

# THE EFFECT OF SPIRITUAL LEADERSHIP ON ORGANIZATIONAL RESILIENCE: MEDIATED BY ENTREPRENEURIAL INNOVATION

Suryadi <sup>\*</sup>, Abd. Qadir Muslim <sup>\*\*</sup>, Langgeng Setyono <sup>\*\*\*</sup>,  
Nanang A.S <sup>\*\*\*\*</sup>

<sup>\*</sup> Corresponding author, Department of Public Administrative Science, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia  
Contact details: Brawijaya University, Malang 65145, Indonesia

<sup>\*\*</sup> Department of Public Administrative Science, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

<sup>\*\*\*</sup> Department of Business Administration Science, Faculty of Administrative Science, Brawijaya University, Malang, Indonesia

<sup>\*\*\*\*</sup> Department of Business and Hospitality, Faculty of Vocational Studies, Brawijaya University, Malang, Indonesia



## Abstract

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Islamic boarding school research is one of the essential factors in dealing with changing times. This problem is caused by the existence of management in Islamic boarding schools, which tends to be traditional and monotonous in religious-centric texts, without regard to aspects of adaptive conceptual and technical abilities. This study aims to reveal the role of spiritual leadership and entrepreneurial innovation in building organizational resilience. In addition, this study also highlights the role of entrepreneurial innovation as a mediating variable. A total of 130 participants were involved in this study, including leaders of Islamic boarding schools, teachers, students, and parents. After distributing 130 questionnaires to the participants, we analyzed them using the Partial least square-structural equation modeling (PLS-SEM) method. Unlike the hypothesis, this study found no significant relationship between spiritual leadership and resilience in Islamic boarding schools. However, spiritual leadership influences entrepreneurial innovation (Yang et al., 2021). Entrepreneurial innovation encourages organizational resilience (YahiaMarzouk & Jin, 2022). In addition, entrepreneurial innovation perfectly mediates the effect of spiritual leadership on resilience in Islamic boarding schools.

**Keywords:** Spiritual Leadership, Entrepreneurial Innovation, Resilience, Islamic Boarding Schools

**Authors' individual contribution:** Conceptualization — S. and A.Q.M.; Methodology — S. and L.S.; Resources — A.Q.M. and N.A.S.; Investigation — A.Q.M. and N.A.S.; Writing — S. and A.Q.M.; Supervision — S. and L.S.

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## 1. INTRODUCTION

The age structure of students between Generation Z and Millennials dominates with an estimated 49.12% of 40.67 million people. The census calculations show that the Millennial Generation occupies

the second position, as much as 24.32%, while Generation Z occupies the first position, as much as 24.80% (BPS Jawa Timur, 2022). In other words, students have a huge role in developing human resources in the Industrial Revolution 4.0 era. Even though the number of Islamic boarding schools has

increased significantly by around 6,661 with 89,342 educators and 1.7 million students (Dinas Kominfo, 2021), they are not capable of the lack of resilience of Islamic boarding schools which is a particular problem for Islamic education institutions in Malang City, because it is predicted Islamic boarding schools are only synonymous with the results of the founder's efforts (individual enterprise) which only focus on the interests of the founding stakeholders, without considering the quality of the students (Yahya, 2015). This was also reinforced by Hartoyo's statement, Chair of the Special Committee for Development of Islamic boarding schools, which revealed that in daily life, it is still challenging for Islamic boarding schools to accept recognition as formal education, so they are often seen as a sub-system of national education that is not independent (Dinas Kominfo, 2021).

Nevertheless, Islamic boarding school means something other than that it is a place that cannot produce independent, innovative, creative generations with a leadership spirit (Wafa, 2015). Even though Muslim students focus a lot on matters of worship, they are believed to have strong resilience in independence. This is evidenced by efforts to integrate character development through the economic activities of students from the aspect of entrepreneurial innovation and spiritual leadership exemplified by the Al-Mawaddah Islamic boarding school (Falah, 2018). This precariousness indirectly agrees that internalization in the development of the independent character of Islamic boarding school students should be encouraged in a well-structured and well-conceived way to realize 21st-century skills that are focused on adapting Islamic boarding schools to the challenges of the Industrial Revolution 4.0 (Bai et al., 2020). If it is only the process of internalizing religious knowledge, without a balance towards the development of artificial intelligence, advanced robotics, and gene editing (Colombo et al., 2014), likely, students will likely not be able to survive and adapt to technology and information developments.

However, the results of pre-research conducted by researchers at most Islamic boarding schools in Malang City also show that the application of organizational systems to student resilience is still rare so issues that come into contact with technical management aspects in the management of Islamic boarding schools are considered as encounter-culture towards the status quo (Yahya, 2015). Furthermore, students are trapped in acute eschatological traps resulting in students being more inclined toward texts than technical contextual aspects (Sodiq, 2019). It means that the spiritual side, in terms of passive worship, is tentatively more dominant when compared to contextual practice (Sodiq, 2019). The bad thing is that this responsiveness cannot be implemented in the social reality that continues to develop today. Slowly, pesantren began to ignore the spirit and culture of independent creation and economic innovation, which had previously been ingrained, so it harmed the students' resilience.

