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The Automated Teller Machines and Profitability of Commercial Banks in Rwanda

By Jean Bosco Harelimana

Abstract- A study on Automated teller machines (ATM) and profitability of commercial bank was conducted in this paper under a period from 2010 to 2016 with the aim of assessing the use of ATM and its contribution to the profitability in bank of Kigali. Quantitative and qualitative Methods of data collection were employed including questionaires in collecting primary data. The total population was 334,121 ATM users at BK where a sample of 200 respondents were used. The findings have shown that in Bank of Kigali still faces an obstacle on lack of financial education (information, training…) of the customers about how to use ATM cards in general. The evolution of the profitability shows that the profitability of the Bank of Kigali remained intact with, ROA, ROE and net margin of 4.0%, 22.9% and 9.9%, respectively in 2014. 4.0%, 22.2%, 11.1% in 2013. When the correlation of variables is < 0.5 the hypothesis is rejected when the correlation of variables is > 0.5, therefore the hypothesis confirmed that there is a significant relationship between automated teller machines and profitability of Bank of Kigali where the finding shows that the correlations between ATM and ROA, ROE and net margin are > 0.5. Lower cost, differentiation and accessibility are factors determinants level of satisfaction of ATM users at BK and competitive market, advertisement and increase ATM services are strategies to optimize the usage of ATM at BK. Also it has been confirmed that there is a significant relationship between ATM and profitability at the BK.

Keywords: *automated teller machines, profitability, commercial bank.*

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THEAUTOMATEDTELLERMACHINESANDPROFITABILITYOFCOMMERCIALBANKSINRWANDA

Strictly as per the compliance and regulations of:

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Jean Bosco HARELIMANA

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Keywords: automated teller machines, profitability, commercial bank.

I. Introduction

Queues have always been a big problem for banks and building societies. Rwanda community needed a quick service delivery by avoiding to spend time on queue in banking hall. Thus the automated teller machine was introduced to avoid those queue. The study is intending to help the bank user to understand how important the ATMs are in increasing and quick services delivery.

An ATM is a computerized telecommunication device that provides the customer of a financial institution with access to financial transactions in a public space without the need for a human cashier, clerk or bank teller (Cronin and Mary, 1997).

Queues are bad news for customers. Most of banking institutions in Rwanda have introduced the use of ATM cards but the problem of long queues of customers who need services is still appearing at the banking hall instead of using ATMs. In the banking industry, the adoption of technology has become the norms as way of securing a competitive edge in the electronic age. Both companies and researchers are becoming increasingly aware of the importance of technology on service delivery and in a business' overall success (Meuter et al.,2000). The evolution of payments in recent history has gone from cash to cheques, and then to payment cards such as credit cards and debit cards (Batiz, 2005). For-profit organizations are in operation to make money and are typically referred to us as businesses. An organization might employ various strategies for generating a profit. If a clothing business spends less money stocking merchandise than it receives selling merchandise, this is considered profitable.

In order to remain competitive, most companies invest a lot of money in modern ICT infrastructure. A number of studies have concluded that ICT has appreciable positive effects on banks productivity; banking hall teller transactions, bank patronage and bank service delivery (Balachandler et al, 2001; Yasuharu, 2003). The ATM is no exception to the numerous ICT products. The ATM services have gone through many stages. According to Abor (2004), the ATM was first introduced solely as a cash dispensing machine but it can now perform other banking services such as cash withdrawals, funds transfers from one account to the other and the payment of bills.

Normally, the objective of any financial institution is to provide rapid and effective services to its clients. In Rwanda, Commercial Banks introduced the system of ATMs as a means of payment to hasten increased services delivery to their clients. However, one wonders if the ATMs in Rwandan commercial banks have delivered to their expectations in facilitating rapid and effective services. It is under this background that the researcher is interested in this study.

The study will be focused on the following hypothesis:

- Lower cost, differentiation and accessibility are the satisfaction factors of ATM card users atthe Bank of Kigali.
- Competitive market, advertisement, and increase ATM services are strategies to optimize the usage of the ATM card to avoid queues at the Bank of Kigali.

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- There is a positive significant relationship between automated teller machines and profitability of Bank of Kigali.

II. Research Objectives

The purpose of this study is to assess the use of ATM and its contribution to the profitability in bank of Kigali, Rwanda. Specifically, the studyintend.

- ✓ To find out the level of satisfaction of ATM card users at the Bank of Kigali.
- ✓ To determine strategies to optimize the usage of the ATM card to avoid queues at the Bank of Kigali.\
- ✓ To identify a significant relationship between automated teller machines and profitability of Bank of Kigali.

III. Methodology

In this section tools and techniques and methods had been used to achieve research objectives of this study. Both primary and secondary data were collected then analyzed through SPSS.

a) Data

The study is descriptive which is employing quantitative methods of data collection and analysis. The population under this study consisted of 334,121 potential respondents who are holding the ATM cards at the Bank of Kigali. By applying Yamane formula, a sample of 200 ATM users from 334,121 has been chosen. The sample period undertaken for the objective of this study is for from 2010 to 2014.

b) Reseach Instruments

The study used both primary and secondary data to collect data. Questionnaires, interview and observations was made on 200 populations for the obtention of primary data. Various published text such as textbooks, web publications, magazines, journals and internet was consulted to obtain secondary data. Gathering data from written resources concerning research topic was made in order to understand the present situation.

c) Models and Techniques

To interpret the responses of the respondents, the following qualification of interpretation were used:

Meanranges	Interpretations
3.26-4.00	Very low
2.51-3.25	Low
1.76-2.50	Moderate
1.00-1.75	High

To explain the relationship between Effect of Automated teller machines on the profitability of commercial banks, the following formula showing the factors of independent variable has been used:

$$Y1 = \beta 0 + \beta 11NCA + \beta 21CSA + \beta 31ASA + \varepsilon$$

To explain the relationship between Automated teller machines on the profitability the following the following formula showing the factors of dependent variable has been used:

$$Y2 = \beta 0 + \beta 12LCS + \beta 22DP + \beta 32AATM + \varepsilon$$

Where β0 is the coefficient constant, ε is the error term β1, β2, β3 and β4 are the coefficients of variables and the variables of the study were Y1 is representing the independent variable, and Y2 is representing dependent variable (Y1 as ATM and Y2 as profitability).

