

Financial Knowledge and Its Impact on Profitability in the Derivative Market of Nepal

Pancharam Chaudhary

Abstract

This paper deals with the identification of various factors that affect profitability in the Nepalese derivatives market. The study is based on primary sources of data. The study focuses on descriptive and causal-comparative research designs by using a structured questionnaire to deal with the issues raised as well as the inferential analysis to support the significance of the relationship between inferential variables. There is a positive correlation between return on investment and technical knowledge, fundamental knowledge, training, and experience, and the relationship is significant. Higher levels of fundamental awareness, technical awareness, training, and experiences lead to high profitability from the Nepalese derivative market hence, investors should widen their knowledge base of the derivatives market which is the crucial factor in determining the profitability of investors. Investors are not satisfied with the performance, pricing mechanism, software, knowledge and skills, training, transparency, regulation, and laws. These weak areas are to be addressed by the government, and exchange house.

Keywords: Financial knowledge, Profitability, technical knowledge, Fundamental knowledge, Impact

Introduction

Derivative instruments can have a significant impact on financial institutions, individual investors, and even national economies. Using derivatives to hedge against risk carries in itself a new risk that was brought sharply into focus by the collapse of Barings Bank. There is a clear call for international harmonization and its recognition by both traders and regulators. There are calls also for a new international body to be set up to ensure that derivatives while remaining an effective tool of risk management, carry a minimum risk to investors, institutions, and national/global economies. Considers the expanding role of banks and securities houses in the light of their sharp reactions to increases in interest rates and the effect their presence in the derivatives market may have on market volatility. (Dixon & Bhandari, 1997)

Derivatives are defined as financial instruments whose value is derived from the prices of one or more other assets such as equity securities, fixed-income securities, foreign currencies, or commodities (Sreenu, 2012). This definition sheds light on the dependency of the value of derivatives instruments on the value of some other underlying assets. In other words, derivatives are financial contracts or financial instruments whose prices are derived from the price of something else, known as underlying. The underlying prices on which a derivative is based can be commodities, equities, residential mortgages, commercial real estate, loans, bonds, index interest rates, exchange rates, stock market indices, or Consumers Price Index inflation derivatives.

Financial knowledge is information that is learned, organized, represented, and stored in memory (Alba & Hutchinson, 1987). The quality of financial knowledge results in the quality of investment decisions, investment spends huge resources to get financial knowledge to trade in the derivative market. Alba and Hutchinson (1987) stated that investors can retrieve, use, and update their financial knowledge to create the inherent and useful properties of the knowledge itself and make reasoning and elaboration regarding their financial decisions. Financial knowledge is equally important in the derivative market to understand the trading mechanism, execute the trading strategy, and know the pricing mechanism. Investors with sufficient knowledge of derivatives play a vital role in the sustainability of the market. The history of the derivative market is not very long in Nepal. The derivatives market is a young financial platform having financial characteristics. In this regard, the trading experiences of Nepalese derivatives investors are also limited. In such a situation, financial knowledge is the prime concern of every investor in the derivative market, and knowledge factors are crucial for the derivative market and have the dominant role in the investment decision. The main objective of this study was to assess the relationship between knowledge and profitability in the derivative market of Nepal.

Research Hypothesis

Following hypotheses are set for the study.

H₀1: There is no significant relationship between profitability and technical awareness

H₀2: There is no significant relationship between profitability and fundamental awareness.

H₀3: There is no significant relationship between profitability and training.

H₀4: There is no significant relationship between profitability and experience.

H₀5: There is no significant relationship between profitability and financial knowledge.

Limitation of the Study

The primary data were collected from investors at the derivative office located inside the Kathmandu Valley. Though the sample size of 384 is fairly large, it may not be truly representative of the hundreds of individuals who constitute the population of the study. Therefore the study does not incorporate wide geographical coverage of the respondent. The choice of answers was influenced by respondents' mood, emotion, and mental state while they were confronted with the questionnaire. While answering a questionnaire, the same individuals are likely to be relaxed and in a better frame of mind, hence choosing to give answers, which may put them across in different light. So, assuring that the answers are correct is very difficult.

