A Structural Equation Modeling on Factors Affecting Lecturer Knowledge Sharing in Islamic Universities for Strengthening Islamic Economy

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Abstract: In the context of developing and strengthening Islamic economy, the practice of knowledge sharing among Islamic university lecturers is very important. This is because lecturers are knowledge workers. Knowledge workers are not just people who have basic jobs or routine activities related to intellectual studies, but must also have innovative-creative power in utilizing, creating, and disseminating knowledge. Of course the knowledge shared must be based on quality research results. Through the practice of effective knowledge sharing based on quality research results, there will be a lot of motivation and innovation related to Islamic economy products and services. Based on the reasons why this study was done, namely to understand what factors that improve the practice of knowledge sharing among lecturers in Islamic universities. This study involved 350 lecturers from a number of Islamic universities in Indonesia. Through analysis of structural equation modelling (SEM), this study examines the proposed theoretical model of the 1st order Confirmatory Factor Analysis (CFA) causal relationship between a number of variables predicted to influence the practice of knowledge sharing. This study also examines a number of hypotheses arranged in a hypothetical model through a series of empirical data analyzes. By identifying overall model fit for the practice of knowledge sharing, the process of developing and strengthening research-based Islamic economy is expected to be carried out better.

1 INTRODUCTION

Indonesia has great potential to become the center of the global Islamic economy as a country with a Muslim population reaching 85 percent of the total population. Unfortunately, this potential still cannot be maximized by Islamic economic actors. This can be proven from the results of the 2016 National Financial Literacy and Inclusion Survey conducted by the Indonesian Financial Services Authority (OJK), the Indonesian Islamic financial literacy index at 8.1%. That means that out of every 100 Indonesians, only 8 persons know about the Islamic financial services industry. This figure is far lower than the conventional financial literacy index which is at 29.5% (OJK, 2017).

A similar report also came from The National Development Planning Agency (BAPPENAS) that the overall impact of the Islamic economic industry on the national economy remained small compared to the conventional financial industry. Even though the Islamic economic system in Indonesia has been officially present more than two decades ago. Of course this is a not-so-pleasant reality. The landscape of Islamic economic industry in Indonesia is very different compared to other countries such as Malaysia which is far more progressive (BAPPENAS, 2016).

Islamic economy is not only about religious preferences. Through the aim of Sharia *(Maqasid al Shariah),* Islamic economy has the latent power to play an important role in empowering individuals and communities. Islamic economy can promote an entrepreneurial culture and influence people to invest in a real and sustainable economy, thus

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bringing benefits to the wider community and the Indonesian economy.

Reflection from the description above, it is urgent to evaluate the Islamic economic performance in order to be able to empower the community. It can be ascertained that there is something wrong regarding the education and socialization of the Islamic economy, so that the level of Islamic financial literacy in the Indonesian community is at a low level. One of the factors predicted as the cause of the low level of Islamic economic literacy is the low participation of universities in the socialization and education of Islamic economics among the public.

Among important agents who can educate and socialize Islamic economic products and services are Islamic university lecturers. Islamic economics lecturers need to intensively share knowledge regarding Islamic economic products and services to the wider community, thereby encouraging the development and strengthening of the Islamic economic sector. Based on that problem, this study was conducted. The aim is to test a proposed theoretical model regarding factors that affect the knowledge sharing of lecturers at Islamic universities to strengthen the Islamic economy.

2 THEORICAL FRAMEWORK

Knowledge sharing is a key concept in knowledge management (Hung and Chuang, 2009). At least there are three basic components supporting the process of forming knowledge management, namely the knowledge acquisition, knowledge sharing, and knowledge utilization. If knowledge acquisition is a process in which knowledge is developed and formed, knowledge sharing is a process of disseminating knowledge and at the same time making it ready for use. (Daud, Salina; Dali, Nuradli Ridzwan Shah Mohd; Hamid, 2006). That is why the concept of knowledge sharing is considered very important in an institution, including Islamic universities which are one of the institutions that are very competent to develop and strengthen the Islamic economy.

