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Editor-in-Chief's Note

I am indeed delighted to bring to you the fourth instalment of the Journal of Wealth Management & Financial Planning (JWMFP). As you may know, JWMFP is now indexed through J-Gate and My Jurnal as well as partially indexed through Google scholar. It is our hope that through such indexing initiatives we will be able to reach to an even wider audience who will find research on financial planning and wealth management useful for their studies.

Our issue this time has a good blend of articles. As an example, in the article *Personal Financial Decision Making Using Analytic Heirarchy Process*, the contributor details an element that is not always examined and may provide insight for an investor. Our *News and Views* column contains an article on *Rule of 72 Vs Rule of 78*, a basic finance rule which many Malaysians are certainly not aware of. We also have a review of *The Intelligent Investor*, a book that is a must read for investors.

My sincere appreciation to members of the editorial board, MFPC Secretariat team, the blind reviewers and the MFPC National Council for supporting the publication of the Journal of Wealth Management & Financial Planning.

I hope you derive value from this publication and as ever I welcome your feedback.

Till the next issue, enjoy this issue!

Assoc. Prof. Dr Mohamad Fazli Sabri
Editor-in-Chief

CONTENTS

Conventional Banking and Islamic Banking: Do the Different Philosophies Lead to Different Financial Outcomes?

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ABSTRACT

Islamic Banking (IB) is a contemporary segment of banking and finance that has become increasingly significant in many Muslim countries. Malaysia is one of the countries that has adopted a dual banking system. Conventional Banks (CBs) borrow money from depositors at a low interest rate and lend them to borrowers at a high interest rate. In contrast, interest is forbidden in Islam and therefore Islamic banks enter into profit-sharing arrangements with both depositors and borrowers. This study seeks to determine whether differing banking arrangements based on different philosophies lead to different outcomes. Several previous studies have compared the profitability, liquidity and risk performance of the two banking systems, but few studies have focused on revenue distribution between the two types of banking systems. Secondary data from the annual reports of 10 banks with both conventional and Islamic banking windows for five years was used. We used financial ratios to process the data, such as profit return to depositors' ratio, net profit ratio, risk ratio and so on. The independent sample test was used to analyse these ratios. Our findings indicate that depositors get higher returns from Islamic banking than from conventional banking. In contrast, conventional banks appear to have a higher taxation cost, operating cost and net profit margin. In the area of profitability and risk performance, conventional banks perform better, while Islamic banks are more liquid.

Keywords: Islamic Banking, Conventional Bank, Financial Outcomes

INTRODUCTION

Islamic banking (IB) has seen rapid growth in the last few years, more than doubling between 2009 and 2014 (https://www.islamicfinance.com/2014/12/size-islamic-finance-market-vs-conventional-finance/). Islamic banks, in contrast to conventional banks, operate on a Profit-Loss-Sharing (PLS) principle,

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that is based on the principle of Islamic law, also known as the Shariah, since Islamic law forbids interest (Abdullah, Sidek, & Adnan, 2012).

The conventional bank borrows money at a lower interest from customers and loans them to borrowers at a high interest rate (Santos, 2000). The major financial objective of the conventional banking system is to achieve maximization of the shareholder's wealth through interest differential. Although interest is not used in banking transactions, Islamic banks have products and services that are similar to conventional banks, i.e., saving and deposit accounts, loan, credit card and other financial products. All these products and services must abide with the Shariah (Abdullah, Sidek, & Adnan, 2012). The Islamic bank uses the pre-determined profit sharing contract for depositors and borrowers instead of the pre-determined interest rate used by the conventional bank (Zaher & Hassan, 2001). Several recent studies have, however, raised the questions concerning "How 'Islamic' is Islamic Banking" (El Gamal, 2006; Khan 2010; Kuran, 2004). One way of answering the above question is to determine if different banking practices based on different philosophies lead to different financial outcomes.

Several previous studies have compared the profitability, liquidity and risk performance of the two banking systems (Samad, 2004; Rashwan, 2010; Hasan & Dridi, 2010; Ryu, Piao & Nam, 2012), but few studies have focused on whether different philosophies lead to different revenue distribution outcomes. Malaysia is one country that has implemented a dual banking system. The most significant income of conventional banks is interest income, which is different from profit sharing which is the basis of Islamic banking. Consequently, financial ratios are used to determine if different philosophies lead to different revenue distribution outcomes.

The rest of the paper is organized as follows: Section Two provides an overview of the main features of Islamic banking, highlighting the key differences with conventional banking. Section Three identifies the methodology and sample of the two groups of banks. Section Four identifies the main findings of the study. This is followed by a discussion of the findings and conclusion in Section Five.

LITERATURE REVIEW

Islamic banking has developed as a major alternative to conventional banking in many countries around the world, particularly in countries with a Muslim majority population. The combined balance sheets of Islamic banks grew from $150 billion in 1990 to about $1 trillion in 2010, with more than 300 Shariah-compliant institutions operating in 80 countries (Cevik & Charap, 2011). Islamic banking emerged due to the general guidelines in the Qur'an and the hadıth as to what are and are not permissible forms of economic activity according to Islam. The Qur'an bans *riba* (usually translated as 'interest' or 'usury' but also with the literal meaning of 'excess' or 'increase' [see, e.g., Ayub, 2002, p. xxxi]) and also requires all practising Muslims to avoid financial transactions that involve excessive *ghar¯ar* (uncertainty, i.e., where the outcome is uncertain), *maysir* (outright gambling) and *har¯am* (religiously forbidden) products.

Engaging in trade is encouraged but, ideally, profits must be the result of assuming a proportionate share of the risk involved in the transaction by taking an equity stake in it; profits must not be earned 'risk-free' by making a collateralized loan. This was summarized by a publication of the Islamic Research and Training Institute of the Islamic Development Bank as follows:

The most important feature of Islamic banking is that it promotes risk sharing between the provider of funds (investor) on the one hand and both the financial intermediary (the bank) and the user of funds (the entrepreneur) on the other hand. In conventional banking, all this risk is borne in principle by the entrepreneur (Iqbal *et al.*, 1998).

Money is generally held to have zero opportunity cost (Ayub, 2002) and therefore there is supposed to be no compensation for its use; however, when combined with other resources, money becomes capital and so deserves 'fair' compensation. In short, "In Islam, one does not lend to make money and one does not borrow to finance business" (El Gamal, 2000).

From a more practical perspective, El Hawary *et al.*, (2004) defines IB as a system that adheres to the following four principles:

1. Risk sharing: the terms of financial transactions need to reflect a symmetrical risk/return distribution among each participant to the transaction,
2. Materiality: all financial transactions must have "material finality", i.e., be directly linked to a real underlying economic transaction; thus, options and most other derivatives are banned,
3. No exploitation: neither party to the transaction should be exploited,
4. No financing of sinful activities: transactions cannot be used to produce goods banned by the Qur'an (e.g., alcohol, pork products, gambling, etc.).

The difference between conventional banking and Islamic banking can be summed up as the former is largely debt-based, and allows for risk transfer, while the latter is asset-based, and centres on risk sharing (Table 1).

Table 1: Risk Sharing and Risk Transfer

Islamic Banking (IB) Risk Sharing	Conventional Banking (CB) Risk Transfer
Sources of funds: Investors (profit sharing investment account (PSIA) holders) share the risk and return with bank. The return on PSIA is not guaranteed and depends on the bank's performance.	Sources of funds: Depositors transfer the risk to the bank, which guarantees a pre-specified return.
Uses of funds: IBs share the risk in *Mudharabah* and *Musharakah* contracts and conduct sales contracts in most other contracts.	Uses of funds: Borrowers are required to pay interest independent of the return on their project. CBs transfer the risk through securitization or credit default swaps. Financing is debt-based.

From the above table, one can observe that the crux of IB is Islamic banks as predominantly "risk-taking institutions committed to long-term productive investment on a partnership or equity basis" (Mills & Presley, 1999) since profit-and-loss-sharing (PLS) (i.e., equity participation) "is at the core of Islamic Banking" (Zaher & Hassan, 2001). "Thus Islamic banks are supposed to act as venture capital providers, investing in worthy firms and financing promising ideas in exchange for a share of the profits, rather than lending on the basis of cash-flow and collateral, and forcing firms into liquidation to recover loans that had gone bad through no fault of the borrower" (Khan, 2010). This form of financing is frequently referred to as Shariah-based products and the main forms are *Mudharabah* (a 'sleeping' partner contributes capital and other expertise/knowledge) and *Musharakah* (the financier takes a direct stake in the venture) (Khan, 2010) (Table, 2).

However, equity participation is not the sole means of Islamic financing available. Islamic banking may be done on the basis of something other than equity participation. There are actually two types of Islamic banking and finance (IBF): profit and loss sharing (PLS) and non-profit and loss sharing (non-PLS) (Obaidullah, 2005). PLS, as the name suggests, is participatory (direct equity stake or a partnership), or the financier may choose to be non-participatory and not take an equity stake. Virtually every IBF advocate

Table 2: Shariah-Based and Shariah-Compliant Products

Shariah-Based	Shariah-Compliant
Musharaka	*Murabaha*
Mudaraba	*Bai Muajjal*
	Ijara
	Bai Salam
	Istasna
	Qard al Hasana

argues that equity participation is the desirable alternative and non-participatory finance, sometimes referred to as 'trade-based financing modes,' is acceptable only as an interim measure or for situations where participatory finance is clearly unsuitable, such as very small or personal consumption loans (Usmani, 2002; Ayub, 2002; Sundarajan & Errico, 2002; Zaher & Hassan, 2001). This form of financing is frequently referred to as Shariah-compliant products and the main forms include *Murabaha* ('mark-up' or cost-plus sale), *ijara* (lease), *bay' salam/ istisna* (deferred delivery), *bai muajjal* (deferred payment), *jo'alah* (service fee), and *qard al hasana* (charity/beneficence loan) (Khan, 2010) (Table, 2).

Chong and Liu (2009) show that only 0.5% of Islamic financial institutions utilize PLS products in Islamic business transactions. The dominance of non-PLS transactions like *Murabaha* and *Ijara* in Islamic banking has led to questions concerning "How 'Islamic' is Islamic Banking" Khan (2010) and supported the critics of IBF (El Gamal, 2006; Kuran, 2004).

This study does not seek to answer that question but rather identify whether conventional and Islamic banking based on different philosophies, lead to different financial outcomes between Islamic banking and conventional banking. Several previous studies have compared the profitability, liquidity and risk performance of the two banking systems but few studies have focused on whether different philosophies lead to different revenue distribution outcomes. For example, Ryu, Piao and Nam (2012) found that Malaysia's IBs have lower risks and better profitability than CBs. In contrast, Samad (2004), found no significant difference in the liquidity and profitability between CBs and IBs. Hasan and Dridi (2010) examined the IBs and CBs during the recent global crisis by looking at the impact of the crisis on profitability, credit and asset growth, and external ratings in a group of countries where the two types of banks have significant market share. The findings suggest that IBs were affected differently than CBs. Factors related to the business model of IBs helped limit the adverse impact on profitability in 2008, while weaknesses in risk management practices in some IBs led to a larger decline in profitability in 2009 compared to CBs.

The revenue depicted in the income statement of both conventional and Islamic banks are allocated to five parties. These include profit return to depositors, taxation cost, net profit return to shareholders, banking operating cost and allowance for the impairment loan. But the appellations for the sharing of revenues to these five parties in the income statements of the two banking systems are different. In order to figure them out better, they are illustrated in Table, 3.

Table 3: Revenue Distribution in the Two Banking Systems

Revenue Distribution	Conventional Banking	Islamic Banking
Profit Return to Depositors	Interest Expense	Income Derived from Investment of Depositors' Funds
Taxation Cost	Taxation	Taxation and Zakat
Banking Operating Cost	Other Operating Expense	Other Operating Expense
Allowance for Impairment Loans	Allowance for Impairment Loans	Allowance for Impairment Loans
Net Profit Return to Shareholders	Net profit for the Financial Year	Net Profit for the Financial Year

To observe whether different philosophies lead to different outcomes, the following research hypotheses were tested:

H1, There is a significant difference in the profit return to depositors between conventional banking and Islamic banking.

H2, There is a significant difference in the taxation cost between conventional banking and Islamic banking.

H3, There is a significant difference in the net profit return to shareholders between conventional banking and Islamic banking.

H4, There is a significant difference in the banking operating cost between conventional banking and Islamic banking.

H5, There is a significant difference in the profitability performance between conventional banking and Islamic banking.

H6, There is a significant difference in the liquidity performance between conventional banking and Islamic banking.

H7, There is a significant difference in the risk performance between conventional banking and Islamic banking.

RESEARCH METHODOLOGY

A quantitative approach was applied in this study where secondary data was collected and analysed using SPSS. All data used in this study were obtained from selected samples of full-fledged Islamic banks and conventional banks in Malaysia. The required data came from the annual reports of selected banks. These included the income statements, and statements of financial position found in the annual reports of 2010 to 2014.

In Malaysia, some banks operate with an Islamic window and a Non-Islamic window (conventional bank), while others are either purely conventional banks or purely Islamic banks. For this study, only banks with both a conventional and an Islamic window were chosen for better comparability. There are a total of 11 banks in Malaysia with both a conventional and

Table 4: Selected Banks

Conventional Bank Groups	Islamic Bank Groups
Affin Bank	Affin Islamic Bank
Alliance Bank	Alliance Islamic Bank
AmBank	AmIslamic Bank
CIMB Bank	CIMB Islamic Bank
Hong Leong Bank	Hong Leong Islamic Bank
HSBC Bank Malaysia Berhad	HSBC Amanah Malaysia Berhad
OCBC Bank Malaysia Berhad	OCBC Al-Amin Bank Berhad
Public Bank	Public Islamic Bank
RHB Bank	RHB Islamic Bank
Standard Chartered Bank Malaysia Berhad	Standard Chartered Saadiq Berhad

Source: Bank Negara Malaysia, 2015

Table 5: Formulae for Financial Ratios

<table>
<tr><th>Ratio</th><th>Conventional Banking</th><th>Islamic Banking</th></tr>
<tr><td>H1: Profit return to depositors (Interest (riba) ratio)</td><td>Interest expense / Interest income</td><td>Income attributable to depositors / Income derived from investment of depositors' funds</td></tr>
<tr><td rowspan="2">H2: Taxation cost (Taxation ratio)</td><td>Taxation / (Interest income + Other operating income)</td><td>(Taxation + Zakat) / Total attributable income</td></tr>
<tr><td>Taxation/ Profit before taxation</td><td>(Taxation + Zakat) / Profit before taxation</td></tr>
<tr><td>H3: Net profit return to shareholders (Net profit ratio)</td><td>Net profit for the financial year / (Interest income + Other operating income)</td><td>Net profit for the financial year / Total attributable income</td></tr>
<tr><td>H4: Banking operating cost (Other operating expense ratio)</td><td>Overheads / (Interest income+ Other operating income)</td><td>Other operating expense / Total attributable income</td></tr>
<tr><td rowspan="2">Profitability Performance (Pre-Tax Profit on Assets Ratio, Pre-Tax Profit on Shareholders Ratio)</td><td colspan="2">Pre-Tax Profit / Total Assets Average.</td></tr>
<tr><td colspan="2">Tax Profit / Shareholders' Funds</td></tr>
<tr><td>Liquidity performance (Total Deposits to Total Assets Ratio)</td><td colspan="2">Pre-Tax Profit / Total Assets Average</td></tr>
<tr><td>Risk performance (Net Impaired Loans Ratio)</td><td colspan="2">Net Impaired Loans / Net Total Loans Average</td></tr>
</table>

an Islamic window, of which 10 were selected for this study (**Table 4**). One bank was omitted because the data was not complete.

Table 5 above describes the formulae for the financial ratios computed.

Table 6: Descriptive Analysis for All Ratios

Group Statistics					
	Groups (Banks)	N	Mean	Std. Deviation	Std. Error Mean
Interest(Riba) Ratio	Islamic	50	.546369798	.1641109584	.0232087943
	conventional	50	.488260932	.0571931841	.0080883377
Tax on Income Ratio	Islamic	50	.062378971	.0218031495	.0030834310
	conventional	50	.084881637	.0153239625	.0021671356
Tax on Pre-tax profit Ratio	Islamic	50	.250866822	.0470523405	.0066542058
	conventional	50	.239000141	.0202344972	.0028615900
Net Profit on Income Ratio	Islamic	50	.186744985	.0624622698	.0088334989
	conventional	50	.270362875	.0438029137	.0061946675
Expense on Income Ratio	Islamic	50	.272291732	.0882776994	.0124843520
	conventional	50	.317525699	.0703046230	.0099425751
Pre-tax profit on Assests Ratio	Islamic	50	.010966866	.0043909655	.0006209763
	conventional	50	.015424422	.0025661101	.0003629028
Pre-tax profit on Shareholds' Ratio	Islamic	50	.154278285	.0661340920	.0093527730
	conventional	50	.197128565	.0410573947	.0058063924
Total Desposit on Assets Ratio	Islamic	50	.886856033	.0335477267	.0047443650
	conventional	50	.837208249	.0506764601	.0071667337
Net Impaired Ratio	Islamic	46	.007298784	.0054860113	.0008088682
	conventional	44	.003515369	.0026130647	.0003939343

FINDINGS

SPSS was utilized to run the result of the output as the objective for this study was to compare the outcome of Islamic banks and conventional banks in Malaysia from the year 2010 to 2014. To make the Levene's test for equality of variances and independent sample t-test (2-tailed), we chose a significance level of (α= 0.05) for equality of variances.

Table 6 summarizes the descriptive statistics calculated for the nine financial ratios. The sample size for the Net Impaired Loans ratio is less than 50, because some of the data for Net Impaired Loans was negative.

Table 7 summarizes the results of the independent sample test conducted using Levene's test for equality of variances, and t-test for equality of means.

Table 7: Independent Sample Test for Group Mean Difference

	Levene's Test for Equality of Variances		t-Test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed) "P-Value"
Interest *(riba)* Ratio	19.351	0.000	2.364	60.730	0.021
Tax on Income Ratio	1.412	0.238	-5.971	98	0.000
Tax on Pre-tax Profit Ratio	3.061	0.083	1.638	98	0.105*

Continued from Table 7

Net Profit on Income Ratio	3.317	0.072	-7.750	98	0.000
Expenses on Income Ratio	2.489	0.118	-2.834	98	0.006
Pre-tax Profits on Assets Ratio	5.825	0.018	-6.198	78.9	0.000
Pre-tax Profit on Shareholders Ratio	6.575	0.012	-3.892	81.88	0.000
Total Deposits on Assets Ratio	4.679	0.033	5.776	98	0.000
Net Impaired Loans Ratio	15.361	0.000	4.205	65.049	0.000

Indicates the P-value is not significant

From the above results one can observe that the only ratio with no significant difference is the Tax on Pre-tax Profit Ratio. In summary, all the null hypothesis can be rejected. The above findings highlight that the philosophical differences between conventional banking and Islamic banking lead to significant differences in financial outcomes and distribution of revenues to different stakeholders.

Table 6 highlights the means of each ratio for both the conventional banks and the Islamic banks. The mean of Interest (*riba*) Ratio in the Islamic banks is 0.5464, which is bigger than the 0.4883 of the conventional banks. So, this means the Islamic banks share more of their profits with their depositors than the conventional banks. Compared to the low interest saving account in the conventional banks, the Profit-and-Loss Sharing (PLS) paradigm in the Islamic banks is more favourable to depositors.

Similarly, the mean of Tax on Income Ratio of the Islamic banks is 0.6238, which is smaller than the 0.8489 in the conventional banks. The mean of Tax on Pre-tax Profit Ratio of the Islamic banks is 0.2509 is, however larger than the 0.2390 in the conventional banks. Unlike the difference in Tax on Income Ratio which is significant, the difference in Tax on Pre-tax profit ratio is not significant. The mean of expense on income ratio of the Islamic banks is 0.2723 which is smaller than the 0.3175 in the conventional banks, meaning that compared to the conventional banks, other operating expense in the Islamic banks consume a smaller part of total revenue.

Tables 6 and 7 also highlight significant differences in Net Profit on Income Ratio, with the Islamic banks showing a smaller percentage (18%) in comparison to that of 27% for the conventional banks. The higher Net Profit on Income Ratio of the conventional banks is also reflected in the higher Pre-Tax Profit on Assets Ratio of the conventional banks (15%) in comparison to the Islamic banks

(10%) and also in the higher Pre-Tax Profit on Shareholders' Funds Ratio of the conventional banks (19%) in comparison to the Islamic banks (15%). This difference could be attributed to the higher percentage paid to depositors in the Islamic banks. In summary, Islamic banks appear to pay a bigger portion of their revenue to depositors, while having a better control of operating cost and taxation cost.

