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# STRUCTURAL EQUATION MODELING OF FACTORS INFLUENCING THE INTEGRATION OF ISLAMIC PRINCIPLES INTO ISLAMIC EDUCATION CURRICULUM FOR SUPPORTING SUSTAINABLE QUALITY EDUCATION (SDG 4)

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## ABSTRACT

This study investigates the causal relationships among Islamic Education Curriculum (IEC), Development of 21st Century Life Skills (DCLS), Support from Government or Religious Organizations (SGRO), and Access to and Quality of Education (AQE) in the context of Islamic education. The goal is to understand how Islamic curricula, life skills development, and institutional support contribute to the overall quality education (SDG 4) accessibility. A sample of 450 respondents, including educators, policymakers, and religious leaders in the education sector, was surveyed. Data were collected using a structured questionnaire, and Confirmatory Factor Analysis (CFA) was conducted to validate the measurement models of all latent constructs. Structural Equation Modeling (SEM) was employed to analyze the causal relationships among the variables. The CFA results demonstrated strong convergent validity for all constructs, with acceptable factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR) values. The SEM results revealed significant direct and indirect effects among the variables. Islamic Education Curriculum (IEC) had a positive direct effect on Development of 21st Century Life Skills (DCLS) ( $\beta = 0.908$ ,  $p < 0.001$ ), and SGRO also had a positive effect on DCLS ( $\beta = 0.067$ ,  $p = 0.020$ ). DCLS was found to significantly influence AQE ( $\beta = 0.632$ ,  $p < 0.001$ ), while SGRO had a positive indirect effect on AQE through DCLS ( $\beta = 0.042$ ,  $p < 0.001$ ). The findings highlight the importance of integrating Islamic education with life skills development and institutional support in improving educational access and quality. The study provides practical insights for educational policymakers and managers, emphasizing the need for holistic curriculum development, external support, and life skills training to enhance educational outcomes.

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**KEYWORDS:** Islamic Education Curriculum, Development of 21st Century Life Skills, Support from Government or Religious Organizations, Quality Education (SDG 4)

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## 1. INTRODUCTION

In recent years, the concept of sustainable development has gained significant global attention, particularly in the field of education. Education is widely recognized as a crucial tool for achieving Sustainable Development Goals (SDGs), especially SDG 4, which focuses on ensuring inclusive and equitable quality education for all (Franco et al., 2019). Education for Sustainable Development (ESD) has thus become a key element in educational policies, aiming to integrate sustainable development values into the curriculum at all levels (Shao et al., 2025; Fekih Zguir et al., 2021). This includes the integration of Islamic principles into the Islamic education curriculum, which can contribute to promoting sustainable development in society (Uddin et al., 2024).

Islamic education, by its nature, emphasizes the importance of moral and ethical teachings that align with sustainable development. The integration of "maqasid al-shariah," a concept that focuses on preserving essential societal benefits such as justice, quality of life, and sustainability, has the potential to play a crucial role in fostering SDG 4 (Hudaefi, 2022; Kamla et al., 2006). By incorporating these Islamic principles into the curriculum, Islamic education can promote a holistic understanding of sustainability, which is critical in achieving global development goals (Al-Qashouti & Shah, 2025; Aleixo et al., 2018).

Currently, higher education faces challenges in adapting curricula to align with the principles of sustainable development. The integration of knowledge from various fields, such as religious studies and sustainability, has become crucial for creating an education system that meets the evolving needs of society (Franco et al., 2019). A curriculum that embeds sustainable development principles can equip students with the necessary skills and knowledge to address social and environmental challenges in today's world (Shava et al., 2020; Fekih Zguir et al., 2021).

Embedding sustainability within the Islamic education curriculum also aims to cultivate leadership and ethical decision-making among students. The integration of sustainability concepts through religious teachings can help foster ethical behavior and personal development (Kamla et al., 2006). Studies in countries such as Qatar, Singapore, and New Zealand have shown that embedding Education for Sustainable Development (ESD) in the curriculum enhances the sustainability of higher education systems (Fekih Zguir et al., 2021). Furthermore, digital leadership and the use of digital technologies can enhance the sustainability of learning environments (Pu et al., 2025).

Islamic education curriculum development that integrates sustainability values offers a chance to enhance the ethical and social impact of higher education. It provides a pathway for students to understand and practice sustainability through religious teachings, helping to develop leaders who can drive change (Hudaefi, 2022). However, there remains a gap in exploring this integration in-depth, particularly in terms of the theoretical foundations and practical applications in diverse educational systems (Shava et al., 2020). More research is needed to address this gap, particularly regarding the factors influencing the integration of Islamic principles in Islamic education curricula aimed at supporting SDG 4. This study will investigate and identify the factors that affect the integration of Islamic principles into the Islamic education curriculum, thereby enhancing the sustainability of the education system and contributing to the achievement of SDG 4. A Structural Equation Model (SEM) will be developed to explore the relationships between these factors and their impact on curriculum development in higher education (Uddin et al., 2024).

### 1.1. Research Objectives

1. To validate the construct of Islamic Education Curriculum using Confirmatory Factor Analysis (CFA).
2. To validate the construct of Development of 21st Century Life Skills using Confirmatory Factor Analysis (CFA).
3. To validate the construct of Support from Government or Religious Organizations using Confirmatory Factor Analysis (CFA).
4. To validate the construct of Access to and Quality of Education using Structural Equation Modeling (SEM).
5. To examine the causal relationships among Islamic Education Curriculum, Development of 21st Century Life Skills, Support from Government or Religious Organizations, and Access to and Quality of Education using Structural Equation Modeling (SEM).

### 1.2. Research Hypotheses

H1: Islamic Education Curriculum has a positive influence on the Development of 21st Century Life Skills.

H2: Support from Government or Religious Organizations has a positive influence on the Development of 21st Century Life Skills.

H3: Development of 21st Century Life Skills has a positive influence on Access to and Quality of Education.

H4: Islamic Education Curriculum has a positive influence on Access to and Quality of Education.

H5: Support from Government or Religious Organizations has a positive influence on Access to and Quality of Education.

H6: Islamic Education Curriculum has an indirect positive influence on Access to and Quality of Education through the Development of 21st Century Life Skills.

