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Due Diligence and Risk Alleviation in Innovative Ventures—An Alternative Investment Model from Islamic Finance

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Abstract: Risk is a big concern for anyone contemplating investing in new, especially innovative ventures. However, if successful, the returns can be extraordinary, serving as an impetus for many venture capitalists to provide greater funding. Still, many new ventures never see the end of the tunnel, and success stories are scant. The venture capital market is growing, yet many investors feel on edge when investing in new and innovative ventures. This paper is based on field survey data to evaluate the importance of risk and return components of an alternative venture investment approach called diminishing Musharakah (DM). DM has roots in Islamic modes of investment that are more suited for ventures with a higher risk profile. This paper focuses on four key ingredients, i.e., due diligence (DD), flexibility (Flex), moral hazard reduction (MHR), and risk reduction (RR) inherent in this mode of investment. All these components contribute towards the end goal of any investment, i.e., value enhancement (VE). DM is based on investment modes approved by Islamic law, called Shariah, and Islamic jurisprudence, called Fiqh. The analysis and the paper's results show that the proposed model is perceived as flexible enough to accommodate a wide variety of investment possibilities. The model carries the potential to encourage venture investment through various stages of growth of a venture. The findings are based on original perception data through a field survey across a broad spectrum of banking users who were interested in alternative and Islamic modes of investment. Findings and analysis of the survey data strongly support our connotations. We propose that the Shariah-based investment model presented in this paper will bring a vast new market into play, i.e., the Islamic money market, thus providing greater venture financing possibilities. As a result, we hope that the number of successful venture investment projects will significantly increase over time as we put the proposed investment model into use.

Keywords: Musharakah; due diligence; innovative ventures; risk reduction; value enhancement

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1. Introduction

Innovation trajectories are replete with disruptive technologies, altering entire product development processes or even organizational business models, with ripple effects beyond the organizational boundaries. Thus far, investment and capital theories have been majorly defined through the explanations given by Modigliani and Miller (MM), especially in the West (Modigliani and Miller 1958). MM have done a marvelous job in explaining their position regarding the capital structure and value of the firm. MM's findings that the value of a firm is independent of how it is financed carried enormous weight and changed economic theory and practice in a big way. However, the Islamic perspective on investment and finance comes with a very different set of rules and regulations. It is not always possible to explain them within the MM framework. The conventional capital structure consists of debt and equity (DE) components, where debt represents a fixed cost component in the capital structure. Islamic financial models or Islamic equity (IE) generally do not permit a fixed cost component in the capital structure, and thus, applying MM nuances to them is not very useful. It has also been observed that large and established business

organizations are very often hostile towards such newer ventures and thus, adhere to killer tactics to scuttle the advent of new ventures. This behavior tends to relegate many new but promising ventures to the status of orphans doomed to extinction, even before being developed into a viable commercial product. This is where the nature and scope of Islamic Equity (IE) come into play and promise a brighter outcome and greater possibilities for such endangered ventures. IE offers some strategic alternatives that can ensure the survival of new and innovative investments through infancy. Understanding the novelty and appreciating IE's capacity for value enhancement are crucial if we want to tap into its potential. This paper outlines an investment model based on IE's DM mode of investment, which allows value enhancement in general and risk mitigation in particular. DM is an Islamic mode of investment that enables investment partnership and ends up with a gradual partnership reduction of one or more investing partners. The DM approach is neither a negation of MM propositions nor an MM extension; instead, it is a novel concept deriving its strength from due diligence and risk-sharing facilities. Besides DD and RR, the model also carries the potential of flexibility and further provides an opportunity to avoid moral hazards.

The possibility of using DM as a helpful investment approach becomes more acceptable as there is a rising trend towards alternative finance. Alternative financing options come into play through various stages of a new or an innovative venture's trajectory. In the following few sections of this paper, we shall explain the concept of DM and its roots in Shariah law. Then, we shall analyze the perception data about the utility of DM in enhancing the value of an investment through its components, i.e., RR, DD, Flex, and MHR. In this manner, we can test DM's desirability against the actual field data collected through a survey. The survey is based on a Guttman binary scale questionnaire distributed and collected from users of Islamic financial services. The users were carefully selected to represent people who carry a good understanding of the Islamic financial system and have prior experience using Islamic financial services, including Islamic investment modes. The analysis of the data conducted in later sections of this paper suggests that DM is broadly considered helpful in reducing the risk of an investment project and can enhance the value of a new venture or innovative venture.