IV. Literature Review

Bankley et al. (2006) cited in Musara and Fatoki (2010) opine that technology provides enhanced insight into handling old and new tasks. Technology has changed not only the way we do business but has also changed virtually all sphere of human life. Abor (2005) affirms that technology affects even the direction of an economy and its capacity for continued growth. Human beings consciously or unconsciously interact with products of technology in almost all their daily activities. These products have made the performance of activities which hitherto were carried our stressfully and unproductively much more convenient, faster, easier and more accurate.

According to Aldajani and Alfares (2009), Automated Teller Machines are among the most important service facilities in the banking industry. In the banking industry, information and communication technology is playing a major role in addressing operational challenges such as quicker exchange of data, information processing, record storage and retrieval and many more. The Automated Teller Machine (ATM) is one of the several electronic banking channels used in the banking industry.

In Rwanda, ATM as a banking instrument has enjoyed widespread acceptance and usage. In a survey conducted by Abor (2005), more than half of respondents revealed their preference for ATM as a conduit to conducting transactions. ATMs particularly when installed off-site serve to keep customers away from bank halls. Unfortunately most ATMs in Ghana are on-site operating very much as another department of the bank.

The issue of queue control in bank halls via ATM is essentially defeated because ultimately access to these facilities is limited to customers going to the bank. ATMs themselves have as a result become subjects of large service demands which directly translate to queues for services when these demands cannot be quickly satisfied. This situation becomes compounded and more evident during festive periods and month endings, around which time demand for cash is high.

(Abaenewe Z.C et al., 2013) in their research on Electronic banking and bank performance in Nigeria investigated the profitability performance of Nigerian banks following the full adoption of electronic banking system. The study became necessary as a result of increased penetration of electronic banking which has redefined the banking operations in Nigeria and around the world. Judgmental sampling method was adopted by utilizing data collected from four Nigerian banks. These four banks are the only banks in Nigeria that have consistently retained their brand names and remain quoted in the Nigerian Stock Exchange since 1997.

The study revealed that the adoption of electronic banking has positively and significantly improved the returns on equity (ROE) of Nigerian banks. On the other hand and on the contrary, it also revealed that e-banking has not significantly improved the returns on assets (ROA) of Nigerian banks. The findings of this study have motivated new recommendations for bank customers, bank management and shareholders with regard to electronic banking adoption for banking operations.

LukwiyaBenard Osteen (2011) in his research conducted in Uganda on the effect of automated teller machine use on customer satisfaction in banking found that the respondents rated the services offered by an ATM to be effective with withdrawal as the main service offered by ATM, followed by checking of balances, while the statement/mini statement of account came third, and Cash or cheque deposit came last. The finding further depicts that more than half of the respondents were satisfied by the services offered by the ATM. This study thus shed light on the awareness of the ATM services to nature evident results in customer satisfaction in society and as a view point for banking industry by showing how quality services offered by ATM service points are essential and its relationship to customer satisfaction.

Omari, Richard KwakuBamfo (2012) in his research onAssessment of the use of Automated Teller Machine (A.T.M) of Barclays Bank Ghana Limited AkimOda Branch concluded that majority of ATM subscribers have a good knowledge on the services offered by the branch ATM. The motivating factors for using the branch ATM services are privacy in carrying out banking transactions, time saving element and the flexibility in use. The demotivating factors that prevented respondents from using the branch ATM are high charges, technical failures and unfavorable daily withdrawal.

During this study, the researcher could not find the study carried on ATM cards and profitability in Rwandan banking industry. However, by observation, many banks in Rwanda have introduced the use of ATMs and that is the main reason which pushed the researcher to choose this topic to find out whether customers are satisfied with ATMs and identifying the contribution of ATMs to the profitability of commercial banks.

V. Findings and Results

The aims of this section is to analyzing; presenting and interpreting the data collected through primary and secondary data sources administered to automated teller machines on profitability of Bank of Kigali.

The findings show that male is 55% of total number of respondents and 45% of total number of respondents which shows gender balance in this paper. From findings, 10% of total number of respondents have below 20years, 22% of total number of respondents have between 21-28 years, 36% have between 29-36 years, 16% of total number of respondents are between 37-44 years and 16% have 45 years and above. The table 3 shows that 15% of total number of respondents has primary school, 52% of total number of respondents has secondary school, and 33% of total number of respondents has university.

The findings show that the respondents are in all categories.The gender distribution of the respondent reveals that majority of the respondents were male that is to say 55(55%) and minority respondent were females 45(45%). these two figures therefore justify almost gender balance in this study. The age distribution of respondents is as follows; 10% of total number of respondents have below 20years, 22% of total number of respondents have between 21-28 years, 36% have between 29-36 years, 16% of total number of respondents are between 37-44 years and 16% have 45 years and above. It can therefore be deduced that through all age categories were represented the youth respondents almost monopolized the study. The findings indicate that 15% of total number of respondents have primary school, 52% of total number of respondents have secondary school, and 33% of total number of respondents have university.

