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Symbiotic Enlightenment: Exploring the Fascination of Biology Education Students with Religion Studies in an Academic Tapestry

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ABSTRACT

Purpose of the Study: This study aims to evaluate the interest of biology students in attending general education courses, specifically religious subjects, while exploring the impact of various factors such as gender, academic background, and extracurricular involvement. By doing so, it seeks to better understand how these factors influence students' engagement in interdisciplinary education.

Methodology: The research adopts a mixed-methods approach. It begins with quantitative analysis, employing descriptive statistics to assess general interest levels, followed by qualitative validation through interviews with seven selected informants. The study population consists of 131 active biology students in the 2023/2024 academic year, with a final sample of 100 after data cleaning. The sampling method used was total sampling to ensure broad representation.

Principal Findings: The findings reveal a variety of interest levels among biology students in religious subjects, with no significant differences based on gender, academic semester, high school major, or extracurricular involvement in religious activities or organizations. However, the school of origin emerged as a significant factor, indicating that students' previous educational experiences play a crucial role in shaping their engagement with religious subjects.

Novelty/Originality of this Study: This research introduces a novel perspective by uncovering the influence of a student's educational background specifically, their school origin on their interest in interdisciplinary religious education. It offers new insights into how prior schooling experiences contribute to shaping students' academic and personal interests, particularly within the context of general education courses, thus providing valuable implications for curriculum design in higher education.

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1. INTRODUCTION

"Sometimes, learning is not something that must be done out of obligation and coercion, but out of interest and talent." Of course, everyone has different interests and talents, and what about biology students who have an interest in religious subjects? Is there a connection between studying biology and religion? Interest in the learning process is very necessary because having interest means that a person has enthusiasm or a great desire for something. Having a person's interest in a lesson will make that person show their attention, activity, and participation in learning that lesson [1]. Interest in the learning process is very important because it is a key factor that drives someone to have great passion and desire for something. When someone has an interest in a lesson, it creates an intrinsic drive to learn, understand, and explore more deeply. This strong interest acts as an

internal motivation that can trigger persistence and commitment in the learning process, even when the material being studied is considered difficult or challenging. Interest also makes someone more open to new knowledge and more motivated to find creative ways to understand the lesson [2]. So, if a student has an interest in religious subjects, the student will be more active in studying them even though the student is majoring in biology. Biology and religion are branches of educational science that are interconnected.

Biology is a science related to natural science that studies living organisms and their surrounding environment. Religion has provided a complete and perfect system that covers all aspects of human life, including the knowledge contained in biology [3], [4]. Religion can be used as a reference in explaining scientific theories such as biology. Religion here acts as a source of inspiration and biology as an explanation [5], [6]. The sciences of religion and biology are interconnected or integrated, whereas in religion, there are scientific theories, and in biology, there are explanations of these theories. However, some reject the existence of science in Islam, especially traditionalist groups who are puritanical, with the gap between science and religion causing Muslims to lag behind Westerners regarding the very rapid development of scientific knowledge and not trying to catch up [7]. Religion serves as a source of inspiration in biology by offering the view that life has a deeper meaning and a higher purpose. In many religious traditions, nature and living things are considered as God's creations to be respected and cared for, thus encouraging scientists and researchers to study life with a sense of awe and responsibility [8].

Is it possible for science and religion, two disciplines often considered to be at odds, to go hand in hand in understanding life? On the one hand, biology as a natural science explains how living things develop, while on the other hand, religion provides spiritual guidance on the meaning and purpose of life. History has shown that the relationship between the two is not always conflictual; many scientists base their discoveries on the belief that science is a way to understand God's creation. This article will examine how biology and religion can enrich each other, both in the context of education and in the search for a deeper meaning in life. Religion has provided a complete and perfect system that covers all aspects of human existence, including the sciences contained in biology [9].

Science and religion are often considered as two different and sometimes conflicting disciplines, especially in terms of their outlook on life. Science, especially biology, focuses on the material and empirical aspects of life, such as how living things develop, adapt, and evolve [10]. Scientific research helps us understand the underlying mechanisms of life from a physical and biological perspective. Religion, on the other hand, offers a profound spiritual dimension, which seeks to answer existential questions such as the meaning, purpose, and morality of life. Many scholars argue that rather than being at odds with each other, biology and religion can complement each other, providing a more holistic insight into life and the universe. Through this approach, religion provides an ethical foundation and moral guidance for the advancement of science, while encouraging an appreciation for the complexity and wonder of life.

The reality in educational institutions now is that there is a gap between religious sciences and biological sciences; in learning these two sciences, there is a sharp separation between biological sciences and religion, where it seems as if religious content only exists in spiritual subjects. In contrast, all general sciences are neutral Seen from a spiritual point of view. The cause of the gap between spiritual and biological knowledge comes from an educator or lecturer who is less professional in all dimensions of the teaching profession. When teaching biology courses, lecturers or educators never connect biology courses with religion courses, and student's interest in studying religion also influences the gap between biology and religion. So that is where the gap between religion courses and biology courses can emerge [11].