2. Literature

This section conducts a quick roundup of empirical evidence related to conventional and alternative approaches towards financing. We shall give greater space to alternative financing approaches and, in the process, explain the background of DM in this paper. Alternative funding may be anything that does not come from conventional funding alternatives such as a bank loan, bonds, or equity-based financing acquired from issuing securities representing a collective claim on the venture's assets. While alternative financing has been catching up fast everywhere and anywhere lately, more recently, China has been a leader in the alternative financing market. Figure 1 shows a notable growth in alternative funding worldwide, with China in the lead. According to the Cambridge Centre for Alternative Finance 2019 Report, the existing matching supply of alternative finance is estimated to be approximately USD 5 trillion worldwide (World Bank 2019). Peer-to-peer funding and online funding sources appear more welcoming towards smaller-sized firms than the conventional funding line banks (Mollick 2014). The model in this paper favors crowdfunding through online sources more than any other options; hence, it seems pertinent that crowdfunding options are also discussed before integrating its utility in the funding model suggested.

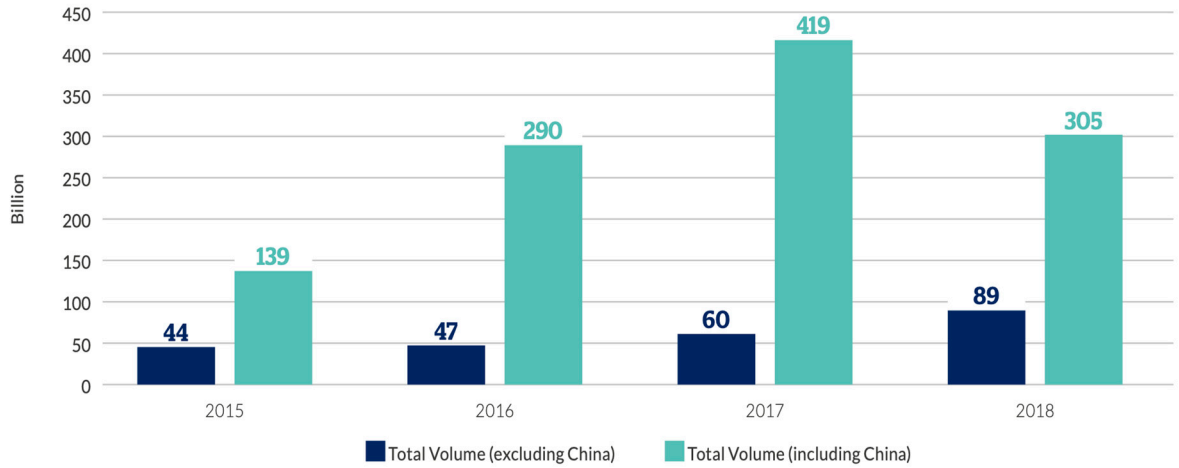

Figure 1. Size and growth of alternative finance market (billion USDs). Source: Cambridge Center for Alternative Finance Report 2020.

Online sources, especially crowdfunding, are a game-changer in the small business world, more so for innovative ventures that are still reeling through earlier incubation stages. According to a World Bank report, this new form of capital formation emerged in the wake of the 2008 financial crisis, mainly because of the difficulties faced by artisans, entrepreneurs, and early stage enterprises in raising funds (World Bank 2013). Crowdfunding is an internet platform-based funding arrangement which fund providers and fund seekers typically come across anonymously, and the lending-borrowing deals take many forms.

It should be noted that Islamic financial models or Islamic equity (IE) generally do not permit a fixed cost of the capital component in the capital structure (Uzair 1976). Thus, applying MM nuances to them is not very useful. One of the critical axioms of Islamic finance is the prohibition of riba (any predetermined or expected return on financial transactions) (Aggarwal and Yousef 2000). In the strictest interpretation of Quranic injunctions on riba, any form or contemporary understanding of interest is disallowed. Several Quranic verses declare the unacceptability of riba in unequivocal terms, e.g., in the second chapter of the Quran, riba is detested and forbidden as follows:

> *"O ye who believe! Fear Allah and give up what remains of your demand for riba, if ye are indeed believers" (Quran 2:278)*

> *"If you do it not, take notice of war from Allah and His Messenger. But if ye turn back, ye shall have your capital sums. Deal not unjustly, and ye shall not be dealt with unjustly" (Quran 2:279)*