As shown by the reults, 100% of total number of respondents agreed that they hold an account in Bank of Kigali which shows that all respondents have accounts in Bank of Kigali. The findings show that 32% of total number of respondents agreed that they have been educated on utilization of ATM cards and 68% of total number of respondents agreed that they have never been educated on utilization of ATM cards which shows that a big number of respondents have never gotten any training on utilization of ATM card.

The findings shows that 84% of total number of respondents agreed that they have gotten a positive influence of ATM on service delivery, and 16% of total number of respondents agreed that there is no a positive influence of ATM on service delivery which shows that ATM card has influence on BK service delivery. From results, 76% of total number of

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respondents agreed that they use to go to the queue before accessing the ATM bank services, and 24% of total number of respondent agreed that they didn't use to go to the queue before accessing the ATM bank service, means that the ATM card influenced the reduction the queue.

The findings in terms of lower cost shows that 10% of total number of respondents agreed that they are in high level of satisfaction, 36% of total number of respondents agreed that they are in middle level of satisfaction, 25% of total number of respondents are neutral, and 29% agreed that they are in low level of satisfaction, and the mean range interpretation shows that the level of satisfaction is low. The findings in terms of differentiation shows that 40% of total number of respondents agreed that they are in high level of satisfaction, 32% of total number of respondents agreed that they are in middle level of satisfaction, 18% of total number of respondents are neutral, and 10% agreed that they are in low level of satisfaction, and the mean range interpretation shows that the level of satisfaction is moderate. From the same table in terms of accessibility shows again that 25% of total number of respondents agreed that they are in high level of satisfaction, 22% of total number of respondents agreed that they are in middle level of satisfaction, 34% of total number of respondents are neutral, and 19% agreed that they are in low level of satisfaction, and the mean range interpretation shows that the level of satisfaction is low. The total mean range is moderate which needs to be improved.

Results show that the mean of overall price related differential is 1.134, coefficient of dispersion is 0.258 and overall of coefficient of variation and median centered is 34.7% which shows that the level of satisfaction of respondents of ATM card is low and it needs to be improved. The results show that level of satisfaction is low with mean range of 2.6370, standard deviation of 0.988 and mean square of -913 which shows that the level of satisfaction of respondents is low and needs to be improved.

Results show that the overall price related differential is 0.992, the coefficient of dispersion is 0.055 and coefficient of variation and median centered is 15.9 %= 16% which shows that level of strategies to optimize the usage of the ATM card to avoid queues at BK is low.

The results about the strategies to optimize the usage of ATM card to avoid queues at BK shows that the competitive market is has mean range of 1,9726 which is moderate, advertisement has mean range of 1,9041 which is moderate and increase ATM services has mean range of ,6712 which is high. The table 15 shows that the profitability of the Bank of Kigali remained intact with, ROA, ROE and net margin of 4.0%, 22.9% and 9.9%, respectively in 2014. 4.0%, 22.2%, 11.1% in 2013, etc….

Results show that high level of lower cost strategy is 45% of total number of respondents, middle level of lower cost strategy is 32% of total number of respondents, and low level of lower cost strategy is 23% of total number of respondents, which shows that Bank of Kigali needs to do more reduction of ATM charges to make all customers to afford usage of ATM cards.

Findings show that high level of differentiation is 36% of total number of respondents, middle level is 35% of total number of respondents, and low level is 29% of total number of respondents which shows that Bank of Kigali needs more innovation.

Results show that high level of accessibility is 42% of total number respondents, middle level of accessibility is 32% of total number of respondents and low level of accessibility is 26% of total number of respondents. Bank of Kigali needs more ATM branches.

Results show that mean range of lower cost strategy is 1.7534 which is high, mean range of differentiation is 1.7055 which is high, and mean range of accessibility is 1.7123. The findings shows that total mean of profitability is high with 1.1392 and it always need to be improved for sustainability of commercial bank.

Results show that in Bank of Kigali Board, Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 1, about ATM cards have a positive contribution in increasing the interest income is 0.893, and about ATM cards open new potential of income generation and help in reducing operating expenses in BK is 0.838. The findings show that in Bank of Kigali staffs Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 0.893, about ATM cards have a positive contribution in increasing the interest income is 1, and about ATM cards have a positive contribution in increasing the interest income is 0.748, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 0.838, about ATM cards have a positive contribution in increasing the interest income is 0.748, and about ATM cards open new potential of income generation and help in reducing operating expenses in BK 1. When the correlation of variables is < 0.5 the hypothesis is rejected when the correlation of variables is > 0.5, therefore the hypothesis confirmed that there is a significant relationship between Automated teller machines and profitability of Bank of Kigali.

The findings show that in Bank of Kigali Board, Pearson correlation about ATM cards increase the net margin by its positive net income is 1, about the payback period in ATM cards does not exceed 3 years is 0.903, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 0.919. The table shows that in Bank of Kigali staffs

Pearson correlation about ATM cards increase the net margin by its positive net income is 0.903, about the payback period in ATM cards does not exceed 3 years is 1, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 0.829, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards increase the net margin by its positive net income is 0.919, about the payback period in ATM cards does not exceed 3 years is 0.829, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 1. When the correlation of variables is < 0.5 the hypothesis is rejected when the correlation of variables is > 0.5, therefore the hypothesis confirmed that there is a significant relationship between automated teller machines and profitability of Bank of Kigali.