In addition, discourses about students' independence from the perspective of spiritual leadership, entrepreneurial innovation, and resilience are rarely discussed. It can be seen from studies conducted by (Falah, 2018; Mubarok & Fatoni, 2018;

Polindi, 2019; Wijaya & Sukmana, 2019). Through the investigations that have been carried out, we have found no studies that discuss the independence of Islamic boarding schools from the perspective of spiritual leadership and entrepreneurial innovation. In the process, this study was deemed necessary because it contributed as an alternative offer for Islamic boarding schools in Malang City in developing institutions not only in spiritual aspects but also in innovative skill and creativity. Malang was chosen as the research location because Malang has long been known as an education city. The development of Islamic-based education in the city of Malang has become a concern, considering that it is of good quality and professionally managed. Islamic education is currently experiencing intense competition because many similar Islamic boarding school institutions have emerged with good accreditation, especially in Malang, Indonesia (Rofiaty, 2019). Therefore, this study aims to analyze the extent to which spiritual leadership and entrepreneurial innovation are able to establish resilience in Islamic boarding schools in Malang City. Therefore, this study compiles several research questions as follows:

*RQ1: Does spiritual leadership contribute significantly to organizational resilience?*

*RQ2: Does spiritual leadership contribute significantly to entrepreneurial innovation?*

*RQ3: Does entrepreneurial innovation contribute significantly to organizational resilience?*

*RQ4: Does entrepreneurial innovation mediate the relationship between spiritual leadership and organizational resilience?*

The rest of the paper is structured as follows. After the introduction we proceed to Section 2, namely the literature review which discusses relevant topics and we also present the development of hypotheses. Section 3 covers the research method, which includes design, the participants involved, and data analysis. Furthermore, in Section 4, statistical findings are presented. Section 5 highlights the discussion. Finally, Section 6 highlights the conclusions of the research results, deficiencies, and recommendations for future studies.

## 2. LITERATURE REVIEW

### 2.1. Organizational resilience

Resilience is defined as the ability to face and recover positively from negative, traumatic, or stressful experiences. However, the concept of resilience has been extended to the organizational level (organizational resilience). The concept of organizational resilience is the ability to prevent organizational weakening, respond to crises, or get back up after an adverse event, and function normally again. Organizational resilience is a function of situational awareness, vulnerability management, and adaptive capacity of an organization in a complex, dynamic, and interrelated environment (McManus, 2008). Islamic boarding school is an educational institution with a curriculum based on Islamic principles (Halomoan et al., 2023). Organizational resilience in the context of Islamic boarding schools refers to the institution's capability to provide a competitive advantage for individuals and institutions (Sheffi, 2007), which in practice still

often encounters obstacles in Islamic boarding schools in Malang City (Dinas Kominfo, 2021). The existence of resilience development can be detected when specific individuals or institutions can use their mental and behavioral processes to promote personal assets and protect themselves from the potential adverse effects of pressure and challenges (Robertson et al., 2015). In simpler terms, the resilience of Islamic boarding schools lies in developing resilience skills that enable students to remain calm during crises and to move on from incidents without perceived long-term negative consequences (de Terte & Stephens, 2014). Islamic boarding schools are required to produce a generation that masters adaptable skills (adaptation) and self-development analysis. This competency can be seen from positive adaptation in the Industrial Revolution 4.0 era (Haderer & Ciolacu, 2022).

## 2.2. Spiritual leadership

Discourse on spiritual leadership has been developed in the transformation of the intrinsic motivation model. The tendency attached to intrinsic motivation is inseparable from an individual's search for something new, unique, and challenging. Spiritual leadership results from constructing values, attitudes, and behaviors, which are crucial in providing intrinsic encouragement or motivation by calling and membership (Fry & Cohen, 2009). Spiritual leadership is directly proportional to the control of commitment, productivity, and performance. The relevance of spiritual leadership is seen as the primary reference for organizations in providing intrinsic strength to individuals or human resources within them (Fry & Cohen, 2009). We believe that without spiritual leadership, it is considered that the resilience of Islamic boarding schools will not be able to form ideally, so it is interesting to study using the perspective of spiritual leadership theory. The results of the research by Ahmed et al. (2023) show that spiritual leadership directly and indirectly affects employee resilience. Spiritual leadership also instills meaning among employees by demonstrating genuine concern and communicating a shared vision.

Empirical studies also explain that spiritual leadership is closely related to innovation. Spiritual leadership can motivate people intrinsically by satisfying their spiritual needs so that they feel energetic, inspired, and comfortable with leaders (Yang et al., 2021), these conditions allow leaders to encourage them to behave innovatively (Pramitha, 2020). Ali et al. (2020) emphasized that spiritual leadership affects forming the harmonious safety and passion for deepening the capacity to learn about something innovative and creative. From another study conducted by Polat (2011) on students, it is proven that the spiritual aspect is an aspect that influences the cognitive development of students so that they can show a sincere attitude, strong faith, and broad vision and mission (Fry & Cohen, 2009). Based on this explanation, we formulate the following hypotheses:

*H1: Spiritual leadership significantly affects the resilience of Islamic boarding schools.*