The statistics also indicate that liquidity of the Islamic banks is better (0.8869) in comparison to the conventional banks (0.8372), The Impaired Loan Ratio of the Islamic banks (0.0073) is however higher than that of the conventional banks (0.0035). The findings indicate that conventional banks probably have better risk management practices.

DISCUSSION AND CONCLUSION

As highlighted in the introduction and the literature review, the dominance of non-PLS banking transactions have raised questions concerning "How 'Islamic' is Islamic Banking?" This study sought to determine if different banking practices based on different philosophies lead to different financial outcomes. The findings strongly suggest that different banking practices based on different philosophies do indeed lead to different financial outcomes, as all the seven hypothesis tested indicate significant differences in all the financial outcomes.

The reasons for the significant differences are however difficult to explain. For example, why is Tax on Income Ratio lower for Islamic banks? The other interesting finding is the higher return to depositors of the Islamic banking windows in comparison to the depositors of the conventional banking windows and the lower returns to Islamic banking window shareholders. This probably occurs because the depositors of the Islamic banking windows and the conventional banking windows are different, but the shareholders of both banking windows are the same, and their returns is an aggregate of the total returns from both the Islamic and the conventional banking window, i.e., conventional banking window depositors are subsidizing Islamic banking window depositors. Similarly, it is also difficult to explain why the Expense to Income Ratio of Islamic banks is lower although Islamic banking transactions are much more complicated. One possible reason is the misallocation of expenses to the two windows. Similarly, why is the Net Impaired Loans Ratio higher for Islamic banks?

The study probably has raised as many questions as it has answered and also highlighted the difficulties in measuring the performance or financial outcomes of conventional banking versus Islamic banking when the two are operated by the same parent bank and are frequently in the same branch ■

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Deciding on Alternatives to Meet the Need for a Bigger House: Personal Financial Decision Making Using Analytic Hierarchy Process

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ABSTRACT

This study demonstrates the application of the Analytic Hierarchy Process (AHP) to a complex personal financial decision-making problem. This study used AHP to assist a family facing the difficult and complex problem of meeting the need for a bigger house to accommodate their growing children. The family identified three alternatives: extending the current house, buying a new house or building a new house. AHP helped the family to identify the relevant criteria to judge the alternatives. It helped the family to structure the problem. Structuring improved understanding of the problem and helped them to make explicit trade-off. Based on careful and deliberate judgement, the family chose to buy a new house.

Keywords: Analytic Hierarchy Process, AHP, Financial Decision-Making, Multi Criteria Decision Making, Personal Finance.

INTRODUCTION

This study demonstrates how to use the Analytic Hierarchy Process AHP (Saaty, 1977) for a complex personal financial decision-making problem. The objective is to demonstrate how to organise and structure a complex problem using AHP. This study defines complex problems as (i) high stakes: the outcome of the decision has significant effects to the decision maker, such as increased costs, increased expenses and loss of income; (ii) unstructured: problems are difficult to understand and a large number of possible solutions exist; (iii) uncertainty: consequences of decisions are unknown; (iv) multiple factors: solutions are influenced by multiple conflicting factors and (v) diversity of problem participants: people relevant to the problems have different values, preferences and perspectives.

One area focusing on improving decision-making ability is decision analysis. The objective of decision analysis is to improve the ability of the

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human decision maker to make timely and better quality decisions. Decision analysis uses extensive algorithmic techniques to model and frame the decision environment. Sophisticated techniques produce results preferred by decision makers. However, the techniques require considerable time to understand and to utilize; model builders may not be aware of the weaknesses or assumptions of the model and decision makers may not fully understand how the model works (Rebonato, 2007). Simple decision-making methods have been criticised as producing unreliable results, being exposed to judgement biases and only representing part of the real problem. However, studies have shown that simple methods, rules and checklists can produce the answers sought by the decision makers (Aikman *et al.*, 2014; Gawande, 2009; Gigerenzer, 2014; Neth, Meder, Kothiyal, & Gigerenzer, 2014; Rebonato, 2007). Simple methods have been applied to many domains, ranging from financial problems to medical and hospitals.

This study aims to address the concerns. It aims to show how a simple technique can solve a complex problem. AHP is a simple and easy-to- use decision-making tool. It enables decision makers to go through complex and difficult decisions with care, improve their understanding of the problem and increase their confidence in the choices they make.

LITERATURE REVIEW

This section has two parts. The first part discusses previous studies on house purchasing decisions. The purpose is to identify decision-making issues faced by an individual or a family concerning house or property purchases. The second part discusses previous studies on AHP applications in finance. The purpose is to show AHP has been widely used in financial decision-making.

Personal Decision-Making on Housing.

Buying, extending or building a house is a major life decision. Normally, it is the single biggest expenditure a family will ever make. One of the first major decisions a family has to make before investing in a house is the type of housing meeting their needs. Park (1982) characterised joint (husband and wife) home purchasing decisions as being reached by a muddling-through process assuming little understanding of the method necessary to achieve the most desirable decision. According to Park (1982), people face complex decision tasks with limited information processing capabilities. They require considerable effort to learn and identify salient dimensions of the tasks as well as choice alternatives. People are also not used to measuring their spouse's preference function and decision strategies. A husband may not be able to identify his wife's preferences or choices associated with a certain dimension. Although each spouse aims to maximise the joint utility of the decision, they may not be able to process detailed information on the spouse's utility function or possess effective tools to identify the function. The consequence is that each spouse follows his or her own decision-making strategy while attempting to minimise conflict, causing them to grope through a recursive and discontinuous decision-making process.

Levy, D., *et al.*, (2008) documented similar findings: adult family members' decision-making process did not always occur in a linear fashion. Levy, D., *et al.*, (2008) stated that the process of purchasing a house is an inherently social activity. It involves setting goals, discussing and negotiating family needs, interacting with professionals, imagining modifications to future purchase and interpreting market trends. Levy, D., *et al.*, (2008) identified five decision-making stages made by families when purchasing a residential property: (i) problem recognition – whether to purchase a house; (ii) product specification such as location, price and number of bedrooms; (iii) information search – comparing properties or real estate agents in the market; (iv) in-depth analysis of a chosen house and (v) making the choice. Levy, D., *et al.*, (2008) further stated there is considerable literature on the residential decision-making process. However, less attention has been given to examining the ways households make decisions regarding specific house purchase. Khoo-Lattimore, *et al.*, (2009) used the projective technique known as ZMET (The Zaltman Metaphor Elicitation Method) to identify factors driving home purchasing decision. ZMET is a technique to understand decision-making behaviour of house purchasing.

AHP Applications in Finance

According to Zopounidis and Doumpos (2002), the globalisation of financial markets, the increased competition among firms, financial institutions and organizations, the rapid economic, social and technological changes, and the increased variety and volume of financial products have led to increasing uncertainty and instability in the financial and business environments. As a result, the importance of making efficient financial decisions has increased given the resultant complexity of the financial decision-making process. The situation has forced researchers and practitioners to use an analytic decision-making tool to address the complexity of financial problems and the importance of the decisions. The methodological framework of the analytic decision-making tool is well suited to the complex nature of financial decision-making problems.

Zopounidis and Doumpos (2002) investigated real-world application of the multi criteria decision-making (MCDM) method on financial decision-making. One of the MCDM techniques used is AHP. The study found AHP has been applied to bankruptcy and credit risk, portfolio selection and management, corporate performance evaluation, investment project decision, venture capital, country risk assessment, financial planning, and mergers and acquisition. The MCDM technique provides the following advantages to financial decision making: (i) structures complex problems (ii) includes both quantitative and qualitative criteria in the evaluation process (iii) is transparent in the evaluation, allowing good arguments in the decision and (iv) is a sophisticated, flexible and realistic scientific method in the decision making process. Stuer and Na (2003) investigated 256 studies published between 1955 and 2001 on the application of MCDM to finance. The study found applications of AHP in capital budgeting, selecting financial instruments, mergers and acquisitions, predicting bankruptcy, and forecasting foreign exchange rates.

ANALYTIC HIERARCHY PROCESS

Saaty (1987) defined AHP as a theory of measurement to derive a ratio scale from both discrete and continuous paired comparisons. AHP is a framework to execute both deductive and inductive thinking. The framework requires considering several factors simultaneously and making numerical trade-off between the factors to arrive at a synthesis or conclusion.

AHP Decision Making Steps

The following outlines and explains AHP decision-making steps.

Step 1: Understand the problem and define the decision goal.

Consider the environment surrounding the problem and collect relevant information representing the problem as thoroughly as possible. Define and identify the following aspects: the decision goal, criteria and alternatives. Criteria are factors used to judge the alternatives. Alternatives are variables to be judged.

Step 2: Organise the problem in a hierarchy.

Figure 1 shows a basic three level hierarchy. The following outlines how to build a hierarchy (Saaty, 2010). The decision goal is at the top level. Level 2 is the criteria to judge the alternatives. The bottom level of the hierarchy is the elements to be chosen or ranked. The elements can be alternatives, actions, consequences, scenarios or policies.

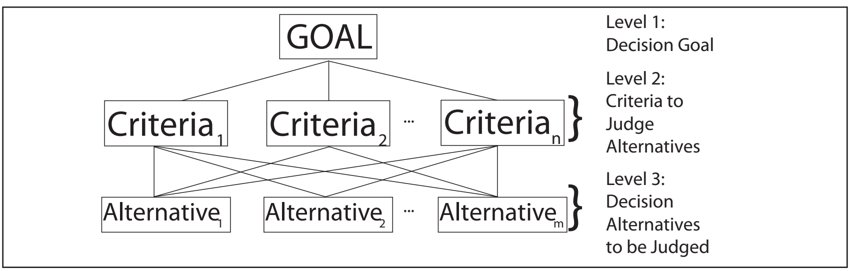

Figure 1: A Basic Three Level Hierarchy

Step 3: Evaluate preference for criteria and alternatives.

AHP uses pairwise comparisons to determine the relative preference or importance of alternatives for criteria. First, a decision maker decides which alternative is more dominant in the context of a criterion. Dominance means having properties satisfying the criterion more. Second, the decision maker decides the intensity of dominance using a scale of 1 to 9. Table 1 presents the comparison scale.

The following presents pairwise comparison questions for the hierarchy presented in Figure 1. The first step is to compare the criteria for the decision goal. For example, compare Criterion1 and Criterion2: Which criterion is more important or preferred for the decision goal and by how much more? The pairwise comparison judgements are translated into values based on the comparison scale presented in Table 1. The values are then used to develop a decision matrix as presented in Table 2. The first row of the matrix is read as the following: $Criterion_1$ is moderately more important compared to $Criterion_2$, and very strongly more important compared to $Criterion_3$. The relative scale of $Criterion_2$ to $Criterion_1$ is the inverse 1/3, and $Criterion_3$ to $Criterion_1$ is 1/7. The diagonal is 1 to express neutrality for the same criteria. The pairwise comparison questions are repeated for $Criterion_2$ and $Criterion_3$.

Table 1: AHP Pairwise Comparison Scale

Value	Definition
1	Equally important or preferred
2	Equally to moderately important or preferred
3	Moderately important or preferred
4	Moderately to strongly important or preferred
5	Strongly important or preferred
6	Strongly to very strongly important or preferred
7	Very strongly important or preferred
8	Very strongly to extremely important or preferred
9	Extremely important or preferred
Reciprocals	Reciprocals for inverse comparisons

Table 2: Decision Matrix for Criteria

Goal	$Criterion_1$	$Criterion_2$	$Criterion_3$
$Criterion_1$	1	3	7
$Criterion_2$	1/3	1	5
$Criterion_3$	1/7	1/5	1

The second step is to compare the alternatives for each criterion. For example, for $Criterion_1$, compare $Alternative_1$ and $Alternative_2$. Which alternative is more important or preferred and by how much more? From Table 3, $Alternative_1$ is moderately more preferred compared to $Alternative_2$, and extremely more preferred compared to $Alternative_3$. The pairwise comparisons questions are also repeated for $Alternative_2$ and $Alternative_3$.

Table 3: Decision Matrix for Alternatives

$Criterion_1$	$Alternative_1$	$Alternative_2$	$Alternative_3$
$Alternative_1$	1	3	9
$Alternative_2$	1/3	1	5
$Alternative_3$	1/9	1/5	1

Step 4: Calculate priority weight of criteria and alternatives.

The priority weights can be approximated using normalization of the geometric means of the rows (NGM). The NGM technique is also known as the Log-Least Square Method (Crawford, 1987, Crawford and Williams, 1985, Jong, 1984). The following outlines the steps of the geometric mean priority weight calculation:

Step 1: A decision matrix is developed from a decision maker's preference of the criteria and alternatives. Consider Matrix A, the decision matrix from Table 2:

$$A = \begin{bmatrix} 1 & 3 & 7 \\ 1/3 & 1 & 5 \\ 1/7 & 1/5 & 1 \end{bmatrix}$$

Step 2: Calculate the product of each row in the matrix. $\prod_i = \prod_{j=1}^{n} a_{ij}$, $i, j = 1, 2, \ldots, n$

$$A = \begin{bmatrix} 1 \times 3 \times 7 = 21 \\ 1/3 \times 1 \times 5 = 1.67 \\ 1/7 \times 1/5 \times 1 = 0.31 \end{bmatrix}$$

Step 3: Calculate the n-degree root: $A = \sqrt[n]{\prod_i}$

$$A = \begin{bmatrix} \sqrt[3]{21} \\ \sqrt[3]{1.67} \\ \sqrt[3]{0.31} \end{bmatrix}$$

Step 4: Sum up the value obtain in Step 3: $\sum_{i=1}^{n} \sqrt[n]{\prod_i}$

$$A = \sqrt[3]{21} + \sqrt[3]{1.67} + \sqrt[3]{0.31} = 4.25$$

Step 5: Normalized the value by dividing each element by the sum producing the weights.

$$p_i = \frac{\sqrt[n]{\prod_i}}{\sum_{i=1}^{n} \sqrt[n]{\prod_i}}$$

$$A = \begin{bmatrix} p_1 = \dfrac{\sqrt[3]{21}}{4.25} = 0.65 \\ p_2 = \dfrac{\sqrt[3]{1.67}}{4.25} = 0.28 \\ p_3 = \dfrac{\sqrt[3]{0.31}}{4.25} = 0.07 \end{bmatrix}$$

The priority weight corresponds to the relative importance or preference of the criteria. Table 4 presents the decision matrix and priority weight of the criteria. For the decision goal, $Criterion_1$ is the most important, followed by $Criterion_2$ and $Criterion_3$. Table 5 presents priority weight of the alternatives for $Criterion_1$.

Step 5: Aggregate the weights to obtain global or overall priority weight of alternatives

To calculate the overall or global weight of the alternatives, combine the priority weight of the alternatives for each criterion into a single matrix. Multiply row of the matrix with the priority weight of the criteria and normalise. Table 6 presents the combined priority weights of alternatives for each criterion and the global priority weight of the alternatives. $Alternative_1$ is most preferred compared to $Alternative_2$ and $Alternative_3$.

Step 6: Check consistency of the pairwise comparisons.

Consistency ratio (CR) measured the consistency of a pairwise comparison. $CR = CI/ RCI$ and $CI = (\lambda_{max} - n)/(n-1)$. The random consistency index

Table 4: Decision Matrix and Priority Weight of Criteria for Decision Goal

$Criterion_1$	$Alternative_1$	$Alternative_2$	$Alternative_3$	Priority Weight
$Criterion_1$	1	3	7	0.65
$Criterion_2$	1/3	1	5	0.28
$Criterion_3$	1/7	1/5	1	0.07
				1.00

Table 5: Decision Matrix and Priority Weight of Alternatives for $Criterion_1$

$Criterion_1$	$Alternative_1$	$Alternative_2$	$Alternative_3$	Priority Weight
$Criterion_1$	1	3	9	0.67
$Criterion_2$	1/3	1	5	0.26
$Criterion_3$	1/9	1/5	1	0.06
				1.00

Table 6: Global Priority Weight of Alternatives

$Criterion_1$	$Alternative_1$	$Alternative_2$	$Alternative_3$	Priority Weight of Criteria	Global Priority Weight
$Alternative_1$	0.67	0.24	0.15	0.65	0.51
$Alternative_2$	0.26	0.36	0.35	0.28	0.30
$Alternative_3$	0.06	0.40	0.50	0.07	0.19
				1.00	1.00

Table 7: Random Consistency Index (RCI)

n	1	2	3	4	5	6	7	8	9	10
RCI	0	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49

Table 8: Calculating λ

A	Criterion$_1$	Criterion$_2$	Criterion$_3$	p	$A.p$	λ
Criterion$_1$	1	3	7	0.65	1.99	3.06
Criterion$_2$	1/3	1	5	0.28	0.85	3.04
Criterion$_3$	1/7	1/5	1	0.07	0.22	3.14

$$\lambda_{max} = \frac{\sum_{i=1}^{n} \lambda_i}{n} = \frac{3.06+3.04+3.14}{3} = 3.08\,,\ CI = \frac{3.08-3}{3-1} = 0.04\,,\ CR = \frac{0.04}{0.52} = 0.08 = 8\%$$

(RCI) is a pre-defined average random index derived from a sample size of 500 randomly generated reciprocal matrices. Table 7 presents the RCI values (Saaty, 1999). n is the number of elements in the decision matrix. λ_{max} is the maximum eigenvalue of the decision matrix. *CR* of less than or equal to 10 per cent is acceptable. *CR* above 10 per cent requires decision makers to revise their pairwise comparison judgements.

To find λ_{max} requires solving the equation *A.P*. *A* is the decision matrix and *p* is the priority weight. Both *A* and *p* are known. Solving the equation using power method of matrix algebra derives λ_{max}. Table 8 presents decision matrix and priority weight for criteria derived previously in Table 4.

CHOOSING THE BEST ALTERNATIVE

This section demonstrates how AHP assists a family to choose the best alternative to meet their need for a bigger house. A family is planning to have a bigger house to accommodate their growing children. They have three daughters and one son. The wife's aunt is also living with them. The current double-storey link house has four bedrooms and three bathrooms. The four bedrooms comprise one master bedroom, two children's bedrooms and one guest room. One bathroom is in the master bedroom, one is in the middle of the house and is shared by the children and one is in the guest room. The husband and wife occupy the master bedroom. The two older daughters are sharing the second bedroom. The third daughter and the youngest son are sharing the third bedroom. The aunt is using the guest room. The following demonstrates how AHP organises and structures the problem.

Step 1: Understand the problem and define the decision goal.

The family is facing the problem of needing more rooms in the house so the growing children do not have to share rooms. They also want to have a room for staying guests. The family plans to have two additional rooms for the children and one additional bathroom. They need a new guest room that includes a bathroom. The family is considering the following alternatives:

- Extend the current house (extend): Extend and renovate the current house to include three additional bedrooms and two additional bathrooms.
- Buy a new house (buy): The new house must have six bedrooms, three bathrooms and one guest room.
- Build a new house (build): The family already has a small piece of land. They can build a new house on the land. The new house must have six bedrooms, three bathrooms and one guest room.

The family identifies the following important criteria to judge the alternatives:

- Size of the house (size): size of rooms, number of rooms and total area of the house.
- Transportation (transport): convenience and proximity to school and work place.
- Neighbourhood (neighbours): security and degree of traffic.
- Yard space (yard): front, back, and side spaces.
- General condition (condition): extent to which renovations or repairs are needed.
- Financing (finance): availability and cost of financing.

Step 2: Organise the problem in a hierarchy.

Figure 2 shows the hierarchy of the problem. The top level is the decision goal - choosing betweeen the alternatives or the best house plan. The second level is the criteria to judge the alternatives. The third level is the alternatives.

Step 3: Evaluate preference for criteria and alternatives.

To evaluate the criteria, the family compares the criteria and decides which criterion is more important. They also have to decide the intensity of importance by referring to the AHP scale. The pairwise comparison questions for the criteria are: a)

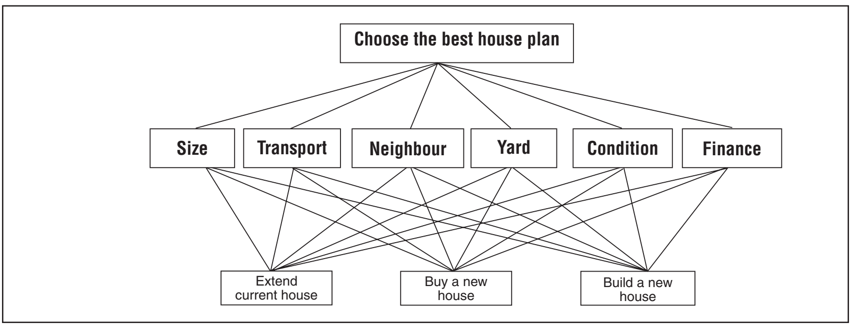

Figure 2: Choosing a House Plan Hierarchy

Table 9: Decision matrix and priority weight of criteria

Goal	Size	Transport	Neighbour	*Yard*	*Condition*	Finance	Priority Weight
Size	1	5	3	1	1	1	0.230
Transport	1/5	1	3	1/5	1/5	1/5	0.052
Neighbour	1/3	1/3	1	1/5	1/5	1/5	0.052
Yard	1	5	5	1	1/3	1/5	0.125
Condition	1	5	5	3	1	1	0.259
Finance	1	5	5	5	1	1	0.283
λ_{max} = 6.574	CR=9.30						1.000

Compare the criteria for the decision goal: For example, compare the size of the house and transportation. Which criterion is more important and by how much more? b) Compare the size of the house and neighbourhood: Which criterion is more important and by how much more?

