



FACTORS AFFECTING OPERATION RISK MANAGEMENT IN ISLAMIC BANKS

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Information of Article

Article history:

Received: Mar 3, 2018
Accepted: Mar 27, 2018
Available online: Apr 1, 2018

Keywords:

Operational Risk Management
Islamic Banks

ABSTRACT

The objective of this paper is to investigate the factors that affect the NFR control in Islamic banks. Questionnaire used as a tool to collect data. The effect of employees' demographic characteristics on NFR control was tested and the effect of NFR procedures and systems on NFR control was tested. The results showed that the higher experience and educational levels showed higher positive attitudes on managing NFR control. Moreover, different procedures and systems used had positive effect on NFR control. The highest impact was for the management of NFR on NFR control in Islamic banks.

INTRODUCTION

The concern with the non-financial operational risk in Islamic banks increased in the last years. Different classifications have raised for the factors affect the non-financial operation risk in Islamic banks. Abdul-Rahman and Yazid (2015) concerned with the banks' human resources as a major contributor of these risks. They justify that as the non-financial risk resulted mainly of human behaves even these risks raise inside or outside the banks. This justification is logic, but it does not cover all concerns of non-financial risks in Islamic banks. The other classifications take into consideration the source of risk inside or outside the bank (Archer and Haron, 2007). Basel II through the Basel Committee on Bank Supervision (2001) classified the operation risk into seven categories:

1. Internal risk: which contributed to enterprise policy or misuse of internal regulations resulted with the contribution of enterprise human resources.
2. External risk: this type of risk associated with a third party that may lead the bank to a risk.
3. Banks personnel: this source is related to any misbehave of the banks' staff due to lack of operation risk management knowledge or due to lack of experience to deal with raised issues.
4. Business processes and practices: this risk is related to the nature of the product if being competitive and meet the customer needs
5. Banks' physical assets: this is associated with the proper selection of assets and infrastructure that meets the bank needs for a good time.
6. System failures: this risk is connected to any damages that occurs in banks' systems anytime leaving disturbances in introduces services
7. Business disruption and system failure: this risk is related to risks resulted from executing any processes of the bank.

Other authors classified non-financial operational risk to four categories (Haron, 2007, Fiennes (2007), Sundarjan (2005), and Chapra and Khan (2000). These four categories are: general risk, *Shar'iah* risk, legal risk and fiduciary risk. *Shar'iah* risk raised from the compliant to Islamic roles in executing *istisna'*, *salam*, *murabaha*, and *ijarah* (Akkizidis and Khandelwal, 2008; Izhar, 2010). The proper of execution of different Islamic crediting activities requires high knowledge of its employees (Abdul-Rahman and Yazid, 2015).

The Islamic banks staff background and experience play crucial role in controlling the risk. Employees training and education discussed as two personnel characteristics that determine the ability of bank to manage and take over all non-financial risks raised properly (Abdul-Rhaman and Yazid, 2015). Training considered a way to improve employees' knowledge to handle risks raised rom executing bank daily works (Dhar and Hoque, 2015; Dhar et al., 2017; Al-Bawab, 2018; Khawar and Ali, 2018; Al-Qaisi, 2018). Educational background of the Islamic employee staff will determine their ability to handle risk issues related to Shariah procedures (Nogodalla and Abdelghani, 2014). On the other hand, the used

systems and procedures inside the Islamic bank and the familiarity of staff with it will determine the extent to solve risk related.

METHODOLOGY

The objective of this research is to test the factors that affect operation risk management in Islamic banks in Jordan. Questionnaire used to collect data. The questionnaire composed of two parts; the demographic characteristics and the employees’ knowledge of procedures and techniques used to control risk in Islamic banks. The second part of the questionnaire used five scale level to measure the extent the staff is agree with the items. Inferential statistics used to test the different hypothesis of this research. The tests included the effect of demographic characteristics; age, experience, education on dealing with and handling the issues related to non-financial risk in Islamic banks. The second part of inferential statistics was to test the effect of different employees’ point of view of the procedures existed in Islamic banks and its effect on non-financial risk management in Islamic banks.