*H2: Spiritual leadership significantly affects entrepreneurial innovation.*

## 2.3. Entrepreneurial innovation

The term entrepreneurial innovation has been extensively explored but there is no agreement on the exact meaning of entrepreneurial innovation (Guerrero & Urbano, 2021). However, Schumpeter (1942) as the first person to recognize this concept, explained that entrepreneurial innovation refers to the transformation of means into innovation as a result of adapting to be accepted by the market. Therefore, it can be stated that entrepreneurial innovation is the implementation of ideas into new products/services (innovations) that can be marketed. Entrepreneurial innovation can be implemented in various contexts and conditions, including in the education sector (Wei et al., 2019). Islamic education is currently experiencing intense competition because many similar Islamic boarding school institutions have emerged with good accreditation, especially in Malang, Indonesia (Rofiaty, 2019). Therefore, entrepreneurial innovation in Islamic educational institutions is a necessity for organizations to survive and develop. The implementation of entrepreneurial innovation seeks to achieve entrepreneurial growth, innovation, and independence in Islamic boarding schools, as well as the development of the capabilities, knowledge, and commitment of stakeholders (Anggadwita et al., 2021).

Islamic boarding schools that lack entrepreneurial innovation will need more entrepreneurial innovation to keep up with the times. These are also agreed by Senbeto and Hon (2020) that resilience is quite difficult to build if the organization only relies on intrinsic elements from the spiritual side. However, maturity also requires strengthening the capacity to persist (increasing the capacity to survive) from all aspects. Organizations that have a competitive advantage tend to engage in innovation than organizations that lack innovation.

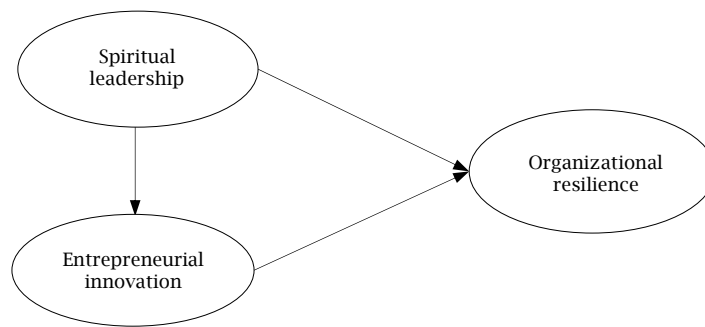
Zighan et al. (2022) show that entrepreneurial innovation is able to transform and mobilize resilience in organizations to survive the magnitude of threats and disruptive disruptions. Earlier studies have confirmed that the ability of organizations to innovate during difficult conditions is critical for resilience (YahiaMarzouk & Jin, 2022). Entrepreneurial and innovation skills can anticipate and adapt to a difficult environment. Innovation is strongly associated with the role of the leader (Yang et al., 2021) and this has implications for organizational resilience (Heinz et al., 2021). Based on this explanation, we formulate the following hypotheses:

*H3: Entrepreneurial innovation significantly affects the resilience of Islamic boarding schools.*

*H4: Entrepreneurial innovation mediates the influence of spiritual leadership on the resilience of Islamic boarding schools.*

## 2.4. Conceptual framework

Based on theoretical studies, we formulated a conceptual model as shown in Figure 1. Specifically, our proposed model examines the mediating role of entrepreneurial innovation on the relationship between spiritual leadership and organizational resilience.

**Figure 1.** Proposed framework

### 3. RESEARCH METHODOLOGY

#### 3.1. Research design

The design of this study is explanatory, namely, a study that examines the reasons behind a phenomenon that occurs (Creswell, 2014). The explanatory study intends to test the hypotheses on whether they support or reject previous research. It means, this research includes causal explanation research, which intends to explain the relationship between one variable and another. However, this research analysis focuses on path analysis between the independent, dependent, and mediating variables, so it does not discuss the reciprocal relationship (Jöreskog et al., 2016). As we emphasize in the conceptual model, this study attempts to investigate the mediating role of entrepreneurial

innovation on the influence of spiritual leadership on organizational resilience.

#### 3.2. Participants and data collection

The universe of this research is all Islamic boarding schools in Malang City. The sample of the boarding schools as the unit of analysis was determined based on calculations according to Isaac and Michael (1981, as cited in, Creswell, 2014), namely with an error rate of 5% in 46 Islamic boarding schools, each institution was represented by the leadership of the Islamic boarding school, teachers, students, and parents of students with total 196 people. Based on Isaac and Michael's table, we obtained a final sample of 130 people. Respondent demographic data is displayed in Table 1 below.

**Table 1.** Respondents' demographic data

| Demographic data              | Gender (%) | Age (%)   | Education (%) | Status (%) |
|-------------------------------|------------|-----------|---------------|------------|
| Female                        | 52 (40.0)  |           |               |            |
| Male                          | 78 (60.0)  |           |               |            |
| 18-22 years old               |            | 48 (36.9) |               |            |
| 24-28 years old               |            | 35 (26.9) |               |            |
| 29-33 years old               |            | 22 (16.9) |               |            |
| 34-38 years old               |            | 17 (13.1) |               |            |
| > 39 years old                |            | 8 (6.2)   |               |            |
| Senior high school or below   |            |           | 54 (41.5)     |            |
| Associate degree (D3)         |            |           | 17 (13.1)     |            |
| Bachelor's degree (S1)        |            |           | 48 (36.9)     |            |
| Master's degree or above      |            |           | 11 (8.5)      |            |
| Leader of the boarding school |            |           |               | 31 (23.8)  |
| Teacher                       |            |           |               | 36 (27.7)  |
| Parent                        |            |           |               | 11 (8.5)   |
| Students                      |            |           |               | 52 (40.0)  |