Review of literature

Sharma (2013) stated that the derivatives provided an effective tool for the problem of risk and uncertainty due to fluctuations in interest rate, exchange rate, stock market prices, and the other underlying assets. The author tried to show the purpose and use of derivative instruments for the economy. Pandey (2005) referred to derivatives as financial instruments whose payoff is derived from some other assets which are called underlying assets. This definition refers to those items that do not have their independent values rather they have derived values. The International Monetary Fund (2002) defined derivatives as “financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific risk can be traded in the financial market in their right. International monetary fund defined derivative as a financial instrument the nature of which is to specify the risk in the market. The assets underlying a derivative may be a commodity or a financial asset. Thus, derivatives include a wide range of financial contracts including forward, futures, swaps, and options.

The commodity market has become the synonym of the derivatives market as no other types of derivatives are exercised in Nepal except futures contracts (MEX Year Book, 2012). Only futures contracts are traded in Nepal and the underlying assets are various agricultural commodities, precious metals, base metals, and energy. The first derivatives market was provided by Commodity and Metal Exchange Nepal Ltd. (COMEN) in September 2006 in Nepal. This was the first commodity and futures exchange in Nepal. Financial knowledge is defined as the understanding of key financial terms and concepts needed to function daily (Huston, 2017). It was defined by (Potrich, Kelmara, & Wesley, 2016) as a particular kind of capital acquired in life through the ability to manage income, expenditure, and savings safely. The Organization of Economic Co-Operation and Development (OECD), added that financial knowledge is an important determinant of whether the individual is financially literate, involving questions related to concepts such as simple and compound interest, risk and return, and inflation

Malyadri and Kumar (2012) conducted the study regarding the Indian commodity market. The observation of the study found that there are 42 percent of female investors are actively trading in the derivatives market. Similarly, when respondents were asked about how they make investment decisions, most of the respondents gave their preference for “tip from an expert” and “self-decision” These findings support the objective of this study that the awareness level of the investor. Ravichandran (2008) studied investors' preferences toward various investment avenues in the capital market with special reference to derivatives. The study showed that in the current scenario, investing in stock markets is a major challenge for professionals. Derivatives act as a major tool for reducing the risk involved in investing in the stock markets to get the best results out of it. The study also focuses that investors should be aware of the various hedging and speculation

strategies, which can be used to reduce their risk. Awareness regarding various uses of derivatives can help investors to reduce risk and increase profits.

Tripathi (2014) studied investors' perception towards derivative trading, the study revealed that Indian investors mainly invest their money in real estate and insurance as they are the options offering great returns with the minimum risk associated with it. The study concluded that the derivative market is dominated by male investors. In the context of Nepal, most of the investors are male, and the study also explores the results of the author. Barton (2001) suggested that if accounting standards increase earnings volatility, derivatives, and discretionary accruals may be substitute means of smoothing earnings. Consistent with this view, researchers find that firms holding derivatives with large account amounts have lower discretionary accruals using a sample of non-financial fortune firms between 1994 and 1996. However, Singh (2004) does not support his findings using 2000-2001 data for a sample of non-financial Fortune 500 firms. The results of the study show no significant difference in earning volatility cash flow volatility and income smoothing between users and non-users of derivatives.

Gebhardt (2012) stated that in recent years the empirical evidence on the relationship between the use of derivatives instruments and reduced earnings volatility has increased. However, there is a controversy regarding the impact of accounting standards on earning volatility. One argument asserts that the financial instrument accounting standard causes additional volatility which may result from discouraging effective hedging strategy, from the non-availability of hedge accounting, or from not applying hedge accounting. Ahuja (2006) concluded that the Indian commodity market has made enormous progress since 2003 with the increased number of modern commodity exchanges, transparency, and trading activity. The volume and value of commodity trade has shown unpredicted mark. This happened due to the role played by market forces and the active encouragement of the Government to change the policy concerning commodity derivatives. He suggested the promotion of barrier-free trading in the future market and freedom of market forces to determine the price. The objective of the study is to find out the level of satisfaction in the derivative market of Nepal and find out whether they are satisfied or not with the overall mechanism in the derivative market of Nepal.