RESULTS

The non-financial operation risk management affected by the personnel characteristics of the bank and the training. To discuss the factors that affect operation risk management in Islamic, two levels of analysis will be executed. The first level is concerned with the effect of demographic characteristics on point of view of operational risk management in Islamic banks in Jordan. The second stage of analysis will take over the effect of the point of view for the different aspects of taking over risk management and outputs of risk management according to the Islamic banks’ employees.

Effect of demographic characteristics on attitudes of non-financial risk management

Age

One-way analysis of variance (ANOVA) was used test the effect of age on the procedures used in Islamic banks as risk management procedures. The results of Table 1 showed that the age did not affect the different procedures used significantly. The results showed trends for the effect. For the realization of the source of risks in the Islamic bank, the first age group (20-29 years) showed the highest positive attitude recorded. This indicates that the new staff receives more information about the source of risk through their education. Moreover, the first age group (20-29 years) showed more positive attitude for the used risk management system including model’s framework. Also, the first group showed positive attitudes compared to other ages to the ability to classify the NFR, realizing operational control and mitigation plans of NFR, reviewing operational risk controls of banks, Impact of using standardized models to manage NFR, and training and awareness of staff for NFRM.

Table 1: One-way ANOVA analysis for the effect of age on risk management constraints

		N	Mean	Std. Deviation	F	Prob
The realization of source of risks in the bank	20-29	21	3.44	0.62	1.16	0.316
	30-39	48	3.06	1.07		
	40-49	68	3.10	1.05		
	Total	137	3.14	1.01		
The ability to classify the NFR in the bank	20-29	21	3.49	0.88	0.447	0.640
	30-39	48	3.30	1.13		
	40-49	68	3.22	1.18		
	Total	137	3.29	1.12		
The used risk management system including models framework	20-29	21	3.45	0.90	0.715	0.491
	30-39	48	3.13	1.19		
	40-49	68	3.22	0.95		
	Total	137	3.22	1.03		
Management of NFR	20-29	21	3.60	0.75	0.667	0.515
	30-39	48	3.36	1.04		
	40-49	68	3.32	0.99		
	Total	137	3.38	0.97		
	20-29	21	3.64	0.76	0.964	0.384

Realizing operational control and mitigation plans of NFR	30-39	48	3.33	1.02		
	40-49	68	3.31	1.00		
	Total	137	3.37	0.98		
Reviewing operational risk controls of banks	20-29	21	3.29	1.10	0.197	0.822
	30-39	48	3.11	1.15		
	40-49	68	3.18	1.00		
	Total	137	3.17	1.06		
Impact of using standardized models to manage NFR	20-29	21	3.54	0.95	0.944	0.392
	30-39	48	3.30	1.03		
	40-49	68	3.20	0.97		
	Total	137	3.29	0.99		
Training and awareness of staff for NFRM	20-29	21	3.70	0.79	1.922	0.150
	30-39	48	3.28	1.11		
	40-49	68	3.17	1.14		
	Total	137	3.29	1.09		

Gender

Table 2 shows the effect of gender on the attitudes to evaluate the procedures in the Islamic banks to manage NFR. Gender does not affect the attitudes of evaluation of the NFRM procedures in Islamic banks. For the realization of source of risk in the bank, and the ability to classify the NFR, Management of NFR the attitudes of males were higher, while for the rest of procedures the attitudes of females were higher.