As an endogenous variable in this study, knowledge sharing (KS) among lecturers should be thought to be significantly influenced by three exogenous variables, namely the lecturers' research skills (RS), research self-efficacy (RSE), and institutional support (IS). The following is briefly reviewed the theoretical framework related to the proposed theoretical model presented in this study.

The success of an institution in developing a particular idea can be predicted from the application of effective KS among its members. Experts strongly believe that an institution —including a university— can generate enormous profits if it consistently applies KS (Cheng, Ho and Lau, 2009). KS will only work effectively if lecturers in Islamic universities have good RS. Lugkana Worasinchai and Aurilla Aurelie Arntzen Bechina concluded that strengthening RS is essential for the success of KS (Worasinchai, Aurelie and Bechina, 2010). Farkhondeh Hassandoust in his research also stated that the practice of KS was influenced by RS (Hassandoust; and Vimala Perumal, 2011).

Unfortunately, the development of the RS of lecturers in the university itself has received peripheral attention. According to Emmanuel Chinamasa, negligence towards the development of lecturers' RS often occurs due to the assumption that lecturers have adequate RS (Emmanuel, 2014). Even though the low of RS can have an impact on the low level of KS.

As Islamic universities that involve many knowledge workers, the practice of KS —especially related to Islamic economics— among lecturers should have a positive impact. Niels-Ingvar Boer and K. Kumar have mentioned in his research results that KS can produce very broad collective outcomes (Boer and Kumar, 2005). KS is able to provide benefits not only for lecturers, but also for the wider community as a target of Islamic economic products and services.

Chun-Lin and Mei-chi Chen's research stated that one of the factors that drives someone to practice KS is because the person has RSE (Lin and Chen, 2009). Without high RSE, a person will not have the courage to practice KS. The research of Hsu et al. prove that one's RSE has a positive effect on KS behavior. Lin and Hung's survey results also stated that RSE is one of a number of variables that positively influence KS behavior (Hsu *et al.*, 2007). While the results of the Elham Aliakbar survey also stated that RSE is one of a number of variables that positively effect KS behaviour (Aliakbar *et al.*, 2012).

The practice of KS is also predicted to be influenced by IS. The practice of KS among lecturers will easily occur when there is support from the university. They will be stimulated to transfer knowledge when the university provides maximum support. This is confirmed by the results of a study by Nicolette Bakhuisen who concluded that the most important supporting factor for the practice of KS was the presence of IS (Bakhuisen, 2012).

Connelly and Kelloway's research on employee perceptions of KS culture also stated that IS is one of the factors that can improve the culture of KS (Connelly and Kevin Kelloway, 2003). The

conclusion is also confirmed by the research findings of Afshin Mousavi Chalak et al. He mentioned that IS was very much required so that the practice of KS could work well (Chalak, Ziaei and Nafei, 2014). Unfortunately, the results of Castells' research show that there are phenomena of bottlenecks on the issue of IS in the campuses (Musiige, Gordon; Maassen, 2015). Therefore it can be understood if the level of Indonesian Islamic financial literacy is very low.

Based on the conceptual and theoretical framework described above, at least three research hypotheses can be formulated regarding any variables that influence the practice of KS among Islamic university lecturers. The following are three hypotheses in this study:

H1: RS has a positive direct effect on KS.
H2: RSE has a positive direct effect on KS.
H3: IS has a direct positive effect on KS.

3 RESEARCH METHOD

This study uses inferential statistical analysis techniques of structural equation modeling (SEM) of 1st order Confirmatory Factor Analysis (CFA). The causal relationship between the exogenous and endogenous variables described in the theoretical model will be empirically tested. The aim is to prove whether there is a fit of hypothetical models with empirical data collected.