This research aims to determine the interest of students majoring in Biology at IAIN Kerinci in studying religious subjects and the positive and negative impacts for students majoring in Biology at IAIN Kerinci in studying religious subjects. This study also makes a new contribution by highlighting the relevance of interest in learning biology, a complex discipline that requires students to actively engage in understanding often abstract scientific concepts. The innovation of this study lies in the recognition that interest is not just an emotional motivation, but also influences deep cognitive understanding in courses such as biology.

2. RESEARCH METHOD

This research uses mixed methods to overcome ecological limitations in purely quantitative or qualitative research. [12], [13]. The research begins with the process of interpreting numbers in quantitative research with main proportions [14], [15]. Then, the research further confirmed the answers through a qualitative approach by interviewing several previously involved informants. The number of informants interviewed was seven people. The population in this study consisted of students majoring in biology who were active in the 2023/2024 academic year, totaling 131 students. The sample selection technique used was total sampling. However, some of the extreme outlier data, the non-return of questionnaires, and the data that was filled in showed that there was carelessness in filling in, leaving the sample size in the study at 100 students majoring in Biology. The analysis technique used to analyze qualitative data is by using thematic analysis techniques used to

analyze qualitative data such as interviews, to identify the main themes that emerge from the data. Thematic analysis can help explain or expand quantitative findings by providing deeper context about how or why a phenomenon occurs [16].

The instruments for this research are questionnaires and unstructured interviews. The questionnaire consists of 16 statements, each representing four indicators. The scale of the results of this research is obtained from the scores obtained and each statement's answer. The indicator used is the adolescent academic interest scale: development, validation, and measurement invariance with Chinese students [17]. Determine biology students' interest in religious subjects in the form of emotion, values, knowledge, and engagement. The statement items in the questionnaire consist of favorable and unfavorable statements. For favorable, if students choose the SS option (Strongly Agree), they are given a score of 4, the S option (Agree) is given a score of 3, the KS option (Less Agree) is given a score of 2, and the TS option (Disagree) is given a score of 1. Meanwhile, a favorable statement is the opposite of a favorable statement; if a student chooses the SS (Strongly Agree) option, they are given a score of 1, and the S (Agree) option is given a score of 2. The KS (Less Agree) option is given a score of 3, and the TS (Disagree) option is given a score of 4.

Data collection in this research was done through questionnaires stating biology students' interest in religious subjects, and interviews, in this case, were conducted with biology students. The questionnaires distributed to Tadris Biology students were in the form of Google forms/links and questionnaires that had been printed and distributed to students. The data was analyzed using the JASP application to find descriptive statistics from the research data. The aim is to get results from research. For qualitative research data is obtained by interviewing sources directly with several questions to obtain more comprehensive results, where qualitative explains the phenomenon in depth, and quantitative provides results that can be measured and generalized.

3. RESULTS AND DISCUSSION

The Kerinci State Islamic Institute is one of the tertiary institutions in Indonesia, and it provides academic education in religious disciplines. The Kerinci State Islamic Institute has many significant choices, including Tadris Biology. In the Tadris Biology department, you will study materials related to biology and several religious subjects. The scope of the biology department is closely related to religion because there is integrity between these two aspects. Integrity is two things that are put together or combined so that one thing becomes part of the other [18].

Integrating religious and science studies into the curriculum can be done through an interdisciplinary approach that allows for explicit connections between the two disciplines. For example, in a biology course, discussions can be held that link scientific topics such as the creation of life to religious perspectives, as well as discussions about ethics and moral values in scientific research. In addition, a project-based approach can be used to explore relevant issues that bring together religious and scientific perspectives, such as projects on the environment or public health that include both scientific and spiritual aspects. This integration can also be done by emphasizing ethics and morality in science, where scientific concepts such as biomedicine or technology are explored through the lens of religious ethics. Open classroom dialogue and reflection are also key to helping students understand how science and religion can complement each other in their search for meaning in life and the world. With a flexible curriculum, educators can link science lessons with spiritual aspects according to the context of religious teachings, without neglecting scientific principles. This integration allows students to gain a more balanced and holistic understanding, where they not only understand science technically but are also able to see its moral and spiritual implications, the integrity of one thing combined from several things into another[19]. The following are the results of research on the interest of students majoring in Biology in studying religious subjects.

Table 1. Demographic

Variable	Sub Variable	Proportion (%)
Gender	Female	84
	Man	16
Semester	1	15
	3	39
	5	33
	7	13
School origin	MAN	21.2
	SMA	78.8
High school major	IPA	89.9
	IPS	10.1
Age	17	2
	18	19
	19	30
	20	31
	21	14
	22	2
	23	1
	26	1
Have attended religious events	once	98
	no	2
Whether involved in a religious organization	no	43.4
	yes	56.6

The Binomial Test table contains information about variables such as gender, semester, school origin, major at school, age, participation in religious events, and involvement in religious organizations. This analysis uses a binomial test to compare the proportion at each level of the variable against a value of 0.5.

