

The Risk Preferences Of Graduates Of Islamic Educational Institutions In Indonesia

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Abstract:

Indonesia as a Muslim-majority country and the survey results show that the most Indonesian are religious. Religious education also gets facilities from the state as a form of support for people's needs for religion. Religiosity, and education are hypothesized to be determinants of risk preference. This study aims to uncover the relationship between risk preferences and Islamic faith-based education in the Indonesian context. This research tries to combine aspects of religiosity and educational aspects in one framework, namely Islamic faith-based education where previous studies do not unite aspects of religiosity and education. This research is expected to provide a more complete picture or map of the risk preferences of graduates of Islamic educational institutions.

Keywords: Risk Preferences, Religious Education, religiosity

INTRODUCTION

Religion becomes one of the most important factors for every individual in carrying out their life activities. 80% of the world's people still claim to be religious or affiliated with a particular religion (Pew Research, 2017). Religion is also a driving factor or motive for a person's behavior

(Allport, 1950) and influences one's preference for risk (Miller & Hoffmann, 1995).

Many definitions from researchers explain the meaning of risk itself. Risk can be equivalent to an estimated loss (Willis, 2007), an estimated disutility (Campbell, 2005), and uncertainty about the consequences of an

activity related to values considered valuable by humans (Aven & Renn, 2009). While risk preference is a person's mental state in determining decisions that in each decision will always consider the risks that may arise, and then make *trade-offs* (sacrificing other choices that are not taken) based on their tendency to accept the risk. A person's risk preferences can generally be categorized into two types, namely *risk-lovers* where a person is happy to take high risks; *Risk-aversion* is a person who tends to avoid high risk.

A person's risk preference is influenced by many things such as age (Sakha, 2019; Schildberg-hörisch, 2018), one's experiences in the past especially significant life experiences such as experiencing natural disasters (Cameron & Shah, 2015; Eckel et al., 2009). A person's level of religiosity can also affect a person's risk preferences (Miller & Hoffmann, 1995). In addition, the level of education can also affect a person's attitude in taking risks (Purnama & Nugroho, 2020).

The relationship of the level of religiosity to one's risk preferences has been hypothesized by Malinowski (1948) where religiosity is closely related to the desire to control something that cannot be controlled and also related to overcoming the fear of death. Empirical evidence of the relationship between the two is evidenced by a study conducted by Miller & Hoffmann (1995), in

which the more religious a person is, the more likely to avoid risk (*risk-averse*). Conversely, if a person is increasingly not religious, the more courageous they will take risks (*risk-lovers*). The empirical evidence was reinforced again by Freese (2004) with similar results. Risk preference in the context of financial and investment theory can be equivalent to *loss-aversion* which is also influenced by religiosity (Blau & Crane, 2021; Gharbi et al., 2021; Guo et al., 2018).

A person's risk preference is also influenced by the level of education (Brown et al., 2006; Jung, 2015; Outreville, 2015; Purnama & Nugroho, 2020). These studies show that a person's level of education can have both positive and negative effects on *risk-aversion*. However, there is a study showing that education level is not a predictor of risk preference (Muzakky, 2021). In other words, the influence of education on a person's risk preferences is still inconsistent between studies. In addition to education in general, knowledge of risk itself (Grable & Joo, 1997) and financial literacy (Muzakky, 2021) has an effect on a person's risk preferences.

Indonesia has the largest Muslim population in the world and is a religious society. The statement was based on the results of a survey from an international survey called *the World Value Survey* (WVS)

which showed that 98% of respondents (as a representation of the Indonesian population) stated that religion is very important for all aspects of their lives (EVS / WVS, 2021). In other words, Indonesian society is a religious society in terms of judgment about the importance of religion in life.

