analysis of changes in their efficacy suggested various plausible causes for the conflicting views on the impact of experience on teacher efficacy (Yoo, 2016). Higher levels of sport psychology education and contact with practitioners were associated with higher CE (p < 0.05). (Villalon and Martin, 2020). Research on trainer training programs found that there was a significant benefit in enhancing trainers’ self-efficacy (Malete & Feltz, 2000).

Athletes’ success indicates the positive influence of a trainer’s self-efficacy. High levels of self-efficacy are associated with effective coaching (Boardley, 2018). One of the factors influencing achievement is high and low self-efficacy (BaeTi 2020). Self-efficacy supports the development of mental strength, control, and increased performance (Romero et al., 2022). According to educational research, teacher self-efficacy has a positive impact on student academic achievement (Shahzad, Khurram; Naureen, 2017). Teacher self-efficacy also shows a positive relationship with student academic adjustment, teacher behavior patterns and practices related to classroom quality, and other factors. Personal achievement, professional satisfaction, and commitment are all characteristics that contribute to teachers’ psychological well-being (Zee & Koomen, 2016). Self-efficacy and self-esteem have a significant impact on an individual’s success and failure. It influence a person’s attempts to achieve their objectives. People with strong self-efficacy are more likely to attempt to accomplish a task than those with low self-efficacy (Kevin, 2020). To accomplish ideal training goals, martial arts trainers should continuously improve their competency and training level. This condition is in accordance with the results in a study which concluded that a large number of coaches indicated their intention to train at a higher level in the future (Paixao et al., 2021). Continuous Professional Development is crucial for professionals to remain effective and relevant in their field (Nash, Sproule, & Horton, 2017). The higher the degree of training, the greater your expertise and experience. These circumstances are equipped to meet the challenges of a more sophisticated training process. A survey of 421 officials from six levels of Canadian ice hockey certification found that officials in the lowest level of office (level 1) experienced less stress than other levels of officials (Dorsch & Paskevich, 2007). A study suggests that intervention programs should be carried out with awareness of disparities in stress experiences based on certification level (Dorsch & Paskevich, 2007). A trainer who feels competent in managing their emotions, in particular, will have a high level of confidence in the efficacy of motivating and developing their athlete’s character, and this insight will influence their positive verbal reactions to the athlete’s performance (Teques, Duarte, & Viana, 2019).

To ensure the effectiveness of the trainer certification upgrading program, policymakers must evaluate existing demands and challenges. Future directions for increasing certification participation rates include clear identification and broad outreach about the benefits of certification, clarification of evaluation criteria, simplifying the certification process and incorporating online models, increasing evaluator accessibility, and providing certification incentives and rewards (Gurgis, Kerr, & Stirling, 2020). Continuing professional development programs should motivate and encourage trainers in sports to learn and improve their skills throughout their careers (Nash et al., 2017). The performance of the sustainability and certification professional improvement program is constantly analyzed in order to be used as material for program evaluation. A study looked at the perspectives of master coach developers and coach education leaders in Canada to see what factors related to their feeling confident and competent in leading assessments of the National Coaching Certification Program (Kloos, K., & Edwards 2022). Other relevant research has been conducted in various countries, including Poland (Hedberg, 2015), Brazil (Milistetd, Trudel, Mesquita, & Nascimento, 2014), development in England (Nash et al., 2017), coaching education in Spain (Junita & Mulyana, 2021), and the challenges of certified trainer resources in Indonesia. (Pranoto, Sa’adah, & Suhartooyo, 2021).

Conclusion

This study concludes that, based on the Independent sample t test analysis, 1) there is no difference in the level of self-efficacy of martial arts trainers in secondary schools in the special region of Yogyakarta in terms of gender, and 2) there is a difference in the level of self-efficacy of martial arts trainers in secondary schools in the special region of Yogyakarta in terms of training license. Self-efficacy plays a vital part in maximizing training and accomplishing athletes’ goals. As a result, it is considered vital to strengthen martial
arts teachers' self-efficacy through training and level advancement. These findings can help trainers, administrators, and policymakers designing better coaching programs. Given the study's limitations, experts believe that similar research with a larger sample size and deeper analysis would be required to enhance the findings of previous studies.

References


Mujica-Johnson, F. N., Concha López, R., Peralta Ferroni,