The findings show that in Bank of Kigali Board, Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 1, ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 0.660, and about ATM cards contribute positively to the operating profit margin by its specific features is 0.543. The table shows that in Bank of Kigali staffs Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 0.660, ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 1, and about ATM cards contribute positively to the operating profit margin by its specific features is 0.824, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 0.543, about ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 0.824, and about ATM cards contribute positively to the operating profit margin by its specific features is 1. When the correlation of variables is < 0.5 the hypothesis is rejected when the correlation of variables is > 0.5, therefore the hypothesis confirmed that there is a significant relationship between automated teller machines and profitability of Bank of Kigali.

a) Profile of Respondents

Due to the first objective of this study, the results on this objective indicate that, the gender distribution of the respondent reveals that majority of the respondents were male that is to say 55% and females of 45%. These two figures therefore justify almost gender balance in this study.

The age distribution of respondents is as follows; 10% below 20, 22% (21-28), 36 % (29-36), 16 %(37-44), 16% 45 above. It can therefore be deduced that through all age categories were represented the youth respondents almost monopolized the study. The table indicates that 15% of respondents who has primary school, 52% of the respondents who has secondary and 33% who has university.

b) Knowledge of respondents on ATM services

The findings shows that the majority of respondents with 84% of total number of respondents agreed that they hold an account in Bank of Kigali, majority of respondents with 58% of total number of respondents agree that they possess an ATM cards, the majority of respondents with 68% of total number of respondents agreed that they have never been educated on utilization of ATM cards, the majority of respondents with 76% of total number of respondents agreed that they use to go to the queue before accessing the ATM bank services.

c) The level of satisfaction of ATM card users at the Bank of Kigali

The findings shows that the majority of respondents with 36% of total number of respondents agreed that they are in high level of satisfaction of ATM card services, the majority of respondents with 40% of total number of respondents strongly agreed that they are in middle level of satisfaction, the majority of respondents with 34% of total number of respondents disagreed that they are in low level of satisfaction, and total mean interpretation is moderate. This shows that the majority of respondents are satisfied with ATM card services.

d) Strategies to optimize the usage of the ATM card to avoid queues at the Bank of Kigali

The findings shows that with 37% of total number of respondents strongly agreed that the competitive market strategy is a strategy to optimize the usage of the ATM card to avoid queues, the majority respondents with 38% of total number of respondents strongly agreed that advertisement strategy is a strategy to optimize the usage of the ATM card to avoid queues, the majority of respondents with 52% of total number of respondents strongly agreed that increase ATM services strategy is a strategy to optimize the usage of the ATM card to avoid queues, and total mean interpretation is moderate. This shows that competitive market, advertisement, and increase ATM services are the good strategies to optimize the usage of the ATM cards.

e) Relationship between Automated teller machines and the profitability

The results shows that in Bank of Kigali Board, Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 1, about ATM cards have a positive contribution in increasing the interest income is 0.893, and about ATM cards open new potential of income generation and help in reducing operating expenses in BK is 0.838. The table shows that in Bank of Kigali staffs Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 0.893, about ATM cards have a positive contribution in increasing the interest income is 1, and about ATM cards have a positive contribution in increasing the interest income is 0.748, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards have a positive contribution to the increase of commission fee income is 0.838, about ATM cards have a positive contribution in increasing the interest income is 0.748, and about ATM cards open new potential of income generation and help in reducing operating expenses in BK 1.

The findings shows that in Bank of Kigali Board, Pearson correlation about ATM cards increase the net margin by its positive net income is 1, about the payback period in ATM cards does not exceed 3 years is 0.903, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 0.919. The table shows that in Bank of Kigali staffs Pearson correlation about ATM cards increase the net margin by its positive net income is 0.903, about the payback period in ATM cards does not exceed 3 years is 1, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 0.829, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards increase the net margin by its positive net income is 0.919, about the payback period in ATM cards does not exceed 3 years is 0.829, and about ATM cards reduce the operational costs and thus contribute positively to the ROA of BK is 1.

Also the findings shows that in Bank of Kigali Board, Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 1, ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 0.660, and about ATM cards contribute positively to the operating profit margin by its specific features is 0.543. The table shows that in Bank of Kigali staffs Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 0.660, ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 1, and about ATM cards contribute positively to the operating profit margin by its specific features is 0.824, and it shows again that in Bank of Kigali customers Pearson correlation about ATM cards induce positively the fast turnover of the total assets of BK is 0.543, about ATM cards contribute positively to an increase of indebtedness of BK vis-a-vis their shareholders is 0.824, and about ATM cards contribute positively to the operating profit margin by its specific features is 1 When the correlation of variables is < 0.5 the hypothesis is rejected when the correlation of variables is > 0.5, therefore the hypothesis confirmed that there is a significant relationship between Automated teller machines and profitability of Bank of Kigali.

To conclude, we remind you that purpose of the study is to assess the effect of Automated teller machines on the profitability of commercial banks in Rwanda especially in Bank of Kigali. The findings shows that the majority of respondents hold the ATM card and small number of them got trainings in usage of them. Therefore Bank of Kigali needs to improve the level of trainings is giving to their customers. The finding shows that there is a positive influence of ATM on service delivery because the majority of responds agreed they use to go to the queue before they assess ATM cards. Therefore Bank of Kigali needs to improve their services in terms customers satisfaction. The finding shows that the level of satisfaction of ATM card users at the Bank of Kigali is moderate witch needs to be improved. The finding shows that the level ofstrategies to optimize the usage of the ATM card to avoid queues at the Bank of Kigali is moderate which needs also to be improved.