Respondents involved in this study were 350 lecturers from several Islamic universities in Indonesia, consisting of 241 state Islamic university lecturers and 109 private Islamic university lecturers. In order to be able to represent lecturers from state and private universities, the method of sampling chosen is stratified random sampling.

The data collection technique used was the Likert scale questionnaire, namely for KS, RSE, and IS variables. The data related to RS is collected through multiple choice research objective tests. All instruments are sent to respondents via email.

SEM techniques of the 1st order CFA type were chosen because according to Bagozzi and Fornel, analysis using SEM techniques enabled researchers to examine complex relationships between variables, both recursive and non-recursive. Through SEM analysis, researchers can also distinguish various kinds of relationship effects, both those that are direct effect, indirect effect, and total effect (Bagozzi and Fornell, 1982).

The process of SEM analysis used in this study follows the five stages of analysis submitted by Bollen and Long, namely (a) model specification, (b) model identification, (c) parameter estimation, (d) model fit, and (e) respecification model (Bollen, Kenneth A.; Long, 1993). The entire process of analysis in this study, starting from the normality test, multicollinearity test, analysis of the measurement model and structural models are calculated using the LISREL program.

4 ANALYSIS

As a multivariate analysis technique, SEM requires a number of fundamental assumptions that must be met. There are four data sets of research variables that will be tested for multicollinearity and normality, namely KS, RS, RSE, and IS variables. The results of the analysis show that all data sets do not contain multicollinearity and fulfill multivariate normality assumptions with details of all p-value$_{skewness\text{-}kurtosis}$ <0.05 as follows:

Table 1. Results of Variable Data Multivariate Normality Test

Variables	*p-value$_{skewness\text{-}kurtosis}$*
KS	0.061
RS	0.071
RSE	0.078
IS	0.067

The next step is to ensure the four measurement models of each variable do not contain offending estimates; do a validity test; check fifteen measures of Goodness of Fit (GOF); and finally do a reliability test. Here are the observed variables of the four measurement models.

The KS measurement model consists of manifes variables of Desire to Share Knowledge (DtSK), Academic Community Interaction (ACT), Information Technology Availability (ITA), University Award (UA), and Academic Culture (AC). The RS latent variable consists of observed variables of Ability to Design Research (AtDR), Ability to Choose a Method (AtCM), Data Gathering Ability (DGA), Data Analysis Capability (DAC), and Ability to Communicate Research Results (AtCRR). For RSE latent variables consists of Intrinsic Motivation (IM), Research Preparation Conceptualization (RPC), Data Sources Utilization (DSU), Research Procedures Application (RPA), Data analysis (DA), and Research Results Communication (RRC). The IS measurement model consists of Policy Support (PS), Financial support (FS), Administrative Support (US), and Infrastructure Support (InfS).

The overall measurement models mentioned above are confirmed its validity and realiability by examining the t-values and standardized loading factor (SLF); examining fifteen measures of Goodness of Fit (GOF); and finally calculating its construct reliability (CR) and variance extracted (VE). The aim is to ensure that the estimated standard loading factors of the measurement models are good fit. The following is a summary of each calculation result as referred to above:

Table 2. Validity and Reliability of Research Variables

Variables	**Validitas**			**Reliabilitas**	
	t-value	**SLF**	**error**	**CR**	**VE**
KS				0.91	0.68
DtSK	16.76	0.76	0.42		
ACT	26.32	1.00	0.00		
ITA	25.58	0.99	0.03		
UA	14.72	0.69	0.53		
AC	12.18	0.59	0.65		
RS				0.92	0.70
AtDR	24.62	0.97	0.06		
AtCM	21.26	0.89	0.21		
DGA	14.09	0.67	0.55		
DAC	13.33	0.64	0.59		
AtCRR	24.27	0.96	0.08		
RSE				0.93	0.67
IM	20.51	0.87	0.24		
RPC	25.36	0.98	0.04		
DSU	23.61	0.94	0.11		
RPA	23.28	0.94	0.12		
DA	16.33	0.75	0.44		
RRC	7.45	0.39	0.85		
IS				0.94	0.80
PS	23.52	0.95	0.10		
FS	21.60	0.90	0.19		
AS	17.54	0.79	0.38		
InfS	22.41	0.92	0.15		