First, in the gender variable, the proportion of women is 0.840 and men is 0.160, with a very significant p-value (< .001) in both groups. This indicates a significant difference in gender distribution within the sample. Then, there are significant differences between semester levels in the semester variable. Semester 1 had a proportion of 0.150, semester 3 was 0.390 (p = 0.035), semester 5 was 0.330, and semester 7 was 0.130. All of these differences had significant p values (< .001), indicating substantial variation in the semester distribution within the sample.

School origin also shows a significant difference, with the proportion of students from MAN being 0.212 and from SMA being 0.788 (p < .001). Likewise, majors at school show significant differences, where the proportion of students majoring in science is 0.899 and social studies is 0.101 (p < .001). When considering age, there are significant differences between age groups. Students aged 17 years had a proportion of 0.020, while students aged 18, 19, 20, 21, 22, 23, and 26 years each had different proportions, but all were significant (p < .001).

Furthermore, in the variable having attended religious events, the majority of students (proportion 0.980) had participated in religious events (p < .001). Meanwhile, on the variable involved in religious organizations, there was no significant difference between those involved and those not involved (p = 0.228). Overall, the Binomial Test statistical analysis in this table provides an in-depth and scientific picture of the distribution of proportions at various levels of variables, identifies significant differences between the groups, and presents p-values to measure the significance level.

Table 2 Descriptive statistics of the total indicator by gender

	Gender	
	Female	Male
Valid	84	16
Mean	49.881	50.813
Std. Deviation	5.434	6.327
Min	39.0	40.0
Max	63.0	58.0

The Descriptive Statistics table 2 provides a descriptive statistical overview of a variable or indicator being measured, divided between groups of women and men. These data provide an in-depth understanding of the distribution and characteristics of these variables in the population studied. First, we can see that the total number of valid respondents calculated for the female group was 84, while for the male group, it was 16. This

indicates that the number of female respondents is much greater than the number of male respondents in this sample.

The absence of missing data in both groups indicates success in data collection, and the entire sample can be used for statistical analysis. This ensures the reliability of the descriptive statistical results generated from this table. Furthermore, descriptive statistical analysis revealed that the average (mean) indicator variable for the female group was 49,881, while for the male group, it was 50,813. The standard deviation, which reflects the data distribution, shows slightly higher variation for the male group (6.327) than the female group (5.434). The data range, seen from minimum to maximum values, shows variations in values between groups of women and men. For the women's group, the lowest score was 39,000, and the highest was 63,000. On the other hand, the male group had the lowest score of 40,000 and the highest score of 58,000. This variability can provide additional insight into the distribution of scores and the potential for significant differences between the two groups. Overall, this descriptive statistics table offers a rich picture of the characteristics and distribution of indicator variables among groups of women and men.

Table 3. ANOVA total indicators with gender

Cases	Sum of Squares	Df	Mean Square	F	p
Gender	11.663	1	11.663	0.375	0.542
Residuals	3051.247	98	31.135		

The ANOVA (Analysis of Variance) table 3 provides the results of the variance analysis for a variable divided by gender. ANOVA was used to assess whether there were significant differences between group means. Let us interpret this table in detail. The ANOVA results show that gender has a sum of squares of 11,663, with 1 degree of freedom (df) associated. The mean square, obtained by dividing the sum of squares by df, is 11.663. The F-statistic value, which is used to test the significance of differences between groups, is 0.375. The P-value associated with the F-statistic is 0.542.

A significant P-value is usually less than 0.05. In this context, we do not have enough evidence to reject the null hypothesis because the p-value (0.542) is greater than the commonly used significance level (0.05). Therefore, there is insufficient evidence to conclude that there are significant differences between gender group means on these variables. Residuals, which reflect variation that the gender factor cannot explain, have a sum of squares of 3051.247 with 98 degrees of freedom. The mean square for residuals is 31.135. Thus, this analysis shows that the majority of variation in the data can be explained by factors other than gender. At a general level of significance, gender does not have a significant effect on the variables measured.

Based on the research results, it was found that there is a relationship between gender and interest in studying religious subjects. The results of the data obtained show that the average score of the male gender is higher in the level of interest in studying religious subjects compared to the average score. of the female gender. The level of interest of biology students in religious subjects is related to gender because the different genders, men, and women, have distinct personalities and ways of thinking. These differences will undoubtedly have different impacts on the learning process and learning outcomes [20], [21].

Between the male gender and the female gender, there are many differences between them, both from a biological perspective and from the way of thinking, as seen from a biological perspective. Namely, there are differences in hormones between the male gender and the female gender, as well as different ways of thinking between men and women. Men and women where women are better at memory, and men are better at logical thinking. The differences between male and female genders can cause differences in study habits, which can lead to differences in achievement [22].