Based on findings and result, it is recommend:

- ✓ To the Government of Rwanda; to bould the financial education infrasture to the Rwandan population in order to be familiar with the new technologies like Automated teller machines to promote the financial services accessibility of getting money without queue which will contribute to the profitability of financial Institutions in Rwanda.
- ✓ To the local community; they should understand the effect of Automated teller machines in its true meaning. Local community should identify the need to respond to changing circumstances and increased understanding by adapting the new system of automated machines so that it will be more likely to achieve its intended impacts.

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DuPont Analysis of Return on Common Stockholder's Equity in Pharmaceutical Industry of Bangladesh

By Md. Nurul Kabir Biplob, Shah Alam & Md. Monzur Hossain

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Abstract- The paper is based on performance evaluation of pharmaceutical companies in Bangladesh through measuring Return on Common Stockholder's Equity (ROCE) by using Du Pont analysis. It means to evaluate how well a company performs. The main purpose is achieved by using five ways Du Pont decomposition. The main data is collected from the annual financial reports of Beximco, Square, Renata, GlaxoSmithKline, Far chemicals, Beacon, ACI, IBNSINA, ACI Formulations, Orion pharmaceutical companies from 2011 to 2015.Different financial ratios are evaluated such as Asset turnover ratio, EBIT margin, tax burden, interest burden, Equity multiplier/Financial leverage etc. and by comparing those results finally measure the best performance among those companies. The mathematical calculation was developed for Du Pont analysis among selected pharmaceutical companies from 2011-2015.It is most important method for measuring ROCE of companies. Du Pont analysis evaluates how well a company is operating and how profit is earned relative to sales, total assets etc. Overall analyses measure and declare the best one among selected pharmaceutical companies.

Keywords: *pharmaceutical companies, asset turnover ratio, DuPont Analysis, equity multiplier, EBIT.*

GJMBR-C Classification: *JEL Code: G10, G11, G23*

DUPONTANALYSISOFRETURNONCOMMONSTOCKHOLDERSEQUITYINPHARMACEUTICALINDUSTRYOFBANGLADESH

Strictly as per the compliance and regulations of:

DuPont Analysis of Return on Common Stockholder's Equity in Pharmaceutical Industry of Bangladesh

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Abstract- The paper is based on performance evaluation of pharmaceutical companies in Bangladesh through measuring Return on Common Stockholder's Equity (ROCE) by using Du Pont analysis. It means to evaluate how well a company performs. The main purpose is achieved by using five ways Du Pont decomposition. The main data is collected from the annual financial reports of Beximco, Square, Renata, GlaxoSmithKline, Far chemicals, Beacon, ACI, IBNSINA, ACI Formulations, Orion pharmaceutical companies from 2011 to 2015.Different financial ratios are evaluated such as Asset turnover ratio, EBIT margin, tax burden, interest burden, Equity multiplier/Financial leverage etc. and by comparing those results finally measure the best performance among those companies. The mathematical calculation was developed for Du Pont analysis among selected pharmaceutical companies from 2011-2015.It is most important method for measuring ROCE of companies. Du Pont analysis evaluates how well a company is operating and how profit is earned relative to sales, total assets etc. Overall analyses measure and declare the best one among selected pharmaceutical companies.

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I. Introduction

Performance evaluation of a company is usually related to how well a company can use its assets and how well a company can generate profit by utilizing its assets. Du Pont analysis is one of the important tools for performance evaluation of any company. For determining the financial position of a company and to know how well the company performs its activities as well as the profitability and asset utilizing capacity of the company Du Pont analysis plays an important role.

Du Pont analysis easily measures return of equity related to the company for performance evaluation. It analyzes the company's profitability and asset utilization. It measures overall performance and efficiency of a company. This method used to analyze companies past financial performance and it also predict future trend of financial position.

Ten pharmaceutical companies in Bangladesh are selected for this purpose. The historical backgrounds of these companies are given below.

a) Background

Square Pharmaceuticals Ltd., the flagship company, is holding the strong leadership position in the pharmaceutical industry of Bangladesh since 1985 and is now on its way to becoming a high performance global player. From the inception in 1958, it has today burgeoned into one of the top line conglomerates in Bangladesh. SQUARE Pharmaceuticals Limited is the largest pharmaceutical company in Bangladesh and it has been continuously in the 1st position among all national and multinational companies since 1985. It was established in 1958, converted into a public limited company in 1991 and listed with stock exchanges in 1995. The turnover of Square Pharma was Taka 30.28 Billion (US$ 385.22 million) with about 18.64% market share having a growth rate of about 25.36% (April 2014–March 2015). (As cited at http://www.squarepharma.com.bd/about-us.php)

Beximco Pharmaceuticals Ltd (Beximco Pharma) is a leading manufacturer and exporter of medicines in Bangladesh. Incorporated in the late 70s, Beximco Pharma began as a distributor, importing products from global MNCs like Bayer, Germany and Upjohn, USA and selling them in the local market, which were later manufactured and distributed under licensing arrangement. Since then, the journey continued, and today, Beximco Pharma is one of the largest exporters of medicines in Bangladesh, winning National Export Trophy (Gold) a record five times. The company continues to adhere to the global standards and its manufacturing facilities have been already certified by the regulatory authorities of USA, Europe, Australia, Canada, Latin America and South Africa. Over the last three decades Beximco Pharma has grown from strength to strength but the simple principle on which it was founded remains the same: producing high quality generics and making them affordable. Ensuring access to quality medicines is the powerful aspiration that motivates more than 3,000 employees of the company, and each of them is guided by the same moral and

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social responsibilities the company values most. (As cited at http://www.beximcopharma.com/about.html)