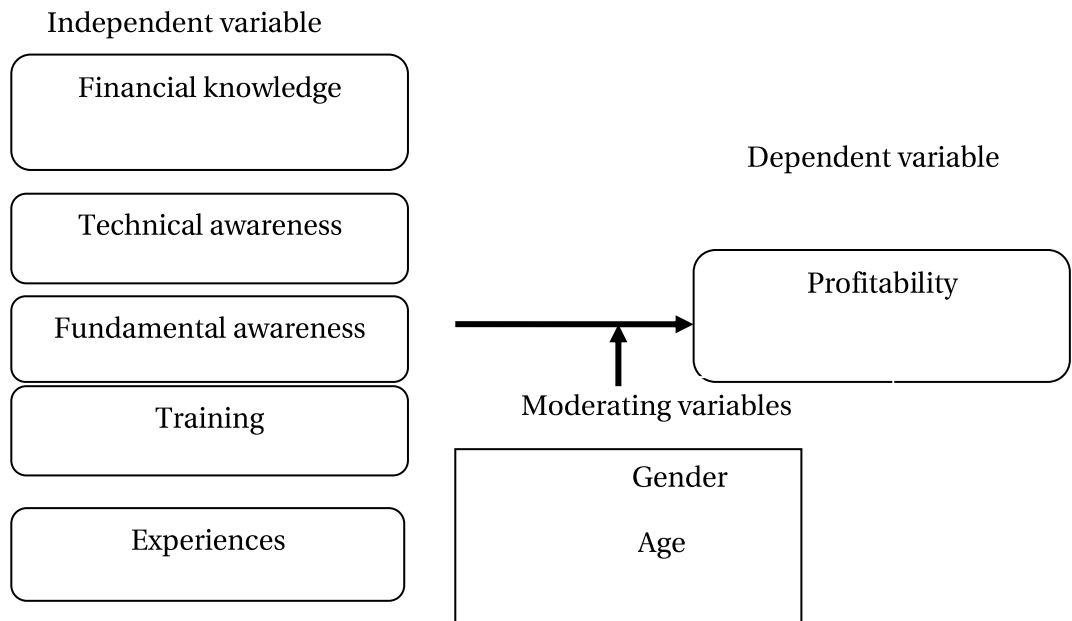
The concept of behavioral finance is growing in the capital market, Manrai (2015) focused on a quantitative model reflecting the factors affecting investor behavior in the derivative market with load factors. Through this study, the researchers find the various factors responsible for investment behavior in the derivative market. Rakesh (2015) intended to find the preference level of investors on various capital market instruments. Tripathi (2014) surveyed through a structured questionnaire targeting 100 retail investors of Delhi/NCR region to understand the awareness and attractiveness of different derivative securities amongst the retail investors. This study used different variables as

determinants of investors' profitability and financial knowledge of the Nepalese derivatives market. Furthermore, there is a lack of consistency and reliability in the findings across the previous studies. Most of the research in this area has been conducted in an international context but barely any research has been conducted in a country like Nepal.

In the framework, Financial knowledge is the independent variable that is explained by technical awareness (Friestad & Wright, 1995), fundamental awareness (Friestad & Wright, 1995), training (Bassi, 2000), experiences (Hilgert & Beverly, 2003) and sentiment (Bennet, 2012). Similarly, Richard and Berger (1968) presented a study on the relationship between profitability and ROI and found that return on investment is a useful predictor because of its comprehensiveness, ease of calculation and acceptance as a proxy for profitability. Hence profitability is the independent variable, represented by return on investment profitability is explained by return on investment.