Table 4. Descriptive statistics of total indicators by semester

	Semester			
	1	3	5	7
Valid	15	39	33	13
Mean	49.3	50.5	50.0	49.2
Std. Deviation	5.16	5.60	6.38	3.67
Min	39.0	40.0	40.0	44.0
Max	57.0	63.0	63.0	56.0

The Descriptive Statistics table 4 presents descriptive statistics for the four measured variables: 1, 3, 5, and 7. These statistics provide detailed insight into the distribution and characteristics of each variable. Valid number (Valid) shows the respondents counted for each variable. In this case, variable 1 has 15 respondents, variable 3 has 39 respondents, variable 5 has 33 respondents, and variable 7 has 13 respondents. The absence of missing data (Missing) indicates no incomplete data in the sample for these four variables. Regarding the middle value, the average (Mean) indicates the center of the distribution. Variable 3 has the highest average of 50,538,

followed by variable 5 (50,061), variable 1 (49,333), and variable 7 (49,231). Standard deviation (Std. Deviation) provides information about data distribution. Variable 5 shows the highest distribution (6,388), followed by variable 3 (5,609), variable 1 (5,164), and variable 7 (3,678). The data range (Minimum and Maximum) describes the distance between each variable's lowest and highest values. Variables 3 and 5 have the same range, namely from 40,000 to 63,000, while variables 1 and 7 have a smaller range, namely from 39,000 to 57,000 and 44,000 to 56,000, respectively.

Table 5. ANOVA total indicators by semester

Cases	Sum of Squares	df	Mean Square	F	p
semester	25.698	3	8.566	0.271	0.846
Residuals	3037.212	96	31.638		

The ANOVA table above provides the results of the variance analysis for the variable "semester." Analysis of variance is used to evaluate whether there are significant differences between the means of variables in several semester groups. Let us interpret the results in detail. The results of the variance analysis show that the sum of squares for the semester variable is 25,698, with three associated degrees of freedom. The mean square, obtained by dividing the sum of squares by the degrees of freedom, is 8.566. The F-statistic, used to test the significance of differences between groups, has a value of 0.271. The P-value associated with the F-statistic is 0.846.

A significant P-value is usually less than 0.05. In this context, we do not have enough evidence to reject the null hypothesis because the p-value (0.846) is more significant than the commonly used significance level (0.05). Therefore, there is insufficient evidence to conclude that there is a significant difference between the means of the “semester” variable across semester groups. Residuals, which reflect variations that semester factors cannot explain, have a sum of squares of 3037.212 with 96 degrees of freedom. The mean square for residuals is 31.638. Thus, the results of this analysis indicate that the majority of variation in the data can be explained by factors other than semester. At the general significance level, the semester variable does not significantly influence the variables measured.

Data obtained based on research that has been carried out shows that the highest average score is in semester three, and the average score is in semester 7. Although each semester has differences in interest in studying religious subjects, the average scores obtained are insignificant. Differences in semester levels also relate to biology primary students' interest in spiritual subjects. The higher the semester a student is, the less interested they will be in studying religious subjects. The results of this research are supported by previous research, which states that if a student is still in the new semester stage, they are still trying to adapt from high school to college. They are not yet focused on the biology major, but when the student has started to enter the senior semester, they can adapt to the campus environment. There will also be more and more courses focused on biology majors, so upper-semester students are less likely to study subjects related to religion, and there will be a decrease in interest in studying religious subjects [23]. With the existence of semester levels, of course, there are age differences in each student majoring in Biology, according to previous research, which states that the influence of age on changes in a person's beliefs is susceptible. In contrast, when a person is still a child, they will be more obedient to the teachings (beliefs). However, when you become a teenager or adult, your level of obedience to teachings (beliefs) will change, either in a good or wrong direction, which various factors can influence [24].

Previous research also explained that age is one of the factors that can influence a person's emotional intelligence. Predicting a person's emotional intelligence is very significant based on age. This research explains that mature students have better emotional intelligence than younger students. Students with better emotional intelligence will be better able to manage their learning well [25].

Table 6. Descriptive statistics of total indicators by school origin

	School	
	MAN	SMA
Valid	21	78
Mean	50.14	48.89
Std. Deviation	4.65	5.77
Min	40.0	39.0
Max	58.0	63.0

This table presents descriptive statistics for the two groups, MAN and SMA, in the context of the total indicators measured. Of the total valid data, namely 21 for MAN and 78 for SMA, no missing data existed. This shows the completeness of the data in the analysis. This indicator's average (mean) for MAN is 50,143, while for

SMA it is 49,897. This average describes the middle value of the data distribution and provides a general idea of the central level of the data. In this context, the average MAN is slightly higher compared to SMA.