We can find plenty of similar injunctions of Islamic finance that restrict fixed cost debt in the capital structure of investments. Such a position is generally accepted amongst most jurists of Islamic Fiqh, Islamic jurisprudence (Seyyed 1989). Islamic finance promotes equity investment instead of debt investment, as the latter is considered inimical to the welfare of society (Ahmad et al. 2010). On the other hand, the Shariah-based DM investment model provides the possibility of bringing a vast new market into play, i.e., the Islamic money market, thus providing greater venture financing possibilities (Jaffe 2002). The milk analogy proposed by Miller (Miller 1991) is exciting and explains the relative role of debt and equity. Again, in IE, we shall need to look at the role of fixed cost financing from a different perspective. This is so because while profit and loss sharing is permitted by Shariah, fixed cost financing is not. It is the conceptual and theological background to Islamic finance that leads us to the formulation of ideas to look towards alternative investment models acceptable in both Islamic and non-Islamic traditions. Thus, we shall look beyond the conventional modes of financing more commonly and contemporarily acceptable across the board. One such mode of financing can be found in Musharakah, an Islamic term for partnership, which is practiced in the West and acceptable in Islam.

Musharakah has deeper roots in Islamic financial jurisprudence and origins in the term Shirkah (Yustiardhi et al. 2020). Shirkah, in its pure form, is a partnership arrangement between two or more persons in an asset's sale purchase or business arrangements. Musharakah is an Arabic word that means sharing. Tyser (2003), deriving from a 14th-century book Majallah el-Ahkam-i-Adliya (1329), defines it as an "agreement for the association on the condition that the capital and its benefit be common between two or more persons." The Shirkah can broadly be either Shirkat-ul-Milk (Joint Ownership) or Shirkat-ul-'Aqd (joint enterprise) (Khan and Mirakhor 1987). DM has features combined from both Shirkat-ul-Milk (SUM) and Shirkat-ul-'Aqd (SUA). It seems pertinent that we briefly explain these concepts before laying down the detailed working of DM.

SUM is joint ownership of a property and can be an outcome of both an optional and forced situation. Joint ownership can be optional as two or more parties join hands to purchase, own, and sell a given asset, sharing costs and benefits emanating from such an arrangement. However, forced partnerships are usually outcomes of a contingent situation, e.g., heirs inheriting property from parents and consequently sharing ownership and maintenance costs or sale proceeds. In Fiqh (Islamic jurisprudence), the former situation's sharing or profits are based upon mutually agreed proportions. Later, sharing among siblings is succinctly laid down in Fiqh. The optional SUM is mainly relevant to the venture finance model laid down in this paper. Ariff (1988) has cataloged a sequential growth and evolution of Islamic banking and investment activities across Muslim countries in the 20th century and later.

SUA or joint enterprise is an interestingly broad concept of Islamic finance that allows joint contractual ownership and control of all sorts of assets, tangible or intangible, including activities that may give rise to value creation in the future. Javaid (2015) has comprehensively presented institutional arrangements for Shirkat contracts in a Hollingsworth framework. His paper is a worthy read to understand how we can incorporate institutionalism within Islamic finance models with very conventional roots dissimilar to contemporary finance. Siddiqui (1987) treatise is also a very worthwhile effort into explaining the concepts of profits sharing and the partnership mechanism allowed by Shariah. The dexterity of SUA makes it the most suitable candidate for the modern-day financial requirement for wide-ranging investment and exit situations. SUA further allows the incorporation of modern institutional arrangements such as the due diligence process, moral hazard, and such concepts in venture operations and allows periodic value adjustments of the potential outcome. It so happens as partners share profits and losses emanating from the venture, the parties can assume an entrepreneurial stance on investment. This eventually leads to the reducing or eliminating of risk exposure. SAU can be further classified into three types as follows.

- Shirkat-ul-Amwal—referring to a joint investment partnership into a commercial venture.
- Shirkat-ul-A'mal—a service business partnership.
- Shirkat-ul-Wujooh—a partnership in commodity trade with no investment by the partners except their time and talents used for the business operations.