To evaluate the alternatives, the family compares the house plans for each criterion. They decide which house plan meets the criterion more and by how much more. The pairwise comparisons questions for the alternatives are: a) In terms of size of the house, compare between extending the current house and buying a new house. Which plan is more preferred and by how much more? b) Compare between extending the current house and building a new house. Which plan is more preferred and by how much more? c) compare buying a new house to building a new house. Which plan is more preferred and by how much more?

Step 4: Calculate priority weight of criteria and alternatives.

Table 9 presents the decision matrix and priority weights for the criteria. The family judges the size of the house is strongly more important than transportation, moderately more important than neighbourhood, and equally important as yard space, condition of the house and financing availability. Table 10 presents the decision matrix of the alternatives for the criteria.

Step 5: Aggregate the weights to obtain overall priority weight of alternatives.

To get the overall ranking of the house plans, the priority weight of the house plans for each criterion are combined into a single matrix. The matrix is then multiplied by the priority weight of the criteria to obtain the global priority weight of the house plans. Table 11 presents the priority weight for the house plans for each criterion and the global weight of the house plan.

Step 6: Check consistency of the pairwise comparisons

The CR of the pairwise comparison judgements are less than 10 percent.

Table 10: Decision Matrix and Priority Weight of Alternatives for Criteria

Size	Extend	Buy	Build	Priority Weight	*Transport*	Extend	Buy	Build	Priority Weight
Extend	1	1/3	1	0.200	Extend	1	3	3	0.600
Buy	3	1	3	0.600	Buy	1/3	1	1	0.200
Build	1	1/3	1	0.200	Build	1/3	1	1	0.200
λ_{max} = 3.000	CR=0.00			1.000	λ_{max} = 3.000	CR=0.00			
Neighbour	Extend	Buy	Build	Priority Weight	*Yard*	Extend	Buy	Build	Priority Weight
Extend	1	5	5	0.714	Extend	1	1/3	1/3	0.142
Buy	1/5	1	1	0.413	Buy	3	1	1	0.429
Build	1/5	1	1	0.413	Build	3	1	1	0.429
λ_{max} = 3.000	CR=0.00			1.000	λ_{max} = 3.000	CR=0.00			1.000
Condition	Extend	Buy	Build	Priority Weight	*Finance*	Extend	Buy	Build	Priority Weight
Extend	1	1/3	3	0.234	Extend	1	1/5	1/5	0.090
Buy	3	1	5	0.650	Buy	5	1	1	0.455
Build	1/3	1/5	1	0.116	Build	5	1	1	0.455
λ_{max} = 3.052	CR=4.500			1.000	λ_{max} = 3.000	CR=0.00			1.000

Table 11: Global Priority Weight of Alternatives

	Size	Transport	Neighbour	Yard	Condition	Finance	Global Weight
Alternatives	0.230	0.052	0.052	0.125	0.258	0.283	-
Extend	0.200	0.600	0.714	0.142	0.234	0.090	0.218
Buy	0.600	0.200	0.413	0.429	0.650	0.455	0.506
Build	0.200	0.200	0.413	0.429	0.116	0.455	0.276

The family's pairwise comparison judgements are consistent.

RESULTS AND DISCUSSION

In AHP, the outcome of the decision depends on the structure of the hierarchy. The result obtained is unique to the specific hierarchy. AHP does not aim to produce a generalised result of a problem. The decision makers determine the criteria and alternatives based on the situation of the problem. The result is unique to the decision makers developing the hierarchy and entering the pairwise comparison judgement.

Figure 3 reveals that in terms of priority weight of criteria, the most important criterion is availability of financing, followed by condition of the house, yard space, size of the house, and transportation and neighbourhood. As for priority weight of alternatives, Figure 4 shows that for size and condition of the house, buy a new house is the most preferred alternative. For transportation and neighbourhood, extend the current house is the most preferred alternative. For yard space and financing availability, buy and build a new house are equally preferred. As for global priority weight of the alternatives, buy a new house has the largest weight, followed by build a new house and extend the current house.

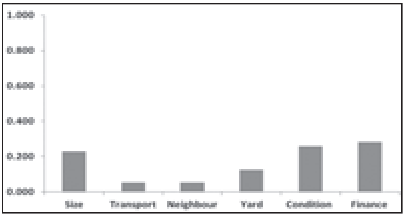

Figure 3: Priority Weight of Criteria

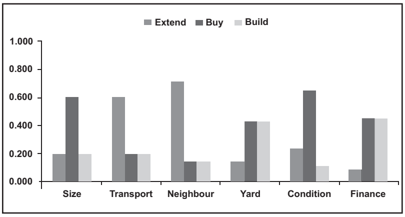

Figure 4: Priority Weight of Alternatives for Each Criterion

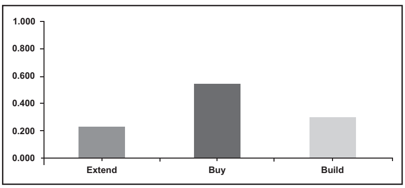

Figure 5: Global Priority Weight of Alternatives

This study documented the following AHP benefits and limitations to personal financial decision making:

AHP Benefits:

- **Simple and Easy to Use**

  AHP is a simple and easy-to-use decision-making tool. It is a simple, logical and easy-to-understand decision-making process. The participants understood how each step works towards achieving the decision goal. The simple aspects of AHP are: (i) It does not rely on extensive data or inputs; (ii) It uses simple calculations to derive the results. The calculation of the priority weights was done using free software from http://bpmsg.com; and (iii) It does not require a complicated market, economy or probability assumptions or estimation.

- **Improves understanding of a problem**

  The starting point of AHP is a well-structured problem with the following components clearly stated (i) the decision goal - the answer sought by the participants; (ii) the alternatives from which the decision will be made; and (iii) the criteria to evaluate the alternatives. Structuring and organising a problem requires in-depth understanding of the problem. The participants have to organise and sort their thinking and understanding. The hierarchy systematically structures their abstract understanding of influences, connections and interactions between criteria and alternatives and improves their understanding of the problem. The hierarchy synchronises the participants' vision and understanding of the problem to deliver better decisions.

- **Increases Transparency and Improves Problem Communication**

  The hierarchy is not just a diagram; it is also a communication tool. The hierarchy visualises the problem and enhances problem communication. It makes a problem transparent. It presents a holistic view of the problem by displaying the criteria and alternatives of the problem. It is a quick way to engage all participants in a problem. It enables them to criticise the reasoning and organisation of the problem constructively. It shows the trade-off the participants have to make when choosing one alternative over another.

AHP Limitations

- **Number of Pairwise Comparisons**

  The number of criteria and alternatives determines the number of pairwise comparisons. A hierarchy with m criteria and n alternatives has $m(m-1)/2 + m(n-1)/2$ number of pairwise comparison questions. Each decision matrix has $n(n-1)/2$ pairwise comparisons questions. The hierarchy has six criteria and three alternatives. The decision makers have to answer twenty-one pairwise comparison questions. Too many pairwise comparison questions decrease the participants' concentration. It increases the tendency of not answering all questions and producing missing values. Consequently, AHP cannot calculate the priority weights.

- **Decision Fatigue**

  Pairwise comparison questions are repetitive. As a result, the participants experienced decision fatigue. They randomly answered the questions instead of making careful and deliberate judgement. Randomly answering the questions increased decision inconsistency. As a result, the priority weights of the alternatives are not valid.

MAIN FINDINGS AND IMPLICATIONS

This study shows how to use AHP as an aid to improve personal financial decision- making. This section discusses the main findings and their implications to decision-making for personal financial planning. The results of the study show that AHP is a practical and effective tool to structure complex personal financial problems. AHP enables decision makers to disentangle a complex problem into manageable parts. It structures a complex problem using a hierarchy. The structure and function of the hierarchy provides an effective and practical way to think about, organise and break down personal financial problems. The hierarchy enables factors that are relevant to a particular personal financial problem to be organised in gradual, incremental and practical steps, from the more general in the upper level to the particulars in the lower levels. AHP is a decision-making tool that is relatively simple, logical and easy to understand, communicate and use. As a simple decision-making tool, AHP is useful for analysing and understanding complex personal financial planning problems. The AHP framework provides direct and clear guidance to model complex personal financial planning problems, starting from collecting relevant information concerning the problem, structuring the information in the hierarchy, and calculating priority weight and consistency ratio. A simple and easy to understand decision-making process can be communicated easily, therefore enabling problem participants to understand how the decision was reached. In uncertain environments and high-stake problems such as house purchasing or planning, it is important that the problem participants understand the decision-making process. In such an environment, simply knowing the decision is not sufficient. Problem participants need to know how the decision was arrived at.

CONCLUSION

The study concludes that AHP is a useful and practical decision-making tool for personal financial planning. It enables individuals, financial planners or financial advisors to have a more thorough understanding of the problem and help them to find the best answer for the problem. The following two findings reveal that AHP is a useful and practical decision-making tool. First, AHP can be used to structure a complex personal financial problem. The study demonstrates that a complex decision problem such as choosing a house plan can be simplified by using a systematic, easy-to-use and easy-to-understand decision-making process. As stated by Park (1982), people usually muddle through the decision-making process with little understanding of the method to achieve the desired decision. AHP is a systematic, easy-to-use and understand decision-making process, enabling decision makers to understand how a decision is achieved. Second, AHP is easy to use and understand, and improve communication of a problem. Levy, D., *et al.*, (2008) stated that the process of purchasing a house is a social activity. Family members set goals, discuss and negotiate family needs. Despite the discussion and negotiation, according to Park (1982), people are not used to measuring their spouse's preference function and decision strategies. A husband may not be able to identify his wife's preferences or choices associated with a certain dimension. AHP is an easy to use and understand decision-making process that improves decision makers' understanding of a problem. It increases transparency of a problem by structuring criteria and alternatives of a problem in a hierarchy. Structuring the problem helps decision makers and problem participants to see the important factors in choosing the alternatives. The pairwise comparisons force decision makers to make deliberate and clear judgement of alternatives for specific criterion. The pairwise comparisons force them to make deliberate trade-offs in choosing the alternatives. This easy-to-use and understand decision-making process improves communication of the problem and enables a decision maker to explain how a judgement is made. AHP, however, has its limitations. Depending on the number of criteria and alternatives, it may have too many pairwise comparisons questions and the questions are repetitive. Therefore, decision makers have the tendency to answer the questions randomly or ignore the questions. Taking both the strengths and limitations of AHP, this study concludes that AHP is a process for helping individuals, financial planners or advisors to find the best answer. It helps them to be as smart as possible in every personal financial decision they have to make. It enables them to disentangle the complexity and confront the ambiguity of personal financial decision-making problems.■

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Assessing Corporate Social Responsibility Activities on Customer Satisfaction: A Study on Commercial Banks in Bangladesh

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ABSTRACT

Stakeholders are any persons, organisations, social groups, or society at large that have a stake in a business. They have diverse interests in the organisation, which can be of an economic or environmental nature involved in implementing the mission of the organisation. Stakeholders can affect or be affected by the organisation's actions, objectives, and polices. There are various stakeholders present in a bank's business. Not all stakeholders are equal. The customer is one of them. This study examines customers' satisfaction level regarding Corporate Social Responsibility (CSR) activities. This study used both primary and secondary data. A survey was conducted to collect primary data. Six activities were selected to understand customer satisfaction concerning CSR activities in commercial banks in Bangladesh. The study found that out of six activities, five of them have a significant relationship between CSR activities and customer satisfaction level. The study identified that banks should give more attention to the health sector under their CSR programme. The findings may be of interest for policy makers, bankers and researchers.

Keywords: Bangladesh, Customer, Corporate Social Responsibility, Satisfaction.

INTRODUCTION

A bank is a service rendering organisation. Various types of stakeholders are involved in the banking business, such as the corporate governance, customers, depositors, bankers, employees and the local community. Among them, customers are important. Business organisations receive various inputs from society, such as skilled and unskilled labour, raw materials and natural resources, and then process and use these inputs to return goods and services to society. Thus, businesses depend on society for

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more service and it is their obligation to develop society. Business organisations cannot operate their business activities either in isolation or in a vacuum. Like human beings, businesses also need to survive in the real world (Haldar and Rahman 2014).

Customer satisfaction is a post purchase attitude formed through a mental comparison of the quality a customer expects to receive from an exchange, and the level of quality the stakeholder perceives actually receiving (Carden & Dellifraine, 2004). Customer satisfaction results in behavioural outcomes such as customer retention, commitment, creation of a mutually rewarding bond between the user and the service provider, increased customer tolerance for services and products failures, positive word-of-mouth advertising about the organisation, increased future customer spending, and might result in more cross-and up-selling, attracting new stakeholders, lowering costs, and greater profitability (Arasli, *et al.*, 2005).

One study by Luo and Bhattacharya (2006) on Fortune 500 companies identified a direct positive path between Corporate Social Responsibility (CSR) and customer satisfaction. Given that satisfaction also mediates the impact of CSR on a firm's market value, there is a need to better understand the relationship between satisfaction and CSR. In this connection, the banking sector in Bangladesh has undertaken various CSR initiatives for customer satisfaction. Through CSR activities, banks have gained positive outcomes and competitive advantage in the banking business. The Central Bank of Bangladesh has undertaken various initiatives to increase the CSR activities of all commercial banks and other financial institutions in Bangladesh. In addition, the Central Bank directly spends a large amount on CSR initiatives every year.

However, the fact is that banks in many countries are experiencing a rise in customer dissatisfaction concurrently with the banks' increased spending on CSR activities. As such, an examination of the impact of CSR measures on retail bank customer satisfaction cannot be ignored.

The rest of the paper is organised as follows: Section 2 presents the literature review, Section 3 presents methodology, Section 4 the findings and analysis, and Section 5 presents recommendations and policy implications.

LITERATURE REVIEW

The aim of the study is to investigate the level of customer satisfaction regarding the CSR activities undertaken by banks in Bangladesh. A good number of studies have been carried out in the field of CSR and some of the significant ones are reviewed in this study. Chung *et al.* (2015) attempted to understand the level of consumer perceptions related to CSR in China by evaluating the social performance of business firms. The study focused on identifying how

CSR influences customer perceptions of customer satisfaction and customer loyalty, as well as the importance order of CSR factors in China. It also examined the moderating effects of corporate image in the relationships between CSR and customer satisfaction and customer loyalty.

The study by Lynette and Rundle (2006) explored firstly the relationship between CSR and customer outcomes, and then discussed the current state of research on CSR and customer satisfaction, noting gaps in the literature. Secondly, the study put forward propositions promoting an agenda that encourages researchers to consider the relative impact of CSR on customer satisfaction compared to alternative initiatives that benefit the customer more directly.

Rubel and Alam (2014) investigated the effect of service quality and consumer satisfaction along with corporate social responsibility actions on consumer purchase intentions and on consumer loyalty. The research used both primary and secondary data. The study found no relationship between awareness of corporate social responsibility and purchase intention. However, the data revealed significant relationship between service quality and customer satisfaction.

Ochoti and Muathe (2013) highlighted the role of CSR initiatives in building customer satisfaction and competitive advantage. It specifically focused on customer-centric, corporate philanthropy and employee-cantered CSR activities and their contribution to customer satisfaction and competitive advantage. The study drew largely from various academic literatures by examining the early reflections of various scholars on CSR and linking them to more contemporary theoretical and empirical reviews. They recommended that retail banking institutions in Kenya should be more involved in CSR initiatives so as to gain customer satisfaction and build competitive advantage in the ever changing business environment.

Senthikumar *et al.*, (2011) explored the perception of the customer on CSR in banking service. The data was analysed by using Structural Equation Modelling (SEM) using AMOS 18. They found that customer satisfaction was the mediating factor in banking service quality and the CSR was the most influential factor for customer satisfaction.

Luo and Bhattacharya (2006) developed and tested a conceptual framework that predicts that customer satisfaction partially mediates the relationship between CSR and the firm's market value; corporate abilities moderate the financial returns to CSR, and these moderated relationships are mediated by customer satisfaction. Based on a large-scale secondary data set, the results showed support for this framework. Notably, the authors found that in firms with low innovative capability, CSR actually reduces customer satisfaction levels and, through the lowered satisfaction, harms market value. The uncovered mediated and asymmetrically moderated results offer important implications for marketing theory and practice.

The literature above indicates that there is a relationship between CSR and customer satisfaction and customer loyalty. Customer satisfaction is the mediating factor in banking service quality where CSR is the most influential factor for customer satisfaction. The literature also indicates that there is no relationship between the awareness of corporate social responsibility and the purchase intention.

In Bangladesh, commercial banks have carried out different CSR activities under their CSR programmes. Every year, they donate huge amounts under their CSR programmes. Existing literature shows that most of the studies discuss trends, patterns of CSR activities of commercial banks in Bangladesh (CBBs). But, the issue of customer satisfaction through CSR activities of CBBs, has yet to be examined. This study aims to fill that gap. Particularly, the study aims to examine the satisfaction level of customers regarding CSR activities undertaken by commercial banks in Bangladesh.

METHODOLOGY

The study used both primary and secondary data. Primary data was collected from commercial banks. A survey using a predesigned questionnaire was conducted to collect primary data. Seven main divisional branches of different commercial banks were selected for data collection. A total of 415 questionnaires were distributed to various customers, of which 253 were returned and finally 200 were usable. The questionnaire administration response rate was 79 per cent. The number and response rate was considered large enough and sufficient for statistical reliability. A similar method was used in Buehler and Shetty (1976), 89 per cent; Stevens *et al.*, 2005), 84 per cent and Holmes (1976), 94 per cent.

The study administered the survey questionnaire to a sample population consisting of customers (depositors, local communities, top government officials, NGOs, beneficiaries of CSR activities, servicemen, businesspersons, etc.) to know the satisfaction concerning the banks' selected CSR activities. The five point Likert scale was used (1= Strong dissatisfaction, 2= Dissatisfaction, 3= Neutral, 4= Satisfaction, 5= Strong satisfaction). We selected six activities such as education, employment and income generation, capacity building, health, financial inclusion, and disaster and relief.

Data was collected through ordinary mail, by hand and E-mail from individuals at the branches of the selected commercial bank divisional branches. The questionnaires were distributed by hand at the various branches of the commercial banks and local communities in different cities. These efforts were taken in order to seek a wider representation of bank stakeholders. Respondents were randomly selected from among customers who visited the sampling locations during the chosen time intervals, in order to eliminate sampling frame errors and to ensure representation of the population under study in the sample units (Dawkins and Lewis, 2003 and Friedman, 1989).

The study considered the following hypotheses to justify the objective:

H01: There is no significant relationship between educational activities and the level of satisfaction of the customers.

Ho2: There is no significant relationship between employment and income generating activities and the level of satisfaction of the customers.

Ho3: There is no significant relationship between capacity building and vocational training activities and the level of satisfaction of the customers.

Ho4: There is no significant relationship between health activities and the level of satisfaction of the customers.

Ho5: There is no significant relationship between financial inclusion activities and the level of satisfaction of the customers.

Ho6: There is no significant relationship between disaster and relief activities and the level of satisfaction of the customers.

FINDINGS AND ANALYSIS

Primary data was used to achieve the objective of the study. The results of the collected data are presented below.

Table 1: Distribution of Gender of Respondents

Sex	No. of Respondents	Percentage
Male	150	75
female	50	25
TOTAL	**200**	**100**

Table1 shows the distribution of the respondents by gender. Male respondents comprised 75 per cent and female respondents 25 per cent. This data reveals that less women participate in the banking sector in Bangladesh as compared to men. The age of the respondents and the percentage are presented in Table 2.