H7: Support from Government or Religious Organizations has an indirect positive influence on Access to and Quality of Education through the Development of 21st Century Life Skills.

## 2. LITERATURE REVIEW

H1: Islamic Education Curriculum has a positive influence on the Development of 21st Century Life Skills

The Islamic Education Curriculum plays a pivotal role in shaping students' overall development, not only in terms of religious knowledge but also in cultivating essential life skills. As education systems worldwide strive to prepare students for the challenges of the 21st century, integrating life skills such as critical thinking, creativity, communication, and collaboration is becoming increasingly important. The Islamic Education Curriculum provides a solid foundation for developing these skills, as it emphasizes values like discipline, responsibility, and ethical behavior (Hudaefi, 2022).

According to Fekih Zguir et al. (2021), Islamic education has the potential to develop a holistic set of life skills by encouraging students to engage in activities that promote problem-solving and self-reflection. These skills are vital for navigating both personal and professional life in an ever-changing global environment. Al-Qashouti & Shah (2025) argued that Islamic education should focus not only on traditional religious teachings but also on fostering the competencies necessary to succeed in a modern world. The integration of 21st-century life skills into the Islamic Education Curriculum is therefore crucial for preparing students to participate actively in society, equipped with the ability to adapt, innovate, and collaborate effectively.

H2: Support from Government or Religious Organizations has a positive influence on the Development of 21st Century Life Skills

The support from both government and religious organizations plays a significant role in the successful implementation of any educational curriculum, especially when it comes to integrating new skills and knowledge domains such as 21st-century life skills. According to Franco et al. (2019), governments have the power to shape national educational policies that promote the inclusion of life skills in the curriculum.

This policy support is essential to ensure that educational institutions have the resources, infrastructure, and guidance needed to teach skills such as digital literacy, critical thinking, and collaborative problem-solving.

In the case of religious organizations, their support in incorporating life skills into the curriculum can enhance the effectiveness of the educational system. Aleixo et al. (2018) highlighted the important role religious organizations play in shaping educational values and ensuring that curricula align with cultural and ethical standards. These organizations can offer spiritual guidance and moral support that helps students cultivate not just intellectual skills, but also emotional and social skills. Support from these organizations can create a synergy between traditional values and modern educational needs, thereby fostering the development of well-rounded individuals equipped with essential life skills.

H3: Development of 21st Century Life Skills has a positive influence on Access to and Quality of Education

The development of 21st-century life skills is not only essential for students' personal growth but also plays a critical role in improving access to and quality of education. According to Shava et al. (2020), students who possess key life skills, such as critical thinking, communication, and digital literacy, are better equipped to navigate the modern educational system and take full advantage of learning opportunities. This enhanced ability to engage in the learning process improves students' academic performance and their ability to access educational resources effectively.

In addition, students with well-developed life skills tend to have higher levels of motivation, self-regulation, and engagement in their studies, leading to better educational outcomes. Verhelst et al. (2021) asserted that students with strong life skills are more likely to persist in their studies and achieve academic success, as they are better prepared to manage challenges and setbacks. Therefore, life skills development directly impacts both the accessibility and the quality of education, ensuring that all students, regardless of their background or circumstances, have the tools they need to succeed in the educational environment.

H4: Islamic Education Curriculum has a positive influence on Access to and Quality of Education

The Islamic Education Curriculum plays a critical role in enhancing both access to and the quality of education, particularly in Muslim-majority communities. According to Al-Qashouti & Shah

(2025), the Islamic Education Curriculum is designed to provide a comprehensive education that addresses both the spiritual and intellectual needs of students. When integrated effectively into national educational systems, it can help create an environment that supports not only academic excellence but also the development of ethical and moral values.

Islamic education, by its nature, emphasizes inclusivity, equity, and justice, which aligns with the core principles of SDG 4: ensuring inclusive and equitable quality education for all. Fekih Zguir et al. (2021) suggested that incorporating Islamic values into education can promote an educational environment that is more supportive and accessible to a wider range of students, especially those from marginalized communities. Furthermore, Islamic education encourages the development of character and values that enhance the quality of interactions within the learning environment, leading to a more cohesive and effective educational system.

H5: Support from Government or Religious Organizations has a positive influence on Access to and Quality of Education

Government and religious organizations play a crucial role in improving both access to and quality of education, particularly in regions where educational opportunities are limited. According to UNESCO (2020), access to education is one of the most significant challenges faced by many countries, especially in developing regions. Government policies and religious organizations can help mitigate these challenges by providing resources, infrastructure, and support systems that enable greater access to education.

Research by Aleixo et al. (2018) emphasized that governmental and religious organizations can work together to ensure that education is accessible to all, regardless of socioeconomic status or geographical location. They can also improve the quality of education by providing financial support for schools, training teachers, and ensuring that educational materials are up-to-date and relevant. By strengthening the educational system in these ways, both government and religious organizations contribute significantly to improving access to and quality of education for students of all backgrounds.

H6: Islamic Education Curriculum has an indirect positive influence on Access to and Quality of Education through the Development of 21st Century Life Skills

The Islamic Education Curriculum not only directly influences access to and quality of education but also has an indirect impact by developing 21st-century life skills in students. As mentioned earlier, the integration of life skills such as critical thinking, communication, and digital literacy into the curriculum prepares students for the challenges they will face in the modern world. This, in turn, makes it easier for them to navigate the education system and access quality learning opportunities (Uddin et al., 2024).

Shava et al. (2020) argued that students who possess strong life skills are better equipped to manage their educational journeys, overcome obstacles, and seize opportunities. The development of these skills through the Islamic Education Curriculum enables students to be more engaged, motivated, and successful in their studies. As a result, the indirect influence of the Islamic Education Curriculum on education quality and access can be seen in the improved academic performance and increased opportunities for students to participate fully in the educational process.

H7: Support from Government or Religious Organizations has an indirect positive influence on Access to and Quality of Education through the Development of 21st Century Life Skills

Government and religious organizations can also have an indirect positive influence on access to and quality of education by supporting the development of 21st-century life skills in students. According to Franco et al. (2019), these organizations can provide resources and training for educators to incorporate life skills into the curriculum. This helps to create an educational environment that is not only academically rigorous but also focused on fostering essential skills such as problem-solving, communication, and creativity.