Usmani (1998, 1999) and Mydin Mydin Meera and Razak (2009) have conducted an in-depth study of these concepts of Musharakah and its application as an Islamic mode of financing. Meera (2012) has further conducted a study to elaborate this type of financing for house building finance as well. AlMaghrebi (2013) too provided an excellent explanation on the utility of Islamic finance for housing in his paper. The The Economist (2001) reports that even in non-Islamic countries, conventional banks such as HSBC and Citibank started offering Islamic financial services quite early on to tap into the potential of the market associated with Islamic finance. Similarly, Warde (2000) has also presented a detailed picture of Islamic finance in the global market. The study is constructive in explaining the geographic mosaic of Islamic finance as a source of alternative financing.

DM diminishes balance of partnership into the value of assets owned proportionately between the entrepreneur and the venture capitalist or the funds' provider. DM carries

the elements of SUM and SUA and is thus widely applicable to most venture investment cases through various stages of the venture's life. The concept has variously been applied to finance an immovable property (Lewis and Algaoud 2001). However, similar principles can be used to finance the acquisition or incubation of a venture through its various life stages—only if we can ascertain the potential value of the venture's assets, tangible or intangible, through different venture stages' life (Dudley 2001). The beauty of DM lies in the fact that it allows:

- Realignment of contractual terms over the life of the contract.
- The contract term can be readjusted based upon the mutually agreed mechanism.
- Several subcontracts can be developed and clubbed together to facilitate the venture's various assets and operations.
- DM contracts can be enacted or terminated across all stages of a venture's life.
- DM provides an executable exit strategy for the venture capitalist adhering to the market value principles.

The DM model has been applied selectively in some investment areas in the past. Jain (2013) has applied the concept of DM to housing mortgages in his thesis and has shown that we can apply the same to many ways of modern financing areas. This paper has proposed using DM for venture investment through its various stages of incubation and maturity. Laux (1990) carried out a review of the book by Khan and Mirakhor on the topic. His review is also beneficial in understanding how Islamic financial models can coexist with conventional investment approaches (Khan and Mirakhor 1994). While an exact number of stages through which a venture matures can be variously argued, we have assumed a three-stage growth model in line with the consensus. Gompers (1995) has looked keenly into the various aspects of venture capital funding, including its stages. A book by Basov and Bhatti will be of particular interest to people who want to grasp a more profound and broader understanding of Islamic finance concepts (Basov and Bhatti 2016).

3. Methodology and Data

3.1. The Methodology

This section explains the DM model used to analyze the respondent's data explained in the next section. With the data analysis, we want to know, from the respondents' point of view, how well the first three model-specific questions connect with the fourth and the fifth questions, i.e., risk reduction and value enhancement (Mead and Delves 1973). Considering the construction and operations of a new venture, we can identify various situations that would require particular attention in order to enhance the value of an investment. These can be listed as:

- Due diligence (DD);
- Risk reduction (RR);
- Moral hazard reduction (MHR);
- Flexibility (Flex).

We can design a progressively workable DM model to explain the interrelationship amongst all these factors with our respondents' data using binomial Probit regression. First, we can describe the risk reduction component of our model. Due diligence, flexibility, and moral hazard have a direct bearing on the risk of any venture. It is thus natural to consider that risk is dependent upon the operations of these independent variables. We want to define the relationship between DD and risk as an investor's initial understanding of the investment opportunity and the investment dynamics (Shahzadah Nayyar Jehan 2018). Hence, DD must be performed by the investing partners concerning the valuation and the risks. Koryak and Smolarski (2008) suggest that diligent pre-investment screening enhances the post-investment risk profile.

Similarly, the risk profile of investment is also affected by moral hazard perceptions related to an investment. There is an empirically proven direct relationship between risk and moral hazard, as both go down and up in consonance (Dionne et al. 1997). While

there are studies and investment models that suggest the flexibility of frequent entry or exit options for investors increases the investment risk profile, Gollier et al. (1997) found this relationship, at least for a single period of investment, and state that flexibility always raises the demand for the risky asset if constant relative risk aversion is less than unity (Jehan 2010).

Nevertheless, in DM's case, flexibility comes in conjuncture with due diligence, and this enhances the value proposition and reduces the risk profile of the investment. Hence, we can assume a relationship between risk and the flexibility of an investment project. Thus, we can explain the construction of independent and dependent variables for the model that we will use for this analysis. The questionnaire was designed to allow us to perform a two-step Probit regression analysis. First, we take DD, Flex, and MHR as independent variables and RR as a dependent variable. In the second stage of the analysis, we shall take VE as a variable dependent on all four of these variables.