Table 2 shows that 37.5 per cent of the respondents were aged between 31-40 years and 34 per cent were aged between 41-50 years, revealing that older and more experienced people are involved in banking activities. More than 22 per cent of young people are involved by banking activities. It is very significant that banks are trying

Table 2: Distribution of Age Groups of Respondents

Age	No. of Respondents	Percentage
20-30 Years	45	22.5
31-40	75	37.5
41-50	68	34
51-60	12	6
Above 61	0	0
TOTAL	**200**	**100**

Table 3: Distribution of Occupation of Respondents

Occupations	No. of Respondents	Percentage
Government service	45	22
NGOs service	30	15
Business	52	26
Lawyer	12	06
Doctor	15	08
Others	46	23
TOTAL	**200**	**100**

** Note: 1= Strong Disatisfaction to 5= Strong Satisfaction*

to increase the involvement of young people in their activities. Table 3 presents the respondents according to their occupation.

Table 3 shows that 26 per cent of the respondents were engaged in business, 22 per cent worked for the Government, 15 per cent worked with NGOs and 23 per cent were those in other occupations.

For the sake of simplicity, we have presented the statistical part of the collected data according to the proposed hypotheses.

Ho[1]: There is no significant relationship between educational activities and the level of satisfaction of the customers.

Bangladesh Bank (Central Bank of Bangladesh) has identified twenty two areas of CSR activities. Educational CSR activities are one of them. On average, banks have been contributing about 45 per cent of total CSR expenditure to the education sector every year. The main activities in this sector comprise offering scholarships, donations, construction of schools, etc. All banks and the Government of Bangladesh give emphasis to the development of the education sector through CSR activities. The level of customer satisfaction regarding CSR activities in the educational sector is presented in Table 4.

Table 4 shows calculated value of χ^2=15.35, significant on level α=0.05 critical value of χ^2=7.96 on 16 degrees of freedom. It thus shows that the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between educational CSR activities and the satisfaction level of the respondents. The greatest expenditure in CSR activities is in the education sector as compared to other

Table 4: Satisfaction Level regarding Educational Activities

Activities	1	2	3	4	5	Total	Value of χ^2
Scholarship	6 (15)	7 (17.5)	9 (22.5)	9 (22.5)	9 (22.5)	40 (100)	15.35
Donation	4 (13.33)	5 (16.67)	9 (30)	7 (23.33)	5 (16.67)	30 (100)	
School Construction	8 (16)	7 (14)	13 (26)	12 (24)	10 (20)	50 (100)	
Transportation	5 (16.67)	4 (13.33)	7 (23.33)	9 (30)	5 (16.67)	30 (100)	
Educational Equipment Supply	8 (16)	7 (14)	10 (20)	13 (26)	12 (24)	50 (100)	
TOTAL	31 (15.50)	30 (15)	48 (24)	50 (25)	41 (20.50)	200 (100)	

*** Note: 1= Strong Disatisfaction to 5= Strong Satisfaction***

sectors in Bangladesh. As spending on the educational sector is a priority area in Bangladesh, the banks' CSR activities in this sector are consistent with government policy.

Ho[2]: There is no significant relationship between employment and income generating activities and the level of satisfaction of the customers.

Banks also conduct CSR activities for employment and income generation. These include different financial activities such as small and medium enterprise (SME) loans, collateral-free loans, and special agriculture loans, etc. The main features of these loans are the interest rate is low or they are interest free.

Table 5 shows calculated value of χ^2=20.56, significant on level α=0.05 critical value of χ^2=13.85 on 24 degrees of freedom. Table 5 thus shows that the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between employment and income generating CSR activities and the satisfaction level of the respondents.

Ho[3]: There is no significant relationship between capacity building and vocational training activities and the level of satisfaction of the customers.

Commercial banks of Bangladesh have conducted different activities for capacity building and vocational training under their CSR activities. Banks have arranged various training programmes as part of their CSR initiatives for skilled and unemployed people.

Table 6 shows calculated value of χ^2=10.50, significant on level α=0.05 critical value of χ^2=7.96 on 16 degrees of freedom. Table 6 thus shows that the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between capacity building

Table 5: Satisfaction Level regarding Employment and Income Generating Activities

Activities	1	2	3	4	5	Total	Value of χ^2
SME loans	4 (13.33)	3 (10)	10 (33.33)	8 (26.67)	5 (16.67)	30 (100)	20.56
Collateral-free loans	3 (9.38)	4 (12.50)	9 (28.13)	10 (31.25)	6 (18.75)	32 (100)	
Loans for special handicrafts	5 (15.15)	6 (18.18)	6 (18.18)	9 (27.27)	7 (21.21)	33 (100)	
Loans for female entrepreneurs	4 (14.29)	3 (10.71)	4 (14.29)	12 (42.89)	5 (17.86)	28 (100)	
Employment Generation Project	2 (7.69)	3 (11.54)	10 (38.46)	7 (26.92)	4 (15.38)	26 (100)	
Agriculture loans	5 (14.29)	6 (17.14)	11 (31.43)	6 (17.14)	7 (20)	35 (100)	
Prestige project loans	2 (12.50)	2 (12.50)	4 (25)	5 (31.25)	3 (18.75)	16 (100)	
TOTAL	25 (12.50)	27 (13.50)	54 (27)	57 (28.50)	37 (18.50)	200 (100)	

** Note: 1= Strong Disatisfaction to 5= Strong Satisfaction*

Table 6: Satisfaction Level regarding Capacity Building and Vocational Training Activities

Activities	1	2	3	4	5	Total	Value of χ^2
New entrepreneur training	5 (12.50)	7 (17.50)	12 (30)	10 (25)	6 (15)	40 (100)	10.50
Computer training	4 (10)	5 (12.50)	15 (37.50)	11 (27.50)	5 (12.50)	40 (100)	
Vocational training	5 (14.29)	6 (17.14)	7 (20)	11 (31.43)	6 (17.14)	35 (100)	
Agriculture training	7 (20)	4 (11.43)	9 (25.71)	5 (14.29)	10 (28.57)	35 (100)	
Female entrepreneur training	6 (12)	9 (18)	12 (24)	10 (20)	13 (26)	50 (100)	
TOTAL	27 (13.50)	31 (15.50)	55 (27.50)	47 (23.50)	40 (20)	200 (100)	

** Note: 1= Strong Disatisfaction to 5= Strong Satisfaction*

and vocational training activities and the satisfaction level of the respondents. Banks have been conducting various CSR initiatives from which many people have benefited such as in building their capacity.

Ho[4]: There is no significant relationship between health activities and the level of satisfaction of the customers.

Every year, banks carry out different CSR activities to improve the health sector of the country. These CSR activities for the health sector are mainly in urban areas and people in

Table 7: Satisfaction Level regarding Health Activities

Activities	1	2	3	4	5	Total	Value of χ^2
Medicine and nutrition support programmes	4 (15.38)	4 (15.38)	5 (19.23)	7 (26.92)	6 (23.08)	26 (100)	12.34
Donation	6 (18.75)	6 (18.75)	8 (25)	5 (15.63)	7 (21.88)	32 (100)	
Hospital construction	4 (13.33)	3 (10)	7 (23.33)	10 (33.33)	6 (20)	30 (100)	
Medical equipment purchase	5 (14.29)	6 (17.14)	11 (31.43)	7 (20)	6 (17.14)	35 (100)	
Free medical camp	3 (15)	3 (15)	5 (25)	5 (25)	4 (20)	20 (100)	
Safe drinking water	7 (21.88)	5 (15.63)	10 (31.25)	8 (25)	2 (6.25)	32 (100)	
Effluent treatment plant	5 (20)	5 (20)	4 (16)	5 (20)	6 (24)	25 (100)	
TOTAL	**34 (17)**	**32 (16)**	**50 (25)**	**47 (23.50)**	**37 (18.50)**	**200 (100)**	

**** Note: 1= Strong Disatisfaction to 5= Strong Satisfaction***

the rural areas have not benefited equally from them.

Table 7 reveals calculated value of χ^2=12.34, significant on level α=0.05 critical value of χ^2=13.85 on 24 degrees of freedom. Table 7 therefore shows that the calculated value of χ^2 is less than critical value. So, null hypothesis is accepted. There is a no significant relationship between health sector CSR activities and the satisfaction level of the respondents. It is very interesting to note that CSR expenditure in the health sector is the second highest. The study found that most of the banks donate to the health sector in urban areas while a few banks donate in the rural areas and to the poor. Less privileged people who live in rural areas have thus not benefited from CSR activities in the health sector.

Ho^5: There is no significant relationship between financial inclusion activities and the level of satisfaction of the customers.

Table 8 shows calculated value of χ^2=13.56, significant on level α=0.05 critical value of χ^2=7.96 on 16 degrees of freedom. Table 8 thus shows that the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between CSR concerning financial inclusion activities and the satisfaction level of the respondents.

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Table 8: Satisfaction Level regarding Financial Inclusion Activities

Activities	1	2	3	4	5	Total	Value of χ^2
10 Taka account open	3 (12)	4 (16)	7 (28)	6 (24)	5 (20)	25 (100)	13.56
Krisi cards	5 (14.29)	6 (17.140)	7 (20)	9 (25.71)	8 (22.86)	35 (100)	
Mobile banking	9 (18)	8 (16)	11 (22)	9 (18)	13 (26)	50 (100)	
Landless sharecroppers loan	7 (15.56)	7 (15.56)	10 (22.22)	12 (26.67)	9 (20)	45 (100)	
Insurance facilities	8 (17.78)	9 (20)	11 (24.44)	10 (22.22)	7 (15.56)	45 (100)	
TOTAL	**33 (16.50)**	**32 (16)**	**46 (23)**	**46 (23)**	**42 (21)**	**200 (100)**	

Note: 1= Strong Disatisfaction to 5= Strong Satisfaction

Table 9: Satisfaction Level regarding Disaster and Relief Activities

Activities	1	2	3	4	5	Total	Value of χ^2
Donation	11 (24.44)	7 (15.56)	7 (15.56)	11 (24.44)	9 (20)	45 (100)	12.55
Relief	10 (20)	7 (14)	10 (20)	8 (16)	15 (30)	50 (100)	
House construction	7 (15.56)	8 (17.78)	12 (26.67)	8 (17.78)	10 (22.22)	45 (100)	
Safe drinking water supply	3 (12)	4 (16)	6 (24)	7 (28)	5 (20)	25 (100)	
Special loan	5 (14.29)	7 (20)	6 (17.14)	10 (28.57)	7 (20)	35 (100)	
TOTAL	**33 (16.50)**	**32 (16)**	**44 (22)**	**45 (22.50)**	**46 (23)**	**200 (100)**	

Note: 1= Strong Disatisfaction to 5= Strong Satisfaction

Banks have conducted various financial inclusion programmes for people in rural and remote areas. Table 8 shows that the respondents' satisfaction level regarding financial inclusion activities is satisfactory.

Ho[6]: There is no significant relationship between disaster and relief activities and the level of satisfaction of the customers.

Bangladesh is a natural disaster prone area. Every year, its different areas are affected by natural disasters like cyclones, floods, etc. Banks have undertaken different CSR initiatives like providing relief, road construction, cyclone shelter construction, etc.

Table 9 shows calculated value of χ^2=12.55, significant on level α=0.05 critical value of χ^2=7.96 on 16 degrees of freedom. Table 9 thus shows that the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between disaster and relief activities and the satisfaction level of the respondents. Through their CSR activities, all banks have donated large amounts towards natural disaster recovery. They donate their fund to the government account and also sponsor certain activities directly.

The above analysis clearly shows that banks undertake their CSR activities in different forms and categories. We developed and tested six hypotheses based on major areas of activities undertaken by banks in Bangladesh. We found that for CSR activities in the education sector, the calculated value of χ^2 is greater than critical value. So, there is a significant relationship between educational CSR activities and the satisfaction level of the respondents.

We also found that for CSR disaster and relief activities, the calculated value of χ^2 is greater than critical value. So, null hypothesis is rejected. There is a significant relationship between CSR disaster and relief activities and the satisfaction level of the respondents. A similar outcome was found for testing the hypothesis related to employment and income generation activities where the value of χ^2 was greater than critical value. So, null hypothesis is rejected. There is a significant relationship between CSR employment and income generating activities and the satisfaction level of the respondents.

The study further found that in the CSR activities related to capacity building and vocational training, the calculated value of χ^2 is less than critical value. So, null hypothesis is accepted. There is a no significant relationship between capacity building and vocational training activities and the satisfaction level of the respondents. The reason for this could be that the type of programmes or categories of training do not meet the desired level of the needs of the society.

A positive relationship was found in testing the fifth hypothesis. The study found that in the CSR activities related to financial inclusion, the calculated value of χ^2 was greater than critical value. So, null hypothesis is rejected. There is a significant relationship between CSR activities related to financial inclusion and the satisfaction level of the respondents.

We found negative relationship for CSR activities in the health sector. The study found that for CSR activities in the health sector, the calculated value of χ^2 was less than critical value. So, null hypothesis is accepted. There is no significant relationship between CSR activities in the health sector and the satisfaction level of the respondents.

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CONCLUSION AND POLICY IMPLICATION

Conclusion

Customer satisfaction is the most important factor for banks to ensure service quality and hence their performance. In Bangladesh, commercial banks practise different management and marketing techniques to satisfy their customers. Spending on the implementation of different socioeconomic development projects under corporate social responsibility obligations is one of the major recognised activities in the banking sector.

The purpose of the study was to examine the satisfaction level of customers regarding corporate social responsibility activities undertaken by commercial banks in Bangladesh. To achieve the objective, we used both primary and secondary data. A survey was conducted with a predesigned questionnaire to collect primary data. Although 415 questionnaires were completed, only 200 were used.

In Bangladesh, commercial banks undertake their corporate social responsibility in different forms and categories. The major areas are health, education, employment, income generation, skills development training, disaster relief, capacity building, financial incentives, etc. The study developed and tested six hypotheses related to these activities to investigate the relationship between customer satisfaction level and the nature of the banks' spending under their CSR schemes.

The study found that four out of six tested hypotheses showed positive relationship. That means customers are happy when banks undertake schemes such as spending their resources for education, employment generation, disaster management, and financial incentives. However, the health sector is of major concern.

The findings of the study are relevant to the socioeconomic condition of Bangladesh. Bangladesh is a densely populated nation where the land-man ratio is extremely low. The available economic resources to meet the socio-economic needs of its citizens are very limited. Given this fact, spending on economic development should be appreciated without any doubt.

It is notable that while the expenditure on CSR activities in the health sector is the second largest, customer satisfaction is low. We found CSR activities in the health sector are mainly urban based. Although banks donate a huge amount towards the health sector in urban areas, customers think that if banks donate to the health sector in rural areas, this will generate benefits for more people. Despite banks conducting different CSR activities in the health sector in rural areas, they do not meet the needs. About 70 per cent people in Bangladesh live in rural areas with strictly limited health facilities.

The study suggests that management should ensure that the banking sector should concentrate on fair and prompt service to their customers. Corporate Social Responsibility (CSR) positively influences customer satisfaction toward banking service quality. However, banks should undertake activities which are most beneficial for their customers.

POLICY IMPLICATION

The banking sector in Bangladesh conducts various CSR activities among which are activities in the health sector. However, most of these CSR initiatives focus on urban areas and as such, people in the remote and rural areas have not benefited equally from these programmes. While many banks donate medical and surgical equipment to hospitals and clinics in urban areas, it must be stated that most of the hospitals and medical centres in rural and remote areas do not have sufficient medical and surgical equipment. The study suggests that the government and the central bank should encourage all scheduled banks to undertake CSR activities in the health sector focusing on rural and remote areas in Bangladesh. ■

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Self-Control: Influencing Physical and Financial Health Behaviours – An Exploratory Study

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ABSTRACT

The last 30 years have witnessed drastic increases in obesity and consumer debt. Research has shown that level of self-control (SC) may underlie this trend. Health and financial environmental opportunities are quite different to those just a few decades ago and may reward a different personality profile (i.e. those with higher SC). The purpose of this study is to extend previous research by examining the relationships between a) SC and exercise behaviours, and, b) SC and financial behaviours. A total of 40,000 alumni from a large Midwest university were invited via email to complete an electronic survey. Completed responses included 1,320 men (61.5%) and (38.5%) women and represented a range of ages (M= 55.28 ± 11.76). SC, exercise behaviour, and financial behaviours were measured using the International Personality Item Pool (IPIP), the International Physical Activity Questionnaire (IPAQ), and Financial Behaviour Questionnaire (FBQ), respectively. The SC variable was a composite score of facets from the IPIP measure (Self-efficacy, Orderliness, Dutifulness, Achievement-Striving, Self-Discipline, Cautiousness) and the Impulsivity Scale. When controlling for income, age, and education, the results of the regression analyses showed that SC positively and significantly predict exercise and financial behaviour.

These results are consistent with growing evidence in health psychology research that SC may be a predictor of the health-wealth connection. Reports in the current study suggest that among individuals with the same resources (i.e. income and education), self-control may help explain why some people prosper while others struggle both physically and financially. The results of this study indicate that strategies to enhance SC may hold promise for the improvement of health and wealth-related behaviours.

Keywords: Exercise, Financial Behaviours, Physical and Financial Health, Self-Control

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INTRODUCTION

Modern-day life is quite different than it was just a half-century ago and, as such, may reward a different personality profile. Technological advancements have decreased the need for physical activity, food is more readily available and affordable, consumer credit is more easily attainable, and complex financial products are widespread (Philipson & Posner, 1999; Hand & Henley, 2007; Church *et al.*, 2011). While many societal changes are seen as improvements, they also bring a new set of physical and financial health challenges. Specifically, the current environment requires resisting high calorie foods and making the effort to plan and implement an exercise regimen in order to maintain a healthy body weight and general health (Thomas *et al.*, 2010). Financially speaking, credit cards have been shown to weaken impulse control and therefore, necessitate the ability to resist over-spending (Thomas *et al.*, 2010). As the shift has been to an efficient society with more potential temptations to stray from positive health and financial behaviours, recent decades have also witnessed a down turn in health and financial status. Specifically, increases in both obesity (Center for Disease Control, 2012) and consumer debt (Federal Reserve Board, 2012) have become a public crisis. Furthermore, a growing body of research has shown a relationship between these health and wealth outcomes (Zagorsky, 2005; Aittomäki *et al.*, 2010). Thus, as environmental cues present new challenges and public health and finance problems rise to the top of societal concerns, in order to provide insights to the causes and treatments of physical and financial health, it becomes important to understand how people can best adapt to the changing environment.

THEORETICAL BACKGROUND

One area of personality research that has consistently been linked to physical and financial health is self-control (SC). SC is an umbrella term that encompasses constructs from different disciplines (e.g. psychology, neuroscience, behavioural genetics, behavioural economics) such as impulsivity, conscientiousness, self-regulation, executive function, willpower, and intertemporal choice (Moffitt *et al.*, 2011). SC is defined as a person's motivation and capacity to refrain from enacting a problematic desire (i.e., a temptation) or to override a problematic desire with a preferred behaviour (Hofmann *et al.*, 2012). Personality research suggests that SC may directly or indirectly effect health and wealth outcomes through behaviour patterns and lifestyle (Terracciano *et al.*, 2009; Moffitt *et al.*, 2011; Sutin *et al.*, 2011).

SC has been traditionally investigated as the effortful inhibition of temptations (Fujita, 2011). However, the development of SC Theory suggests that a broader conceptualization, which also includes preventative regulation, may add additional insights into the SC process (Fujita, 2011). According to Hofmann and Kotabe's (2012), SC taxonomy, SC is made up of two components, namely preventive (i.e., anticipatory strategies) and interventive (i.e., the use of will power in the moment) mechanisms. The Conscientiousness trait (the state of being thorough, careful, or vigilant) from the Big Five Factor Model measures broad differences in desire for, implementation of, and success with SC (Goldberg, 1999). Additionally, according to Gottfredson and Hirschi's SC Theory (1990), people with low SC tend to pursue immediate pleasures as measured by Impulsivity, a variant of Conscientiousness. Impulsivity and the facets of Conscientiousness (Self-efficacy, Orderliness, Dutifulness, Achievement-striving, Self-discipline, Cautiousness) overlap to a degree, but Impulsivity measures to a greater degree the extent to which an individual intentionally prepares for the future versus focuses on pleasure in the short run. Thus, Conscientiousness and Impulsivity are good predictors of whether or not a person will have success in implementing SC (Piquero & Rosay, 1998; Moffitt *et al.*, 2011).

LITERATURE REVIEW

Physical Health Behaviours and Outcomes.

Obesity rates have more than doubled since the 1970s (Center for Disease Control, 2012). The sharp increases in obesity and the associated health consequences have been clearly documented (Flegal *et al.*, 2005). The behaviours contributing to obesity, including physical inactivity and poor diet, are the second leading controllable cause of death in the United States (Mokdad *et al.*, 2004). Thus, it has been suggested that a combination of increased food intake and decreased physical activity are responsible for the obesity epidemic (Swinburn *et al.*, 2009; Church *et al.*, 2011). Advancements in technology have made it easy to remain inactive. Fifty years ago, nearly half the jobs in private industry required moderate physical activity compared to today when less than 20% call for this amount of energy expenditure (Church *et al.*, 2011). It is estimated that occupationally related energy expenditure has decreased by more than 100 calories per day (i.e. 7 pounds per year; Church *et al.*, 2011). Thus, in today's environment, in order to acquire the recommended amount of physical activity to achieve health benefits, most people must intentionally make time for regular exercise as a part of their day.