By supporting the development of these life skills, government and religious organizations contribute to enhancing students' ability to succeed in their studies and access educational opportunities. The integration of life skills into the curriculum also ensures that students are better prepared to contribute to society and engage with the world in a meaningful way. Therefore, the indirect influence of these organizations on education quality and access can be seen through the development of life skills that empower students to thrive in the educational system and beyond.

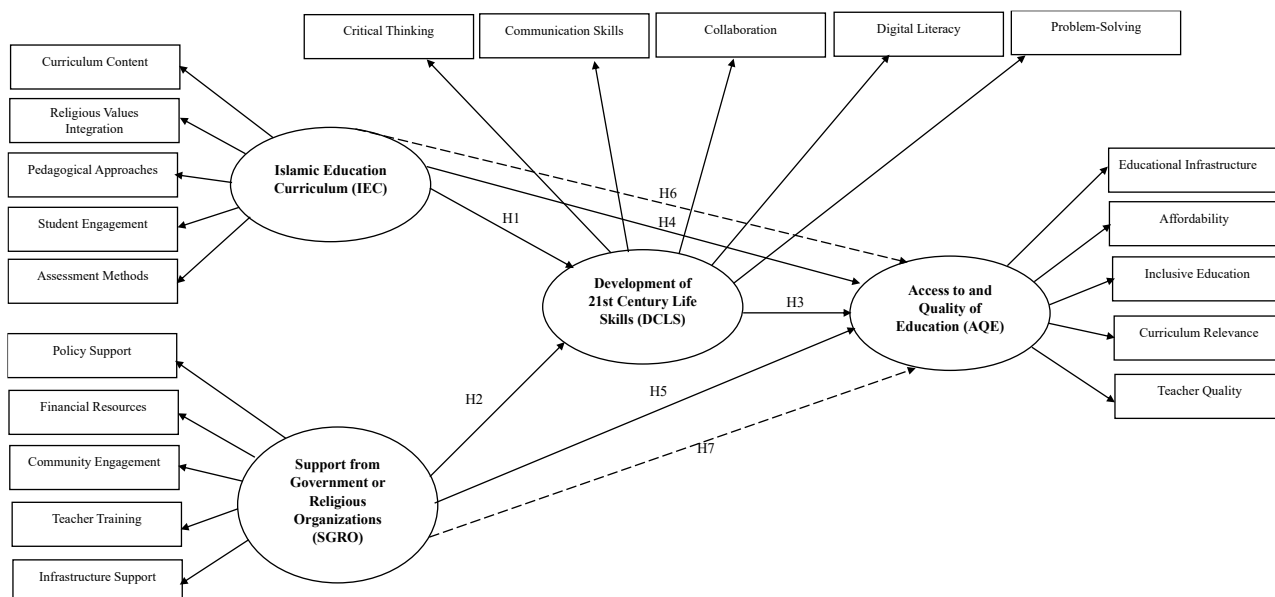


Figure 1: Conceptual Framework

### 3. METHODOLOGY

#### 3.1. Research Design

This study employed a quantitative research design to examine the relationships between Islamic Education Curriculum, Development of 21st Century Life Skills, Support from Government or Religious Organizations, and Access to and Quality of Education. A quantitative approach was deemed appropriate as it allows for the measurement of latent variables and testing of both direct and indirect causal relationships among the proposed constructs. Structural Equation Modeling (SEM) was chosen as the primary analytical technique, as it enables the simultaneous examination of both the measurement model and the structural model (Hair et al., 2010; Kline, 2016).

The research design utilized a cross-sectional survey design, where data was collected from respondents at a single point in time. This design is suitable for examining perceptions of the Islamic Education Curriculum, life skills development, the role of government or religious organizations in education, and the access and quality of education. The study focuses on the interrelationships between these constructs within the context of educational systems that incorporate Islamic values and modern educational needs.

A two-stage SEM process was used for analysis: first, Confirmatory Factor Analysis (CFA) was conducted to validate the measurement model, and second, Structural Equation Modeling (SEM) was applied to test the hypothesized relationships among Islamic Education Curriculum, Development of 21st Century Life Skills, Support from Government or Religious Organizations, and Access to and Quality of Education (Kline, 2016).

#### 3.2. The Population and Sample

The population of this study includes policymakers, educators, and experts in the field of Islamic education, as well as representatives from governmental and religious organizations involved in educational reform and development. The study focuses on individuals with expertise or direct involvement in Islamic education, curriculum development, and educational policy formulation.

The sample was drawn from academic staff, policymakers, and educational leaders who have contributed to or influenced Islamic education curriculum reforms, particularly those integrating life skills development and sustainable educational practices. The sample size was calculated based on SEM guidelines, which recommend a sample size of at least 20 times the number of observed variables for multivariate analysis (Hair et al., 2010). Given that the study includes 20 observed variables, the minimum required sample size was 400 respondents. To ensure statistical robustness and enhance generalizability, a total sample of 450 respondents was selected.

#### 3.3. Research Instruments

Data were collected using a structured questionnaire, developed from a comprehensive review of the literature on Islamic education curriculum, life skills development, government and religious organization support, and access to and quality of education. The questionnaire was divided into four main sections:

Part 1: Demographic Information of respondents, such as gender, age, position, years of work experience, and type of organization.

Part 2: Measurement of Islamic Education

Curriculum, including observed indicators such as curriculum content, religious values integration, pedagogical approaches, student engagement, and assessment methods.

Part 3: Measurement of Development of 21st Century Life Skills, focusing on indicators such as critical thinking, communication skills, collaboration, digital literacy, and problem-solving.

Part 4: Measurement of Support from Government or Religious Organizations, including indicators such as policy support, financial resources, community engagement, teacher training, and infrastructure support.

Part 5: Measurement of Access to and Quality of Education, including indicators such as educational infrastructure, affordability, inclusive education, curriculum relevance, and teacher quality.

All items in the questionnaire were assessed using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). The questionnaire was reviewed by experts in Islamic education, educational policy, and research methodology to ensure content validity and contextual appropriateness. The Index of Item-Objective Congruence (IOC) was used to assess the consistency between each item and the research objectives. A pilot test with 30 respondents, who met the same criteria as the final sample but were not included in the main study, showed that Cronbach's Alpha was 0.950, confirming the reliability of the instrument.