Standard deviation measures the distribution of data around the mean. For MAN, the standard deviation is 4,651, while for SMA it is 5,772. This shows that the data in the MAN group has a lower spread than the SMA data. In other words, the scores of individuals in the MAN group tend to be closer to the group average than those in the SMA group. The range of values can be seen from the minimum and maximum values. For MAN, the minimum value is 40,000, and the maximum is 58,000. Meanwhile, the minimum score for SMA is 39,000, and the maximum is 63,000. This indicates the variation in values that can be observed within each group.

A footnote stated that one row of data was excluded from the analysis because it was missing. This footnote demonstrates transparency and consistency in data analysis by presenting that certain steps were taken to address missing values in the study. Thus, based on the descriptive statistics from the table, it can be concluded that there are differences in the distribution of indicators between the MAN and SMA groups. This analysis can be the basis for further decision-making or even formulating hypotheses that can be tested further through inferential analysis.

Table 7 ANOVA total indicators by school origin

Cases	Sum of Squares	df	Mean Square	F	p
School origin	0.997	1	0.997	0.032	0.858
Residuals	2997.751	97	30.905		

The Total Indicator ANOVA table shows the analysis results of differences between groups based on the variable "school origin." With 99 observations, this analysis obtained a sum of squared variations of 0.997 for the "school origin" variable. Degrees of Freedom (df) is 1, indicating the number of groups has been reduced by one. The resulting Mean Square is 0.997. The F-statistic is 0.032, and the p-value is 0.858. A low F value illustrates that the variation between groups is relatively small compared to the variation within groups. However, a significant p-value indicates insufficient statistical evidence to reject the null hypothesis, indicating that the differences between the “school origin” groups regarding the total indicators are not significant. Residual analysis produces a sum of squares of 2997,751 and a Mean Square of 30,905. Thus, this ANOVA analysis concludes that there is no significant difference in the total average of indicators between "school origin" groups. The Type III Sum of Squares method is used in the calculations, according to the notes in the table. These results provide insight into the significant impact of the “school origin” factor on the total indicators measured.

Table 8. Descriptive statistics of total indicators by high school major

	Indicator	
	Science	Social
Valid	89	10
Mean	50.24	47.3
Std. Deviation	5.40	6.23
Min	40.0	39.0
Max	63.0	58.0

The total indicator descriptive statistics table describes the characteristics of two groups based on school majors: Sciences and Social. Understanding each aspect of the table can present a more detailed and scientific interpretation. From valid data, there were 89 observations for the science group and ten observations for the social studies group. There were no missing data, indicating the completeness of the data in this analysis.

The average (mean) of the Total Indicators for the Science group is 50,247, while for the Social group, it is 47,300. This average provides a general idea of the central level of the data distribution. In this context, the science group has a slightly higher average than the social studies group. Standard deviation measures the distribution of data around the mean. For the science group, the standard deviation is 5.405, while for the social studies group, it is 6.237. This shows that the data in the science group has a lower spread than in the social studies group. In other words, individual scores in the science group tended to be closer to the group average than in the social studies group.

The range of values can be seen from the minimum and maximum values. The science group's minimum score is 40,000, and the maximum is 63,000. Meanwhile, the IPS group's minimum score is 39,000, and the maximum is 58,000. This variation indicates the variation in values observed within each group. In a footnote, it was stated that one row of data was excluded from the analysis because it was a missing value, and it related to the variable “major in school.” This demonstrates transparency and consistency in data analysis by providing information that specific steps were taken to address missing values. Thus, these descriptive statistics provide a deeper understanding of the characteristics of total indicators in the context of majors while at school and can help formulate further questions or hypotheses for further research.

Table 9. ANOVA total indicators with high school major

Cases	Sum of Squares	df	Mean Square	F	p
High school major	78.086	1	78.086	2.593	0.111
Residuals	2920.662	97	30.110		

The Total Indicator ANOVA table presents the analysis results of differences between groups formed based on the variable “major at school” By involving 99 observations in this analysis, the results show that the variable "major at school" significantly impacts the Total Indicator. The sum of squared variations for the variable "major at school" is 78,086, with Degrees of Freedom (df) of 1. This indicates that one degree of freedom is used in estimating population parameters. The Mean Square for this variable is 78.086, reflecting the average number of squared variations per degree of freedom. The F-statistic is 2.593 with a p-value of 0.111. The F-statistic is a statistical value that measures the comparison of variation between groups with variation within groups. Although the F value is relatively high, a p-value more significant than the general significance level (0.05) indicates that the difference between groups in “major while in school” is not statistically significant.