Research has linked SC to numerous health outcomes and behaviours. SC has been shown to significantly predict health outcomes such as body mass index (Crescioni *et al.*, 2011), HDL, and triglycerides (Sutin *et al.*, 2011). Relationships have been established between SC and fitness (Kinnunen *et al.*, 2012) and physical health symptoms of immune functioning (Boals *et al.*, 2011). Research has also demonstrated a link between SC and both body mass and general health, even after controlling for genetics, intelligence, social class, and home life (Terracciano *et al.*, 2009; Moffitt *et al.*, 2011). A recent study by McKee *et al.* (2013) that examined success and failure underpinning weight maintenance may begin to explain the process by which self-control maintains the relationship with important health behaviours. In a comparison of people who lost weight and maintained the weight loss (Maintainers) to those who lost weight and then regained the weight (Regainers), two main themes were highlighted which were: goal regulation and self-control. Maintainers reported long-term, realistic goal setting, consistent use of routines and self-monitoring, avoiding deprivation, and effective coping skills.

Financial Health Behaviours and Outcomes.

The results of McKee *et al.'s* (2013) study are in line with Gottfredson and Hirschi's SC Theory (1990), Hofmann and Kotabe's (2012) SC taxonomy, and Fujita's conceptualization of SC (2011) in that each suggest that SC is a process by which preventative and interventive strategies (e.g. consistent use of routines and self-monitoring) are explicitly implemented in the present in order to achieve a greater desired future goal. Furthermore, research suggests that the SC process may follow a similar course of action in several areas of life, such as financial behaviours and outcomes (Moffitt *et. al*, 2011).

In the last 50 years, spending, borrowing, and saving practices have changed drastically. Until 1966 when the first general purpose credit card was introduced, nearly all consumer transactions were made with cash (Sienkiewicz, 2001). In a short period, credit cards have become the preferred method of payment for travel, entertainment, retail purchases, and even bill payment (Evans & Schmalensee, 2005). In 1970 only 16% of people had credit cards compared to 75% today (Federal Reserve Board, 2012). Currently, the average household credit card debt of those who have credit cards is about $15,600 (United States Census Bureau, 2010). Shortly after the widespread use of the credit card, savings rates began to decline from 6-12% in the 1970s to a rate close to zero during the 2000s (Sherlund, 2010). In addition to poor spending practices, an inability to set financial goals negatively affects Americans. It is predicted that over 60 million American households will fail to achieve one or more major life goal, because they do not use a financial plan (Consumer Federation of America, 2012).

Research from the discipline of financial management has linked SC to various financial behaviours and outcomes. In their review paper, Tanaka and Murooka (2012) explain that people with higher SC accumulate more wealth. Specifically, people who put especially high value on immediate consumption compared to any time in the future reported higher rates of excessive credit card use, under-saving, and an over accumulation of debt. In a 30-year longitudinal study, Moffitt *et al.* (2011) found that childhood SC predicted adult wealth independent of intelligence, social class, and home lives.

PURPOSE OF THE STUDY

This body of research indicates that SC may be a valuable behavioural characteristic in a modern environment that requires volitional health and wealth-related practices. However, few studies have examined the effects of SC on exercise, and even fewer have examined SC on financial behaviours. Furthermore, no studies have examined the effects of SC on health and wealth behaviours concurrently. As health and wealth trends have become progressively worse in the same time frame, it is clearly important to extend the current research and explore the possible link between SC and the health and wealth connection. Thus, the purpose of this study is to examine the relationships between a) SC and exercise, and, b) SC and financial behaviours. It was hypothesized that SC would explain both exercise and financial behaviours independent of income, age, education, and gender.

METHOD

Participants

Study participants were recruited from a database of alumni at a large Midwest university. The decision to focus on university alumni from a single institution was based on an effort to control for previously demonstrated educational influences on financial and health behaviours (CDC, 2013). A power analysis (G*Power 3.1 Software) determined that a sample size of 148 would be sufficient to detect a statistically significant relationship between SC and the outcome behaviour variables ($p < .05$) with a small effect size. According to the sample database centre, a 5% response rate could be anticipated from the sample. In order to ensure an adequate sample of completed responses, a total of 40,000 people were invited to participate in the study. The recruitment sample was made up of a random selection of 1,000 alumni from each of the graduating classes from 1963-2003 in order to target individuals 30 years of age or older in an effort to exert some control over the degree to which individuals were financially independent, while also keeping a broad age range. The response rate was 6.1% (N=2,455). Participants were included in each analysis if they completed the survey questions that were tested (i.e., SC, exercise behaviours, and financial behaviours). Thus, completed responses included 1,320 men (61.5%) and 1,135 women (38.5%).

Approval from the Institutional Review Board at the university from which the sample was collected and research was conducted was obtained prior to data collection. Participants were informed of any risks associated with participation as well as the voluntary nature of the study. Completing and submitting an electronic survey is considered implied consent when participants are informed that the study is voluntary and there is no coercion of any kind involved.

PROCEDURE

Participants were invited via email to participate in the study by completing a series of questionnaires measuring SC, exercise behaviours, financial behaviours, and demographic information. Participants also received a cover letter explaining the voluntary and confidential nature of the study. The survey was closed and data were downloaded from the website three weeks after the email was sent.

Variable Measures

Self-Control

Based on the framework of SC described by Gottfredson and Hirschi (1990) and Hofmann and Kotabe (2012), the facets of Conscientiousness and the Impulsivity factor from the Grasmic SC Scale were combined to form a composite SC score. In the current study, the Conscientiousness subscale and the Impulsivity questions were found to be highly reliable (64 items; α= .921).

Conscientiousness

The International Personality Item Pool (IPIP), an online version of the Neuroticism Extroversion Openness Personality Inventory-Revised (NEO PI-R; McCrae & Costa, 1987; McCrae & Costa, 1992), measures the five broad dimensions of personality and each facet of the dimensions (Goldberg, 1999; Goldberg *et al*., 2006). The dimension of Conscientiousness and its facets were the focus of the present study. The NEO PI-R has been determined a valid and reliable measure of personality (McCrae & Costa, 1992). Participants scored each item on a 4-step (1-5 point) Likert-type scale ranging from disagree strongly (1) to agree strongly (5) with the degree to which the statement represented perceptions of themselves. The reliability scores of each facet of Conscientiousness were acceptable in the current study (Self-Discipline, 10 items; α = .73; Self-Efficacy, 10 items; α = .74; Orderliness, 10 items; α = .78; Dutifulness, 10 items; α = .69; Achievement-Striving, 10 items; α = .82).

Impulsivity

The Impulsivity construct in Grasmick *et al.'s* Self-Control Scale (Grasmick *et al*., 1993) was also used to measure SC. Participants scored four items on a four-step (1-4 point) Likert type scale ranging from strongly disagree (1) to strongly agree (4) with the degree to which the statement represented perceptions of themselves. Items included the following statements: 1) acts on the spur of the moment without stopping to think, 2) devotes much thought and effort to planning for the future, 3) often does whatever brings me pleasure here and now, even at the cost of some distant goal, and 4) is more concerned with what happens to me in the long run than the short run. Items two and four were reverse scored. The Impulsivity questions have been shown to be valid and reliable measure of the impulsivity dimension of SC (Piquero & Rosay, 1998) and were also reliable in the current study (4 items; α = .71).

Exercise behaviours

Exercise behaviours were measured using the International Physical Activity Questionnaire (IPAQ). The questionnaire includes four items related to the amount of minutes per day and days per week that the individual engages in walking, moderate intensity activity, vigorous intensity activity, and sitting. The IPAQ is considered a valid and reliable measure of physical activity and has been shown to correlate well with objective measures of physical activity (Craig *et al.*, 2003).

Financial behaviours

The Financial Behaviour Questionnaire is an assessment of individuals' spending, saving, borrowing, and investing behaviours. Specifically, participants indicated the extent to which they make plans on how to use/ spend money, carry a balance on credit cards, evaluate spending on a regular basis, keep bills and receipts where they are easy to find, pay for yearly expenses out of current income or savings, save regularly, pay bills as they are due, contribute to a retirement fund, and make financial goals. The nine items in the questionnaire have been used to measure financial planning behaviours in several studies concerning financial management (Titus *et al.*, 1989; Garrison & Hira, 1992). Participants answered each item on the questionnaire on a 4-step (1-5 point) Likert-type scale ranging from seldom (1) to most of the time (5) with the degree to which they engage in the behaviours. In the current study, the Financial Behaviour Questionnaire was found to be reliable (9 items; α = .71).

Demographic variables

Pre-tax annual household income is a measure of potential wealth and was assessed using a nine-point scale where 1 < \$15,000, 2 = 15,000-29,999, 3 = 30,000- 44,999, 4 = 45,000- 59,999, 5 = 60,000-74,999, 6 = 75,000-89,999, 7 = 90,000-99,999, 8 = 100,000-149,999, and 9 > 150,000. Age was assessed by subtracting the answer to the following question from 2011, "In what year were you born?" Highest level of education was assessed using a five-point scale where 1 = Grade School, 2 = High School, 3 = Bachelor's, 4 = Master's, and 5 = PhD/MD/equivalent. Gender was assessed using two dichotomous levels where 1 = male, and 0 = female.

Variables Transformation and Statistical Analyses

Only participants with completed responses were included in the final analyses. A t-test was used to compare differences in SC among participants with completed responses and those with missing data. There was no significant difference in SC between the participants with completed responses (M = 270.31 ± 25.08) and participants with missing data (M = 269.67 ± 24.97; t(2,453) = .769, $\boldsymbol{p}$ = .442).

The current study used an SC composite score with measures from recent psychology and health-wealth research that used the Conscientiousness facets in the IPIP (Goldberg, 1999) and the Impulsivity measure in the Self-Control Scale (Grasmick *et al.*, 1993). Each Conscientiousness facet (Self-Efficacy, Orderliness, Dutifulness, Achievement-Striving, and Self-Discipline) score ranged from 10-50 points (10 questions each with a five-point Likert scale). The Impulsivity measure included four questions with a four-point Likert scale (range 4-16). In order for the Impulsivity facet to have a similar weighting in the SC score as the Conscientiousness facets, the Impulsivity score was multiplied by three and therefore ranged from 12-48. Each of the facets were added together to sum the total SC score, which ranged from 42 (low SC) to 348 (high SC).

Exercise behaviour was calculated as the sum of minutes per week of moderate, vigorous, and walking activity multiplied by the metabolic equivalent (MVMETmin/week). The IPAQ defined moderate activity (4 METs) as activities that take moderate physical effort and make you breathe somewhat harder than normal. Vigorous activity (8 METs) was defined as activities that take hard physical effort and make you breathe much harder than normal. Walking (3.3 METs) was included at work and at home, walking to travel from place to place, and any other walking that might be done solely for recreation, sport, exercise, or leisure. Participants were asked to report only those physical activities that they did for at least 10 minutes at a time.

Financial behaviours were assessed using a nine-item questionnaire with answers ranging from 1-5 (1 being never and 5 being most of the time). Items were added together to compute a financial behaviour composite score that ranged from nine (poor financial behaviours) to 45 (good financial behaviours).

Income, age, education, and gender are demographic variables that have been shown to be related to health and wealth, so they could confound the results of the study (Titus *et al.*, 1989; Smith, 2004). Therefore, they were controlled for in each analysis. Descriptive statistics (mean ± SD) for the sample population were computed for income, age, education, and gender. Basic assumptions for linear models were checked and met.

Multiple linear regression analyses are suitable for determining the relationship between one or more explanatory variables and a dependent variable. Therefore, two separate multiple linear regression analyses were used to examine the following: a) whether SC was related to exercise behaviour when controlling for income, age, education, and gender, and, b) whether SC was related to financial behaviour when controlling for income, age, education, and gender. Based on the objectives of the study and the conceptualization of SC as a process, facet level analyses were not run. SC is the broad tendency for individuals to engage in preventative and interventive regulation as measured by Conscientiousness and Impulsivity, as opposed to independent trait-like facets. All statistical analyses were performed using IBM SPSS Statistics 19 (IBM Corporation, Somers, NY).

RESULTS

Before performing the multiple linear regression it was determined that basic assumptions for linear models were met (linearity, independence and homoscedasticity of the errors, and normality of the error distribution). The exercise variable was positively skewed, so, a log transformation was used to normalize the distribution. The linear regression was rerun using this new variable and the significance of the relationship between the predictor and criterion variables did not change.

Descriptive Analyses

Participants in the final analyses included 1,320 men (61.5%) and women (38.5%) and represented a range of ages (29-91) with a mean age of 55.3 ± 11.8 years (Table 1). Regarding education, 43% reported earning a bachelor's degree, 35% a master's degree, and 20% a PhD/MD or equivalent. Since the sample was taken from a pool of university alumni, it was expected participants would be highly educated. Participants reported high pre-tax gross annual household incomes (***M*** = \$95,000, ***SD*** = \$35,000) relative to the average national income (\$51,914; U.S. Census Bureau, 2010) with 0.5% earning < \$15,000, 13% earning \$15,000-60,000, 27% earning \$60,000-100,000, 30% earning \$100,000-150,000, and 29% earning > \$150,000.

Table 1: Descriptive Statistics

	Mean	SD
Income (\$)	95,000	1.7
Age (yr)	55.3	8.5
Education (yr)	5.8	0.9
N =1,320		

SC and Exercise Behaviour

The results of the multiple regression analysis showed that SC (β = .11, *t*(1,315) = 3.54, p < .001) was positively and significantly related to exercise behaviour when controlling for income, age, and education (Figure 1; Figure 3). Tests indicated that multicollinearity was not present (tolerance = .98, .97, .99, .98, and .95 for SC, income, age, education, and gender). Age was a significant correlate of exercise behaviour (*r*(1,318) = -.06, ***p*** < .01). The R^2 change when adding gender to the exercise behaviour model increased by a value of .005, which was also significant. Table 2 provides details of these results.

Table 2: Results of Regression Analysis: Variables Explaining Exercise Behaviour

	B	*SE B*	Β
Self-Control	16.48	4.57	.11**
Income	-64.05	50.48	-.03
Age	22.59	9.95	-.06*
Education	-9.10	138.71	-.01
Gender	.06	.02	.07*

Note: R^2 *= .033 (N = 1,320,* ***p*** *< .001).*
**p < .01; **p < .001*

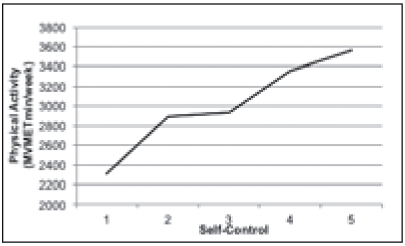

Figure 1: A Gradient of SC positively and significantly predicted exercise behaviour (t(1,315) = 3.54, p < .001) when controlling for Income, Age, Education, and Sex.

SC and Financial Behaviour

The results of the multiple regression analysis showed that SC (β = .40, *t*(1,315) = 15.37, ***p*** < .001) was positively and significantly related to financial behaviour when controlling for income, age and education (Figure 2; Figure 3). Tests indicated that multicollinearity was not present (tolerance = .97, .95, .94, and .94 for SC, income, age, and education). Income was a significant correlate of financial behaviours (r(1,318) = .20, p < .001). The R^2 change when adding gender to the financial behaviour model increased by a value of .004, which was also significant. Table 3 provides details of these results.

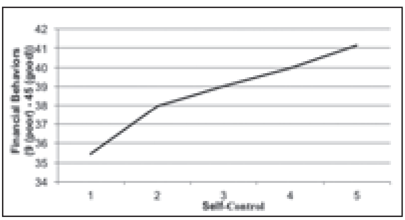

Figure 2: A Gradient of SC positively and significantly predicted financial behaviour (t(1,315) = 15.37, p < .001) when controlling for Income, Age, Education, and Sex.

Table 3: Results of Regression Analysis: Variables Explaining Financial Behaviour

	B	*SE B*	B
Self-Control	.08	.01	.40**
Income	.46	.06	.20**
Age	-.01	.01	-.01
Education	-.10	.15	-.02
Gender	-.63	.27	-.06*

*Note: R^2 = .21 (N = 1,320, **p** < .001).*
**p < .01; **p < .001*

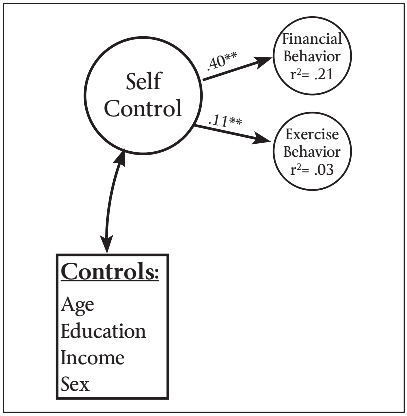

Figure 3: A model depicting the positive and significant relationship between SC and physical and financial-health behaviours when controlling for Income, Age, Education, and Sex.

DISCUSSION

Self-Control (SC) is characterized by the ability to control emotions and behaviours, be task- or goal-driven, be planful, delay gratification, and persist despite set-backs (Miller *et al.*, 2011; Moffitt *et al.*, 2011). The purpose of this study was to examine the relationships between a) SC and exercise behaviours, and, b) SC and financial behaviours within the same population. It was hypothesized that SC would explain both exercise and financial behaviours independent of income, age, education, and gender. The results supported this hypothesis, demonstrating that reports of higher SC were related to engagement in more exercise for males and females in every income bracket, regardless of gender, age, and independent of education. The strength of the relationship between SC and exercise behaviour in the current study was similar to previous personality and exercise research (Ingledew *et al.*, 2004). Furthermore, for every one-unit increase in SC, there was a corresponding 16.48 METminute increase in weekly exercise behaviour, which is equivalent to about four minutes of brisk walking. This was a small effect (accounting for 3.3% of the variance in exercise behaviour), though this does constitute a meaningful relationship according to Cohen (1988). In addition, the practical importance of the effect can be seen in the magnitude of the change in actual exercise behaviour such that an improvement of 5% (15 units) on the SC scale corresponded with an increase of an hour (61 minutes) of brisk walking per week (an intensity of four METs). Lee and Skerrett's (2001) dose response curve for physical activity and health outcomes indicates that even one hour of walking per week is enough to warrant significant health benefits and decrease risk for all-cause mortality, especially when a person's starting point is relatively inactive.

The results also showed that reports of higher SC were related to engagement in positive financial behaviours when controlling for income, age, education, and gender. In this case, SC was related to 21% of the variance in financial behaviour, which is considered a medium-large effect (Cohen, 1988). This meant that for every one-unit increase in SC there was a corresponding 0.2% improvement in financial behaviour such that an increase of 5% (15 units) on the SC scale corresponded with an improvement in financial behaviours of 3%. On the financial behaviours questionnaire, an increase of 3% would improve an individual's financial behaviour by one category on one of the items. As an example, a person who saved "seldom" would save "occasionally" or a person who made a plan on how to use money "usually," would plan "most of the time."

The findings in this research suggest that SC is linked to financial behaviours to a greater extent than exercise behaviour. However, it is possible that the physical activity measure prevented the true amount of intentional exercise from being revealed, because it measured general physical activity and not exercise explicitly. Exercise is physical activity that is planned, structured, repetitive, and purposive in the sense that improvement or maintenance of one or more components of physical fitness and/or health is the objective. Thus, the physical activity questionnaire used in the present study would categorize people who have sedentary jobs, but exercise daily, as less physically active than a person who does not intentionally exercise, but has a very active job. The purpose of the present study was to examine the extent to which SC would be related to exercise behaviour, not general physical activity. Therefore, it is recommended that future research examining SC and exercise should use an exercise questionnaire that measures leisure time exercise and not total general physical activity accumulated throughout the day. This will help gain a better understanding of the mechanism that drives purposive exercise as opposed to the accumulation of general physical activity.

These results are in agreement with previous SC and health behaviour research (Bogg & Roberts, 2004) and SC and financial behaviour research (Tanaka & Murooka, 2012) and indicate that SC underlies a portion of the health-wealth connection. Specifically, Rhodes *et al.* (2001) found a positive relationship between SC and exercise participation in a sample of breast cancer patients. In agreement with the results of the current study, the authors suggest that SC may be an important determinant of exercise behaviour. Ingledew *et al.* (2004) speculate as to the process that which SC translates into positive health behaviours. They suggest that it is unlikely that many health-related behaviours are fulfilling initially, but that individuals with high SC may either force themselves to persist with activities in spite of finding them difficult or have the ability to transform mundane activities into enjoyable tasks. Research by McKee *et al.* (2013) demonstrated that the process by which SC leads to healthy weight maintenance includes long-term, realistic goal setting, consistent use of routines and self-monitoring, avoiding deprivation, and effective coping skills. It is likely that the SC process unfolds in a similar way regarding exercise behaviour. More research is needed to conclude how the SC process leads to exercise.