The demographic data of respondents in Table 1 reveals that out of 130 respondents, men (60.0%) are the most dominant participants compared to women (40.0%). Among the participants, generations Z and Y were dominated, namely ages 18-22 years old (36.9%), 24-28 years old (26.9%), and 29-33 years old (16.9%). Regarding the level of education, more than 40% had senior high school education or below, and the least had obtained a master's degree or more (8.5%). The majority of participants were students, namely 52 (40%), and the rest were boarding school leaders (23.8%), teachers (27.7%), and parents of students of 11 (8.5%).

#### 3.3. Measures

This study covers spiritual leadership, entrepreneurial innovation, and organizational resilience. Firstly, spiritual leadership indicators include hope/belief (endurance, persistence, doing what is necessary,

expanding goals, hope and feelings of victory, and excelling), vision and mission (broad appeal to critical stakeholders, determining goals and direction of vision and mission, reflect high ideals, encourages hope/belief, sets standards of excellence), and loves what is (loyalty, forgiveness, integrity, honesty, courage, kindness, empathy/compassion, patience/gentleness/diligence) (Fry & Cohen, 2009). Secondly, entrepreneurial innovation is measured based on proactive, risk-taking, and competitive spirit, product innovation (creating attractive designs, quality standards, quality development, product expansion, product imitation, new products), process innovation (energy saving, using new technology), marketing innovation (product promotion, marketing products to new market places, and expanding potential target markets) (Blind, 2017). Finally, organizational resilience is measured by three indicators, namely 1) macrosystem (friend support and closeness to

the community), 2) exosystem (access to financial support and access to supportive work), and 3) microsystem that is closely related to sub-indicators such as quality attention, and support from friends, reinforcing learning places, and support from the leaders of Islamic boarding schools (Aleghfeli & Hunt, 2022; Ang et al., 2021).

**3.4. Data analysis**

The selection of the data analysis technique used is based on the research objectives and the type of statistical data collected, so structural equation modeling (SEM) analysis with the partial least square (PLS) approach is employed to assess whether the formulated hypothesis is confirmed or not with a low p-value of 0.5. Before assessing the hypotheses, evaluating the reliability and validity of the measured items was also carried out using the PLS method. Furthermore, evaluating the feasibility of the model can be explained through four stages, namely evaluating R-squared ( $R^2$ ),

predictive relevance (Q-squared,  $Q^2$ ), Goodness of Fit (GoF), and path coefficients (Ghozali, 2014).

**4. RESULTS**

**4.1. Measurement model**

Testing the validity and reliability of the research model can be seen after several calculations with certain conditions in the form of a minimum value that must meet the threshold in the convergent validity, discriminant validity, and composite reliability calculations. Convergent validity is helpful to test the validity of each latent variable through the items that represent each variable indicator. Using a loading factor with the condition that the value is above 0.7 is the initial stage for an assessment reference. Then the AVE calculation must have a value above 0.5 to complete this stage. Meanwhile, to measure reliability, it can be found through the composite reliability value, which must be above 0.7, and Cronbach's alpha value above 0.7.

**Table 2.** The results of the measurement model in PLS

| Constructs                  | Items | FL    | AVE   | CA    | CR    | rho_A |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| Spiritual leadership        | SL.1  | 0.765 | 0.529 | 0.923 | 0.933 | 0.927 |
|                             | SL.2  | 0.726 |       |       |       |       |
|                             | SL.3  | 0.781 |       |       |       |       |
|                             | SL.4  | 0.797 |       |       |       |       |
|                             | SL.5  | 0.786 |       |       |       |       |
|                             | SL.6  | 0.722 |       |       |       |       |
|                             | SL.7  | 0.785 |       |       |       |       |
|                             | SL.8  | 0.766 |       |       |       |       |
|                             | SL.9  | 0.782 |       |       |       |       |
|                             | SL.10 | 0.798 |       |       |       |       |
|                             | SL.11 | 0.789 |       |       |       |       |
|                             | SL.12 | 0.768 |       |       |       |       |
|                             | SL.13 | 0.783 |       |       |       |       |
|                             | SL.14 | 0.733 |       |       |       |       |
|                             | SL.15 | 0.734 |       |       |       |       |
|                             | SL.16 | 0.732 |       |       |       |       |
|                             | SL.17 | 0.759 |       |       |       |       |
| Entrepreneurship innovation | EI.1  | 0.709 | 0.584 | 0.914 | 0.926 | 0.920 |
|                             | EI.2  | 0.763 |       |       |       |       |
|                             | EI.3  | 0.742 |       |       |       |       |
|                             | EI.4  | 0.722 |       |       |       |       |
|                             | EI.5  | 0.794 |       |       |       |       |
|                             | EI.6  | 0.764 |       |       |       |       |
|                             | EI.7  | 0.716 |       |       |       |       |
|                             | EI.8  | 0.775 |       |       |       |       |
|                             | EI.9  | 0.769 |       |       |       |       |
|                             | EI.10 | 0.725 |       |       |       |       |
|                             | EI.11 | 0.710 |       |       |       |       |
|                             | EI.12 | 0.721 |       |       |       |       |
|                             | EI.13 | 0.766 |       |       |       |       |
|                             | EI.14 | 0.740 |       |       |       |       |
|                             | EI.15 | 0.753 |       |       |       |       |
|                             | EI.16 | 0.713 |       |       |       |       |
|                             | EI.17 | 0.700 |       |       |       |       |
| Organizational resilience   | OR.1  | 0.776 | 0.520 | 0.932 | 0.940 | 0.937 |
|                             | OR.2  | 0.766 |       |       |       |       |
|                             | OR.3  | 0.737 |       |       |       |       |
|                             | OR.4  | 0.703 |       |       |       |       |
|                             | OR.5  | 0.749 |       |       |       |       |
|                             | OR.6  | 0.761 |       |       |       |       |
|                             | OR.7  | 0.797 |       |       |       |       |
|                             | OR.8  | 0.751 |       |       |       |       |
|                             | OR.9  | 0.761 |       |       |       |       |
|                             | OR.10 | 0.819 |       |       |       |       |
|                             | OR.11 | 0.746 |       |       |       |       |
|                             | OR.12 | 0.776 |       |       |       |       |
|                             | OR.13 | 0.736 |       |       |       |       |
|                             | OR.14 | 0.745 |       |       |       |       |
|                             | OR.15 | 0.700 |       |       |       |       |
|                             | OR.16 | 0.712 |       |       |       |       |
|                             | OR.17 | 0.718 |       |       |       |       |