Religious education is also one that gets attention for the state by providing formal Islamic religious education facilities through state-owned Islamic religious education institutions from basic education to higher education. In addition, formal Islamic religious education is also driven by the community through the establishment of privately owned formal educational institutions and privately owned non-formal education. In general, formal religious education institutions are called Madrasahs, while non-formal Islamic religious education institutions are represented by pesantren huts. The data from the Ministry of Religious Affairs (2019) shows that there are 82,418 madrasahs from the basic to the level of prevention consisting of 4,010 publicly owned and privately owned 78,408, while for universities there are 796 consisting of 58 state-owned and 738 privately owned. For non-formal religious education represented by pesantren huts, the number spread throughout Indonesia is 27,123 institutions.

This study seeks to uncover the relationship between risk preferences and Islamic faith-based education in Indonesia. This research tries to combine aspects of religiosity and educational aspects in one framework, namely Islamic faith-based education, where previous studies have not included aspects of religiosity and Islamic education in the same framework. This research is expected to provide a more complete picture or map of the risk preferences of graduates of Islamic educational institutions. Human risk preferences are macro-related to how a nation goes. Risk-lover behavior is identified with one of the characters of the entrepreneur who in a certain amount is needed as a driver of a nation's economy. However, it should also be noted that excessive *risk-loving* is also an indication that a person is not able to use rationality well, so in the aggregate (macro) is also bad for a nation.

Library Review

Risk

Many definitions from researchers explain the meaning of risk itself. Risk can be equivalent to an estimated loss (Willis, 2007), an estimated disutility (Campbell, 2005), and uncertainty about the consequences of an activity related to values considered valuable by humans (Aven & Renn, 2009). Risk can be defined as the probability of the emergence

of something that makes discomfort to humans, either predicted or unexpected events without estimates as a consequence of a choice or decision.

Risk Preferences

Risk preference in psychology is generally defined as a tendency to engage in beneficial behaviors or activities but involves some potential harm, including the use of substances, or criminal activities that may be associated with considerable physical and mental harm to the individual (Mata et al., 2018; Steinberg, 2013). While in an economic point of view, risk preference more often refers to a tendency to engage in behaviors or activities involving higher *variance in returns*, either gains or losses (Harrison & Rutström, 2008).

In economic theory, risk preference has traditionally been conceptualized as a primitive model of decisions that influence the way individuals make risky *trade-offs*. This trait is general in the sense that it is relevant for risky choices in all contexts, be they about financial assets, driving a car, or health. The concept of risk preference has traditionally not been observed directly but rather is latent. A specific way to obtain empirical measurements of the latent nature of risk preferences is to make observations of the decisions of individuals facing certain situations (Dohmen et al., 2018).

In the prospect *theory* point of view of behavioral economics (*behavioral economics*) assesses that humans tend to put a heavier burden on feeling disappointed for loss than feelings of pleasure if they get benefits (Kahneman & Tversky, 1979). That is, cognitively humans tend to avoid loss (*loss-aversion*) or risk (if loss is equivalent to risk).

Risk preference is a person's mental state in determining decisions that in each decision will always consider the risks that may arise, and then make *trade-offs* (sacrificing other choices that are not taken) based on their tendency to accept the risk. A person's risk preferences can generally be categorized into two types, namely *risk-lovers* where a person is happy to take high risks; *Risk-aversion* is a person who tends to avoid risk.

Religiosity, Education, and Risk Preferences

Religiosity is how a person lives a life based on his beliefs or religion (Allport and Ross, 1967), so that a person's level of religiosity can vary, regardless of religion. The relationship of the level of religiosity to one's risk preferences has been hypothesized by Malinowski (1948) where religiosity is closely related to the desire to control something that cannot be controlled and also related to overcoming the fear of death. Empirical evidence of the relationship between the two is evidenced by a study conducted by Miller & Hoffmann (1995), in which the more

religious a person is, the more likely to avoid risk (*risk-averse*). Conversely, if a person is increasingly not religious, the more courageous they will take risks (*risk-lovers*). The empirical evidence was reinforced again by Freese (2004) with similar results. Risk preference in the context of financial and investment theory can be equivalent to *loss-aversion* which is also influenced by religiosity (Blau & Crane, 2021; Gao et al., 2017; Gharbi et al., 2021)