Therefore, initially, we take RR as a variable dependent upon DD, Flex and MHR,

$$RR = \beta_0 + \beta_1 \text{ DD } + \beta_2 \text{ Flex } + \beta_3 \text{ MHR } + \varepsilon \quad (1)$$

and further expand it to accommodate value enhancement as:

$$VE = \beta_0 + \beta_1 \text{ DD} + \beta_2 \text{ Flex} + \beta_3 \text{ MHR} + \beta_4 \text{RR} + \varepsilon \quad (2)$$

Here, VE stands for value enhancement, which is a dependent variable; the rest of the four variables are independent variables. DD is for due diligence, Flex is for flexibility, MH is for moral hazard and RR is for risk reduction. The Probit regression model takes the form

$$\Phi - 1(\text{p}) = \beta 0 + \beta 1 \text{x} 1 + \beta 2 \text{x} 2 + \ldots + \beta \text{nxn} + \varepsilon \quad (3)$$

with

$$\varepsilon \sim \text{N } (0, 1) \text{ and p} = \text{P } (\text{y} = 1 \mid \text{X}) \text{ where X} = \text{x}_1, \text{x}_2, \ldots, \text{xn}$$

First, we regress three variables, DD, Flex and MHR, as independent variables, with RR as the dependent variable. Hence, our Probit model for stage I of the analysis will be

$$\Phi - 1(\text{RR}) = \beta_0 + \beta_1 \text{DD} + \beta_2 \text{Flex} + \beta_3 \text{MHR} + \varepsilon \quad (4)$$

with

$$\varepsilon \sim \text{N } (0, 1) \text{ and p} = \text{P } (\text{RR} = 1 \mid \text{X}) \text{ where X} = \text{DD, Flex, and MHR}$$

Secondly, we regress four variables, DD, Flex, MH and RR, as independent variables with VE as the dependent variable. Hence, for stage II of the regression, we adjust and extend our regression model as

$$\Phi - 1(\text{VE}) = \beta_0 + \beta_1 \text{DD} + \beta_2 \text{Flex} + \beta_3 \text{MHR} + \beta_4 \text{RR} + \varepsilon \quad (5)$$

with

$$\varepsilon \sim \text{N } (0, 1) \text{ and p} = \text{P } (\text{VE} = 1 \mid \text{X}) \text{ where X} = \text{DD, Flex, MHR, and RR}$$

The analysis presented in the next section of this paper is based on data collected from the respondents through a Guttman binary scale. The binary response 1 was denoted as 'Yes' for agreement and 0 for 'No' to each question. Out of 500 questionnaire forms, we selected 320 responses, where the respondents marked "1" (Yes) for the first two general questions in the survey. Twenty responses were dropped because of writing mistakes or lack of clarity in circling the response box; as a result, our analysis is based on 300 responses. The data thus collected (as explained in the summary statistics) pertained to all dependent and independent variables employed in this model.

3.2. The Data

To assess the viability of the assumptions of the model presented in the last section of this paper, we carried out a field survey of Islamic banking system users during the second through to the fourth week of December 2020. The respondents were selected randomly from clients exiting from five significant banks providing Islamic investing and banking services in Pakistan. The data were collected through a questionnaire containing seven questions, where respondents were asked to give a binary response to the questions. The first two questions were general and allowed us to include only respondents with an understanding of the model and some Islamic banking experience and investment in the final tally. The last five questions were directly related to the respondents' perception of the model proposed in this paper. The model was presented and explained to the respondents in an easy-to-understand nonmathematical form. The explanation described how many components of the model there are and how they are expected to inter-relate. We cannot comment separately on the level of understanding of more complex concepts by every respondent, e.g., MHR; however, a reasonable effort was made to explain the mechanics of the model to the respondent. This may also be considered a practical limitation of the study. However, as the survey was carried out in the general users group and not in a controlled group (such as within employees of a financial institution or financial academics), this fact also makes it a broad scope study.

After explaining the model and collecting answers to the model questions, the respondent's data were collected to understand the model. The section on general questions contains two primary questions to establish this very fact. The questionnaire was designed on a Guttman scale. The binary response 1 was denoted as 'Yes' for agreement and 0 for 'No' to each question. Out of 500 questionnaire forms, we selected 320 responses, where the respondents marked "1" (Yes) for the first two general questions in the survey. All respondents were explained the nature of the DM model laid down in this paper. They were asked to link their responses to their understanding of the model. The questionnaire used in the survey is as given in Table 1. The data thus collected were recorded in an Excel sheet for processing and analysis. After that, we have presented a brief review of the summary statistics calculated from the accumulated data to highlight the responses' salient characteristics. Twenty responses were dropped because of writing mistakes or lack of clarity in circling the response box; as a result, our analysis is based on 300 responses.