Figure 1

Theoretical framework: knowledge and profitability



Materials and Methods

The study is based on the primary source of data and the data for the study is collected through a structured questionnaire. The questionnaire is drawn from the study of Saba and Aftab (2017), Hon (2012), and (Mustabsar, 2016). The overall questionnaire has been categorized into three sections. Section A consists of the Demographic background. Section B consists of different questions reflecting each variable. Section C is about satisfaction level which consists Likert scale type of

question measured through seven variables. The actual number of investors in Nepal is hard to figure out because exchange houses are not publishing actual data on their investors. Thus, for the unidentified population, 384 investors are selected as the representative samples by using the Yamane (1967) approach. Out of the 400 questionnaires distributed some were partially filled and some were not returned. The partially filled questionnaires were discarded and not included in the research. Thus, the study is conducted using 225 responses from Nepalese investors. A convenience sampling method was adopted for the selection of the respondents. The trading hour is from 3:45 Monday morning to 2:45 Saturday morning most of the investors are trading in the morning time therefore exchange house was visited at that time. Putalisadak and Dellibazar area has several exchange houses which made it a perfect location to collect the samples. Thus, the exchange houses of Putalisadak and Dellibazar were successively visited.

The research design for this study is descriptive and causal-comparative. The descriptive design is used to describe the nature of various demographic factors (age, gender, education level, income level, occupation, etc.). On the other hand causal-comparative research design is followed to find the effect of investor knowledge on profitability. The data obtained from the questionnaire response was analyzed using SPSS software. Correlation analysis is used to find the relationship between financial knowledge and profitability and regression analysis is used to examine the effect of financial knowledge on profitability

Result and Discussion

This section deals with the respondents' profile and measurement knowledge and their impact on profitability and their discussion

Table 1

Respondent Profile

Demographic		Frequency	Percentage (%)
Gender	Male	178	79.1
	Female	47	20.9
Age	Below 30 year	109	48.2
	30-50 year	72	46.4
	50 and above years	44	5.5
Education level	Intermediate	4	1.8
	Bachelor	122	54.2
	Masters	99	44
Occupation	Government Service	113	50.8
	Investment traders	43	19.1
	Business	18	8
	Student	51	21.8
Monthly income(Rs)	Below 20000	76	33
	20000-50000	78	39
	50000-100000	43	19
	More then 100000	18	8

Table 1 presents the composition of total number of respondent with the classification of their demographic factors. Most of the respondents are male implying that the dominant players on the derivative market were male in this study. The majority of the respondents were mainly at the age of less than 30 this sample reflected the fact that a high proportion of individual investors in the derivative market were younger. Almost all investors are educated to some extent 54.2 percent of investor are completed their bachelor's level and 44 percent of investor completed their master's level this show that investor in the derivative market are educated. Most investors belong to the services sector 50.5 percent of investors are jobholders in the private and government sectors 19.1 percent of investors are investment traders 5 percent of investors are related to the business field and 21.5 percent are students. Most of the Nepalese derivative investor is related to the services sector. Most of the Nepalese derivative investor's income level is between Rs 20000 to 500000.

Relationship between knowledge and profitability

In this study, an effort has been made to test the relationship between profitability and financial knowledge along with the significance of the relationship. Dummy variables are used for nominal variables like fundamental awareness, technical awareness, training, and sentiment. The following descriptive statistics show the profitability status of Nepalese derivatives investors

Table 2

Pearson Correlation coefficient between profitability and technical awareness, fundamental awareness, training, experiences,

	Profitability	Technical awareness	Fundamental awareness	Training
Technical awareness	.551**			
Fundamental awareness	.618**	.355**		
Training	.515**	.347**	.488**	
Experience	.599**	.464**	.663**	.441**

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2 reveals that most Nepalese derivatives investor invests in derivatives with the help of technical knowledge. There is a medium degree of positive correlation between average profitability (return on investment) and use of technical awareness (Pearson correlation=0.551) this means that investors giving higher attention to technical awareness before investment in the derivative market are subject to making a higher return on investment. From the above table, the P value is lower than the alpha value hence there is sufficient evidence to reject the null hypothesis. Therefore, there is a significant relationship between profitability and technical awareness.