ACI was established as the subsidiary of Imperial Chemical Industries (ICI) in the then East Pakistan in 1968. After independence the company has been incorporated in Bangladesh on the 24th of January 1973 as ICI Bangladesh Manufacturers Limited and also as Public Limited Company. This Company also obtained listing with Dhaka Stock Exchange on 28 December, 1976 and its first trading of shares took place on 9 March, 1994. Later on 5 May, 1992, ICI plc divested 70% of its shareholding to local management. Subsequently the company was registered in the name of Advanced Chemical Industries Limited. Listing with Chittagong Stock Exchange was made on 22 October 1995.Advanced Chemical Industries (ACI) Limited is one of the leading conglomerates in Bangladesh, with a multinational heritage. The company has diversified into four major Strategic Business Units. (As cited athttp://www.aci-bd.com/corporate.php)

Renata Limited (formerly Pfizer Limited) is one of the leading and fastest growing pharmaceutical and animal health product companies in Bangladesh. The company started its operations in 1972 as Pfizer (Bangladesh) Limited. In 1993, Pfizer transferred the ownership of its Bangladesh operations to local shareholders and the name of the company was changed to Renata Limited. The core businesses of Renata Limited are human pharmaceuticals and animal health products. In Bangladesh it is the 4th largest pharmaceutical company and the market leader in animal health products. In addition, Renata products are exported to Afghanistan, Belize, Cambodia, Ethiopia, Guyana, Honduras, Hong Kong, Kenya, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, United Kingdom, and Vietnam. The Company is listed on the Dhaka Stock Exchange with market capitalization of approximately Taka 50 billion. The Company has eight manufacturing facilities spread over three manufacturing sites. In addition Renata Oncology Limited has two manufacturing facilities. Distribution of products is carried out by 19 depots across the country. Renata employs 4,334 people. (As cited at http://renata-ltd.com/about-us/)

GlaxoSmithKline - one of the world's leading research-based pharmaceutical and healthcare companies of Bangladesh- is committed to improving the quality of human life by enabling people to do more, feel better and live longer. GlaxoSmithKline plc (GSK), incorporated on December 6, 1999, is a healthcare company. The Company is engaged in the creation and discovery, development, manufacture and marketing of pharmaceutical products, including vaccines, over-the-counter (OTC) medicines and health-related consumer products. GSK's principal pharmaceutical products include medicines in various therapeutic areas, such as respiratory, anti-virals, central nervous system, cardiovascular and urogenital, metabolic, anti-bacterials, dermatology, rare diseases, immuno-inflammation, vaccines and human immunodeficiency virus (HIV). The Company's segments include Pharmaceuticals, Pharmaceuticals R&D, Vaccines and Consumer Healthcare. (As cited at http://www.gsk.com/en-gb/contact-us/worldwide/bangladesh/)

The IBN SINA Pharmaceutical Industry Ltd. (IPI) is leading pharmaceutical company in Bangladesh. The company was founded in the year 1983. The manufacturing facilities located at Gazipur, 56 Kilometer away from the center of the capital city Dhaka, in a campus of about 15 acres of land. The manufacturing plant has been established with modern state of the art technology and equipped with high standard machineries for the production and quality checking of various dosage form of several therapeutic classes. (As cited at http://bd.kompass.com/c/ibn-sina-pharmaceutical-industry-ltd/bd00199/)

ACI formulation Limited (ACI FL) is a subsidiary of ACI limited, located at Gazipur in the out skirt of Dhaka. ACI FL manufactures majority of the products of ACI Strategic Business Limited except for the Pharmaceutical Division. The factory is equipped with the state of the art facilities for product formulations and process innovation. These include modern computerized equipment like HPLC and GLC. The product range manufactured at ACI FL include Crop Protection Chemicals like Insecticides, herbicides and fungicides in granular, powder and liquid, mosquito pesticides in the forms of aerosols, vaporizers and coils house hold chemicals like toilet cleaners and hand wash. (As cited at https://www.aci-bd.com/subsidiaries.php)

Since 1983 FAR Chemical's headquarters, development labs and production facility have been located in Palm Bay, Florida. FAR Chemical produces pharmaceutical reagents and intermediates. A variety of organic catalysts are synthesized for polymer manufacturers. Cyanate ester pre-polymers are supplied to the structural composite industry. FAR Chemical furnishes the electronics market with materials used as strippers, etchants, polishing compounds and additives for high density data transmission wires. (As cited as https://www.linkedin.com/company/far-research-inc.-dba-far-chemical-inc.)

Orion Pharma a member of Orion Group was founded as a pharmaceutical manufacturing company in 1965. With the mission to serve the ailing humanity around the globe orion pharma started its operation nearly four decades ago, and after a great run of success the company today has proliferated out into one of the leading pharmaceutical companies in Bangladesh. It has already established itself to the doctor's community, other health care professionals, chemists and patients as a provider of quality medicines and health care services through 50 brands and 51 presentations of various formulations. With the mission to serve the ailing humanity around the globe, Orion Pharma has proliferated into one of the leading pharmaceutical companies in Bangladesh manufacturing and marketing general drugs. Orion Pharma manufactures and markets a wide array of dosage forms including tablet, capsule, syrup, suspension, injection, dry powder for syrup/suspension, cream/ointments in different therapeutic groups like anticancer, antibiotics, anti-diabetics, anxiolytics, diuretics, cardiovascular drugs etc. (As cited at http://www.orion-group.net/concern/19/40/orion-pharma-ltd)