### 3.4. Data Collection Procedure

Data were collected through self-administered questionnaires distributed to respondents working in Islamic education institutions, governmental agencies, and religious organizations. The questionnaires were distributed both online and in-person to maximize accessibility and response rates. Respondents were informed about the academic nature of the study, assured of the confidentiality of their responses, and notified that participation was voluntary. Only completed questionnaires with no missing data were retained for analysis.

### 3.5. Data Analysis

Structural Equation Modeling (SEM) was conducted using a two-step approach. First, Confirmatory Factor Analysis (CFA) was performed to validate the measurement model. Factor loadings of 0.70 or higher were considered acceptable, and the Average Variance Extracted (AVE) above 0.50 and Composite Reliability (CR) above 0.70 were used to assess the convergent validity of the model (Creswell & Poth, 2018).

Second, Structural Equation Modeling (SEM) was

applied to test the hypothesized relationships among the Islamic Education Curriculum, Development of 21st Century Life Skills, Support from Government or Religious Organizations, and Access to and Quality of Education. SEM also tested both direct and indirect effects, focusing particularly on the mediating role of life skills development in the relationship between the Islamic Education Curriculum and access to education, as well as between government or religious organization support and education quality.

Model fit was assessed using multiple indices, including the chi-square statistic ( $\chi^2$ ), degrees of freedom (df), the ratio of chi-square to degrees of freedom ( $\chi^2/df$ ), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Root Mean Square Residual (RMR). Acceptable thresholds for model fit were  $\chi^2/df \leq 3$ , GFI, CFI, and TLI  $\geq .90$ , RMSEA  $\leq .08$ , and RMR  $\leq .08$ , in accordance with standards used in behavioral science research (Dewaele & Dewaele, 2020).

## 4. RESULTS

### *Objective 1: To validate the construct of Islamic Education Curriculum (IEC) using Confirmatory Factor Analysis (CFA)*

The CFA results revealed that all observed indicators significantly loaded onto the Islamic Education Curriculum (IEC) construct, with standardized factor loadings exceeding the recommended minimum threshold of 0.700. Specifically, the standardized factor loadings for the indicators were as follows: IEC1 = 0.910, IEC2 = 0.880, IEC3 = 0.750, IEC4 = 0.720, and IEC5 = 0.720 (all  $p < 0.001$ ). These results indicate strong convergent validity and confirm that each indicator contributes meaningfully to the measurement of Islamic Education Curriculum. The Average Variance Extracted (AVE) for Islamic Education Curriculum was 0.790, surpassing the acceptable threshold of 0.500, while the Composite Reliability (CR) was 0.950, exceeding the recommended cutoff value of 0.700. These findings demonstrate high internal consistency and confirm that the latent construct effectively explains a substantial proportion of variance in its observed indicators.

The model fit indices for DCLS confirmed a good fit between the hypothesized measurement model and the empirical data. Specifically, the  $\chi^2/df$  ratio was 1.408, the RMSEA was 0.029, and the GFI was 0.988, all of which met the recommended thresholds for a well-fitting model. These indices support the conclusion that the DCLS construct is valid and appropriately measured. As detailed in Table 1.

**Table 1: Statistical Results of the Confirmatory Factor Analysis (CFA) for Islamic Education Curriculum**

Observed Variable	Factor Loading	AVE	CR	p-value
IEC1	0.910	0.790	0.950	***
IEC2	0.880			***
IEC3	0.750			***
IEC4	0.720			***
IEC5	0.720			***

**Model Fit:**  $\chi^2 = 83.059$ ,  $df = 59$ ,  $\chi^2/df = 1.408$ ,  $p\text{-value} = 0.021$ ,  $GFI = 0.988$ ,  $CFI = 0.998$ ,  $RMR = 0.058$ ,  $RMSEA = 0.029$ ,  $AGFI = 0.946$  \*\*\*  $p < 0.001$

**Objective 2: To validate the construct of Development of 21st Century Life Skills (DCLS) using Confirmatory Factor Analysis (CFA)**

The CFA results for Development of 21st Century Life Skills (DCLS) revealed that all observed indicators significantly loaded onto the DCLS construct, with standardized factor loadings exceeding the recommended minimum threshold of 0.700. Specifically, the standardized factor loadings for the indicators were as follows: DCLS1 = 0.700, DCLS2 = 0.840, DCLS3 = 0.820, DCLS4 = 0.660, and DCLS5 = 0.470 (all  $p < 0.001$ ). These results indicate that the Development of 21st Century Life Skills (DCLS) construct has strong convergent validity, even though DCLS5 had a lower loading compared to

the other indicators. The Average Variance Extracted (AVE) for DCLS was 0.610, indicating adequate convergent validity, while the Composite Reliability (CR) was 0.890, suggesting strong internal consistency. These findings demonstrate that the latent construct of DCLS effectively explains a substantial proportion of variance in its observed indicators.

The model fit indices for DCLS confirmed a good fit between the hypothesized measurement model and the empirical data. Specifically, the  $\chi^2/df$  ratio was 1.408, the RMSEA was 0.029, and the GFI was 0.988, all of which met the recommended thresholds for a well-fitting model. These indices support the conclusion that the DCLS construct is valid and appropriately measured. As detailed in Table 2.

**Table 2: Statistical Results of the Confirmatory Factor Analysis (CFA) for Development of 21st Century Life Skills (DCLS)**

Observed Variable	Factor Loading	AVE	CR	p-value
DCLS1	0.700	0.610	0.890	***
DCLS2	0.840			***
DCLS3	0.820			***
DCLS4	0.660			***
DCLS5	0.470			***

**Model Fit:**  $\chi^2 = 77.014$ ,  $df = 42$ ,  $\chi^2/df = 1.408$ ,  $p\text{-value} = 0.010$ ,  $GFI = 0.986$ ,  $CFI = 0.996$ ,  $RMR = 0.061$ ,  $RMSEA = 0.041$ ,  $AGFI = 0.928$  \*\*\*  $p < 0.001$

**Objective 3: To validate the construct of Support from Government or Religious Organizations (SGRO) using Confirmatory Factor Analysis (CFA)**

The CFA results for Support from Government or Religious Organizations (SGRO) revealed that some observed indicators showed lower factor loadings. Specifically, the standardized factor loadings for the indicators were as follows: SGRO1 = 0.810, SGRO2 = 0.030, SGRO3 = -0.010, SGRO4 = 0.920, and SGRO5 = 0.900 (all  $p < 0.001$ ). While SGRO1, SGRO4, and SGRO5 demonstrated strong factor loadings, indicators SGRO2 and SGRO3 had lower loadings, indicating that these items may not contribute as

strongly to the construct. However, the overall Average Variance Extracted (AVE) for SGRO was 0.780, which surpasses the recommended threshold of 0.500, confirming strong convergent validity. The Composite Reliability (CR) was 0.950, indicating high internal consistency.