From the summary table above, it can be seen that each measurement model has a good level of validity and reliability. It can be proven that every t-value of all manifest variables has loading factors > 1.96 and all standardized loading factors > 0.70. Likewise with all construct reliability of the latent variables are > 0.70 and the variance extracted are > 0.50. Thus, it can be concluded that the four models of measurement models match the good fit.

To continue on the analysis of the hybrid model which is a combination of the four measurement models, it is necessary to evaluate the overall model fit or GOF statistics between the data and the hypothetical model. Following are the results of the tabulation of the overall model fit test of the hybrid model:

Table 3. The Overall Model Fit Test Result of Hybrid Model

Fit Index	Acceptable Threshold Level	Estimation Result	Decision
Absolute Fit Measures			
Chi-Square	Low Chi-Square value	1388.74	Poor Fit
p	p > 0.05	(P = 0.0)	
NCP	Low NCP value	1224.74	Poor Fit
Interval	Narrow interval value	(1109.50 ; 1347.42)	
RMSEA	RMSEA $\leq$ 0.08	0.15	Poor Fit
p *(close fit)*	p > 0.05	P = 0.00	
ECVI	Small value and close to saturated ECVI	M* = 4.24	Good Fit
		S* = 1.20	
		I* = 83.87	
RMR	*Standardized* RMR $\leq$ 0.05	0.044	Good Fit
GFI	GFI $\geq$ 0.90	0.72	Poor Fit
Incremental Fit Measures			
NFI	NFI $\geq$ 0.90	0.95	Good Fit
NNFI	NNFI $\geq$ 0.90	0.95	Good Fit
AGFI	AGFI $\geq$ 0.90	0.64	Poor Fit
RFI	RFI $\geq$ 0.90	0.94	Good Fit
IFI	IFI $\geq$ 0.90	0.96	Good Fit
CFI	CFI $\geq$ 0.90	0.96	Good Fit
Parsimonious Fit Measures			
AIC	Small value and close to saturated AIC	M* = 1480.74	Good Fit
		S* = 420.00	
		I* = 29272.12	

Fit Index	Acceptable Threshold Level	Estimation Result	Decision
Absolute Fit Measures			
CAIC	Small value and close to saturated CAIC	M* = 1704.21	Good Fit
		S* = 1440.17	
		I* = 29369.28	
Other GOFI			
CN	CN ≥ 200	51.28	Poor Fit

Information:
M* = *Model* S* = *Saturated* I* = *Independence*

From the results of the GOF Statistics test, it is known that there are 9 of GOF statistics that have a good fit, those are Expected Cross-Validation Index (ECVI), Root Mean Square Residuan (RMR), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Comparative Fit Index (CFI), Akaike Information Criterion (AIC), and Consistent Akaike Information Criterion (CAIC). The rest is 6 of GOF that indicate poor fit, namely Chi-Square, Non-Centraly Parameter (NCP), Root Mean Sequare Error of Approximatipn (RMSEA), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Critical N (CN). Thus, it can be concluded that the level of model fit of the structural model is good fit. Through the Structural Fit Model test, the path diagram of t-values is also obtained. The path diagram shows the t-value of each correlation between variables as follows:

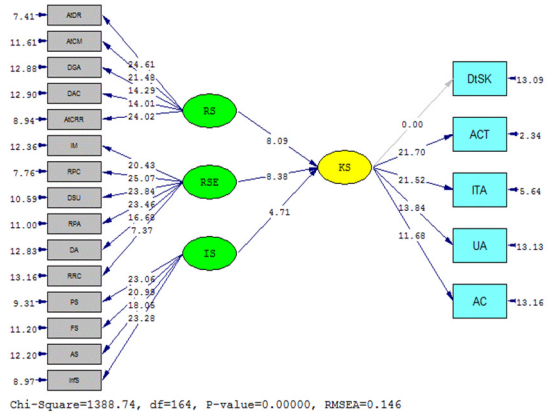

Figure 1. Path Diagram of T-values of Hybrid Model

The structural model regression coefficients can be seen from the path diagram of standardized solution below:

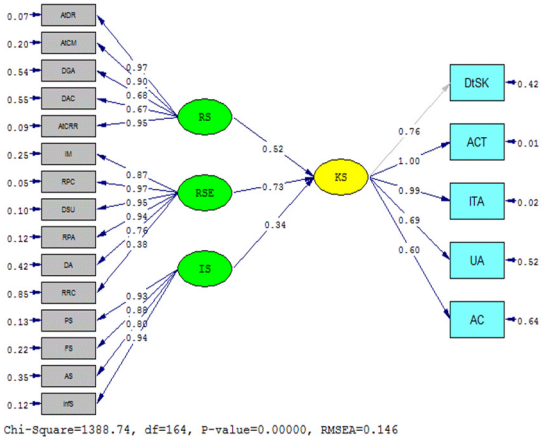

Figure 2. Path Diagram of Standardized Solution of Hybrid Model

Based on the results of the Structural Fit Model test above, a number of parameters relating to the exogenous and endogenous latent variables which are also the basis for testing a number of hypotheses can be summarized in the table below:

Table 4. Relationship Parameters between Exogenous and Endogenous Latent Variables based on the Research Hypothesis

Hypothesis	***T-value***	**Path Coefficients**
H1: RS ➔ KS	8.09	0.52
H2: RSE ➔ KS	8.38	0.73
H3: IS ➔ KS	4.71	0.34

Analysis of the structural model fit also produced a coefficient of determination (R2) for the KS latent variables as below:
RS RSE IS ➔ KS = 0.82

Based on the analysis of the level of the structural model fit above, a number of hypotheses proposed can be tested as follows:

Hypothesis 1:
It is known that the t-value for the RS ➔ KS parameter is 8.09. That means that the t-value is significant between the acceptance region, namely 8.09 > 1.96. In addition, the estimated regression coefficient between the two variables shows a positive relationship of 0.52. Thus it can be concluded that the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected, so that RS has a positive direct effect on KS.

Hypothesis 2:

It is known that the t-value for the RSE ➔ KS parameter is 8.38. With a t-value of 8.38 > 1.96, the parameter is significant in the acceptance region. In addition, the estimation results of the regression coefficient between the two variables show a positive relationship of 0.273. This means that it can be concluded that Ha is accepted and Ho is rejected, so that RSE has a direct positive effect on KS.

Hypothesis 3:

It is known that the t-value for the IS ➔ KS parameter is 4.71. With a t-value of 4.71 > 1.96, the parameter is significant in the acceptance area. In addition, the estimation results of the regression coefficient between the two variables show a positive relationship of 0.34. This means that it can be concluded that Ha is accepted and Ho is rejected, so IS has a positive direct effect on KS.

5 RESULTS

Analysis of the structural model fit shows that RS has a positive direct effect on the practice of KS. With the estimated value of the regression coefficient parameter of 0.52, it can be interpreted that the effect of RS on KS is 52%. In addition, the standard error value of the SIMPLIS program calculation output is 0.086 or 9%. With a standard error value that is not too large, it can be interpreted that the estimated regression coefficient of 52% is an accurate parameter estimation value. This means that RS factor can be used to accurately predict the increase of KS.

With the acceptance of Hypothesis 1, conclusions delivered by Lugkana Worasinchai and Aurilla Aurelie Arntzen Bechina above is getting stronger. It is true that strengthening RS is essential for the success of KS practices. The results of this study also confirm the conclusions of Farkhondeh Hassandoust who stated that the practice of KS is influenced by RS. The more a person has the high level of RS, the higher the tendency to practice KS.