Beacon Pharmaceuticals Limited is the number one oncology company and one of the leading and fastest growing pharmaceutical companies of Bangladesh. The Company started its operation in 2006. Now Beacon is one of the top oncology pharmaceutical companies of Bangladesh. Manufacturing plant of Beacon has the finest infrastructure & facilities developed and engineered by European consultants to conform world class standards like US FDA, UK MHRA, TGA Australia and WHO GMP. Beacon has dedicated facilities to manufacture lifesaving oncology, Biotech and Hi-Tech & conventional general products. The company manufactures more than 200 world class generic drugs and even successfully introduced a global first generic drug. After meeting the local demand, Beacon exports its medicines to many countries of Asia, Africa, Europe and Latin America. (As cited at https://www.beaconpharma.com.bd/)

b) Purpose and Research Questions

The purpose of this study is a performance evaluation of ten pharmaceutical companies in Bangladesh through measuring ROCE by Du Pont analysis. The study analyzes the financial conditions of selected ten pharmaceutical companies in Bangladesh.

c) Research Questions

- What is the condition of the company related to tax burden?
- What is the condition of the company related to interest burden?
- What is the condition of the company related to EBIT margin?
- What is the condition of the company related to asset turnover?
- What is the condition of the company related to equity multiplier/financial leverage?
- Which company has the best performance among the selected pharmaceutical companies?

d) Limitations of Study

There are some limitations of the Study. Du Pont analysis is used for performance evaluation of pharmaceutical companies. When conducting the research some problems have been faced. For evaluating performance have to choose a method that is appropriate. However data should be correct, otherwise calculation may be baffling. Sometimes the items to analyze could not find appropriately as a result there may have some lacking in comparing among those companies.

There are some drawbacks of Du Pont decomposition also. Such as-

1. The DuPont identity is an accounting identity. The model relies on accounting data, which can be altered by companies to hide short-term weaknesses (even though this is unethical).
2. DuPont decomposition does not include the cost of capital.
3. How much increase of debt will determine the negative or positive return to shareholders is not recognized by this disaggregation.

II. Literature Review

Gopinathan Thachappilly (2009), he states in this article about different types of financial ratios for measuring performance. It helps the investor to decide whether he should invest in the company or not. The article is used to evaluate performance of a company through different types of ratios such as performance ratio, liquidity ratio, profitability ratio etc.

Penman (2001), he states that increasing leverage can increase ROE of a company but if the discount rate is increased there will occur no change in the value of the equity.

Liesz (1999), he states that determining the reason of failure of small firms is troublesome. Du Pont analysis can be used in this regard to evaluate the performance of the company and also dictating the reason of failure. In this case asset turnover, profit margin, financial leverage etc. are considered. These factors show that poor planning and controlling are the reasons of failure.

Soliman (2007), he states that increase in asset turnover ratio indicates that the firm is generating revenue increasingly by utilizing its assets and this indicates the efficiency of the company.

Collins (2010), this article states the Du Pont model to calculate optimal debt of the company which helps to choose between equity or leverage structure of the company.

James Clausen (2009), this article states about evaluating profit performance of a company through profitability ratio analysis. The income statement and balance sheet are used to evaluate performance through ratio analysis. Income statement and balance sheet shows profitability and net financial condition of the company. This article shows how the profit is generating within the company and how the assets are

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utilized to generate revenue. He states that Income statement shows the profitability of the company and balance sheet shows the net value of the assets and liabilities.

Maria Zain (2008), this article states that the return on asset is an important indicator to dictate how well the assets are used to generate revenue. The higher return on asset indicates the company is utilizing its assets appropriately whereas the lower percentage indicates asset utilization of the company is not good enough to generate revenue. Return on asset is calculated by dividing the net profit by total assets. He also states that profit margin ratio which is derived by dividing the net profit by net sales. Profit margin ratio also called operating performance ratio.

Jo Nelgadde (2010), he states about asset management ratio. The accounts receivable and working capital figures are used to determine company's performance.

Lucia Jenkins (2009), he states that the fixed cost and variable cost are the important financial item to know the financial performance of the company. Fixed costs are those costs which are remain unchanged and are always same regardless of how much items are sold. On the other hand, variable costs are subject to change in terms of sales and other related factors. Examples of fixed costs include salary, rent, advertisement, depreciation, insurance etc. and examples of variable costs include direct labor, direct material, commission, shipping costs etc.

Herciuetal(2011), he states that it can be often found that the most profitable companies may not always be the most attractive company in the eye of an investor. The components of Du Pont model such as profit margin, asset turnover, equity multiplier etc. are used to realize the fact.

Boyd et al.(2007),this article tells that there is no significance between size of the asset and profitability of the company for dropping return of equity and the profitability, liquidity and solvency of a company can be managed.

Vintila, Gheoghe, Pocan and Anghel (12), this article states about the key items that directly or indirectly affect the performance and profitability of a company. Du Pont analysis is an important method to recognize profitability of a company.

CameliaBurja(2) states, profitability is the form of operating efficiency that includes economic and financial aspects of a company that helps to make appropriate decisions.

Kalluci (2011), he dictates that the volatility of profit margin and financial leverage can be the reason of changing ROE of a company. The increase of those components can make the ROE higher as well as the decrease of those components can be the reason of lower ROE of a company.

III. Methodology

The methodology chapter represents how the data should be collected, analyzed and used for the purpose of the thesis. It also describes about the Du Pont decomposition and the formula for measuring ROCE. Quantitative approach is used for the thesis as majority of data is collected from the quantitative approach.

a) *Data Collection*

The data of this paper is mainly collected from the annual financial reports of Beximco, Square, Renata, GlaxoSmithKline, Orion, Far chemicals, ACI, Beacon, ACI Formulations, IBNSINA pharmaceutical company from 2011 to 2015. When measuring the ratio analysis for any company, annual financial reports must be used. Two main financial statements of annual reports have been used for Du Pont analysis of pharmaceutical company such as; balance sheet and income statement.

b) *Data Analysis*

Du Pont analysis model is used in this regard for performance evaluation of pharmaceutical company. It indicates the different steps such as Identifying balance sheet and income statement and by using Du Pont analysis comparison among companies and declaring the best one among those companies.