A person's risk preference is also influenced by the level of education (Brown et al., 2006; Jung, 2015; Outreville, 2015; Purnama & Nugroho, 2020). These studies show that a person's level of education can have both positive and negative effects on *risk-aversion*. However, there is a study showing that education level is not a predictor of risk preference (Muzakky, 2021). In other words, the influence of education on a person's risk preferences is still inconsistent between studies. In addition to education in general, knowledge of risk itself (Grable & Joo, 1997) and financial literacy (Muzakky, 2021) has an effect on a person's risk preferences.

Previous Research and Hypotheses

Here is a previous study relating to the relationship between religiosity, education, and risk preference. Miller & Hoffmann (1995) and Freese (2004)

examined the relationship of risk to religiosity as well as gender differences in religiosity and found that risk preferences and religiosity are interconnected. Blau & Crane (2021); Gao et al., (2017) and Gharbi et al. (2021) examined the relationship of *risk-aversion* behavior with religiosity in a financial context and the result is that religiosity variables affect the level of *risk-aversion* of a person. Research on the relationship of risk-aversion behavior (*risk-aversion*) with education was conducted by Brown et al. (2006); Jung (2015); Outreville (2015); Purnama & Nugroho (2020) found that Education can be a predictor of *risk-aversion* behavior.

The hypotheses in this study are:

- H1: there is a significant difference in religiosity between public school graduates and Islamic education graduates*
- H2: there is a significant difference in risk preferences between public school graduates and Islamic education graduates*
- H3: there is a significant influence between religiosity and risk preference*
- H4: there is a significant influence between Islamic education and risk preference*

RESEARCH METHOD

Sampling and Data Collection Techniques

Data is obtained by accessing Indonesian Family Life Survey (IFLS) data. This data set is a longitudinal study collected by international pollsters in collaboration with

local research institutions. This data set is available and can be downloaded on the <https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS.html>

The data used is IFLS data from the 5th wave implemented during 2014-2015. The filter process is carried out to select the items / questions according to the required variables. The data selected according to research needs is stated in Table 1

Table 1. IFLS data used

Variable	Book	Question Code in IFLS
Independent Variables		
<i>Religiosity:</i>		
– how obedient (subjective)	3A	TR11
– how often to pray		TR13
– come to the study		TR14a
Dependent Variables		
<i>Risk taking:</i>		
– <i>game 1</i>	3A	SI01, SI02, SI03, SI04, SI05
– <i>game 2</i>		SI11, SI12, SI13, SI14, SI15
Control Variables:		
<i>Demography:</i>		
– age	3A	COV3
– marital status		COV4
– gender		COV5
– tribe		DL01f
– Disaster experience	2	ND01

Table 2. The Possible Respondents' Choice Path

Path	Game 1		Game 2		GO OUT
	Options	Score 1	Options	Score 2	Score 1+score 2
1	SI01=2; SI03=2; SI05=2	2	SI11=1; SI13=2; SI15=2	2	4
2	SI01=2; SI03=1; SI04=2	1	SI11=1; SI13=2; SI15=1	1	2
3	SI01=1; SI02=2; SI03=2; SI05=1	1	SI11=2; SI12=1	0	1
4	SI01=2; SI03=1; SI04=1	0	SI11=2; SI12=2; SI13=1; SI14=1	0	0
etc.	etc.	etc.	etc.	etc.	etc.