Likewise with RSE factor, it have a positive direct effect on the practice of KS. The estimated value of the regression coefficient between them is known to be positive at 0.73. This means that the effect of RSE on KS practices is 73%. Moreover, the standard error value from the analysis results is only 0.069 or 7%. This shows that the results of the regression parameter estimate of 73% are accurate values. Thus it can be concluded that the factor of RSE is a very strong predictor for the improvement of KS practices.

The acceptance of Hypothesis 2 confirms the conclusions of Chun-Lin and Mei-chi Chen in the above theoretical study that RSE is a very strong factor to encourage someone to practice KS. Similarly, the results prove the conclusions of Hsu et al. that one's RSE does have a positive effect on KS behavior.

Similar to the latent variables of IS, it was proven to have a positive direct effect on the latent variables of KS. The estimated value of the regression coefficient between the two shows a positive value of 0.34. This means that IS can affect the practice of KS by 34%. Moreover, the standard error value of the analysis results is only 0.067 or 7%. This shows that the results of the regression parameter estimation of 34% are accurate values. Therefore, it can be concluded that the factor of IS can be used as a very strong predictor for the improvement of KS practices.

The acceptance of Hypothesis 3 confirms the conclusions of Nicolette Bakhuisen who stated that the most important supporting factor for the practice of KS is IS. Likewise with the conclusions of Connelly and Kelloway who stated that IS is a very significant supporting factor for the culture of KS. Another conclusion confirmed by Hypothesis 3 reception is the study of Afshin Mousavi Chalak et al. They stated that IS is highly required so that the practice of KS can run well in an institution.

The results of other analyzes also show a coefficient of determination (R2) of 0.82. That means the three exogenous variables (RS, RSE, and IS) have a total influence of 82% on endogenous variables (KS). This means that the practice of KS among Islamic university lecturers —particularly related to Islamic economic products and services— is largely determined by the factors of RS, RSE, and IS in 82% and other factors only have an influence of 18%. In other words, when the university focuses on these three exogenous factors (RS, RSE, and IS), the predictable success rate for improving the practice of KS has reached 82%.

6 CONCLUSIONS

The results of testing a number of research hypotheses on the proposed theoretical model in this study proved empirically. The hypothetical model that was previously designed proved to be supported by empirical data with a number of significant values. Based on the analysis above, it can be

concluded that one of the most effective efforts to increase the level of literacy of Islamic finance in Indonesia is to increase the willingness of Islamic university lecturers to share their knowledge regarding Islamic financial products and services. This is because Islamic university lecturers are people who have the competence to provide information and education related to Islamic economic materials. With a high level of KS among Islamic university lecturers, the Islamic financial literacy index in the future is not expected to be in a very low position as the survey was reported by the Indonesian Financial Services Authority (OJK) in 2016.

Therefore, it is important for Islamic universities to provide support and commitment to increase the KS of lecturers. The method is by strengthening the research skills of the lecturers; improving their research self-efficacy; and facilitating maximum institutional support, both in terms of policy, finance, administration, and infrastructure supports. By boosting these three factors (RS, RSE, and IS), it can be predicted that the level of KS of lecturers will also increase. With the increasing practice of KS among Islamic university lecturers, a positive impact on developing and strengthening Islamic economy will be felt.

Increasing KS will also produce a multiplayer effect. In addition to information and education related to the Islamic economy that can run well, KS among lecturers will indirectly have a positive impact on the overall Islamic economic industry towards the national economy. The lecturers in Islamic universities will also indirectly empower individuals and communities. Thus, the entrepreneurial culture and investment in the real and sustainable sharia economic sector will continue to grow, so bringing benefits to the wider community and the Indonesian economy. Thus, the opportunity for Indonesia to become a strong Islamic economic player on a global scale can be realized.

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