Residual analysis produces a sum of squares of 2920,662 and a Mean Square of 30,110. Residuals measure the variation that cannot be explained by the factor "major in school." Notes in the table show that Type III Sum of Squares is used in the calculation, indicating a particular approach to calculating the sum of squares. Thus, the results of this ANOVA analysis imply that the between-group differences in “major while in school” regarding the Total Indicator did not reach the required level of statistical significance. At the 95% confidence level, we cannot reject the null hypothesis, which states no significant difference between the “major while in school” groups regarding the Total Indicator. Although the F-statistic value indicates considerable variation, the relatively high p-value emphasizes the importance of statistical differences. These results provide valuable insight into the relative impact of the “major in school” factor on the Total Indicator. However, its insignificance in the context of statistical analysis is worth noting.

The research results show that differences in student majors during high school also correlate with students' interest in studying religious subjects. Referring to previous research, there are differences in cognitive abilities between science students and social studies students, where the cognitive skills from the level of understanding of science students get a higher average score than the average score obtained by social studies students [26]. Previous research also explains significant differences between the learning skills of students majoring in science and those majoring in social studies [27].

Table 10. Descriptive statistics of total indicators by attending a religious event

	Religious event	
	Once	No
Valid	97	2
Mean	49.94	56.5
Std. Deviation	5.5	0.7
Min	39.0	56.0
Max	63.0	57.0

The descriptive statistics table above provides detailed information about the variable “TOTAL INDICATORS” divided by participation in religious events, with two categories: “ever” and “never” This descriptive statistical analysis provides an in-depth picture of the data distribution characteristics in the two groups. Valid number (Valid) shows the respondents counted for each participation category. In this context, 97 respondents had attended religious events, and two had never attended them. The absence of missing data (Missing) indicates that there is no incomplete data in the sample for both categories of participation.

The average (Mean) of the “TOTAL INDICATOR” variable for the two participation groups is 49,948 for those who have attended religious events and 56,500 for those who have never. This average provides an idea of the mean value of the distribution in each participation group. Standard deviation (Std. Deviation) shows how far the values in each group are spread from the average. The group who had never attended a religious event had a lower standard deviation (0.707) than those who had (5.546).

Data ranges (Minimum and Maximum) provide information about each group's lowest and highest values. The group that had attended religious events ranged between 39,000 and 63,000, while the group that had never attended religious events had a range between 56,000 and 57,000. One row of data was excluded from the analysis because it had a missing value in the variable “Have attended a religious event.” This reflects care in handling incomplete data to ensure accurate analysis results.

Overall, the results of these descriptive statistics provide an in-depth understanding of the distribution of “TOTAL INDICATOR” scores in the context of participation in religious events. This analysis can help see differences between the two groups and understand variations and central tendencies in the data. It can also be used for further interpretation or follow-up research in religious contexts or related fields.

Table 11. ANOVA total indicators by attending religious events

Cases	Sum of Squares	df	Mean Square	F	p
Have attended religious events.	84.111	1	84.111	2.763	0.100
Residuals	2953.242	97	30.446		

The ANOVA table above provides the results of the analysis of variance for the variable “TOTAL INDICATORS” which is divided based on participation in religious events, with two groups: ‘Ever attended a religious event” and “Never participated in a religious event”. Analysis of variance was used to assess whether there were significant differences between group means. Let us interpret the results in detail. The results of the variance analysis show that the sum of squares for the variable "Have attended a religious event" is 84.111, with 1 degree of freedom associated. The mean square, obtained by dividing the sum of squares by the degrees of freedom, is 84.111. The F-statistic, used to test the significance of differences between groups, has a value of 2.763. The P-value associated with the F-statistic is 0.100.

A significant P-value is usually less than 0.05. In this context, we do not have enough evidence to reject the null hypothesis because the p-value (0.100) is more significant than the commonly used significance level (0.05). Therefore, there is not enough evidence to conclude that there is a significant difference between the average group who have attended religious events and those who have never attended. Residuals, which reflect variation that cannot be explained by participation in religious events, have a sum of squares of 2953.242 with 97 degrees of freedom. The mean square for residuals is 30.446.

Thus, this analysis suggests that most variation in the data can be explained by factors other than participation in religious events. At a general level of significance, participation in religious events does not significantly affect the variables measured. The results from the data show that the average value for those not involved in religious organizations is lower than for those involved in religious organizations. Joining a religious organization contains positive values, such as teaching good morals or attitudes toward students [28].

Table 12. Descriptive statistics of total indicators involving religious organizations

	Involving religious organizations	
	No	Yes
Valid	43	56
Mean	50.34	49.87
Std. Deviation	5.55	5.61
Min	40.0	39.0
Max	63.0	63.0

The descriptive statistics table above provides detailed information regarding the “involving religious organizations” variable divided by involvement in religious organizations, with two categories: “no” and “yes” This descriptive statistical analysis provides an in-depth picture of the data distribution characteristics in the two groups. The valid number (Valid) shows the respondents counted for each involvement category in religious organizations. In this context, 43 respondents were not involved, and 56 respondents were involved. The absence of missing data (Missing) indicates no incomplete data in the sample for these two categories.