Table 2 shows that most investors use fundamental awareness before investing in the Nepalese derivative market. There is a high degree of positive correlation between profitability (return on investment) and fundamental awareness (Pearson correlation =0.618) this means that investors' higher focus on fundamental awareness before investment in the derivatives market is subject to generating a higher return on investment. From the above table, the P value is lower than the alpha value Hence there is sufficient evidence to reject the null hypothesis. Therefore, there is a significant relationship between profitability (ROI) and fundamental awareness. Most investor has training experience in trading in the derivatives market. There is a medium degree of positive correlation between profitability (ROI) and training (Pearson correlation= 0.515). This means to say that, if an investor trades in the derivative market with training, it results in a higher return on investment. From the above table, the P value is lower than the alpha value hence there is sufficient evidence to reject the null hypothesis. Therefore there is a significant relationship between ROI and training.

There is a high degree of positive correlation between profitability (ROI) and experiences (Pearson correlation =0.599). This means that, investors with higher experience in the derivatives market result in higher return on investment. From the above table, the P value is lower than the alpha value hence there is sufficient evidence to reject the null hypothesis. Therefore there is a significant relationship between profitability (ROI) and experience.

From the above analysis all the null hypotheses are rejected and accepted the entire alternative hypothesis this means that investor profitability is statistically significant with the fundamental awareness, technical awareness, training, and experiences of the Nepalese derivative market. The result indicated that to get higher profit from the derivative market investors have the knowledge about technical and fundamental factors as well as training and experiences that also matter in maximizing their wealth. The study concluded that there is a positive and significant relationship between profitability and its independent variables it meets the objective of the study the relationship between dependent and independent variables.

Multiple regression analysis

Table 3

Regression analysis of profitability with technical knowledge, fundamental knowledge, training, experiences gender, age, and occupation.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	1.637	1.813	1.721	1.630	1.867	1.774	1.884	2.11
Technical awareness	0.284 (.000)	0.294 (.000)	0.287 (.000)	0.284 (.000)	0.296 (.000)	0.306 (.000)	0.314 (.000)	0.333 (.000)
Fundamental awareness	0.446 (.000)	0.436 (.000)	0.411 (.000)	0.458 (.000)	0.408 (.000)	0.308 (.000)	0.304 (.000)	0.353 (.000)
Training	0.152 (.001)	0.153 (.001)	.149 (.001)	0.153 (.001)	0.151 (.001)	0.182 (.001)	0.184 (.001)	0.170 (.002)
Experiences	0.209 (.000)	0.201 (.008)	0.231 (.003)	0.199 (.013)	0.219 (.004)	0.168 (.013)	0.160 (.018)	0.100 (.181)
Gender		0.168 (.046)			0.059 (.200)		0.080 (.081)	0.083 (.067)
Age			0.071 (.122)		0.153 (.072)	0.123 (.031)		0.084 (.153)
Occupation				0.009 (.715)		0.092 (.123)	0.088 (.013)	0.086 (.145)
R ²	0.553	0.615	0.630	0.654	0.670	0.701	0.730	0.760
F (sig)	68.039 (.000)	55.991 (.000)	55.267 (.000)	54.267 (.000)	47.132 (.000)	46.751 (.000)	40.885 (.000)	36.612 (.000)

In this study profitability is taken as a dependent variable and financial knowledge is taken as an independent variable. Table 3 shows the regression results of the effect of investors' financial knowledge on profitability. Four major financial knowledge variables- fundamental awareness, technical awareness, training, and experiences are taken as independent variables and profitability is taken as a dependent variable. In model 1 Value of adjusted R² is 0.553 which shows that 55.3 percent of the variation in profitability is explained by fundamental awareness, technical awareness, training, and experiences variables and the rest is still unexplained, low p-value of the F test confirms the fitness of the model means higher fundamental and technical awareness is lead to higher profitability. Investors who attend training provided by exchange houses are getting higher returns and investors who have higher experiences in derivative markets are getting higher profitability. The result shows that all variables have a positive impact on the profitability of investors. All coefficients are statistically significant in all models. It means investors having higher levels of Technical awareness, fundamental awareness, training, and experiences are getting higher profits from the derivative market.