Table 1. The survey questionnaire.

No.	The Questions	Answer (Mark 1 for Yes and 0 for No)	
General Questions			
1	Did you understand the explanation of the model?	1	0
2	Do you have an Islamic banking and investment experience?	1	0
The Model Specific Questions			
1	*Due Diligence (DD)* Do you think the proposed model will enhance due diligence?	1	0
2	*Flexibility (Flex)* Do you think the flexibility in the model is good for the investment value?	1	0
3	Moral Hazard Reduction (MHR)Do you think the model will reduce moral hazard?	1	0
4	*Risk Reduction (RR)* Do you think earlier 3 points will help reduce overall risk of the investment?	1	0
5	*Value Enhancement (VE)* Do you think earlier 4 points will lead to an enhanced value of the venture?	1	0

In Table 2, we have presented the summary statistics gathered through our survey. It is evident from the summary statistics that most respondents believe that the model will have a positive effect upon the venture's value via enhanced due diligence, greater flexibility, and decreased level of moral hazard. They also generally believe that the risk level will go down, and eventually, the investment model will result in a greater value of the investment.

Table 2. Summary statistics.

Variable	Obs.	Mean	Std. Dev.	Min	Max
DD	300	0.5867	0.4933	0	1
Flex	300	0.6500	0.4778	0	1
MH	300	0.4467	0.4980	0	1
RR	300	0.7067	0.4561	0	1
VE	300	0.7700	0.4215	0	1

Table 3 portrays details of pairwise counts, sums, and means of the responses grouped by the VE, the final and the dependent variable of our model. It is clear from the data in Table 3 that the majority of the respondents perceive that the DM model will result in greater due diligence and the flexibility inherent in the model will be good for investment (Hussain 2010). The response towards the moral hazard aspect in the model is, however, not overwhelming. Additionally, most respondents rated the model favorably in its capacity to reduce risk and enhance value.

Table 3. Pairwise counts, sums and means grouped by VE.

VE	DD	Flex	MHR	RR
0	69 0.65217 45	69 0.637681 44	69 0.405797 28	69 0.666667 46
1	231 0.5671 131	231 0.65368 151	231 0.458875 106	231 0.718615 166
Total	300 0.58667 176	300 0.65 195	300 0.446667 134	300 0.706667 212

A look at Figure 2 also clearly points towards a similar conclusion. We can see that a large majority of the respondents think that the DM investment model, as presented earlier in this paper, will have a clear and positive impact on risk reduction and value enhancement.

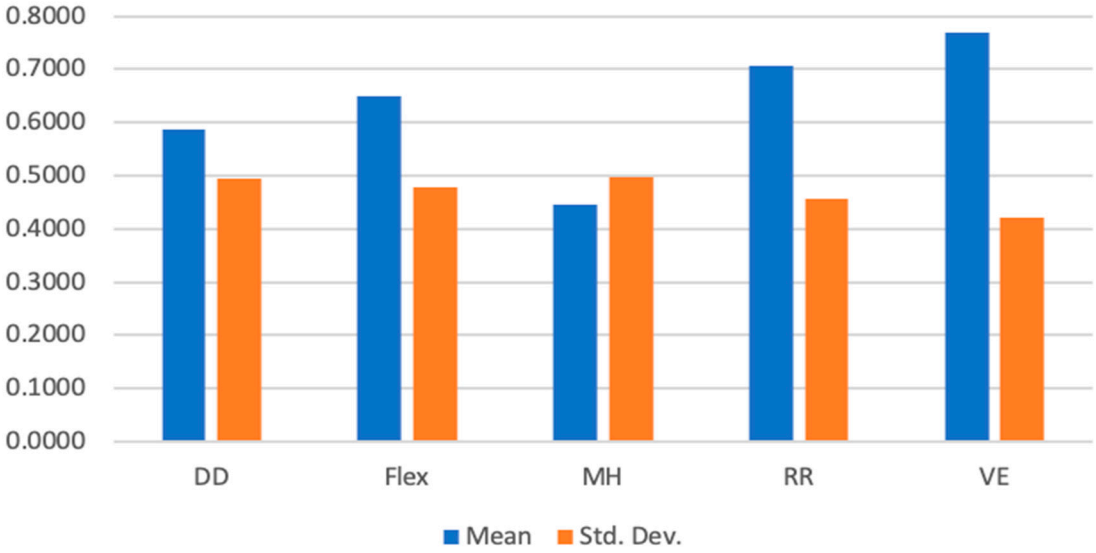

Figure 2. Survey response regarding DM model components.