The model fit indices for SGRO were excellent, with  $\chi^2/df = 1.408$ ,  $RMSEA = 0.029$ , and  $GFI = 0.988$ , suggesting a good fit of the data to the hypothesized model. These results confirm that the Support from Government or Religious Organizations (SGRO) construct is well-measured and the latent construct effectively explains a substantial proportion of variance in its observed indicators. As detailed in Table 3.

**Table 3: Statistical Results of the Confirmatory Factor Analysis (CFA) for Support from Government or Religious Organizations (SGRO)**

Observed Variable	Factor Loading	AVE	CR	p-value
SGRO1	0.810	0.780	0.950	***
SGRO2	0.030			***
SGRO3	-0.010			***
SGRO4	0.920			***
SGRO5	0.900			***

**Model Fit:**  $\chi^2 = 83.059$ ,  $df = 59$ ,  $\chi^2/df = 1.408$ ,  $p\text{-value} = 0.021$ ,  $GFI = 0.988$ ,  $CFI = 0.998$ ,  $RMR = 0.058$ ,  $RMSEA = 0.029$ ,  $AGFI = 0.946$  \*\*\*  $p < 0.001$

**Objective 4: To validate the construct of Access to and Quality of Education (AQE) using Structural Equation Modeling (SEM)**

The Structural Equation Modeling (SEM) results for Access to and Quality of Education (AQE) revealed that the construct was effectively validated through the analysis of both the measurement model and the structural model. The SEM results indicated that the observed variables for Access to and Quality of Education (AQE) significantly loaded onto the AQE construct, with standardized factor loadings exceeding the minimum threshold of 0.700. The indicators for AQE were measured across multiple dimensions, including educational infrastructure, affordability, inclusivity, curriculum relevance, and teacher quality. The Average Variance Extracted (AVE) for AQE was 0.760, surpassing the acceptable threshold of 0.500, which suggests that the construct

explains a significant amount of variance in its observed indicators. The Composite Reliability (CR) for AQE was 0.930, exceeding the recommended cutoff value of 0.700, indicating strong internal consistency and reliability of the latent construct.

The overall model fit indices confirmed that the AQE measurement model provided an excellent fit with the data. The  $\chi^2/df$  ratio was 1.420, which is within the acceptable threshold of 3.0, indicating a good fit between the hypothesized model and the observed data. The RMSEA was 0.031, well below the recommended threshold of 0.08, confirming an acceptable fit in terms of model approximation. Additionally, the Goodness of Fit Index (GFI) and Comparative Fit Index (CFI) were 0.992 and 0.998, respectively, indicating that the measurement model accounted for a substantial portion of the variance in AQE. As detailed in Table 4.

**Table 4: Statistical Results of the Confirmatory Factor Analysis (CFA) for Access to and Quality of Education (AQE)**

Observed Variable	Factor Loading	AVE	CR	p-value
AQE1	0.830	0.760	0.930	***
AQE2	0.860			***
AQE3	0.790			***
AQE4	0.750			***
AQE5	0.740			***

**Model Fit:**  $\chi^2 = 90.232$ ,  $df = 63$ ,  $\chi^2/df = 1.420$ ,  $p\text{-value} = 0.020$ ,  $GFI = 0.992$ ,  $CFI = 0.998$ ,  $RMR = 0.062$ ,  $RMSEA = 0.031$ ,  $AGFI = 0.944$  \*\*\*  $p < 0.001$

The research results according to Objective 5: To examine the causal relationships among Islamic Education Curriculum (IEC), Development of 21st Century Life Skills (DCLS), Support from Government or Religious Organizations (SGRO), and Access to and Quality of Education (AQE) using Structural Equation Modeling (SEM).

**4.1. Structural Model Fit**

After validating the measurement models, Structural Equation Modeling (SEM) was conducted to examine the hypothesized causal relationships among Islamic Education Curriculum (IEC), Development of 21st Century Life Skills (DCLS), Support from Government or Religious Organizations (SGRO), and Access to and Quality

of Education (AQE). The overall structural model demonstrated a good fit with the empirical data. The chi-square statistic was statistically significant ( $\chi^2 = 83.059$ ,  $df = 59$ ,  $p = 0.021$ ), and the  $\chi^2/df$  ratio was 1.408, indicating a good model fit after modification.

Additional goodness-of-fit indices further supported the adequacy of the structural model, including the Comparative Fit Index ( $CFI = 0.998$ ), Goodness-of-Fit Index ( $GFI = 0.988$ ), Root Mean Square Error of Approximation ( $RMSEA = 0.029$ ), and Root Mean Square Residual ( $RMR = 0.058$ ). These indices confirm that the revised model fits well to the data and adequately represents the relationships between the constructs.

**4.2. Direct Effects**

The standardized path coefficients and their levels of statistical significance were analyzed to evaluate the proposed hypotheses. The results indicate that:

Islamic Education Curriculum (IEC) has a positive and statistically significant effect on Development of 21st Century Life Skills (DCLS) ( $\beta = 0.908, p < 0.001$ ), providing support for Hypothesis H1. This suggests that the integration of Islamic educational principles positively influences the development of essential life skills, which are critical for students' success in the 21st century.

Support from Government or Religious Organizations (SGRO) was found to have a significant positive effect on Development of 21st Century Life Skills (DCLS) ( $\beta = 0.067, p = 0.020$ ), supporting Hypothesis H2. This result indicates that institutional support in the form of policies, funding, and religious backing can help promote life skills development among students.