Note: FL — Factor loadings; AVE — Average variance extracted; CA — Cronbach's alpha; CR — Composite reliability.

The results of the item measurements show the loading factor value for each item that exceeds 0.7. Thus, it is declared valid. It is shown in Table 2 that all items from spiritual leadership, entrepreneurship innovation, and organizational resilience were finally allowed to continue measuring to the next stage. Meanwhile, the validity of the AVE minimum value threshold of 0.5 indicates a valid measure. Based on the measurement model, as shown in Table 2, the size of the AVE value has exceeded 0.5. Hence, all research variables are confirmed. Thus the research instrument is powerful for measuring the variable being studied. Furthermore, composite reliability is applied to test the level of reliability through the internal consistency reliability approach. As presented in Table 2, instrument reliability shows that all research variables have Cronbach's alpha and composite reliability values that exceed the minimum requirement of 0.7 at each stage of the assessment. Finally, it was concluded that this study used an instrument with all items that were error-free and consistent so that they were suitable for further analysis.

#### 4.2. Structural model

The PLS structural model helps predict the causality relationship between research variables and know the level of accuracy of the model formed. The results of the PLS structural model can be explained through several stages, namely evaluating  $R^2$ ,  $Q^2$ , GoF, and path coefficients. First, the coefficient of determination ( $R^2$ ) is used in research to show the accuracy of the effect of exogenous variables on endogenous variables. The  $R^2$  value of each endogenous variable is recorded in Table 3, which is 0.344 for entrepreneurial innovation

and 0.676 for organizational resilience. Accordingly, the magnitude of  $R^2$  in this study is in the moderate category because the values of the endogenous variables are successively above 0.33. They followed what Chin (1998) stated: the  $R^2$  criterion is divided into three classifications: above 0.67 as substantial, above 0.33 as moderate, and above 0.19 as weak. Thus, the  $R^2$  value of each of the endogenous variables of this study is valid and is in the medium category.

**Table 3.** The results of the coefficient of determination ( $R^2$ )

| Variable                   | $R^2$ |
|----------------------------|-------|
| Entrepreneurial innovation | 0.344 |
| Organizational resilience  | 0.676 |

$Q^2$  is used to measure the quality of the results of the research model used to determine whether the predictions are good or not. The assessment method is the  $Q^2$  value  $> 0$  (Ghozali, 2014). As recorded in Table 4, the  $Q^2$  value for each endogenous variable is 0.309 for spiritual leadership, 0.117 for entrepreneurship innovation, and 0.994 for organizational resilience. Furthermore, the magnitude of  $Q^2$  in this study is in the moderate category because the values of the endogenous variables are successively above 0.25. Following the division of categories put forward by (Hair et al., 2019), the criteria for a robust model are with conditions of more than 0.5, moderate models with more than 0.25, and a weak model with less than 0.25. Therefore, the  $Q^2$  value of each endogenous variable in this study is valid and is in the medium category. Table 4 below is the result of the  $Q^2$  calculation.

**Table 4.** The results of predictive relevance ( $Q^2$ )

| Variable                   | SSO      | SSE      | $Q^2 (= 1 - SSE/SSO)$ | Cut off | Decision |
|----------------------------|----------|----------|-----------------------|---------|----------|
| Spiritual leadership       | 1972.000 | 1361.759 | 0.309                 | $> 0$   | Valid    |
| Entrepreneurial innovation | 1972.000 | 1740.514 | 0.117                 | $> 0$   | Valid    |
| Organizational resilience  | 1972.000 | 1962.000 | 0.994                 | $> 0$   | Valid    |

Note: SSE — Sum square prediction error; SSO — Sum squared observation.