Table 2: T-test analysis for the effect of gender on risk management constraints

		N	Mean	Std. Deviation	T-value	Prob
The realization of source of risks in the bank	Male	101	3.15	0.98	0.538	0.722
	Female	36	3.08	1.09		
The ability to classify the NFR in the bank	Male	101	3.30	1.12	0.589	0.861
	Female	36	3.26	1.12		
The used risk management system including models framework	Male	101	3.21	1.00	0.598	0.784
	Female	36	3.26	1.12		
Management of NFR	Male	101	3.39	0.96	0.647	0.802
	Female	36	3.34	1.02		
Realizing operational control and mitigation plans of NFR	Male	101	3.36	0.97	0.736	0.842
	Female	36	3.39	1.00		
Reviewing operational risk controls of banks	Male	101	3.11	1.04	0.633	0.286
	Female	36	3.33	1.14		
Impact of using standardized models to manage NFR	Male	101	3.28	0.99	0.922	0.949
	Female	36	3.30	0.99		
Training and awareness of staff for NFRM	Male	101	3.28	1.10	0.806	0.817
	Female	36	3.33	1.09		

Education

Table 3 show the results of testing the effect of education on different NFR procedures used in Islamic banks. If the attitudes of high school dropped as it represent one employee, the results showed that the bachelor were more positive for the realization of source of risks in Islamic banks. The Ph.D. educational levels showed more positive attitude for the ability to classify the NFR. Also, Ph.D. educational levels show higher attitudes for the used risk management system including model's framework, management of NFR, realizing operational control and mitigation plans of NFR, reviewing

operational risk controls of banks, impact of using standardized models to manage NFR, and training and awareness of staff for NFRM.

Table 3: One-way ANOVA analysis for the effect of education on risk management constraints

		N	Mean	Std. Deviation	F	Prob
The realization of source of risks in the bank	High school	1	5.00		0.975	0.424
	Diploma	3	3.08	0.80		
	Bachelor	72	3.11	1.03		
	Master	51	3.09	0.98		
	Doctorate/PhD	10	3.33	1.06		
	Total	137	3.14	1.01		
The ability to classify the NFR in the bank	High school	1	5.00		0.605	0.659
	Diploma	3	3.17	1.66		
	Bachelor	72	3.26	1.11		
	Master	51	3.29	1.11		
	Doctorate/PhD	10	3.35	1.15		
	Total	137	3.29	1.12		
The used risk management system including models framework	High school	1	5.00		1.076	0.371
	Diploma	3	2.87	1.80		
	Bachelor	72	3.15	1.06		
	Master	51	3.26	0.96		
	Doctorate/PhD	10	3.46	0.93		
	Total	137	3.22	1.03		
Management of NFR	High school	1	5.00		1.285	0.279
	Diploma	3	3.29	1.38		
	Bachelor	72	3.26	0.94		
	Master	51	3.46	0.96		
	Doctorate/PhD	10	3.66	1.12		
	Total	137	3.38	0.97		
Realizing operational control and mitigation plans of NFR	High school	1	5.00		1.810	0.131
	Diploma	3	3.80	0.53		
	Bachelor	72	3.32	1.02		
	Master	51	3.27	0.91		

	Doctorate/PhD	10	3.90	0.86		
	Total	137	3.37	0.98		
Reviewing operational risk controls of banks	High school	1	5.00		2.08	0.087
	Diploma	3	3.00	1.86		
	Bachelor	72	3.02	1.03		
	Master	51	3.23	1.04		
	Doctorate/PhD	10	3.80	0.93		
	Total	137	3.17	1.06		
Impact of using standardized models to manage NFR	High school	1	5.00		0.975	0.424
	Diploma	3	3.44	1.07		
	Bachelor	72	3.24	1.00		
	Master	51	3.27	0.98		
	Doctorate/PhD	10	3.53	0.97		
	Total	137	3.29	0.99		
Training and awareness of staff for NFRM	High school	1	5.00		1.270	0.285
	Diploma	3	3.00	1.75		
	Bachelor	72	3.17	1.08		
	Master	51	3.37	1.10		
	Doctorate/PhD	10	3.68	0.83		
	Total	137	3.29	1.09		

Experience

Table 4 shows the effect of experience on employees' attitudes for NFR constraints in Islamic banks. The results show that the experience does not affect the different constraints significantly ($p > 0.05$). The results show that the low experience category shows higher positive attitudes for the realization of source of risks in the bank, the ability to classify the NFR, the used risk management system including models framework, Management of NFR, realizing operational control and mitigation plans of NFR. The experience 16-20 years shows higher positive trends for training and awareness of staff for NFRM, impact of using standardized models to manage NFR, reviewing operational risk controls of banks. The results related to these two categories may be justified due to the knowledge of low experience group through education and the knowledge of the 16-20 years experience group through the experience gained through Islamic bank work.