The average (Mean) of the “involving religious organizations” variable for the two groups is 50,349 for those not involved in religious organizations and 49,875 for those involved. This average provides an idea of the middle value of the distribution in each group. Standard deviation (Std. Deviation) shows how far the values in each group are spread from the average. The two groups have relatively similar standard deviations, 5.559 for those not involved and 5.615 for those involved. Data ranges (Minimum and Maximum) provide information about each group's lowest and highest values. Both groups have a relatively wide range of scores, with a minimum score of 40,000 and a maximum of 63,000.

One row of data was excluded from the analysis because it had a missing value on the variable “whether involved in a religious organization”. This reflects care in handling incomplete data to ensure accurate analysis results. These descriptive statistics provide an in-depth understanding of the distribution of “involving religious organizations” scores in the context of involvement in religious organizations. This analysis can help see differences between the two groups and understand variations and central tendencies in the data. It can also be used for further interpretation or follow-up research in religious contexts or related fields.

Table 13. ANOVA total indicators involving a religious organization

Cases	Sum of Squares	df	Mean Square	F	p
Whether involved in a religious organization	5.461	1	5.461	0.175	0.677
Residuals	3031.892	97	31.257		

The ANOVA table above provides the results of the variance analysis for the variable “involving a religious organization” which is divided by involvement in religious organizations, with two groups: “no” and “yes”. Analysis of variance was used to evaluate whether there were significant differences between group means. Let us interpret the results in detail. The results of the variance analysis show that the sum of squares for the variable "whether involved in a religious organization" is 5.461, with 1 degree of freedom associated. The mean square, obtained by dividing the sum of squares by the degrees of freedom, is 5.461. The F-statistic, used to test the significance of differences between groups, has a value of 0.175. The P-value associated with the F-statistic is 0.677.

A significant P-value is usually less than 0.05. In this context, we do not have enough evidence to reject the null hypothesis because the p-value (0.677) is more significant than the commonly used significance level (0.05). Therefore, there is not enough evidence to conclude that there is a significant difference between the average groups involved and those not involved in religious organizations. Residuals, which reflect variation that cannot be explained by involvement in religious organizations, have a sum of squares of 3031.892 with 97 degrees of freedom. The mean square for residuals is 31.257. Thus, this analysis suggests that the majority of the variation in the data can be explained by factors other than involvement in religious organizations. At a general significance level, involvement in a religious organization does not significantly affect the variables measured.

The results of the data above show that involvement in organizations can influence biology students’ interest in studying religious subjects, supported by previous research, which states that the better a person is at organizing, the better their learning outcomes will be [29]So, students' involvement in organizations can influence their interest in learning. Previous research also states that organizations are places for students to expand their knowledge and insight [30]. The research results were also confirmed from interviews with several students majoring in Biology regarding their interest in studying religion courses at IAIN Kerinci. To deconstruct views involving religious education among students majoring in biology, Respondent A was interviewed to obtain his perspective on the relevance and benefits of religious education in the context of scientific education. The interview revealed interesting and in-depth views from Respondent A.

According to Respondent A, the importance of studying religious subjects for students majoring in biology should not be ignored. In his analysis, Respondent A stated that understanding religion and spirituality positively impacts a person's life and thinking, including biology students like himself. This is also in line with the opinion of respondent D, who said that the religious knowledge gained in college can be applied in everyday life. Respondent A emphasized that religious studies can provide a solid moral and ethical foundation in facing everyday challenges, including scientific research and practice. This is also in line with the opinion of respondent E, who said that religion can influence daily life by providing a moral and ethical framework that guides actions and provides spiritual comfort in facing life's challenges. In biology, where research ethics and moral considerations often play a role in decision-making, a deep understanding of religious principles can enrich one's outlook and help students navigate the ethical complexities of their scientific practice. Respondent F also believes that religious courses can influence students' understanding of moral and ethical values by introducing them to the ethical principles held by certain religions and assisting in considering the ethical implications of actions and decisions in a religious context.

Furthermore, Respondent A also referred to the psychological dimension of religious understanding. He says involvement with religious teachings can provide inner peace and emotional balance, improve academic performance, and positively contribute to society. Overall, the interview results with Respondent A illustrate that religious studies have significant relevance in scientific education, especially in biology, by providing a moral foundation and psychological balance. Religious studies can be an essential aspect in forming students who are holistic and contribute positively to society. Previous research supports this, stating that biology is a general science that can clarify things that have been stated in religious courses [31]. The results of this research are also related to Respondent A's opinion that studying biological sciences must be accompanied by an understanding of religious knowledge so that the application of biological sciences does not conflict with religion. Through dialogue with Respondent B, a rich and meaningful perspective on religious studies' importance for biology students was reflected. Respondent B emphasized that understanding religion has significant relevance in the context of the teaching profession, especially in biology.