Furthermore, the validation of the overall concept model can be reviewed through GoF. Ghozali (2014) argues that GoF index is a single measure to validate the performance of all models consisting of measurement models and structural models. Chin (2010) states that the GoF score criteria range from 0 to 1 with an interpretation of the value: 0.1 means small, 0.25 means medium, and 0.36 means big. Based on calculations using the GoF index formula, the GoF result is 0.526. These results meet the GoF threshold, namely between 0 and 1. As a result, it is concluded that the GoF in this study has extremely strong criteria. The following is the GoF calculation through the GoF index formula:

$$\begin{aligned} GoF &= \sqrt{Communnality} \times \sqrt{R^2} \\ &= \sqrt{0.544} \times \sqrt{0.510} = 0.526 \end{aligned} \quad (1)$$

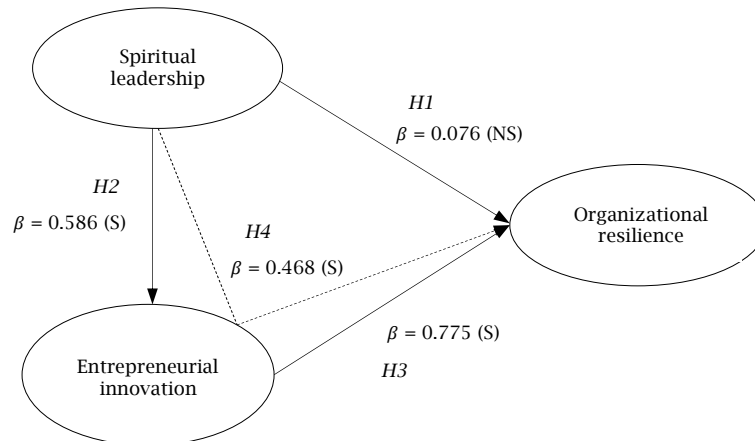
#### 4.3. Hypothesis testing

Hypothesis testing proves the acceptance or rejection of the hypothesis that has been formulated. Bootstrapping through path coefficients examines the hypothesis of direct and indirect effects. The evaluation is carried out by identifying the suitability of the minimum value on the t-statistic test value, which must exceed 1.96, and the p-value must be less than 0.05 to determine significance. Meanwhile, to find out the negative or positive relationship is assessed by the value of the original sample. The results of the direct hypothesis test are presented in Table 5.

**Table 5.** The results of hypotheses testing

| Relationship                             | Original sample ( $\beta$ ) | Sample mean | Std. Dev. | T-statistics | P-value | Decision |
|--|-----------------------------|-------------|-----------|--------------|---------|----------|
| H1: SL $\rightarrow$ OR                  | 0.076                       | 0.072       | 0.084     | 0.906        | 0.365   | Rejected |
| H2: SL $\rightarrow$ EI                  | 0.586                       | 0.605       | 0.075     | 7.846        | 0.000   | Accepted |
| H3: EI $\rightarrow$ OR                  | 0.775                       | 0.780       | 0.047     | 16.336       | 0.000   | Accepted |
| H4: SL $\rightarrow$ EI $\rightarrow$ OR | 0.468                       | 0.567       | 0.066     | 7.061        | 0.000   | Accepted |

Note: SL — Spiritual leadership; OR — Organizational resilience; EI — Entrepreneurship innovation.

**Figure 2.** Diagram hypothesis testing

Note: The dotted line — the mediation effect; S — the significant path; NS — not the significant path.

Five hundred sub-samples of PLS bootstrapping were applied to evaluate the significance of the proposed hypotheses. The PLS bootstrapping analysis shown in Table 5 exhibits that spiritual leadership does not appear to affect organizational resilience in Islamic boarding schools ( $\beta = 0.076$ ; p-value = 0.365). Thus, H1 is rejected. Spiritual leadership significantly influences entrepreneurship innovation ( $\beta = 0.586$ ; p-value = 0.000). Hence, H2 is accepted. Furthermore, the effect of entrepreneurship innovation on organizational resilience shows a convincing value ( $\beta = 0.775$ ; p-value = 0.000). Therefore, H3 is confirmed. Furthermore, the hypothesized results of the mediating effect of entrepreneurship innovation on the relationship between spiritual leadership and organizational resilience appear significant ( $\beta = 0.468$ ; p-value = 0.000). Thus, H4 is accepted.

## 5. DISCUSSION

The results of hypothesis testing using the PLS-SEM method in this study found that spiritual leadership does not substantially affect organizational resilience. Resilience can be interpreted as a function of situation awareness, vulnerability management, and adaptive capacity of an organization in a complex, dynamic, and interrelated system (McManus, 2008). This finding aligns with Malik et al. (2022), who revealed that leaders with high spirituality do not have a close relationship with organizational resilience. The weak relationship between an organization's resilience and a spiritual leader's role must be connected to its people, especially the students, who can adapt independently to the existing environment and situation. Although the findings of this study indicate an insignificant relationship between spiritual leadership and organizational resilience, the direction of the relationship between the two

variables is positive. That is, the higher the role of the spiritual leader is also directly proportional to the organization's increased ability to deal with difficult situations. Shelton et al. (2020) explained that resilience in an organization is closely related to how well the leadership instills the value of trust and the organization's vision.