Table 4: One-way ANOVA analysis for the effect of experience on risk management constraints

		N	Mean	Std. Deviation	F	Prob
The realization of source of risks in the bank	Less than 5 years	17	3.34	1.10	0.716	0.582
	5-10 years	20	3.05	0.85		
	11-15 years	49	3.15	0.98		
	16-20 years	38	3.20	1.08		

	> 20	13	2.75	1.03		
	Total	137	3.14	1.01		
The ability to classify the NFR in the bank	Less than 5 years	17	3.41	1.28	0.555	0.696
	5-10 years	20	3.19	1.05		
	11-15 years	49	3.30	1.10		
	16-20 years	38	3.41	1.12		
	> 20	13	2.92	1.13		
	Total	137	3.29	1.12		
The used risk management system including models framework	Less than 5 years	17	3.42	1.17	0.780	0.540
	5-10 years	20	3.06	0.86		
	11-15 years	49	3.14	1.09		
	16-20 years	38	3.39	1.03		
	> 20	13	3.00	0.85		
	Total	137	3.22	1.03		
Management of NFR	Less than 5 years	17	3.55	0.96	1.100	0.359
	5-10 years	20	3.31	0.94		
	11-15 years	49	3.36	0.92		
	16-20 years	38	3.52	1.02		
	> 20	13	2.91	1.09		
	Total	137	3.38	0.97		
Realizing operational control and mitigation plans of NFR	Less than 5 years	17	3.34	1.26	0.576	0.680
	5-10 years	20	3.28	0.92		
	11-15 years	49	3.38	0.90		
	16-20 years	38	3.52	0.97		
	> 20	13	3.06	1.00		
	Total	137	3.37	0.98		
Reviewing operational risk controls of banks	Less than 5 years	17	3.04	1.37	0.380	0.823
	5-10 years	20	3.22	1.00		
	11-15 years	49	3.16	1.01		
	16-20 years	38	3.30	1.06		
	> 20	13	2.92	1.01		
	Total	137	3.17	1.06		
Impact of using standardized models to manage NFR	Less than 5 years	17	3.29	1.24	1.146	0.338
	5-10 years	20	3.30	0.88		
	11-15 years	49	3.29	0.97		
	16-20 years	38	3.45	0.96		
	> 20	13	2.77	0.93		

	Total	137	3.29	0.99		
Training and awareness of staff for NFRM	Less than 5 years	17	3.37	1.24	1.008	0.406
	5-10 years	20	3.21	0.98		
	11-15 years	49	3.24	1.07		
	16-20 years	38	3.51	1.04		
	> 20	13	2.85	1.26		
	Total	137	3.29	1.09		

Effect of realization of source of risks on reviewing operational risk controls of banks

Table 5 shows the linear regression of the effect of realization of source of risks on the NFR control in Islamic banks. The adjusted regression coefficient shows that this constraint justifies 51.4% of NFR control in Islamic banks. The model of this regression was significant ($p < 0.05$) and the t-test for the independent factor of the regression was significant too ($p < 0.05$).

Table 5: Linear regression for the effect of source of risk on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.789	3.799	0.001	0.514	145.024	0.0001
Realization of source of risk	0.760	12.043	0.001			

Effect of ability to classify non-financial risk on reviewing operational risk controls

Table 6 shows significant effect of the ability to classify NFR on NFRM in Islamic banks. This constraint justified 51.3% of NFR management in Islamic banks. The results show direct relation for the effect of the ability to classify non-financial risk on NFR management in Islamic banks in Jordan.

Table 6: Linear regression for the effect of the ability to classify the non-financial risk on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.923	4.640	0.0001	0.513	142.04	0.001
Ability to classify the NFR	0.683	11.929	0.0001			

Effect of used risk management on reviewing operational risk controls

Table 7 shows that the used risk management justified 50.4% of NFR control in Islamic banks with significant model. The effect of model was significant ($p < 0.05$). The effect was direct indicating that the used risk management will reflect the extent of risk control in Islamic banks.