Financially speaking, Tanaka and Murooka (2012) in their review of SC problems and financial behaviours showed that individuals who report low SC also participate in harmful financial behaviours such as spending their earnings instantaneously on consumption using credit cards excessively and do not save enough for the future. Like the current study, these results showed that individuals high in SC are able to resist the temptation of immediate gratification and save for purchases and the future. The results of the current study are in line with previous SC research (Moffitt *et al.*, 2011; Tanaka & Murooka, 2012) and are the first to demonstrate a relationship between SC with both health and wealth behaviours within the same population.

A shift in the way society operates both physically and financially has changed the environmental demands on individuals, and while the environment has changed, it appears that most people have not adapted (Evans, & Schmalensee, 2005; Church *et al.*, 2011). Physical activity was once acquired continuously throughout the day. Today, technology advancements have eliminated the need for manual labour with many tasks in the home and at work (Church *et al.*, 2011). Thus, the current environment may reward a different personality profile than decades ago. The results of the current study suggest that SC may be an important individual level characteristic to combat the present-day temptation of a sedentary lifestyle by increasing participation in a purposive exercise programme despite environmental obstacles and distractions.

Likewise, the financial industry operates much differently than a half century ago. In those days, people had to save money and make most purchases with their money in hand. Today, it is much easier to finance consumption and pay it back later. Products are more complex and sales tactics are very aggressive. The mortgage crisis of 2008 is a vivid example of this reality (Hira, 2012). With an increase in financing options via credit cards, in-store financing, and payday lending, consumer debt among people in every income brackets has steadily trended up since the early 1970s (Gross & Souleles, 2002). In the current environment, a healthy financial status requires avoiding over-spending and over-borrowing with conscious inhibition of consumption until it can be paid for out of one's current income. The results of the present study are consistent with this concept in that people who reported higher SC also reported fewer negative financial behaviours such as carrying a balance on their credit card, spending impulsively, and paying bills late. Individuals with high SC also reported more positive financial behaviours such as making plans on how to use their money, paying for yearly expenses out of current income, higher saving rates, contributing to a retirement fund, evaluating spending, and making financial goals. Present day financing opportunities may present temptations that conflict with an individual's financial well-being. Therefore, SC may be a valuable characteristic in the current financial environment to help individuals reach short- and long-term goals of financial security.

LIMITATIONS

An apparent limitation of the study was the low response rate (6%). As a reference point, response rates to email surveys have drastically decreased from 60% in 1986 to 24% in 2000 (Sheehan, 2001) and are likely even lower today. All studies that rely on voluntary participation must consider that there is a potential bias if there is a systematic difference between people who decided to respond and those who did not. Another limitation of the study is the nature of self-report surveys. As with all self-report studies, answers may be limited by biases related to self-deception and self-enhancement. The study sample also consisted mostly of those who had higher than average incomes and educational statuses. This potential bias may actually work against the hypotheses by restricting the variability of responses. Had the sample been more variable and thus representative of the general population, it is plausible that the results may have been even more profound and generalizable to a broader population.

Based on the results of this study, a recommended next step in the SC and health research is to design an experimental study to include measures of health (disease, blood lipid profile, body composition) and wealth (net worth) and to test general SC strategies that could empower engagement in positive health and financial behaviours.

CONCLUSIONS

Although personality is generally thought of as stable, research of individuals with anxiety and depression has shown that with training, SC can be improved in children, adolescents, and adults (Febbraro & Clum 1998; Francis *et al.,* 2012). Based on this research, it could be suggested that SC is more of a learned and malleable behaviour that can be improved with training and effort than it is an inborn, unchangeable trait. Self-monitoring, self-evaluating, and self-reinforcing are basic SC skills (Banduara, 1991) that can be learned and may be effective in combating the present-day temptations and distractions that compete with health and financial well-being.

IMPLICATIONS

While this study was not an intervention, the result suggest that such SC strategies may be beneficial for health and financial practitioners to teach and encourage among their clients. As mentioned, self-monitoring, self-evaluating, and self-reinforcing are basic SC skills that likely improve both physical and financial health behaviours and outcomes. Additionally, government investments in SC programmes that teach such strategies at a young age may develop into healthier physical-and financial health behaviours in adulthood. ■

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Rule of 72 Vs Rule of 78

Gunasegaran Munusamy

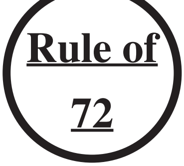
Rule of 72 and Rule of 78 are two mathematical approaches that have been commonly used in Malaysia since the late 1980s. This began to be used when the banking industry was growing and the use of the computer to calculate the loan formula was limited.

During the 1970s, the 1980s and the early 1990s, banks were mainly using formulas with manual calculation to be translated into payment schedules/table forms.

This approach changed during the late 1990s with the widespread use in the banking industry of computers with programmes for these formulas, making calculation much easier.

However, consumers or borrowers had very little knowledge of the two rules then and this is true even today. The knowledge gap between consumer and bankers must be reduced so we can have informed consumers.

WHAT IS RULE OF 72?



The Rule of 72 is a simple formula used widely to calculate the estimated compounding period / tenure required to double an investment. In other words, you use it if you want to know within how many years your investment of, say, RM10,000.00 will double to RM20,000.00 at a specific interest rate.

This Rule of 72 approach is an easy way to calculate the number of years it will take to double the investment instead of using scientific calculator (or spreadsheet) to get the answer.

Formula:

$$n = 72 / i$$

Where:

1. "n" is estimated compounding number of years required.
2. "i" is annual interest rate.

Example:

Assuming John invests RM10,000 in an investment vehicle which promises an interest/return/dividend of 6% per year. Now, John wants to know the estimated number of years it will take to double his investment to RM20,000.

You may calculate this by using the calculator that is readily available in any mobile phone.

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$$n = 72 / i$$

$$n = 72 / 6$$
$$= 12^{*} \text{ years}$$

Note: *Therefore, it will take an estimated 12 years for RM10,000 to double to RM20,000 at 6% interest per year.

The same formula can be used to calculate other parameters or variables i.e. the interest rate required, given the tenure.

In my opinion, notwithstanding the above, the limitation of this formula is it is not appropriate to calculate the simple interest rate. The result is just an estimation; hence, this formula can be applied as a general guide by consumers or investors.

However, with this knowledge, consumers or investors can have better guidance before committing to any of the many non-genuine investment or financial schemes in existence today. However, the drawback of using this rule is, the higher the interest, the less the accuracy. It will give a close to accurate result if the interest rate is within the range of 6% to 10%.

WHAT IS RULE OF 78?

The Rule of 78, on the other hand, is a formula widely used to calculate the rebate on fixed interest /financial charges if the loan were settled before maturity. Rule of 78 is also known as sum of digits: the number of months in a year i.e. 1 + 2 + 3 + 4+ 5 + 6 + 7+ 8 + 9 + 10 + 11+ 12 equals to 78. This formula is commonly used in hire purchase (HP) or personal loans where the interest is added to the principal before the calculation of the fixed/ monthly instalment.

Under Rule of 78, a lender will gain interest at a bigger margin at the beginning of the loan tenure. If one takes a 12 months' repayment HP loan, the interest portion on the first instalment is very much higher than the interest portion on the last instalment.

For example, if a hirer intends to settle his hire purchase loan before the due date of the 3rd month's repayment for a loan with twelve (12) months' repayment tenure, he will be get a rebate of 70.51% ((78 – (11 + 12)) / 78) from the total interest/finance charges. And the lender has already gained 29.49% ((11 +12) / 78).

Table 1: Combination of Interest Gained & Total Rebates to the Hirer / Borrower

Period in Months	Remaining Tenure	% Interest Gained by Lender (% X Total interest / Finance Charges)	% Rebate to the Borrower /Hirer (% X Total interest /Finance Charges) {100- Interest Gained by Lender)
1	12	(12/78)= 15.39	84.62
2	11	(23/78) = 29.48	70.52
3	10	(33/78) = 42.31	57.69
4	9	(42/78) = 53.84	46.16
5	8	(50/78) = 64.10	35.90
6	7	(57/78) = 73.08	26.92
7	6	(15/78) = 80.77	19.23
8	5	(68/78) = 87.18	12.82
9	4	(72/78) = 92.31	7.69
10	3	(75/78) = 96.15	3.85
11	2	(77/78) = 98.72	1.28
12	1	(78/78) = 100	0.00
	78		

The table above gives more combinations of interest gained and total rebates to the hirer/borrower.

In my opinion, however, the limitation of this formula is that the rebate calculation does not factor in any penalty due to late payment or additional fees levied during the repayment period. ■

MFPC Malaysian Financial Planning Council Competence.Ethics.Standards
RFP Your Pathway to Professionalism
Shariah RFP A Premier Financial Planning Designation of MFPC

Choosing the Right Investment Products

Ameer Ali Vali Mohamed

One of the most important elements in our investment planning is to be able to invest in the right investments so that we can achieve the desired returns within the level of risk we can assume. This will enable us to attain the desired retirement capital gap at retirement age or realize the amount of funds intended for a specific purpose such as a deposit for the purchase of a house or an education fund.

Achieving the targeted retirement capital gap on retirement is crucial so that our total retirement capital is sufficient for us to have a reasonable quality of life after retirement as we defined it when we drew up our retirement planning. Similarly, making sure to achieve a desired amount to be used as a deposit for property purchase at a particular point in time in our life is crucial so that we will be able to buy our own property at the right age. Likewise, ensuring an education fund reaches a desired level within a set period of time will help us sponsor the tertiary education of our offspring as well as to elevate our own education or technical qualification.

So what is the right investment? There is no one portfolio of investments that is suitable for everyone. The portfolio of investments is unique for each individual. And for an individual having targeted funds with different objectives and/or time frames, each portfolio of investments is also comparatively unique. Hence, there is no such thing as one fits all. But choosing the right portfolio of investments is a key ingredient to achieving the objective of investment planning. Therefore we need to be mindful and careful when we make our investment decisions.

BEST RETURNS VS SUPERIOR RETURNS VS RISK ADJUSTED RETURNS

Generally, when choosing an investment, there is a tendency among some of us to be attracted by the investment with the best return. An investment product that produced the best return the previous year may be the fund of choice for some of us, as other funds within the same category could not match such a return. This may be the easiest way of choosing a fund for us to invest. But, is this the right way? What happens next year if the fund – let us name it Fund A – no longer produces the best return this year? Should we then dispose of the investment and move to another fund – Fund B - that produces the best return this year? And should we continue to do

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the same year-in year-out the same way if we buy after it became the best fund and sell after it did not manage to be the best fund? This would be a decision based on an after event.

Having such an attitude towards performance may also give rise to the risk of us being trapped in Get Rich Quick Schemes. About 10 percent of the rural population in Malaysia was found to participate in such schemes each month[1]. Such schemes normally promise returns that are exceptionally high, calculated on a monthly basis – such as 5% per month or even 10% per month. The good experience of friends and relatives in such schemes over the last 3 to 6 months may entice us to believe in the scheme and ; hence the investment in such a scheme, only to realize later that this is a "robbing Peter to pay Paul" kind of scheme which cannot be sustainable and later goes bust.

What we as investors should look for is superior returns. Superior returns means better than average, or better than others of the same type . In seeking superior returns, we do not only look at the best; we also look at those that are better than average performers, or we may look only at the top 5 or top 10 within the same league. This will also lead us to have a wider choice of funds, which is good as it allows us to diversify our investment, making us not only have an investment product but also a portfolio of investment products.

Taking a step further, a professional investor or advisor will assess fund performance not only from the standpoint of returns alone, but also from the perspective of risks that are assumed in order to produce such returns. This is important as seeking returns beyond the risk free rate of return requires the assumption of risk. The higher the risk, the higher the expected returns, as the risk reflects the potential of the investment losing money as well. Therefore, we need to ascertain the extra return produced for each unit of risk assumed by an investment fund; hence the principle of risk-adjusted return. Risk-adjusted return is an investment's return by measuring how much risk is involved in producing that return[3].

ASSESSING RISK TOLERANCE

Before we go further, it is best to assess our own risk appetite or our risk tolerance level. There is no point of talking about investment risk without knowing to what extent we are willing to assume the risk. But what is risk? According to Economic Times, investment risk is the probability or likelihood of occurrence of losses relative to the expected return

[1]Berita Harian, 4 March 2012, quotation, as reported, by the then Minister of Domestic Trade, Co-operatives and Consumerism, Datuk Seri Ismail Sabri Yaakob.

[2]Cambridge Dictionary, http://dictionary.cambridge.org/us/dictionary/english/superior.

[3]http://www.investopedia.com/terms/r/riskadjustedreturn.asp.

on any particular investment[4] while the Cambridge English Dictionary defines it as the chance of losing money from a particular investment[5].

Many of us wrongly go by the adage "the higher the risk, the higher the return" when it should be "the higher the risk, the higher the expected return". When we use the former, we will be under the impression that assuming higher risk will definitely lead to achieving higher return, which is wrong. However, the latter is true as the higher return is an expectation as a result of assuming a higher level of risk; hence making us realize that achieving positive return is not an absolute certainty.

Investment houses worldwide have various ways of conducting risk profiling of their respective clients so that recommendations or management of their accounts can be in line with their respective profiles.

Risk profiling is a process for finding the optimal level of investment risk of a person, taking into consideration the risk required, risk capacity and risk tolerance. Risk required is the risk associated with the return required to achieve the one's goals from the financial resources available; risk capacity is the level of financial risk one can afford to take, while risk tolerance is the level of risk one is comfortable with[6].

In Malaysia, the Securities Commission Malaysia made it compulsory in late 2012 for all companies that sell unlisted capital market products such as unit trust funds and wholesale funds to conduct what it terms "Suitability Assessment" on their clients. The suitability assessment is an exercise carried out by a product distributor that would entail the product distributor gathering necessary information from the investor in order to form a reasonable basis for his or her recommendation[7]. A Suitability Assessment exercise comprises the following stages: gathering information pertaining to an investor, analysing information gathered, matching a suitable product to meet an investor's risk profile and needs, and making a recommendation[8].

To enable us to know our risk profiling, it is best for us to go through the questions set by professionals and used by investment houses that come together with a grading scheme. This process is very important to enable us to invest in a portfolio of investments or a portfolio of investment products that have a risk level which approximates

[4]http://economictimes.indiatimes.com/definition/investment-risk.

[5]http://dictionary.cambridge.org/dictionary/english/investment-risk.

[6]https://riskprofiling.com/riskprofiling/what-is-risk-profiling.

[7]Guidelines on Sale Practices of Unlisted Capital Market Products, Securities Commission Malaysia, Issued: 28 December 2012, Updated: 29 March 2013.

ours. The assessment will show whether we fall within the very high, high, moderate or low risk taker category or we are totally risk averse.

RISK ASSESSMENT OF INVESTMENT PRODUCTS

A popular measurement of risk for an investment or investment product is the standard deviation of the investment return. It measures the dispersion of a series of returns of the investment products from the average return. It is therefore a measure of volatility; hence the risk.

The Federation of Investment Managers Malaysia (FIMM), an association for unit trust management companies in Malaysia and a recognized self-regulatory body for its members, makes it compulsory for its members to publish the "volatility factor" of their funds in any notices that publish the performance figures of the funds except for notices published through sound broadcasting, film or television. According to its Investment Management Standard (IMS) that was issued in 2009, "volatility factor" is the annualized standard deviation on unit trust schemes/ recognized funds month-end returns for the immediate preceding 36 months and will be used as the main measurement for volatility[9].

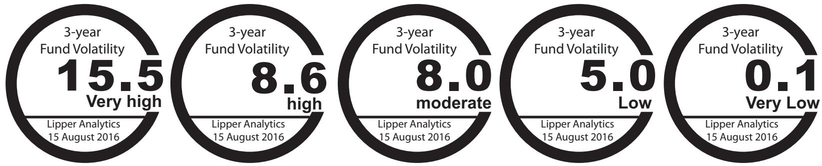
The volatility factor has two elements – the first is the 3-year annualized standard deviation of the monthly performance of a fund or called Fund Volatility Factor (FVF), and the second is the FIMM-Lipper Fund Volatility Classification (FVC) of Very Low, Low, Moderate, High and Very High in terms of volatility of a fund relative to all qualified funds that are evenly divided into five classes. The FVC is subject to revision every six months. What is interesting here is that we as investors do not have to calculate the volatility of the funds as it is already provided on a silver platter. We just need to find out where to obtain the information.

Both the FVFs and our risk tolerance level will enable us to gauge if funds are suitable or not suitable for us in terms of risk level. If we are assessed as a high risk taker, then we should invest only in investment products that have FVC of high risk. Alternatively, we can also invest in multiple investment products with different FVCs so long as the risk of the portfolio of the investment products is within the range of high risk FVC. The important point is we neither over expose ourselves to investment risks more than what we can assume so that we can take it when there is any reversal in the investment market that goes against us. Neither should we under expose ourselves to investment

[8]Ibid

[9]FMUTM/IMS (R&D)-009: Measuring and Disclosure of Volatility For Unit Trust Schemes and Recognized Funds, Federation of Investment Managers Malaysia (FIMM), Issued 27 February 2009, Effective Date: 1 May 2009

Examples of Volatility Factor and Volatility Class Icons are as follows:



risk less than what we can assume to ensure we can earn returns that are commensurate with our risk tolerance level.

Optimizing Investment Returns In Selecting Investment Funds

Once we know our own risk profiling, including the level of investment risk we can tolerate and the returns and risks of investment funds are made available in the periodic fund factsheets that are easily downloadable from the websites of the respective fund houses, what should we do next?

We would certainly be happy if we were able to enjoy higher returns given the same level of risks, wouldn't we? For an example, if the expected return of Fund M is 10% and that of Fund N is 11% and both have the same volatility and therefore the same risk level, we would certainly invest in Fund N. From another perspective, if the volatility of Fund K is higher than that of Fund L and both have the same expected returns, we would certainly invest in Fund L. The critical point here is that we want to optimize the returns that our investment portfolio can produce as we can only assume a certain level of risk.

To achieve the findings, we then apply the Sharpe Ratio, which is a measure of an investment's excess return, above the risk-free rate, per unit of standard deviation, with the following formula. Derived in 1966 by William Sharpe, it looks for investments with a ratio of more than 1.

$$\text{Sharp Ratio} = \frac{R_p - R_f}{SD_p}$$

Where R_p = Return of the fund in question

R_f = Risk-free rate of return

SD_p = Standard deviation of the fund in question

As the unit trust industry in Malaysia produces a 36-month annualized volatility for all funds that have a life span of at least three years, we can then compare this with the 3-year annualized return of the funds. Since we are forgoing the potential of obtaining a return over the period of three years without us having to assume any risk, or what is normally termed as opportunity cost, we will then use the 3-year deposit rate as the risk-free rate of return.

[10] http://www.investopedia.com/terms/r/riskadjustedreturn.asp

Suppose that we find nine funds that invest in the same asset classes and have annualized returns as listed in Column 2 of the table below. The funds are arranged according to their annualized returns. This is not the "average annual return" as understood by some of us. A 60% total return over a three-year period is not a return of 20% per annum, just because we can easily divide 60 with 3 because a 20% return per annum over a three-year period means a total return of 72.8%, i.e. [(1.2 x 1.2 x 1.2) – 1] x 100%. A total return of 60% over three years means an annualized return of 17.0% per annum, i.e. $[(1.6)^{1/3} - 1]$ X 100%.

Column 3 tells us the risk of the portfolios in the form of volatility factor, which is essentially the standard deviation of returns that we discussed earlier. A higher volatility factor does not necessarily produce higher returns; similarly, a higher return does not necessarily require a higher volatility factor. One point to note is that the funds must continue to invest in the same asset class over the period under review; otherwise, the return-risk preposition will be compromised, making the study unacceptable.

Column 4 categorizes the funds into three different classes – three each in very high risk, high risk and moderate risk level. We do not list funds with lower volatility class because they are associated with funds that invest in other asset classes of lower risk level such as fixed income and money market while the nine funds in the table are equity funds. In addition, this study is intended to be as simple as possible.

Column 5 lists the risk-free rate in the market place for a period similar to the fund return and volatility. Column 6 is the Sharpe Ratio, the formula of which is shown earlier.