It supports previous research conducted by Besuner and Bewley (2017), who found that leadership applied by organizations plays a role in organizational resilience. His study found that leaders who are tough and courageous and have the confidence to take action can direct and sustain living organizations in the face of the forces of change. Furthermore, Morales et al. (2019) conducted research on predictor factors of organizational resilience, in this study, the authors tried to analyze various factors that affect organizational resilience. According to Morales et al. (2019), organizational strength can be developed by seven factors because they have some influence and contribute to its development and deployment. Determining whether organizational resilience is effective is related to performance variables, in this case, the company's response when facing disturbances. For this reason, it is seen through the critical factors by looking at the significance of the magnitude of the influence, namely adaptive capacity. This research is supported by the analysis of Morales et al. (2019), who continue the construction of adaptive capacity obtained from resilient leadership and organizational management.

This study also proves that spiritual leadership is strongly related to entrepreneurial innovation in Islamic boarding schools. Islamic boarding schools, as a place to gain knowledge, also require innovation that is able to stimulate their students to become entrepreneurs and independent. Therefore, the role of the leader becomes pivotal in encouraging innovation within the Islamic boarding school environment. Innovation in Islamic boarding schools

is closely related to leaders who inspire and have explicit beliefs and visions (Pramitha, 2020). Lei et al. (2020) explained that innovation capability increases when leaders are able to encourage their members to think creatively and rationally and are far-sighted. In this sense, entrepreneurial innovation in Islamic boarding schools can be understood through effective student initiative development, radical breakthroughs, encouraging entrepreneurship, and an ecosystem that supports innovation and entrepreneurship. Innovation is key for organizations to survive and develop, and this depends on how significant the role of the leadership is in encouraging it (Akbari et al., 2021). The findings of this study extend previous literature on the considerable impact of leadership on innovation. Our results are unique because the variable of spiritual leadership is rarely studied with innovation. In addition, another exciting thing is the context of this research carried out in Islamic boarding schools.

Furthermore, the present study highlights the role of entrepreneurial innovation as a predictor of resilience in Islamic boarding schools. This study found that entrepreneurial innovation affects organizational stability in Islamic boarding schools in Malang City. Zighan et al. (2022) show that entrepreneurial innovation can transform and mobilize resilience in organizations to survive the magnitude of threats and disruptive disruptions. Earlier studies have confirmed that an organization's ability to innovate during difficult times is critical for resilience (YahiaMarzouk & Jin, 2022). Organizations, including in the education sector, need to constantly innovate to build a competitive advantage compared to organizations that need to be more innovative (Williams et al., 2017). Heinz et al. (2021) revealed that organizations could respond to and anticipate demanding environments through innovation and adapt and transform with the organizational environment. The relevance of innovation during difficult conditions can be demonstrated by one's innovation ability which is a suitable strategy for overcoming difficulties (Senbeto & Hon, 2020).

The essential finding of this study is that entrepreneurial innovation perfectly mediates the relationship between spiritual leadership and organizational resilience. As previously explained, spiritual leadership does not directly affect resilience in Islamic boarding schools. However, examining the indirect effect of spiritual leadership on resilience in Islamic boarding schools through innovation shows a significant value. It means that leaders must first create innovation and entrepreneurship in the organizational environment to build Islamic boarding schools' resilience.

Organizations with high stability and adaptability are strongly associated with the ability to innovate (Williams et al., 2017). The capacity of Islamic boarding schools to innovate can contribute to resilience in difficult situations and environments. Therefore, leaders need to build entrepreneurial innovation because organizational resilience increases when leaders encourage organizational members to innovate, make breakthroughs, and become entrepreneurs (Akbari et al., 2021; Zighan et al., 2022).

## 6. CONCLUSION

The present study highlights the mediating role of entrepreneurial innovation in the relationship between spiritual leadership and organizational resilience. This study explores three direct fundamental relationships between spiritual leadership on organizational resilience, spiritual leadership on entrepreneurial innovation, and entrepreneurial innovation on organizational resilience. Based on the PLS-SEM analysis that has been done, the present study surprisingly found that there is no significant relationship between spiritual leadership and organizational resilience. Furthermore, as we hypothesized, spiritual leadership influences entrepreneurial innovation, and entrepreneurial innovation can convincingly encourage the resilience of Islamic boarding schools. We also found the decisive mediation role of entrepreneurial innovation in the influence of spiritual leadership on organizational resilience.

Like other prior research, this study is not free from drawbacks. The most apparent area for improvement is the collection of cross-sectional data, which is carried out under particular conditions so that analysis of long-term trends is complicated. Future research is expected to consider longitudinal studies, which make it possible to read conditions at various moments and times. Another limitation is that the subject of this study only focuses on Islamic boarding schools in Malang, Indonesia. It provides deficiencies in the generalization of study results in different cases. Future research is expected to widen the research subject beyond certain geographic boundaries. Lastly, this study involves three variables: spiritual leadership, entrepreneurial innovation, and organizational resilience, and spiritual leadership does not significantly affect organizational resilience. Therefore, including transformational leadership and Islamic leadership may be more linear in the context of Islamic education organizations. In addition, testing the moderation of effects must also be considered to enrich this discipline.