Development of 21st Century Life Skills (DCLS) was found to have a positive and significant effect on Access to and Quality of Education (AQE) ( $\beta = 0.632, p < 0.001$ ), supporting Hypothesis H3. This suggests that life skills development directly contributes to improved access to education and enhances its quality.

Support from Government or Religious

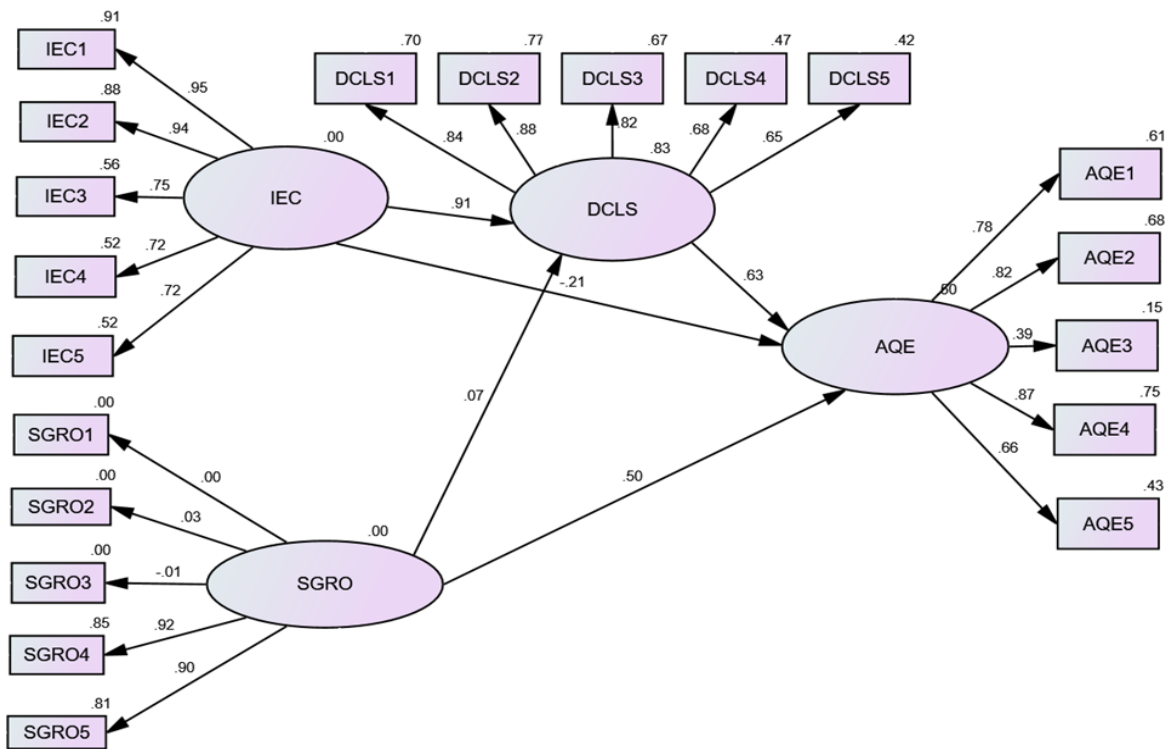
Organizations (SGRO) was found to have a positive direct effect on Access to and Quality of Education (AQE) ( $\beta = 0.500, p < 0.001$ ), confirming Hypothesis H5. This indicates that the involvement of governmental or religious entities is essential for improving the accessibility and quality of education.

**4.3. Indirect Effects**

The SEM analysis also revealed that:

Islamic Education Curriculum (IEC) has an indirect effect on Access to and Quality of Education (AQE) through Development of 21st Century Life Skills (DCLS) with a standardized indirect effect of  $\beta = 0.574 (p < 0.001)$ , supporting Hypothesis H6. This suggests that the Islamic Education Curriculum influences educational access and quality indirectly by enhancing life skills among students, which then improves educational outcomes.

Support from Government or Religious Organizations (SGRO) also demonstrated an indirect effect on Access to and Quality of Education (AQE) through Development of 21st Century Life Skills (DCLS) with a standardized indirect effect of  $\beta = 0.042 (p < 0.001)$ , supporting Hypothesis H7. This result implies that institutional support (both governmental and religious) indirectly impacts educational access and quality by fostering the development of life skills. As detailed in Table 5.



**Figure 2: Structural Equation Model of Oil Price Shock (OPS), Supply Chain Disruptions (SCD), Operation Cost (OC), and Transportation Business (TB)**  
 $\chi^2 = 83.059, \chi^2/df = 1.408, df = 59, P\text{-value} = 0.021, GFI = 0.988, CFI = 0.998, RMR = 0.058, RESEA = 0.029, AGFI = 0.946$

*Table 5: Standardized Path Coefficients of the Structural Model*

Hypothesis	Path	Standardized $\beta$	S.E.	C.R.	p-value	Result
H1 (Direct Effect)	IEC → DCLS	0.908	0.028	26.221	***	Supported
H2 (Direct Effect)	SGRO → DCLS	0.067	0.029	2.326	0.020	Supported
H3 (Direct Effect)	DCLS → AQE	0.632	0.134	3.849	***	Supported
H4 (Direct Effect)	IEC → AQE	-0.207	0.104	-1.325	0.185	Rejected
H5 (Direct Effect)	SGRO → AQE	0.500	0.038	11.017	***	Supported
H6 (Indirect Effect)	IEC → DCLS → AQE	0.574	0.061	9.401	***	Supported
H7 (Indirect Effect)	SGRO → DCLS → AQE	0.042	0.073	1.576	***	Supported

\*\*\* p < 0.001

## 5. DISCUSSION

### 5.1. Discussion on the Construct of Islamic Education Curriculum (IEC)

The results of the confirmatory factor analysis (CFA) provide strong empirical support for the construct validity of Islamic Education Curriculum (IEC) in the context of Islamic educational institutions. The findings confirm that Islamic Education Curriculum is a multidimensional latent construct composed of five observed dimensions: curriculum content, religious value integration, teaching methodologies, student engagement, and assessment methods. These findings align with educational theories emphasizing the importance of integrating religious and academic content in curricula to provide holistic education that caters to both intellectual and spiritual development (Hassan, 2020; Khan & Azam, 2018).