Table 1: Sharpe Ratio of Funds

Fund	3-Year Annualized Return	3-Year Annualized Volatility	Fund Volatility Class	3-Year Risk-Free Annualized Return	Sharpe Ratio
P	16.0%	14.0%	Very High	3.4%	0.90
Q	15.7%	12.1%	Very High	3.4%	1.02
R	14.5%	10.0%	High	3.4%	1.11
S	13.7%	10.5%	High	3.4%	0.98
T	12.9%	11.3%	Very High	3.4%	0.84
U	11.9%	8.2%	Moderate	3.4%	1.03
V	11.1%	9.5%	High	3.4%	0.81
W	10.2%	7.7%	Moderate	3.4%	0.89
X	9.1%	8.0%	Moderate	3.4%	0.72

**** The figures and FVCs are not actual.***

The main strength of Sharpe Ratio is to find funds that produce relative return, which is the difference between the fund's return and the risk-free rate, in excess of its risk. Based on this and from the examples in the table above, there are only three funds that are worth investing in – Fund R which is the best with a Sharpe Ratio of 1.11, followed by Fund U at 1.03 and Fund Q at 1.02. The worst of the nine funds from the Sharpe Ratio perspective is Fund X with a ratio of only 0.72.

If our risk profile is very high, then we will be able to invest in all the three funds – Funds R, Q, U. We may also consider investing in Fund S as its Sharpe Ratio is only a small fraction less than 1 and they produce relatively high annualized return. If our risk profile is high, we then have two funds to invest in, which are Fund R and Fund U, and possibly Fund S. If our profile is moderate, Fund U shall be our only choice.

In essence, the application of Sharpe Ratio in selecting the right investment funds for us will enable us to make the right investment decision given the expected returns and risks associated to producing such returns.

CONCLUSION

Investing in funds with the highest returns may not necessarily be the right decision and investing in a fund with a relatively lower return may not necessarily be a wrong decision. Return should not be the main determinant when it comes to decision making. The element of risk of the funds in relation to the performance must be put into perspective to ensure that we make the right decision – investing in funds that can produce a certain level of returns given the certain level of risk we are willing to assume. I hope that the above explanation and examples will be beneficial to unit trust consultants when recommending an investment mix to their clients.

Other elements that we also need to consider, but which are not covered in this article, are to include the consistency of the funds' performance as well as the investment objective and strategy of the funds. ■

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The Intelligent Investor

Thechinamoorthy Subbiah Chettiar

Title : The Intelligent Investor
Author : Benjamin Graham
Publisher : Harpercollins Publisher
No. pages : 640 Pgs
Price : RM85.00
ISBN : 0060555661

Benjamin Graham, the author of the book *The Intelligent Investor*, may not be as famed as the well-known investment guru Warren Buffett. Nevertheless, Benjamin Graham can be lionized as the grand master of value investing. He is also known as the "Dean of Wall Street". He outshined others, excelled and made money for himself and his clients from the stock market without taking big risks. Ben Graham developed his unique way of finding the right stocks, which made him a successful investor. His wisdom and principles of investing in the stock market are timeless masterpieces which every modern investor can draw on.

Warren Buffet himself describes the book *The Intelligent Investor* as "the best book on investing ever written" and I couldn't agree more with him. In my opinion, it is a book every investor should read before they invest. I would have done a lot of things differently if I had read this book years before investing. However, it has certainly has changed my perception of looking at a stock in recent years.

The book *The Intelligent Investor* comes in 20 chapters, followed by a commentary from Jason Zweig, a senior writer at *Money Magazine*. Jason is also an author of *Your Money and Your Brain* (Simon & Schuster, 2007). Many, including Warren Buffet, attribute their massive net worth to the principles and wisdom in this book.

As matter of fact, Ben Graham wrote another book earlier entitled *Security Analysis* and this book *The Intelligent Investor* is the watered down or a simpler version of the former. It is definitely geared to equip a common investor as opposed to a securities analyst or someone working professionally in a financial institution.

I would like to divide this book into four segments for the sake of the book review. So, we will look at Chapters 1 - 7 first, then Chapter 8, Chapters 9 to 19 and finally Chapter 20 by itself. I have

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heard Warren Buffet preaching that if you ever read *The Intelligent Investor*, read Chapter 8 and 20. Hence, my decision to divide the book review in such a manner.

The Intelligent Investor takes off with a very important discussion distinguishing between and an investor and a speculator. Graham says if you are an investor, you will not seek a massive amount of return in a short period of time. Therefore, an investor must seek to expect a reasonable return taking into consideration numerous things such as the holding time, options available at that time and risk or the margin of safety as Graham calls it in a particular investment proposition. The question I am asking right now is, what is the reasonable amount of return for an investor? However, Graham does not answer that question; instead, he leaves it to the readers to determine the expected return. He probably means if you are looking for a 50% return in a one-year period, you are probably getting into the realm of speculation. An investment with such excessive gain is most likely speculative in nature and if you are not sure or have some basis in your decision making, then you are probably speculating or gambling. He clearly cautions the readers to stay away from speculation if they want to be successful investors.

He then moves on to a discussion about promoting safety of the principal. Graham says an investor must pay attention to protection of the principal and expect a reasonable return. No investor will compromise losing the principal of the invested amount in any investment. Therefore, he emphasises resolutely that the protection of principal is of utmost importance. Conventionally, there is always a trade-off between risk and return and therefore most of us will condone losing the principal in the venture of getting higher gains.

In my opinion, Graham's investment approach example would be, if you are planning to invest in a large cap company, you probably want their revenues to be really steady. They will have all these consistent numbers and an expectation that they are going to continue to have this trend at least to the level of earning where they are today as they move forward into the future. There is not anything really that you can see on the horizon that would cause a major disruption in the next couple of years. That will probably be an example of investment.

However, if the revenue or the net income is not something you can project nor can you predict when a bad event is about to occur, that is where you get into more of a speculative approach as opposed to an investment approach.

In a nutshell, Graham postulates these two ideas: the protection of the investor's principal and to go after the things that will give that reasonable return. That is probably how he will be investing. Here is a direct quote from the book that will reaffirm the statement above: *"Investing is promoting the safety of the principal with an adequate return".*

The first thing that came to my mind as I read the line above is the idea of risk-return trade-off. Investopedia defines risk-return trade-off as *"The risk-return tradeoff is the principle that potential return rises with an increase in risk. Low levels of uncertainty or risk are associated with low potential returns, whereas high levels of uncertainty or risk are associated with high potential returns. According to the risk-return tradeoff, invested money can render higher profits only if the investor is willing to accept the possibility of losses."*

When you read that definition, you will probably will believe that the principal must be exposed to risk or you must be willing to accept the risk of losing the capital for a potential higher return. You may now realise that you may be wrong if you had that sort of thinking. After reading about the idea of margin of safety in *The Intelligent Investor*, my paradigm as an investor has shifted. Investors should have the notion of safety at the back of their minds as the cardinal rule of investment.

Finally, the big message for every investor in the first few chapters is that they must understand these basic fundamentals although they may sound really simple. If you are not doing that, then you are most likely speculating.

I often hear investors say, *"I feel like this is the direction it's going to go"*, throwing around that "feel" word as opposed to *"I have looked at the company's cash flows; they have been very consistent over the last 5 years and looking forward, I expect those cash flows to continue to remain consistent if not slightly grow, then, when we do a discount cash flow analysis by taking those future cash flows and discounting them back to today's present value, I expect the value of the company to be at a certain price a share at a certain discount rate."*

That's the kind of conversation investors need to have in their minds when determining the intrinsic value of the company. An investor must have gone through that sort of thought process in the decision making before picking the stock or making that important investment decision. If that's not your thought process, you are probably going into territory that you should not be venturing into.

When we really think about Graham's approach to investing, it could be a little mundane. Graham made his money by just waiting. So, we can talk about it the whole day, yet it's not going to be fun or easy to just wait. However, if you are looking for action and a lot of things to really happen fast, investing is probably not for you. If you really are "*The Intelligent Investor*", then there is no action at all. You would buy into a company and probably hold it for 10, 20 years or perhaps the rest of your life. Keep your money there and let it grow. That's is what Graham has been teaching to investors all his life.

After all, that is what value investing is all about.

An important point from Chapters 1 - 7 is that Graham divided investors into two categories:

1. Passive (defensive) investors.
2. Active (aggressive) investors.

Passive investors want "freedom from effort, annoyance, and the need for making frequent decisions." In other words, they value their time and freedom more than extra investment returns.

Active investors, on the other hand, are willing "to devote time and care to the selection of securities [investments] that are both sound and more attractive than the average."

Active investors make a job out of investing, whether part time or full time. They tend to love the details of the game of investing, and as a result they enjoy the sometimes tedious process of finding the best investments.

There is no right or wrong about active or passive investing. There are benefits and drawbacks to each. Graham also cautions that an aggressive investor will be expected to fare better than the passive equivalent but his result may well be worse.

He then gets into much discussion about defensive / aggressive investors, speculative trading, decision making based on information in hand and much more. I am now asking, how many types of investors are there? Probably there are only two types of investors and at times an investor can be both, depending on the choices they have based on their own research before investing.

As you progress to this part of the book, I must say it's not an easy read. It is dry and loaded with financial terminologies which have been used interchangeably and if you are not familiar with them, it can be brutal even though it's a simpler version of security analysis.

In Chapter, 8 Graham talks about Mr. Market. He illustrates that someone knocks on your door every day and that someone is Mr. Market. Mr. Market comes at the same time every day and he tells you, "I have these companies and I want to sell them to you." He goes on to say, "This XYZ Company is 35 dollars today and yesterday it was only 30 dollars. I have another company, ABC Company, which was 90 dollars yesterday and today it is a 100 dollars." Each day he goes back and comes back with different prices, sometimes higher and sometimes way less. This is how the market waves hit at us every day. Being the calm, competent, consistent, and balanced thinker that you are, you are going to listen to the offer and make a conscious decision of what something is worth.

Therefore, based on what Mr Market says of a company's worth, if you think it's a heck of a deal, maybe an investor needs to buys some as he is offering it to you at a great price.

This is probably the kind of example, Graham would use in his classes which inspired and produced a prodigy like Warren Buffet. So, it's really about the choice you are making to determine whether you think it's a good offer or not. The price is just an offer; you don't get upset or angry with Mr Market. The Intelligent Investor must now get to work, using his or her own analysis and call the shots of what something is worth or valued i.e. the intrinsic value of a stock.

What Graham is trying educate the readers here is to really get back to the fundamentals of the content of the book. Are you speculating or are you investing? If you are investing, then you must do things that are necessary to protect the principal. He went on to say that as long as you find a good bargain, time will take care of the rest. Don't put your money into things that you have no idea of what could go wrong.

In the preface of this book, Warren Buffet states explicitly to pay attention to the valuable advice provided in Chapters 8 and 20. This is why Chapter 8 is so important. It shifts your behaviour, attitude and thoughts about the price movement of stock. Therefore, I urge readers not to miss the story of Mr Market and the other inestimable thoughts in Chapter 8.

Now let us move on to Chapters 9 to 19 of *The Intelligent Investor* and hit some of the high points in these chapters. I would probably label these chapters as *how to find the right stocks.*

Graham was more specific in these chapters regarding the criteria an investor should set before investing. He gets into much discussion about what discount rates and normalised earnings are and why they are important in determining the intrinsic value of a stock.

One of the shortcomings of *The Intelligent Investor* is that it really does not tell us how an investor can determine the intrinsic value of a stock. However, it does talk about discount rate and multiples of earning to price.

The intrinsic value of a security tells us whether it is higher or lower than its current market price - allowing them to categorize it as "overvalued" or "undervalued." Typically, when calculating a stock's intrinsic value, investors can determine an appropriate margin of safety, where the market price is below the estimated intrinsic value. By leaving a 'cushion' between the lower market price and the price you believe it's worth, you limit the amount of downside that you would incur if the stock ends up being worth less than your estimate.

For beginners getting to know the markets, intrinsic value is a vital concept to remember when researching firms and finding bargains that fit within their investment objectives. Though not a perfect indicator of the success of a company, applying models that focus on fundamentals provides a sobering perspective of the price of its shares.

Graham speaks briefly about discounted cash flow, which could be a good indication of what its worth of investment proposition is in today's value based on the estimated potential cash flows of business.

A discounted cash flow (DCF) is a valuation method used to estimate the attractiveness of an investment opportunity. DCF analysis uses future free cash flow projections and discounts them to arrive at a present value estimate, which is used to evaluate the potential for investment

Graham does not get into details in this book although he mentions discount analysis. That is my frustration about the book as it does not tell me how I do it. There is more than just science in finding out the real value of a business.

The other thing is when there is high inflation, everything demands a high return on our capital. When we compare risk and the discount rate that we are using, there is no finite number that is the perfect measure of risk. So how do we come up with the valuation of a company with all these facts, graphs and future earnings? They may all look good but they may be risky due to the uncertainty in the cash flows.
Therefore, when an investor discounts that to the appropriate discount rate, it may turn out to out to be a risky company for a start-up as it is reflected in the intrinsic value.

I would rather look at the current yield of the KLCI when comparing an individual stock picking. Graham uses the Treasury Bill to measure the opportunity cost. In today's example, a 10-Year Treasury Bill is probably going to give a much higher intrinsic value due to a lower yield. Hence, the KLCI would be a better bet as it will give you better margin of safety. Furthermore, why in the world would I use a 10-Year Treasury Bill when I could be using the KLCI which will give me a more matched and conservative risk assessment? I am comparing an apple to apple simply because I am using equities to compare and it's so much safer to do so in today's context. If an investor cannot beat the KLCI, why take the risk on an individual stock? An investor should not be taking action with emotional attachment but should be doing with some science at the back of that decision. So, the calculation of the intrinsic value is not as easy as it may seem and can be misunderstood easily, which may result in financial losses.

The question that we should be asking ourselves is, how do I find undervalued shares? The answer to that question is often not as easy as we think. However, the criteria provided by

Graham in *The Intelligent Investor* could serve as a gauge for one to become a better investor. Graham's criteria for a stock pick are:

I. Look for a company that has a quality rating that is average or better. An investor need not find the best quality companies. He recommends using Standard & Poor's rating system and requires companies to have an S&P Earnings and Dividends Rating of B or better.

II. Buy into companies with Total Debt to Current Asset ratios of less than 1.0. In value investing, it is important at all times to invest in companies with a low debt load.

III. Check the Current Ratio (current assets divided by current liabilities) to find companies with ratios over 1.50 to make sure a company has enough cash and other current assets to weather stormy economic conditions.

IV. Find companies with positive earnings per share growth during the past five years with no earnings deficits. Earnings need to be higher in the most recent year than five years ago. Avoiding companies with earnings deficits during the past five years will help you stay clear of high-risk companies.

V. Invest in companies with price to earnings per share (P/E) ratios of 9.0 or less. I am looking for companies that are selling at bargain prices. Finding companies with low P/Es usually eliminates high growth companies, which should be evaluated using growth investing techniques.

VI. Find companies with price to book value (P/BV) ratios less than 1.20. P/E ratios, mentioned in rule 5, can sometimes be misleading. P/BV ratios are calculated by dividing the current price by the most recent book value per share for a company. Book value provides a good indication of the underlying value of a company. Investing in stocks selling near or below their book value makes sense.

VII. Invest in companies that are currently paying dividends. Investing in undervalued companies requires waiting for other investors to discover the bargains you have already found. Sometimes your wait period will be long and tedious, but if the company pays a decent dividend, you can sit back and collect dividends while you wait patiently for your stock to go from undervalued to overvalued.

In Chapter 20, Graham talks about the Margin of Safety. Graham calls the margin of safety "the secret of sound investment" and "the central concept of investment".

He devotes the whole of the last chapter to this concept and places it last because it is the most important. In my opinion, Margin of Safety are probably the most important three words in *The Intelligent Investor.*

Investopedia defines Margin of Safety as *"a principle of investing in which* *an investor only purchases securities when the market price is significantly below its intrinsic value. In other words, when market price is significantly below your estimation of the intrinsic value, the difference is the margin of safety".* Hence, the margin of safety for an investment is the difference between the real or fundamental value and the price you pay. The goal of the value investor is to pay less (hopefully, much less) than the real value.

Warren Buffett compares margin of safety to driving across a bridge. I love this analogy, and Warren Buffett has used it multiple times. If you're driving a truck across a bridge that says it holds 10,000 pounds and you've got a 9,800 pound vehicle, if the bridge is 6 inches above the crevice it covers, you may feel okay; but if it's over the Grand Canyon, you may feel you want a little larger margin of safety.

That is the same thing with businesses. If you understand a business perfectly and the future of the business, you will need very little in the way of a margin of safety. So, the more vulnerable the business is, and assuming you still want to invest in it, the larger the margin of safety you would need.

Finally, I shall leave you with these seven interesting quotes from *The Intelligent Investor* which may arouse your interest to get your hands on the book.

QUOTE 1

To invest successfully over a lifetime does not require a stratospheric IQ, unusual business insights, or inside information. What's needed is a sound intellectual framework for making decisions and the ability to keep emotions from corroding that framework. (pg. ix).

QUOTE 2

By developing your discipline and courage, you can refuse to let other people's mood swings govern your financial destiny. In the end, how your investments behave is much less important than how you behave. (pg. xiii).

QUOTE 3

Investing isn't about beating others at their game. It's about controlling yourself at your own game. (pg. 219)

QUOTE 4

The best way to measure your investing success is not by whether you're beating the market but by whether you've put in place a financial plan and a behavioural discipline that are likely to get you where you want to go. (pg. 220).

Quotes 1 - 4 inspired many to become better investors. One need not be a genius or smarter than others to invest in the stock market but what an intelligent investor needs is the discipline in investing. The intelligent investor's decision making must take the fundamentals into consideration and not be swayed by popularity or mood swings.

QUOTE 5

The defensive (or passive) investor will place chief emphasis on the avoidance of serious mistakes or losses. His second aim will be freedom from effort, annoyance, and the need for making frequent decisions. (pg. 6).

QUOTE 6

Successful investing is about managing risk, not avoiding it.

Quotes 5 and 6 refer to what Graham emphasizes greatly: "Margin of Safety". I defer to agree to a common fact that we always speak of, that is, high return equals high risk although many may not agree with me. At times, we think that we must be prepared to lose money when we take high risk. If you read this book, you would probably know why I don't subscribe to this idea.

QUOTE 7

People who invest make money for themselves; people who speculate make money for their brokers. And that, in turn, is why Wall Street perennially downplays the durable virtues of investing and hypes the gaudy appeal of speculation. (pg. 36).

Quote 7 is derived from some of Graham's basic ideas. When I say this, I hope I am ridiculously wrong. I think most people are speculators. Many get into the market for a quick gain and not with a long-term plan. Speculators seek to make abnormally high returns from investments that can go either way in the short term. One needs to be that calm and competent investor to pick a stock that will grow over the years. ■

Personal Finance
Turning Money Into Wealth

Desmond Chong Kok Fei

Title : Personal Finance
Turning Money Into Wealth
Author : Arthur J. Keown
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INTRODUCTION

Arthur J. Keown's book titled is divided into five parts and comes with a total of 607 pages. The book covers an individual's life stage planning with many real life examples and graphs and charts. The book helps an individual to think of their goals (financial planning) until the wealth distribution process (estate planning) when faced with different life cycle scenarios.

The book explains credit as receiving cash, goods or services with an obligation to pay later. The shopper's language is, "Just charge it". The credit card is the easiest way to obtain credit and once credit is easily obtained in this way, many people become addicted to it. Therefore, as the book claims, the most dangerous debt is right in your pocket – your credit card. But there is another group of people who disagree credit is "dangerous" as they see it as very convenient when you wish to make hotel reservations, buy airline tickets, make online purchases, etc. There are numerous arguments regarding the advantages and disadvantages of credit cards. Let us gain an explanation of credit cards by understanding their important elements.

For those who have yet to read the book, the most recent edition (7th) is updated with recent changes in personal finance. Most importantly, the preceding editions and the latest one have one thing in common, the fundamental principles of personal finance are given serious emphasis so that readers may take control of their financial future by incorporating the necessary changes in their lives that could help them cope with their financial future.

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THE 10 PRINCIPLES OF FINANCE

The author illustrates the 10 principles of finance in Chapter 1 of his book briefly before going into these in a more in-depth manner in subsequent chapters. The "10 Principles of Finance" provides the framework for the major concept of the book. The principles ensure a reader can make and carry out a financial plan.

- **Principle 1:** The Best Protection is Knowledge
- **Principle 2:** Nothing Happens Without a Plan
- **Principle 3:** The Time Value of Money
- **Principle 4:** Taxes Affect Personal Finance Decisions
- **Principle 5:** Stuff Happens, or the Importance of Liquidity
- **Principle 6:** Waste Not, Want Not—Smart Spending Matters
- **Principle 7:** Protect Yourself against Major Catastrophes
- **Principle 8:** Risk and Return Go Hand in Hand
- **Principle 9:** Mind Games, Your Financial Personality, and Your Money
- **Principle 10:** Just Do It!