Table 3 indicates gender is found statically significant in model 2 p-value is 0.046 less than the alpha value means gender also affects the profitability of derivative market investors. But in model 3 and model 4, age and occupation are

found a statically insignificant p-value of these variables is higher than the alpha value means age does not affect profitability. The same result is found in model 5 while including gender and age though the R^2 is higher. But in model 6 while including age and occupation, age is found statically significant, and occupation is found statically insignificant. In model 7 while including gender and occupation result is contradicted means occupation is found statically significant and gender is found statically insignificant. In model 8 all the demographical variables are found statically insignificant but the R^2 is 0.76 means 76 percent of the profitability in derivative market investors are impacted by their financial knowledge and gender, age, and occupation, and the rest is still unexplained.

Conclusion and Recommendation

The study found that there is a positive relationship between profitability and fundamental and technical awareness. This shows that a higher fundamental and technical awareness level leads to higher profitability from the derivative market in Nepal. This is consistent with the findings of (Oberlechner, 2001) who revealed that dealers in the European financial market have used both two technical and fundamental knowledge to get higher returns. Similarly, the result is consistent with (Park & Irwin, 2004) who found that simple technical trading strategies were profitable in a variety of speculative markets at least until the early 1990s. In the same way, the finding of the study was similar to those (Obamuyi, 2013) who found that investors in the Nigerian capital market are influenced by technical factors such as past performance, past trends, and expected earnings. However, the result was inconsistent with (Cheung, Chinn, and Marsh, 2000) who found that in UK-based foreign exchange dealers, only 33 percent of respondents use technical knowledge for better earning. This could be different because they use fundamental factors rather than technical factors.

Experiences were found positively related to profitability in the derivatives market of Nepal. (Roszkowski and Davey, 2010) also support this finding which revealed that experienced investors have more ability to hold risky investments than investors having no experience, similar results were found by (Mustabsar, 2016) an experienced investor is confident about the skills and experience he has which make him known with the condition. Higher investment experience leads the investor towards high-risk tolerance and getting a higher return.

Fundamental and technical awareness, experiences, training, and profitability were found statically significant with demographic variables such as gender, age, and occupation. The study found that Female investors have more fundamental awareness, experiences, training and profitability than men this is consistent with Shinde (2015) who revealed that Traditionally men were the target segment of financial institutions, while women were viewed as feeling much less confident with financial services. But recent societal developments e.g., the demise of the nuclear family, and the career-seeking woman have made women more

knowledgeable of financial services. Results contradict with (Chen & Volpe, 1998) who found women were far less literate than men this could be because the study was based on college students but this study is based on investment.

The study has analyzed the relationship between financial knowledge and profitability in the derivatives market of Nepal. Financial knowledge in the derivatives market is the accumulative knowledge of technical awareness, fundamental awareness, training, and experiences. These knowledge components significantly influenced profitability. The higher the level of technical and fundamental awareness, the higher would be the profitability. Higher experiences also result in increased profitability. Investors who attended training provided by exchange houses are also getting higher returns from the derivatives market. Hence, investors should address their knowledge component to improve profitability.

International politics, international economy, national legal environment, knowledge of derivatives and economic data and reports are the most important factors that affect investment decisions in derivatives investors. This could be because the price of the derivative instrument is affected by the international incident. Similarly, national politics and the national economy are the least important factors affecting investment decisions in the Nepalese derivatives market. The level of satisfaction among Nepalese derivative investors is unsatisfactory. Most of the investors are not satisfied with the overall market mechanism of the industry. Investors are not satisfied with software, knowledge and skill, training, Transparency, regulation, and bylaws.

Fundamental and technical awareness, training, experiences and profitability were found statically significant with gender. Female investors have more fundamental awareness, training, experiences and profitability than male investors though the participation of female investors is very low in comparison with male investors. Male investors have more technical awareness than female investors. In the same way whose age group is more than 50 years are found more fundamental awareness, training and profitability and investment traders have higher fundamental awareness and profit than other occupations.

Fundamental awareness, technical awareness, training, and experiences have positive effects on profitability in the Nepalese derivative market. People who have higher financial knowledge are getting higher returns from their investments. Therefore, in a nutshell, it can be concluded that knowledge and awareness have a positive effect on profitability in the Nepalese derivative market

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