4. Results and Discussion

We have seen from the summary statistics that most respondents concluded that our 1st three independent variables contribute to risk reduction. However, the response regarding MHR has not been overwhelming. This may be because of the cultural and professional background where these data were collected. With a relatively less strict corporate governance environment, it was expected that people may not be very eager towards the MHR being considered forcefully. The same has also been found possible in some other studies (Chambers et al. 2007). We also moved on towards the final question in our survey, and the summary statistics indicate that respondents believe that four independent variables contribute to value enhancement. A look at the pairwise comparison of counts, sums, and means (Table 3) points towards our contention that building a DM model such as this will result in value enhancement for the investment (Craig and Eisenberg 2012).

Further, we produced binary Probit regression results. Table 4 presents results estimated from the binary Probit model using the maximum likelihood method for estimation. The estimated coefficients and standard errors reveal which factors influence the respondent's perception of value enhancement in our model. The estimation results of the Probit model are presented in Table 4. Overall, the performance—in terms of the probability of successful rating at completion—of flexibility is better than DD and MHR, as indicated by the positive and highly significant coefficient of Flex.

Table 4. Probit regression analysis with RR as dependent variable.

Log likelihood = −177.71196					**Number of obs = 300** **LR chi^2(3) = 7.64** **Prob > chi^2 = 0.054** **Pseudo R^2 = 0.021**	
RR	**Coef.**	**Std. Err**	**z**	**P > z**	**[95% Conf. Interval]**	
DD	0.0416035	0.156378	0.27	0.79	−0.26489	0.348099
Flex	0.3692816	0.159178	2.32	0.02	0.0573	0.681264
MHR	−0.2017806	0.154708	−1.3	0.192	−0.505	0.101442
_cons	0.3806881	0.169461	2.25	0.025	0.04855	0.712826

A statistically significant coefficient suggests the likelihood that the investment's value will increase/decrease as the regressor's response or independent variable increases/decreases. The likelihood ratio test results indicate that our variables are sta-

tistically significant at 5%. McFadden's Pseudo R^2 was calculated, and obtained values suggest that the Probit model's independent variables explain a significant proportion of the model's investment risk (Hasan 2011, 2013).

However, as probit coefficients cannot directly calculate the dependent variable's value through regressor coefficients (DD, Flex, and MHR), we also calculated margins to calculate the predicted value. Hence, we computed margins (Table 5). Marginal effects are changes in response to a change in a covariate (predictor). The average marginal effect is computed using the sample values of the other predictors. The average marginal effects suggest that, on average, the predicted probability of Flex is higher than DD and MHR. However, the predicted probability of DD is still higher than MHR. The overall performance of the model is significant at the 5% significance level. The result of the margin tells us that a 0.0139998 increase in DD will result from a corresponding 1.0 change in the risk of investment and the rest of the regressor variables.

Table 5. Marginal effects with RR as dependent variable.

					Number of obs = 300 **Model VCE: OLM** **Expression: Pr(rr), Predict()** **dy/dx w.r.t.: dd flex mhr**	
RR	**Delta-Method**		**z**	**P > z**	**[95% Conf. Interval]**	
	dy/dx	**Std. Err.**				
DD	0.0139998	0.0526009	0.27	0.79	−0.08909610	0.1170957
Flex	0.1242651	0.0522263	2.38	0.02	0.0219035	0.2266268
MHR	−0.06790020	0.0516695	−1.31	0.192	−0.16917050	0.0333701

Lastly, we repeated the same Probit regression approach with four independent variables and VE as the dependent variable. We produced binary Probit regression results (Table 6).

Table 6. Probit regression analysis with VE as dependent variable.