PART 1 TO PART 5 OF THE BOOK

In Part 1 of the book the author writes on financial planning. He explains the financial planning process and the importance for every individual to have a plan, including having tax planning and the appropriate strategies.

In Part 2, the author draws everyday examples of money management, defining among others, the differences between cash and liquid assets and the role of borrowings. He provides a significant amount of information on the role of open credit.

Part 3 of the book covers protection with Insurance and in Part 4 the author explains the basics of investments including the ways of diversifying and obtaining mutual funds. While some examples may not be relevant to the Malaysian scenario, the basic elements, as discussed in the book are indeed those that are propagated by many financial experts.

In the final part of the book, the author illustrates life cycle issues. In the reviewer's experience, this is an important element in financial planning that throughout one's life, there are bound to be different scenarios that one has to deal with.

The author also provides appendices where he illustrates the concepts of finance, compounding, present value, future value and monthly instalment loan tables.

For the purpose of writing this review, I would like focus on one element in Part 2 where the author writes about Managing Your Money and thoroughly explains the role of Open Credit and the characteristics of Credit Cards. The books also explains individual creditworthiness which is determined by "The Five Cs of Credit". The Five Cs include Character, Capacity, Capital, Collateral and Condition to determine for credit evaluation of an individual.

HOW CREDIT CARDS WORK

A credit card is an electronic payment tool which allows you to purchase products and services without the exchange of cash. Credit cards involve receiving cash, goods or services with an obligation to pay later with interest. Before you make a purchase, there is a line of consumer credit extended to the consumer and once you open credit, then you can pay back the debt at whatever pace you like as long as you pay a specified amount or minimum payment each month. Additionally, you are given an interest-free period of between 20 to 50 days from the date of purchase to settle the outstanding amount.

BENEFITS OF CREDIT CARDS

Below are the benefits of owning a credit card provided you use it smartly:

- They are a convenient and efficient mode of cashless payment.
- They facilitates online purchase of products and services.
- They assist in tracking spending for budgeting purposes based on the statements.
- Some credit cards provide free personal accident and travel insurance coverage.
- They offer attractive schemes such as zero-interest instalment plan, flexi-payment scheme and balance transfer.
- They earn loyalty points to redeem goods and services.

UNDERSTANDING THE COST OF CREDIT

The main factor that determines the cost of a line of credit is the annual percentage rate (APR) which is the true simple interest rate paid over the life of the loan. It takes most of the costs into account, including interest on the balance, the loan processing fee, and document preparation fee. In Malaysia, the annual percentage rate for credit cards is 18% and the breakdown of the cost is given below.

Type of fees/charges	Explanation
Joining fee	Credit card issuers may impose a one-time joining fee. This fee varies depending on the card issuers.
Annual fee	This is a fee to be paid annually once is accepted the credit card.
Finance charges	These are charges imposed on the outstanding balance after the payment due date.
Cash advance fee	The fee varies from 3% to 5% of the amount withdrawn.
Late payment charge	This charge is imposed when you fail to pay the minimum monthly payment.
Administrative cost for overseas transactions	It varies from 1% to 5% of the transaction amount.

GRACE PERIOD

You will enjoy an interest-free period on the purchases made using your credit card if you do not have unpaid payments due from the previous billing cycle. This interest-free period is usually 20 to 50 days from the posting date of the transaction. Please take note that there is no interest-free period for cash advances.

This means that if you do not pay your credit card bill in full but carry forward the balance to the following month, the interest-free period would not be applicable. Interest charges will be imposed on each transaction from the posting date to the statement date. Further interest will be charged on the outstanding balance from the statement date to the payment due date. All the interest charges will be computed on a daily basis.

BALANCE TRANSFER FACILITY

A balance transfer enables credit cardholders to transfer their credit card balance (or part of) from one card issuer to another to save on interest charges. Usually, card issuers offer this facility at 'promotional' rates to encourage cardholders to transfer their balance. This may not be a bad idea as it helps save on interest charges.

While a balance transfer may be a good strategy to reduce interest charges on your credit card outstanding balance, you have to be aware of the terms and conditions of such facilities.

For example, some of these conditions may state that you can only make the minimum payment of 5% of the amount transferred during the promotion period and that you cannot pay more or settle the amount earlier. In addition, there would be a 'lock-in' period barring you from transferring your balance to another card issuer without first paying a penalty. Moreover, if you opt for a balance transfer and use the credit card from which you have transferred the balance, you could incur more expenses than you can manage if you are not prudent with your spending.

You also have to make sure that you keep to the repayment amount and agreed schedule. If you are unable to do so, then the promotional rates will revert to the normal rate, say, 18% p.a., along with other late payment charges and penalties.

FLEXIBLE PAYMENT / ZERO-PERCENT INTEREST SCHEME

This is a facility arranged between card issuers and selected merchants where cardholders can pay for purchases made with the merchants at no interest by instalment ranging from three to 24 months. This is subject to the cardholder's available credit limit at the time of purchase.

MANAGE YOUR CREDIT CARDS AND OPEN CREDIT WITH 5Cs

Using credit wisely will ensure you to maintain a good record of individual credit worthiness which is measured a's credit scoring. Credit scoring involves the numerical evaluation and your score is evaluated according to predetermined standard. If your score is up to the acceptance standard, then you will get approval for credit. The book proposes the 5Cs to help individuals to manage a good credit scoring.

1. **Character** – Have you established a record of timely repayment of past debt? Keep in mind that exhibiting good character involves not overextending yourself with respect to credit- not taking on too much debt given your income level.

2. **Capacity** – Determine your ability to repay any credit card charges. Lenders will look to both your current income and level of borrowing in determining your capability to service the loan.

3. **Capital** – The size of your financial holding or investment portfolio which refers to the more your savings, the more creditworthy you are. The lenders want to know whether your income is sufficient to provide for the debt you have already incurred

4. **Collateral** – This refers to assets or property offered as security to obtain credit. If you were to default on a loan, the collateral would be sold and the proceeds from the sales would go to repay the debt.

5. **Conditions** – The impact the current economic environment may have on your ability to repay any borrowing. You may appear to be strong in all the other "Cs" but if you are affected by an economic downturn, you might not able to meet your obligations.

CONCLUSION

We have become a society of "no secret" can be kept thanks to advancements in technology. Therefore it is essential we keep a good track record and maintain a good credit scoring to ensure our future financial security. The book gives an insight into how credit cards work and an understanding of the costs of credit to alert us into not falling into financial traps with this easy credit. Most importantly, the book provides ways to keep a good credit scoring by learning the 5Cs principles. The real life examples and simple language used makes the book interesting and it is easy to understand the concepts shared. More importantly, as the book focusses on the logic of financial planning instead of terminologies. I chose to focus in-depth on a single aspect of the book as this is one of the most important elements that continue to contribute to the consumption patterns of Malaysians, which have led many to fall into debt. ■

Journal of Wealth Management & Financial Planning (JWMFP)

Journal of Wealth Management & Financial Planning is a peer-reviewed research and practitioner journal, published annually by Malaysian Financial Planning Council (MFPC). The aim of JWMFP is to establish an academic and practice guide for the fast-growing Financial Services industry.

The Journal comprises research papers in the various aspects of wealth management and financial planning by academicians and practitioners in a number of fields, providing research-based benchmarks and studies for public, corporate and academic reference.

JWMFP features original research and conceptual effective approaches to education and practice concerning all aspects of financial planning and management. The Journal covers the entire spectrum of the Financial Services industry i.e. Insurance, Unit Trusts, Stock Markets, Wealth Management, Banking, Macro Economy, Infrastructure and IT, Practice Management, etc.

Readers will find detailed recommendations for education and practice in the journal articles. JWMFP also features book reviews, and news and views on relevant issues.

All articles are blind-reviewed and publication decisions are the responsibility of the chief editor and editorial board members.

Key Journal Audiences

- Academics
- Practising Financial Planners
- Financial Services Providers
- Insurance Advisors
- Professionals in the Securities Industry
- Financial Planning Consultants
- Regulators
- Educators
- Students

Editorial Criteria

JWMFP publishes empirical and theoretical research topics related to personal and household financial decision making. JWMFP invites submission of both normative and empirical research on topics that include:

- Household Portfolio Choice
- Retirement Planning and Income Distribution
- Saving and Investment
- Wealth Creation and Distribution
- Individual Financial Decision Making
- Household Risk Management
- Life Cycle Consumption and Asset Allocation
- Investment Research Relevant to Individual Portfolios

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- Household Credit Use and Debt Management
- Takaful, Zakat and Islamic Banking
- Tax and Estate Planning
- Professional Financial Advice and Its Regulation
- Behavioural Factors Related to Financial Decisions
- Financial Education, Literacy and Capability
- Other Topics of Interest to Scholars and Practitioners in the Field of Personal and Family Finance

Review Process

Manuscripts are subject to double-blind peer review at the discretion of the Editor. Papers submitted to JWMFP must not be published or submitted for publication elsewhere until an editorial decision is rendered on the submission. Successful authors are required to submit final versions of their papers in Microsoft Word, and to assign copyright to the publisher of JWMFP.

The review process normally takes 1-2 weeks and MFPC will inform you if your submission will be printed. To ease the reviewing and editing of your submission, please follow the guidelines provided.

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Articles accepted for publication will be edited by the editorial board. Authors will only be required to ascertain the validity of facts in the proof. Two copies of the proof will be sent to the author. The author is required to sign his / her name on one of the proofs and return it to the editor after making sure that there are no factual errors. JWMFP is the rightful owner of all published articles.

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All persons writing and submitting articles or any other materials in any form (texts, illustrations, diagrams, statistics, etc.) for publication in the *Journal of Wealth Management & Financial Planning* and for storage in the MFPC publication database are required to adhere strictly to the stated guidelines.

Submission of Manuscripts

Papers submitted should not have been published in any other publication.

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Papers submitted should be typed:

Font Times New Roman, size 12, single space.

Manuscripts should be sent in both Microsoft Word and pdf format, and preferably via email.

Manuscripts that contain complex equations and / or diagrams should be submitted in print as well as electronic versions.

Three copies of the complete manuscript (one original and two copies) should be sent to:

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References

The Journal of Wealth Management and Financial Planning adopts The Publication Manual of the American Psychology Association (APA) (6th Ed.) in terms of style and format. The APA Manual is available in bookstores or from the APA online at www.apa.org/books. Summaries of the APA style and format guidelines also are available from a variety of Internet sources. The following guidelines may be helpful:

- **Reference citations within the manuscript should read as:**

Should Smith be cited again in this same paragraph, it would not be necessary to again cite the date (1999).

"This problem has been studied previously (e.g., Black *et al.*, 1998; Smith & James, 1999; Jones, Smith, & White, 2001)."

The use of the Black *et al.*, reference would indicate that the complete list of authors has appeared previously in the manuscript.

- **References should appear at the end of the article as follows:**

The list of references should appear at the end of the main text (after any appendices, but before tables and legends for figures). References should be one and a single space and listed in alphabetical order by author's name. Articles by the same author should be listed in descending order ranked by least current date and where applicable, alphabetized by the second author. Hanging indents should be used in the reference list.

Below are selected examples although the manual offers many examples for the different print and media publications.

Books

Silva, F. (1993). Psychometric foundations and behavioural assessment. Thousands Oaks, CA: Sage.

Chapters in a Book

Roszkowski, M.J., Snelbecker, G.E., & Leimberg, S.R. (1993). Risk tolerance and risk aversion. In S.R. Leimberg, M.J. Satinsky, R.T. Leclair, & R.J. Doyle, Jr. (Eds.), *The tools and techniques of financial planning* (4th ed., pp. 213-226). Cincinnati, OH: National Underwriter.

Journals Paginated by Issue

Archuletta, KL., Grable, J.E., & Britt, S.L. (2013) Financial and relationship satisfaction as a function of harsh start-up and shared goals and values. *Journal of Financial Counselling and Planning*, 24 (1), 3-14.

Print Articles Retrieved from an Internet Source

Garmaise, E. Long-run planning, short-term decisions: Taking the measure of the investor's evaluation period. *Journal of Financial Planning*, 19(7), 68-75. Retrieved August 23, 2007, from http://www.fpanet.org/journal/articles/2006_Issues/jfp0706-art8.cfm.

Equations / Mathematical Sentences

All symbols or mathematical sentences should follow the correct format. Mathematical equations have to be prepared using Math Type. A single mathematical symbol can be done by inserting symbol in Microsoft Word. Each mathematical sentence should begin at the first tab after skipping one line. If it is referred to in the texts, the equation should be numbered in the bracket and right aligned.

Use of (. . .) Symbols

For indication "and so forth", particularly in mathematical sentences, use the conventional standard three dots (. . .) only. For example: The equation is true for x = 1, 2, 3, ...

The fourth dot in this example which is of one space distance from the other three dots is the full stop.

Diagrams / Illustrations

Diagrams or illustrations should preferably be prepared in black and white only. If the diagram is reduced in size for publication purpose, it has to be clear and sharp so that it can be easily seen.

Guidelines: News & Views Section

Topic Areas

The News and Views section is a practitioner-focused section covering Malaysian, Asian and international economic, business and financial issues.

This section aims to deliver relevant, essential and current market information and views relevant to our readers. The focus of the articles should be to help financial planners better serve their clients and contribute to the common good of the Financial Planning industry.

"News" includes any financial-related news comprising any aspect of financial planning, wealth management, investment banking, and regulatory changes. It should be of general interest or a current issue affecting the marketplace.

"Views" includes an opinion piece on any aspect of Financial Planning detailing the practitioner's outlook on a particular issue.

Length

Articles for the news and views column should not exceed 3,000 words. A succinct introduction as a summary would help readers better understand the information contained in the article.

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Guidelines: Book Review Section

A book review for JWMFP should run one to three pages or approximately 500 to 1500 words at most (font Times New Roman, size 12, single space).

The heading should include the following bibliographic information about the book:

- Author
- Date of publication Title Edition (if any) Place of publication Publisher
- Number of pages Price (if applicable)

Example:

Robert T. Kiyosaki (2012). *Retire Young Retire Rich: How to get Rich Quickly and Stay Rich Forever!* NY, USA, Warner Books, 376 pages. US$9.73.

Write the review with two goals in mind: to report basic information about the book and more importantly, to evaluate the book. Do not abstract the book, but be sure to indicate the range and nature of its contents. The exact information will vary according to the kind of book, but in all cases it includes the book's purpose or main theme, and the way in which the author seeks to achieve the purpose or develop the theme.

Summarize your main conclusion briefly. Place the book in the perspective of related literature by comparing it with other books on a similar topic. Tie together any issues raised in the review, and end with a concise comment on the book. If you like, you can offer advice for potential readers.

Avoid quoting long passages from the book. Paraphrase when possible. Always give the page number of the quote in parenthesis.

Because JWMFP is an interdisciplinary publication, avoid overly technical language understandable to only a few specialists.

Avoid using references and footnotes. If a quotation from another work is absolutely necessary, incorporate the reference into the text. The form of the reference should be: (Francine D. Blau, Marianne A. Ferber & Anne E. Winkler, *The Economics of Women, Men and Work*, Boston, NY: Prentice Hall, 2010).

We reserve the right to edit reviews for style, conciseness, and consistency.

Submit the review in typewritten copy via e-mail attachment to mfpc@mfpc.org.my.

Declaration Form

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Declaration Statement

I/We hereby represent and warrant that the paper is original and that I am/We are the author(s) of the work, except possibly for the material such as text passages, figures and data that are clearly identified as to the original source, with permission notices from the copyright owner where required. I/We also represent that I/We have the power and authority to make this statement. I/We also declare that the material submitted for publication is exclusively for *Journal of Wealth Management & Financial Planning (JWMFP)* and has not been submitted for publication elsewhere.

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About MFPC

MFPC is an independent body set up with the noble objective of promoting nationwide development and enhancement of the financial planning profession. MFPC provides an evolving set of Best Practice Standards and Code of Ethics that must be adhered to by Registered Financial Planner (RFP) and Shariah RFP designees. This requirement is aimed at ensuring that the public will be served with the highest quality of financial planning services. MFPC was registered on 10 March 2004 under the Societies Act 1996.

MFPC is proud to have received numerous awards. In 2014, MFPC received Honourable Commendation in the UNESCO Wen Hui Award for Educational Innovation in recognition of its Financial Planning awareness programmes. In addition, in September 2015, MFPC was awarded the Best Islamic Finance Education Provider by the prestigious Global Islamic Financial Awards (GIFA). Subsequently, in June 2016, the World Education Congress Global Awards awarded MFPC the Best Educational Institute in Banking and Insurance. Further, our Shariah Registered Financial Planner was recognized as the Best Islamic Finance Qualification 2016 by the GIFA Awards Committee.

Registered Financial Planner (RFP)

The Registered Financial Planner (RFP) programme was launched by the former Governor of Bank Negara Malaysia, Y.Bhg. Tan Sri Dato' Sri Dr Zeti Akhtar Aziz in November 2002.

The RFP designation was approved by Bank Negara Malaysia (BNM) in March 2005 as the prerequisite qualification to apply for the Financial Adviser's Licence and Financial Adviser's Representative Licence. The Registered Financial Planner (RFP) designation was also approved by Securities Commission Malaysia (SC) in November 2005 as one of the qualifications to apply for the Investment Adviser's Licence under the Securities Industry Act 1983.The RFP designation has also been approved by the SC for the application of the Capital Markets Services Licence (CMSL) with the implementation of the Capital Markets and Services Act 2007.

The RFP serves as a mechanism for the MFPC to help fulfil the national objectives of making Malaysia a Centre of Educational Excellence. The RFP signifies the twin pillars of professionalism in financial planning – Professional Education and Practice Excellence.

Most importantly, the concept of the RFP is defined by Malaysians. As of September 2012, RFP designees are licensed Private Retirement Scheme (PRS) distributors/consultants. The Federation of Investment Managers Malaysia (FIMM) which regulates PRS consultants grants RFP designees automatic recognition as PRS consultants.

Affiliate RFP

The Affiliate RFP designation was launched by Y.B. Dato' Mustapa bin Mohamed, Minister of International Trade and Industry on 6 December 2007. It was introduced in recognition of the commitment of the students undertaking the RFP programme.

The Affiliate RFP designation is conferred on members who have passed Module 1: Fundamentals of Financial Planning and one other module of the RFP Programme. The Affiliate RFP serves as a measure to inject a new force of professionally qualified human capital into the industry. Affiliate RFP designees are potential Financial Adviser Representatives and Capital Markets Services Licence Representatives who will be given the appropriate guidance and opportunities to practise financial planning advisory services.

RFP Programme (7 Modules)

- Module 1 : Fundamentals of Financial Planning
- Module 2 : Risk Management & Insurance Planning
- Module 3 : Investment Planning
- Module 4 : Zakat & Tax Planning
- Module 5 : Estate Planning
- Module 6 : Retirement Planning
- Module 7 : Applications in Financial Planning

Shariah Registered Financial Planner (Shariah RFP)

In line with the national agenda to make Malaysia an Islamic Financial Centre and to promote advancement in Islamic transactions and businesses, MFPC developed the Shariah RFP Programme as a practical professional programme for practitioners to equip themselves with Takaful and Islamic financial planning principles and knowledge. Y.B. Dato' Seri Mohamed Khaled Bin Nordin, former Minister of Higher Education, launched the Shariah RFP Programme on 21 August 2008. Shariah RFP is recognised as a professional programme by both Bank Negara Malaysia and Securities Commission Malaysia.

Affiliate Shariah RFP

In response to local and international market demand and changes in the financial planning landscape, MFPC introduced the Affiliate Shariah RFP designation for members who have passed Module 1: Fundamentals of Shariah Financial Planning and one other module of the Shariah RFP Programme.

Affiliate Shariah RFP aims to meet the need for a pool of professionally qualified practitioners in the Shariah financial planning sector in Malaysia.

Shariah RFP Programme (7 Modules)

- Module 1 : Fundamentals of Shariah Financial Planning
- Module 2 : Risk & Takaful Planning
- Module 3 : Shariah Investment Planning
- Module 4 : Zakat & Tax Planning
- Module 5 : Shariah Estate Planning
- Module 6 : Retirement Planning
- Module 7 : Applications in Shariah Financial Planning

Financial Planning Awareness Programmes for Undergraduates, Practitioners and Public

MFPC continuously promotes awareness of the value and importance of financial planning and financial planning services, and works towards elevating the financial planning literacy of Malaysians. Towards this end, we regularly conduct financial planning awareness workshops and programmes for undergraduates, practitioners and the public nationwide. These include our Financial Planning Workshops (My Money and Me) and our Shariah Financial Planning Awareness Programmes. ■

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