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## APPENDIX. ITEMS OF RESEARCH QUESTIONNAIRE

| <i>Variable</i>                    | <i>Code</i> | <i>Item</i>  |
|------------------------------------|-------------|--|
| <i>Spiritual leadership</i>        | SL.1        | The leadership of my Islamic boarding school has an understanding of the proposed vision.  |
|                                    | SL.2        | Islamic boarding schools have formulated a vision to be achieved.  |
|                                    | SL.3        | Islamic boarding school leaders and students make the Islamic boarding school's vision an inspiration in carrying out their duties.                                |
|                                    | SL.4        | The leadership of my Islamic boarding school has a clear vision to guide the management of the Islamic boarding school.  |
|                                    | SL.5        | The leadership of my Islamic boarding school likes to forgive the mistakes of members (administrators and students) of Islamic boarding schools.                   |
|                                    | SL.6        | The leadership of my Islamic boarding school has a friendly attitude towards others.   |
|                                    | SL.7        | The leadership of my Islamic boarding school has good integrity.   |
|                                    | SL.8        | The leadership of my Islamic boarding school has empathy for other people.   |
|                                    | SL.9        | The leader of my Islamic boarding school is honest.  |
|                                    | SL.10       | The leader of my Islamic boarding school is patient.   |
|                                    | SL.11       | The leader of my Islamic boarding school is a leader who encourages administrators and students to move forward.   |
|                                    | SL.12       | The leadership of my Islamic boarding school can be trusted.   |
|                                    | SL.13       | The leadership of my Islamic boarding school is humble.  |
|                                    | SL.14       | The leadership of my Islamic boarding school has values that are believed.   |
|                                    | SL.15       | The leadership of my Islamic boarding school carries out the values that are believed to be the success of the Islamic boarding school.                            |
|                                    | SL.16       | The leadership of my Islamic boarding school is firm in carrying out efforts to achieve the goals of Islamic boarding schools based on the values they believe in. |
|                                    | SL.17       | I am passionate about the leadership of the Islamic boarding school in facing the challenges and obstacles that occur in Islamic boarding schools.                 |
| <i>Entrepreneurship innovation</i> | EI.1        | Islamic boarding school emphasizes the use of technology in carrying out its activities.   |
|                                    | EI.2        | Islamic boarding school has a good management information system.  |
|                                    | EI.3        | Islamic boarding schools dare to take risks for the good of the organization.  |
|                                    | EI.4        | Our institution (Islamic boarding school) has a spirit of innovation.  |
|                                    | EI.5        | Islamic boarding schools value the emergence of new ideas in the innovation process.   |
|                                    | EI.6        | Our institution always encourages creativity in learning.  |
|                                    | EI.7        | Our institution conducts promotions and advertisements to make it easily recognized.   |
|                                    | EI.8        | Our institution has educational units operating in different places.   |
|                                    | EI.9        | Our institution has certain operational standards.   |
|                                    | EI.10       | At Islamic boarding school, we have innovative leaders.  |
|                                    | EI.11       | Islamic boarding schools have different programs from other educational institutions.  |
|                                    | EI.12       | Islamic boarding school uses the latest technology.  |
|                                    | EI.13       | Islamic boarding schools have superior programs that are difficult to compete with.  |
|                                    | EI.14       | Islamic boarding school has a specific strategy to expand its services.  |
|                                    | EI.15       | Islamic boarding school has an interesting educational design.   |
|                                    | EI.16       | Islamic boarding schools carry out imitation and modification strategies in producing services.  |
|                                    | EI.17       | Islamic boarding schools are proactive in providing innovative services.   |
| <i>Organizational resilience</i>   | OR.1        | Islamic boarding schools have a list of potential threats that will occur that must be responded to.   |
|                                    | OR.2        | Islamic boarding schools have a basis for predicting problems that will arise.   |
|                                    | OR.3        | Islamic boarding schools are always up to date with the latest environmental conditions.   |
|                                    | OR.4        | Islamic boarding schools have alternative steps to respond to problems.  |
|                                    | OR.5        | Islamic boarding school has speed in responding to conditions.   |
|                                    | OR.6        | Islamic boarding schools have the ability to quickly respond to changes.   |
|                                    | OR.7        | In Islamic boarding schools, the support of students and families is needed to deal with problems.   |
|                                    | OR.8        | The leadership of the Islamic boarding school has a list of problems to be monitored.  |
|                                    | OR.9        | Financial support from external parties can contribute to organizational resilience.   |
|                                    | OR.10       | A positive work environment can support the resilience of Islamic boarding schools to crises.  |
|                                    | OR.11       | Leaders are able to analyze a supportive environment for the sustainability of Islamic boarding schools.   |
|                                    | OR.12       | Islamic boarding schools have access to finance from external parties (e.g., banking, cooperatives, etc.)  |
|                                    | OR.13       | Islamic boarding school pays attention to me.  |
|                                    | OR.14       | At my Islamic boarding school, there is formal training related to how to find information, analyze it, and study it.  |
|                                    | OR.15       | In Islamic boarding schools, there is continuous learning.   |
|                                    | OR.16       | In Islamic boarding schools, adequate resources are available for learning.  |
|                                    | OR.17       | The leadership at the Islamic boarding school supports me in learning new things.  |