Table 7: Linear regression for the effect of used risk management on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.799	3.784	0.001	0.504	139.058	0.0001
Used risk management	0.736	11.792	0.001			

Effect of management of NFR on reviewing operational risk controls

Table 8 shows the linear regression for the effect of management of NFR on reviewing NFR management in Islamic banks. The results show that management of NFR justifies 60.9% of controlling the NFR in Islamic banks. The adjusted regression coefficient indicates that management of NFR contributes the highest among other factors for the control of NFR in Islamic banks.

Table 8: Linear regression for the effect of management of NFR on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.285	1.384	0.169	0.609	212.489	0.001
Management of NFR	0.855	14.577	0.0001			

Effect of realizing operational control and mitigation plans of NFR on reviewing operational risk controls

Table 9 shows that realization operational control and mitigation plans of NFR has the least effect on NFR control in Islamic banks as the adjusted regression coefficient was the least.

Table 9: Linear regression for the effect of realizing operational control and mitigation plans of NFR on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.627	2.640	0.009	0.476	124.474	0.001
Realization operational control and mitigation plans	0.756	11.157	0.001			

Effect of using standard models to manage on reviewing operational risk controls

Table 10 shows the positive effect of using standardized models on NFR control. Adjusted regression coefficient justifies 54.1% of NFR control in Islamic banks.

Table 10: Linear regression for the effect of using standard models to manage on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.563	2.623	0.01	0.541	161.109	0.001
Using standard models	0.793	12.693	0.0001			

Effect of training and awareness on NFR control

Table 11 shows that training and awareness of NFR justifies 52.4% of the NFR control in Islamic banks. The effect was directing which explaining the importance of training and awareness to control NFR in Islamic banks.

Table 11: Linear regression for the effect of training and awareness of staff for NFR on reviewing operational risk controls

Source of variation	Value	t-value	Prob	Ad. Reg. Coef	Model F	Prob
Constant	0.839	4.197	0.001	0.524	150.919	0.001
Training and awareness	0.709	12.285	0.001			

Overall effect

Table 12 show the effect of different constraints when collected in one model. The adjusted regression coefficient indicated that the different constraints explain 65% of NFR control in Islamic banks. The results show that the highest contribution of NFR control in Islamic banks was for management of NFR, realizing operational control and mitigation plans, impact of using standardized models to manage NFR, then the realization of source of risks in banks.

Table 12: Overall effect on reviewing operational risk controls

	B	Std. Error	Beta	t	Sig.
(Constant)	-0.044	0.213		-0.208	0.836
The realization of source of risks in the bank	0.111	0.105	0.106	1.058	0.292
The ability to classify the NFR in the bank	0.068	0.110	0.071	0.612	0.541

The used risk management system including models framework	-0.017	0.120	-0.017	-0.143	0.886
Management of NFR	0.404	0.130	0.370	3.101	0.002
Realizing operational control and mitigation plans of NFR	0.213	0.091	0.196	2.354	0.020
Impact of using standardized models to manage NFR	0.181	0.111	0.168	1.630	0.106
Training and awareness of staff for NFRM	0.006	0.120	0.006	0.052	0.959

CONCLUSIONS

The objective of this research is to find out the factors that affect NFR control in Islamic banks according to their employees' point of view. The data of was collected using questionnaire. The results of this research showed that the demographic characteristics including experience, age, gender and education do not affect the control of NFR in Islamic banks. The results showed that for education the Ph.D degree employees has positive attitudes on the procedures and system used to control NFR in Islamic banks. For the experience, the low experience category and the experience 16-20 years show higher positive attitudes for the procedures and systems used in Islamic banks to control NFR. The results of this research showed that the different constraints related to system and procedures to control NFR affect positive the control of NFR in Islamic banks. The extent of effect was varied from factor to another.

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