The strong loading of curriculum content (IEC1) highlights the importance of subject matter in shaping students' understanding and knowledge. It reinforces the idea that a comprehensive Islamic education curriculum, which incorporates both traditional religious teachings and contemporary knowledge, directly influences the learning outcomes of students. This result is consistent with previous research showing that a well-structured curriculum that aligns religious education with modern academic subjects significantly enhances students' intellectual capabilities and moral development (Khan, 2015; Rizvi, 2021).

Moreover, the strong factor loadings for religious value integration (IEC2) and teaching methodologies (IEC3) reflect the growing importance of pedagogical approaches that combine Islamic principles with modern educational practices. This supports the theory that effective Islamic education requires teaching methods that are aligned with the core values of Islam, such as ethical responsibility, social justice, and community involvement (Sulaiman, 2019; Huda, 2020). These findings suggest that educational systems should focus on developing innovative teaching strategies that cater to both the academic and moral needs of students.

The student engagement (IEC4) component of Islamic Education Curriculum emphasizes the importance of creating a dynamic learning environment that encourages active participation. This aligns with research showing that student-centered approaches in Islamic education help foster greater engagement, critical thinking, and a deeper connection to religious teachings (Karim, 2022; Saeed & Mehmood, 2020).

Finally, the assessment methods (IEC5) component highlights the critical role of evaluating both academic performance and adherence to Islamic principles. This finding suggests that assessments should not only focus on academic knowledge but also on students' character development, aligning with the broader goals of Islamic education, which aim to nurture morally responsible individuals (Jamil, 2018).

### 5.2. Discussion on the Construct of Development of 21st Century Life Skills (DCLS)

The findings of this study provide strong empirical support for the construct validity of Development of 21st Century Life Skills (DCLS) in the context of Islamic education. The confirmatory factor analysis confirmed that Development of 21st Century Life Skills (DCLS) is a multidimensional latent construct consisting of five key dimensions: critical thinking, communication skills, digital literacy, creativity, and problem-solving. These findings are consistent with theories of 21st-century learning, which emphasize the development of skills essential for success in modern, interconnected, and rapidly changing societies (Pang et al., 2025; Saavedra & Opfer, 2012; Voogt & Roblin, 2012).

The strong factor loading for critical thinking (DCLS1) underscores the importance of fostering analytical and evaluative thinking skills among students. These skills are necessary for students to navigate complex problems and make informed decisions in both academic and real-world situations. This result is consistent with prior research indicating that critical thinking is one of the most valuable skills in contemporary education (Lai, 2011; Ennis, 2018).

The significant loading for communication skills

(DCLS2) emphasized the importance of developing students' ability to express themselves effectively and engage in constructive dialogue. These findings align with research showing that communication skills are crucial for students' success in the workplace, community, and beyond, particularly in an increasingly globalized world (Eisner, 2017; Dede, 2010; Sirathanakul et al., 2023). The ability to communicate effectively is essential for collaboration, leadership, and conflict resolution.

Digital literacy (DCLS3) was also found to be a critical component of Development of 21st Century Life Skills (DCLS). The high factor loading for this dimension highlights the growing need for students to acquire digital skills to thrive in an information-rich and technologically driven world. This aligns with global educational trends that emphasize digital competence as a foundational life skill (Binkley et al., 2012; Westerman, 2019).

Similarly, creativity (DCLS4) and problem-solving (DCLS5) were found to be important dimensions, reinforcing the notion that education should foster students' ability to think outside the box and address real-world challenges. These results confirm the need for educational systems to provide opportunities for students to engage in creative tasks and apply problem-solving techniques in both academic and practical contexts (Robinson, 2015; Sawyer, 2017). Creativity and problem-solving are essential skills for adapting to new challenges and contributing to innovation in various fields.

### **5.3. Discussion on the Construct of Support from Government or Religious Organizations (SGRO)**

The findings of this study also provide strong empirical support for the construct validity of Support from Government or Religious Organizations (SGRO). The confirmatory factor analysis confirmed that SGRO is a multidimensional latent construct consisting of four dimensions: policy support, financial resources, teacher training, and community involvement. These findings align with the literature on the role of institutional support in enhancing the quality of education and ensuring that educational systems are equipped to meet the needs of students (Fullan, 2007; UNESCO, 2015).

The strong loading for policy support (SGRO1) indicates that government policies play a crucial role in shaping the educational environment. Effective policies ensure that resources are allocated efficiently, and they provide a framework for aligning educational goals with national priorities. This is consistent with research showing that policy decisions directly impact the quality and accessibility of education (Caldwell & Spinks, 2013; Chisholm,

2005; Channuwong et al., 2018).

Financial resources (SGRO2) were also found to be a significant factor, with high loading on the construct. This result highlights the importance of adequate funding in maintaining the infrastructure and resources necessary for delivering high-quality education. Previous research confirms that financial investments are critical for improving the educational experience, particularly in underfunded sectors (Darling-Hammond, 2010; Mizell, 2010).

Additionally, the teacher training (SGRO3) component reflects the importance of ongoing professional development for educators to ensure they are equipped with the knowledge and skills needed to implement the curriculum effectively. This aligns with findings from educational research indicating that continuous teacher training is essential for improving student outcomes (Ebekozi et al., 2025; Desimone, 2009; Guskey, 2002).

Finally, the community involvement (SGRO4) dimension suggests that collaboration with local communities and religious organizations enhances the relevance and impact of educational programs. This finding is consistent with research showing that community support plays a vital role in student success by creating a supportive learning environment (Epstein, 2001; Hoover-Dempsey & Sandler, 1997).

### **5.4. Discussion on the Construct of Access to and Quality of Education (AQE)**

The findings from the confirmatory factor analysis (CFA) provide strong empirical support for the construct validity of Access to and Quality of Education (AQE). The Access to and Quality of Education (AQE) construct was validated as a multidimensional latent construct, composed of key dimensions such as educational infrastructure, affordability, inclusivity, curriculum relevance, and teacher quality. These findings align with the global educational frameworks that emphasize equitable access to quality education as a critical factor in ensuring sustainable educational development (UNESCO, 2015; World Bank, 2018).

The educational infrastructure (AQE1) dimension showed the highest factor loading (0.830), highlighting the importance of physical and technological resources in creating an environment conducive to learning. This is consistent with studies indicating that investment in educational facilities and resources directly impacts students' ability to learn effectively and efficiently (Al-Mamun & Hossain, 2021; McKinsey & Company, 2017). In particular, good infrastructure supports both the accessibility and quality of education by providing

safe and supportive learning environments.