According to Respondent B, the moral foundation obtained through understanding religion forms a solid foundation for prospective biology teachers. In a learning context, a teacher is responsible for transmitting scientific knowledge and guiding students in understanding the ethical implications of that knowledge. In this case, understanding religion can provide the necessary framework for teaching moral and ethical values in a scientific context. Respondent B highlighted that prospective teachers will be faced with a variety of situations that involve ethical considerations, such as debates about the use of biological technology, environmental issues, and developing sustainability attitudes. Religious understanding can be a vital source of inspiration and moral guidance in facing these challenges.

Furthermore, Respondent B also underlined religion's important role in shaping biology teachers’ personalities. According to him, humility, empathy, and justice, which are values often championed in religious

teachings, are highly valued in the educational context. This is in line with the opinion of respondent G, who said that an educator must have good morals to set an example for the students he will teach later. Thus, understanding religion enriches the academic dimension and helps form a respectable character and professional identity for biology teachers. Overall, the views of Respondent B indicate that studying religion courses has significant implications for students majoring in biology. By providing a moral foundation, ethical guidance, and personality development rooted in religious values, religious education plays a crucial role in preparing prospective biology teachers for the challenges they face in the teaching profession in the future.

This is in line with the results of previous research, which stated that the higher a person's understanding of religion, the higher their level of morality [32]. This also supports the opinion of respondent B, who said that to form moral students, an educator who is also moral is required. However, not all respondents showed the same interest in religious subjects. In a conversation with Respondent C, views were expressed that underscored the attention given to religious material in the Biology Tadris Department curriculum. Respondent C voiced concerns that too much focus on religious material could divert attention and resources from learning that should be focused on biology.

According to Respondent C, while understanding religion may have significant value in developing a student's personality and moral values, excessive emphasis on religious material in the biology curriculum can cause time and energy allocated to understanding scientific concepts to be divided or even neglected. This can result in a lack of depth of knowledge and understanding of biology, which is very important for students who will later become biology teachers. Respondent C also highlighted that in facing global competition in the fields of science and technology, students majoring in Tadris Biology must have a deep understanding of complex and current scientific materials. Thus, overemphasizing religion in the curriculum may reduce opportunities for exploration and in-depth understanding of more complex and pressing biological concepts.

Furthermore, Respondent C also underlined that education must be balanced and comprehensive, including scientific aspects, humanities, and moral values. However, placing the right proportions between various subjects is critical in ensuring students receive a balanced education that suits their future needs. Therefore, Respondent C's view shows the importance of balancing religious and biological learning in the Biology Tadris Department curriculum. While it is essential to introduce moral aspects and religious values, this should not be done at the expense of reducing or reducing the focus on essential scientific learning. Thus, the discussion of religious education must be integrated intelligently and in a balanced manner in the curriculum to ensure that students can acquire the knowledge and skills they need to be successful in the biology teaching profession.

This is contrary to previous research, which states that biology and religion must be studied simultaneously because these two things greatly influence human life [33]. Respondent C prefers to focus on courses directly related to the main field of study, such as biology, rather than Religion courses. The interview results obtained in this study clearly support the findings of the quantitative research, where quantitative data show significant interest from biology students in studying religious subjects. The quantitative research shows that most biology students at IAIN Kerinci have a fairly high interest in religious studies, and this is confirmed by qualitative findings. The interviews conducted revealed that many biology students feel that studying religious subjects provides important spiritual benefits, and helps them integrate science with moral and ethical values. Therefore, both quantitative and qualitative data consistently show that biology students at IAIN Kerinci are not only interested in natural sciences, but also in religious knowledge, which they consider relevant and supportive of their personal and professional development. This study has several limitations that need to be considered. First, the sample size used was relatively small and limited to students at one institution, so the results of this study may not be generalizable to a wider population. Second, the data collected through interviews may be influenced by social bias, where participants tend to provide answers that are considered more socially acceptable.

4. CONCLUSION

This study reveals that while there are slight variations in biology students' interest in studying religious subjects, such as differences between male (mean = 50.813) and female (mean = 49.881) students, the statistical analysis shows no significant gender difference ($F = 0.375$, $p = 0.542$). Additionally, other factors, such as academic semester, high school major, participation in religious events, and involvement in religious organizations, do not significantly affect the interest of biology students in religious studies. However, the study found that the student's school origin significantly influences their interest in studying religious subjects.

The findings suggest that school origin plays a crucial role in shaping students' interest in religious studies, indicating that the educational environment prior to university may have a lasting impact on students' academic preferences. This highlights the importance of understanding how different school backgrounds influence student engagement with various subjects, particularly in higher education. Future research should explore additional factors that may influence student interest, such as peer influence, family support, and

interactions with lecturers, as these social and environmental factors might offer deeper insights into the determinants of student interest. Furthermore, with advancements in technology, research could investigate how tools like online learning platforms, gamification, and interactive simulations may boost student engagement and interest in religious subjects, or even other disciplines. This could open new avenues for enhancing student motivation and making learning experiences more immersive and dynamic.

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