Description: the color red indicates that respondents chose a riskier option. The next path with any combination of options remaining the score is equal to 0

Variable Operations

This study consists of 3 types of variables, namely dependent variables, independent variables, and control variables. The variable dependent in this study is the risk preference

projected by the *Total Risk Aversion (TRA)* value developed by Sanjaya (2013) with the TRA score criteria of 0 means it is very risk averse to a score of 4 which means that it is very like risk. The formation of tra scores was

obtained from the choice of respondents on *the questionnaires of game 1 and game 2*. The combination of choices will form a path that indicates that respondents chose a risky or non-risky choice. Assessment criteria can be seen in Table 2.

The independent variable in this study is the level of religiosity and islamic religious education taken. The religiosity of respondents was obtained from several questions in the IFLS survey, namely the question of how obedient (subjective) (TR11), how often to pray (TR13), and how often to visit the study (TR14a). The answers from the respondents were then recoded for the purposes of data analysis and facilitated interpretation with the following measurements: (1) religiosity (subjective obedience) is calculated on a scale of 1 - 4 where the higher the value, the more religious / obedient; (2) how often prayers are calculated on a scale of 0= never, 1= rarely, 2= often; (3) how often to attend studies with a rating scale of 0 – 4 where 0 = never, 1 = less than once a month, 2 = at least once a month, 3 = at least once a week, and 4 = more than once a week. The total value of religiosity is the sum of the three scores of the item. The second independent variable is the *dummy* variable of Islamic religious education. Score 0 for those who receive or graduate from secular educational institutions

(either public or private) and score 1 for those who have received education or graduated from islamic religious-based educational institutions whether public, private, or pesantren.

Control variables are variables that are assumed to have an effect on dependent variables, but are not the subject of discussion in this study. The function of the control variable can also neutralize the influence of independent variables on dependent variables from unexplored factors so as to reduce bias in estimation and draw conclusions. The control variables in this study consisted of *dummy* gender variables (1= women), marital status (1= married), ethnicity (1= Java), significant life experiences such as experiencing a disaster event (1= having experienced a disaster in the last 5 years), and age which is a continuous variable.

This study is an observational study using secondary data analyzed using descriptive analysis and multivariate analysis consisting of ANOVA analysis techniques and multiple linear regression. Data analysis is carried out after all data from IFLS is tabulated according to research needs. The data is processed using several statistical analysis techniques consisting of ANOVA and regression. Statistical testing was conducted to explain how relationships

occurred between variables in the study. The statistical analysis in this study utilized *Jefferey's Amazing Statistical Package 13.0* (JASP 13.0) statistical software because of its open source and licensed-free with easily operational features.

RESULTS AND DISCUSSION

Descriptive analysis and ANOVA

The discussion began by knowing the difference in religiosity between those who attend public education institutions and Islamic educational institutions. Total respondents (N) who attended public education institutions amounted to 6551

people, while those who attended Islamic schools as many as 1003. The average religiosity that attended Islamic education was higher than those who attended public institutions at 5,587 with a standard deviation of 1,294. While the average religiosity that attended public education institutions amounted to 5,344 with a standard deviation of 1,398. The risk preference of generally educated respondents was lower at 0.416 on average compared to the average Islamic-educated respondent whose score was 0.459. This means that those who are Educated in Islam prefer risk (*risk-lover*) compared to those who are educated in more secular one.

Table 3. Descriptive Statistical Results and ANOVA

Variable	N	Common	Islamic	P-value
		Mean (SD)	Mean (SD)	
Religiosity	6551	5.344 (1.398)	5.587 (1.294)	0.000
TRA	1003	0.416 (0.783)	0.459 (0.806)	0.109

The results of the ANOVA tests showed that in terms of religiosity, there was a statistically significant difference between those who went to public school and those who went in Islamic educational institutions with a significance value of 0.000. While in terms of risk preference there was no statistically significant difference between those who had attended public schools and those who attended Islamic institutions. Hence, H1 was accepted and H2 was rejected.