					Number of obs = 300 **LR chi^2(4) = 3.06** **Prob > chi^2 = 0.5471** **Log likelihood = −160.25056** **Pseudo R^2 = 0.0095**	
VE	**Coef.**	**Std. Err.**	**z**	**P > z**	**[95% Conf. Interval]**	
DD	−0.21243340	0.165464	−1.28	0.199	−0.5367359	0.111869
Flex	0.0389408	0.170004	0.23	0.819	−0.2942613	0.372143
MHR	0.1333415	0.162845	0.82	0.413	−0.1858287	0.452512
RR	0.1545142	0.176036	0.88	0.380	−0.19050990	0.499538
_cons	0.6766168	0.212737	3.18	0.001	0.2596607	1.093573

Table 6 presents results estimated from the binary Probit model with VE as a dependent variable. Again, we used the maximum likelihood method for estimation. The estimated coefficients and standard errors reveal which factors influence the respondent's perception of value enhancement in our model. A statistically significant coefficient suggests the likelihood that the investment's value will increase/decrease as the regressor's response or independent variable increases/decreases. Again, the likelihood ratio test results indicate that our variables are statistically significant at 5%. McFadden's Pseudo R^2 was calculated, and obtained values suggest that the independent variables included in the Probit model explain a significant proportion of the model's value. However, as we already mentioned that Probit coefficients could not directly calculate the dependent variable's value through regressor coefficients (DD, Flex, MHR, and RR in this case), we need to calculate margins

to calculate the predicted value. Hence, we computed margins (Table 7). For example, the result of the margin tells us that a 0.0139998 increase in quantified DD will result in a corresponding change equal to 1 in the value of the investment and the rest of the regressor variables.

Table 7. Marginal effects with VE as dependent variable.

					Number of obs = 300 **Model VCE: OLM** **Expression: Pr(rr), predict ()** **dy/dx w.r.t.: dd flex mhr**	
VE	**Delta-Method dy/dx Std. Err.**		**z**	**P > z**	**[95% Conf. Interval]**	
DD	−0.06388830	0.0494590	−1.280	0.199	−0.1608262	0.0330497
Flex	0.0117113	0.0511200	0.23	0.819	−0.0884822	0.1119047
MHR	0.0401018	0.0488650	0.82	0.412	−0.0556719	0.1358755
RR	0.0464694	0.0527928	0.88	0.379	−0.0570026	0.1499413

5. Conclusions

Innovative venture incubation is ordinarily replete with failure, and few ventures in practice see the light of day, while a vast majority are discarded in infancy. High levels of uncertainty in developing a commercially viable product or service are one primary reason that throttles the continued sustenance of innovative ventures due to lack of access to funds during various stages of their life. Different conventional modes of venture financing are available; however, the dismal percentage of successful innovative ventures calls for something beyond the usual to raise success levels. Thus, we found an opportunity to present a model that can combine the novelties of IE with modern trends in finance and provide a solution to the incubation pains of new ventures. We analyzed the utility of a DM-based risk reductant model, which is both agile and robust at the same time, and have tried to explain its potential in risk reduction in new investments. The DM is an Islamic finance mode for such a project where continued funding is relative, and uncertainty entails all the developmental stages. The flexibility and piecemeal contractual nature of the financing approach coupled with neural network prognostics allow enhanced value creation to be reaped through due diligence, reduced moral hazard, continued funding, and risk mitigation. The DM model accomplishes the task by focusing on risk components such as due diligence, moral hazard, and a flexible approach towards financing through various funding stages of a new venture. Thus, the building blocks of the DM investment model can be described as DD, Flex, MHR, and RR. A model with these components designed within the Shariah constraints is novel and in line with a growing trend towards alternative finance growth initiatives worldwide. DM's flexible approach, coupled with due diligence opportunities, encourages continued funding and ensures an increased possibility of success. DM also provides a gradual exit strategy for the venture capitalist before an entrepreneur can also exit after the venture has reached the commercial viability region.

Besides explaining the nature of DM investment, we used actual data from users of the Islamic banking system who did know and use Islamic finance. Analysis of data does support our model's fundamental axiom that DD, Flex, and MHR components of the model result in risk reduction. It may be noted that the MHR factor does not overwhelmingly contribute towards the utility of the DM investment model as much as one would have expected. We, however, attribute that fact towards the cultural attitudes towards moral hazard and corporate governance rule in the community where this survey was conducted. This may be considered as one limiting factor of this study. However, as we noted earlier, this may not be an overriding factor when moral hazard and corporate governance issues are well rooted and established in a society. Finally, overall Probit regression analysis also confirms that all four independent variables, i.e., DD, Flex, MHR, and RR, have a

significant bearing on the value of the investment project designed on the model presented in this paper.

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