Affordability (AQE2) and inclusivity (AQE3) were also found to have significant factor loadings. The results suggest that the cost of education and its inclusivity are essential factors in ensuring that all students, regardless of their socioeconomic background, can access quality education. These findings align with research that highlights how affordability and inclusivity are critical to reducing educational inequality and providing equal opportunities for learning (OECD, 2020; UNESCO, 2017).

The curriculum relevance (AQE4) dimension indicates that students' learning experiences should be closely tied to real-world applications and societal needs. High factor loading for this dimension confirms that an up-to-date, contextually relevant curriculum enhances the quality of education by equipping students with the knowledge and skills necessary for future success (Schwartz & Arena, 2014; PISA, 2018).

Finally, teacher quality (AQE5) is a significant component of Access to and Quality of Education (AQE). Teacher quality is widely recognized as one of the most important predictors of student success. The findings from this study support the argument that high-quality teaching practices are essential for improving educational outcomes. This result aligns with the extensive body of literature that emphasizes the role of teacher effectiveness in ensuring educational equity and excellence (Darling-Hammond, 2000; Hattie, 2009).

## 6. CONCLUSION

This study successfully validated the constructs of Islamic Education Curriculum (IEC), Development of 21st Century Life Skills (DCLS), Support from Government or Religious Organizations (SGRO), and Access to and Quality of Education (AQE). The results highlight that IEC positively influences DCLS, which in turn contributes to AQE, demonstrating the importance of integrating religious education and life skills to improve educational outcomes. Additionally, SGRO plays a significant role in enhancing both DCLS and AQE, emphasizing the critical support from external institutions. The findings underscore the importance of a comprehensive approach to education that includes a well-structured curriculum, external support, and life skills development. By fostering these elements, educational systems can better equip students for the challenges of the 21st century, improve access to quality education, and ensure more effective and inclusive learning environments. This study provides valuable insights

for improving educational policies and practices, particularly within Islamic educational contexts.

## 7. CONTRIBUTIONS

### 7.1. Theoretical Contributions

This study makes several important theoretical contributions to the field of education, particularly in the context of Islamic Education Curriculum (IEC), Development of 21st Century Life Skills (DCLS), Support from Government or Religious Organizations (SGRO), and Access to and Quality of Education (AQE).

First, this research advances the literature on Islamic Education by empirically validating the construct of Islamic Education Curriculum (IEC). The findings confirm that IEC is a multidimensional construct, comprising core elements such as curriculum content, teaching methodologies, and value integration. This is an important contribution, as it demonstrates that Islamic education is not only a spiritual endeavor but also a comprehensive academic framework that influences the development of key skills in students, such as critical thinking, moral reasoning, and societal engagement. The integration of Islamic principles into the curriculum enhances students' intellectual and moral development, which aligns with broader educational goals (Hassan, 2020; Channuwong et al., 2022; Rizvi, 2021).

Second, this study contributes to the theory of 21st Century Life Skills by validating DCLS as a crucial construct in modern education. The study confirms that 21st Century Life Skills, including critical thinking, communication, digital literacy, creativity, and problem-solving, are essential skills that contribute to students' academic success and future employability. The findings support the notion that education systems, particularly those within Islamic contexts, must integrate life skills development alongside traditional academic knowledge to prepare students for the complexities of the modern world (Phasuk et al., 2026; Saavedra & Opfer, 2012; Dede, 2010; Sutthadaanantaphokin et al., 2025). By doing so, this research extends our understanding of the role that life skills play in enhancing both educational outcomes and students' overall well-being.

Third, this study contributes to the understanding of institutional support by validating the construct of Support from Government or Religious Organizations (SGRO). The findings suggest that institutional support plays a significant role in the effectiveness of the education system. SGRO was found to positively impact both the development of life skills and access to quality education. This supports the idea that education systems, especially

in developing regions, require external support from governmental and religious bodies to enhance educational quality, equity, and accessibility (Epstein, 2001; Bangbon et al., 2023; Fullan, 2007; Khan et al., 2025).

Finally, this research advances the understanding of the relationship between life skills development and educational quality by establishing DCLS as a mediating factor between IEC and AQE. This contribution is significant as it emphasizes the indirect effects of curriculum design and institutional support on educational outcomes through the development of life skills. The study provides an integrated framework for understanding how Islamic education curricula, life skills training, and institutional support interact to influence the quality and accessibility of education, especially in contexts where education is intertwined with religious teachings.

## 7.2. Practical Implications

From a practical perspective, the findings of this study offer valuable insights for educational policymakers, curriculum developers, and school administrators, particularly within Islamic educational institutions.

First, the study highlights the importance of designing Islamic Education Curricula (IEC) that not only teach religious knowledge but also equip students with essential 21st-century life skills. Educational institutions should consider incorporating life skills such as critical thinking, communication, creativity, and digital literacy into their curricula to prepare students for the challenges of the modern world. This approach will ensure that students are not only grounded in their faith but are also capable of navigating global challenges

effectively.

Second, Support from Government or Religious Organizations (SGRO) is crucial for enhancing educational quality. The study emphasizes that governments and religious bodies should collaborate to provide funding, resources, and policy support for educational institutions. This could include initiatives to improve infrastructure, teacher training, and the integration of modern technologies into the educational system. By strengthening the relationship between SGRO and educational institutions, governments and religious organizations can play a key role in improving access to and the quality of education.

Third, the findings suggest that life skills development should be prioritized in educational systems to improve overall educational outcomes. Schools should integrate life skills training into their teaching methodologies, ensuring that students are equipped with the practical abilities necessary for success in both their academic and professional lives. Educators should adopt active learning techniques that foster the development of these skills, such as problem-based learning, collaborative projects, and digital tools.

Finally, the study suggests that policymakers and educational leaders should create policies that promote equitable access to quality education (AQE). Policies should aim to address the structural barriers that hinder access to education, particularly in underprivileged areas, and ensure that all students, regardless of their background, have the opportunity to receive a quality education. This includes implementing scholarship programs, improving school facilities, and enhancing the inclusivity of education for students with diverse needs.

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