Linear Regression analysis results

Multiple linear regression analysis is applied to see the influence of whether religiosity and religious education have an effect on a person's risk preferences. The variable dependent by this study is Risk preferences that are projected with tra values. This research-independent variable is Religiosity and Islamic education, while the control variables are gender, marital status, Javanese ethnicity, and experience of experiencing disasters in the past five years.

The results of the regression test can be seen in table 4.

Table 4. Regression Test Results on TRA as The Dependent Variables

Variable	Coefficient	Standard Error	t-stat	p-value
Intercept	0.197	0.052	3.826	0.000
Religiosity	0.025	0.007	3.707	0.000*
Islamic Education (1=yes)	-0.025	0.013	-1.898	0.058
Gender (1=female)	0.062	0.009	6.605	0.000*
Marital status (1=yes)	0.022	0.012	1.853	0.064
Ethnicity (1= Java)	0.109	0.009	12.141	0.000*
Disaster (1= ever)	0.013	0.011	1.257	0.209
Age	0.004	0.002	2.385	0.017*
F-State (p-value)	32.268 (0.000)			
R ²	0.029			

*sig= 5%

The results of the regression test showed that religiosity variables were significant at the level of 5% in influencing a person's risk preferences. The positive coefficient indicates that the more religious a person is, the more likely they are to become *risk-lovers*. Meanwhile, variabel Islamic education cannot be a predictor of risk preference. The results of the statistical test showed that H3 was accepted and H4 was rejected.

The control variables in the study were gender, marital status, ethnicity, catastrophic experiences, and age. Variables that have a significant effect or can be a predictor in estimating a person's level of risk preference are gender, ethnicity, and age, while marital status and experience of feeling disasters have no significant effect.

Discussion

A person's religiosity has a significant effect on a person's level of risk preference. In other words, the factor of one's obedience in religion can affect a person's risk preferences. The more religious a person will be, the more likely the risky choices. The results of this investigation contradict the Miller & Hoffmann hypothesis (1995) and previous empirical evidence (Freese, 2004; Gao et al., 2017; Gharbi et al., 2021) that the more religious a person is, the more risk-averse. The explanation of this phenomenon may be because the more religious a person is, the more likely they are not to worry about the future and feel that there is a God who will always protect. This feeling will make a more religious person tend to expect positive things at a higher power or God (Binde,

2007), so the choice taken is a more favorable choice. This phenomenon may be equivalent to *gambling fallacies*, which is a mistake of thinking (*fallacy*) in which a person believes that they are able to control random events. A person with high religiosity will feel that they have the strength (or assisted by God) in bringing up positive /favorable events. Therefore, someone who is more religious tends to be suspected of having more of this *gambling fallacy* (Kim et al., 2018).

Religious education through Islamic educational institutions in general shows a difference in the religiosity of students or graduates compared to public schools. But in terms of the formation of risk preferences there is no difference between those who attend public schools or religious schools. The process of Islamic education through school institutions also does not affect a person's risk preferences. Religious education background should be able to make a person more internalize religious values and norms (Torgler, 2006). However, it does not automatically change its behavior, as does its risk preference. Since there is no significant difference in risk preference between general and Islamic education graduates, the working effect on the relationship between pendidikan and risk preference is the same as education in general. In general, education has an effect

on risk preferences (Jung, 2015; Outreville, 2015; Purnama & Nugroho, 2020) although some stated no effect (Muzakky, 2021).

CONCLUSIONS

This study aims to find out the differences in risk preferences of graduates of public education institutions and graduates of Islamic educational institutions as well as to find out the influence of Religiosity and Islamic education on one's risk preferences. The results of this study concluded that there is a difference in religiosity between public school graduates and Islamic school graduates where the average religiosity of Islamic school graduates is higher. However, the risk preferences of each of these graduates did not make a significant difference.

The results of this study also showed that religiosity has an effect on a person's risk preferences. The more religious a person will tend to like risk (*risk-loving*) and vice versa. While a person's educational background in Islamic educational institutions has no effect on one's risk preferences.

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