First step, make a choice of annual financial report. The annual financial report presents a company's financial position, operating performance, capital structure, and cash flow for an accounting period. Annual reports of selected pharmaceutical companies from 2011 to 2015 are used for measuring ROE of a company.

Second step, balance sheet and income statement are identified from the annual financial report. Some data are used from balance sheet and income statement for analysis of different types of ratios such as asset turnover ratios, Equity margin, EBIT margin etc. Analysis of profitability includes income statement of those companies.

Third step, identification of suitable ratio for performance evaluation and the ratios include asset turnover ratio, profitability ratio, financial leverage ratio etc. These ratios are very important to know how well a company generates its assets, revenue, expenses and profit or loss etc.

Forth step, some figures are used from income statement and balance sheet of those companies for performing Du Pont analysis. Scientific calculator is used for determining the result.

Fifth step, Using the result of Du Pont analysis such as EBIT margin, asset turnover and profitability compare among selected pharmaceutical companies and identify why one company is better than other companies and also discuss why some companies are not in good position comparing with others.

Finally declaration of the best one among those pharmaceutical companies by using different kinds of ratios under Du Pont analysis and by knowing the result can easily compare of those companies.

c) The DuPont Ratio Decomposition

Du Pont analysis is a model that is used to assess the factors that affects a company's financial performance. Donaldson Brown is the first who thought about Du Pont analysis around the period of 1920s. First time it is applied for general motors.

Du Pont analysis is very important as it calculates ROE which is an important key ratio which indicates the rate at which owner's wealth is increasing.

There are two way of Du Pont decomposition that includes three way decomposition and five way decomposition. Three way decomposition covers the areas of net profit margin, asset turnover and financial leverage. The meaning of each of these components is described below.

d) Three-Step DuPont Model

The three-step DuPont model is calculated as follows:

ROE = Net profit margin × asset turnover × equity multiplier

Where:

Net profit margin = net income/sales; Asset turnover = sales/average total assets; and Equity multiplier or financial leverage = average total assets/average common stock equity.

The three-step Du Pont model captures management's effectiveness at generating profits (net profit margin), managing assets (asset turnover) and identifying an optimal amount of leverage (equity multiplier).

e) Five step Du Pont model

The three-step DuPont Model has some drawbacks. It provides us with insights that drives a company's return on equity. In three step Du Pont model a company can boost its ROE by improving its profitability, by using assets more efficiently, or by taking additional leverage. However, companies that boost ROE by taking additional leverage may eventually reach a point where the cost of debt will diminish profit margin and decrease asset turnover.

This "shortcoming" with the three-step model led to the development of an expanded, five-step model of Du Pont analysis, the extended model considers company's interest burden and also tax burden.

The extended five-step Du Pont decomposition breaks return on equity down into five components:

- Tax burden = net income/earnings before tax (EBT);
- Interest burden=Earnings before tax (EBT)/Earnings before interest and tax (EBIT);
- EBIT margin=Earnings before interest and tax (EBIT)/sales;
- Asset turnover=EBIT margin/average total assets; and
- Financial leverage ratio (equity multiplier) = average total assets/average common stock equity.

Multiplying all five ratios together gives return on equity.

IV. Results and Analysis

The average of five years results of five ways Du Pont analysis of ten selected pharmaceutical companies is summarized below:

Name of the Companies	Tax Burden	Interest Burden	EBIT Margin	Asset Turnover	Financial Leverage	ROCE
Square	0.75	1.07	0.21	0.89	1.26	0.19
Renata	0.73	0.82	0.26	0.78	1.90	0.23
GlaxoSmithKline	0.77	0.94	0.29	0.59	7.65	0.92
ACI	0.76	0.83	0.12	0.75	0.31	0.27
IBNSINA	0.76	0.98	0.05	1.98	1.70	0.13
ORION	0.83	1.05	0.27	1.00	2.38	0.56
ACI Formulations	0.74	0.74	0.11	0.77	1.74	0.08
Far chemicals	1.00	1.03	0.25	0.70	1.07	0.20
Beacon	0.69	0.25	0.23	0.30	1.6	0.019
Beximco	0.73	0.86	0.23	0.38	1.37	0.07

Square pharmaceutical has tax burden of 0.75 and interest burden of 1.07.Whereas it has EBIT margin of 0.21.The asset turnover ratio of this company is 0.89 and it has financial leverage of 1.26.The average ROCE of this company is 0.19.

Renata pharmaceutical has tax burden of 0.73 and interest burden of 0.82.Whereas it has EBIT margin of 0.26.The asset turnover ratio of this company is 0.78 and it has financial leverage of 1.90.The average ROCE of this company is 0.23.

GlaxoSmithKline has tax burden of 0.77 and interest burden of 0.94.Whereas it has EBIT margin of 0.29.The asset turnover ratio of this company is 0.59 and it has financial leverage of 7.65.The average ROCE of this company is 0.92.

ACI has tax burden of 0.76 and interest burden of 0.83.Whereas it has EBIT margin of 0.12.The asset turnover ratio of this company is 0.75 and it has financial leverage of 2.31.The average ROCE of this company is 0.27.

IBNSINA has tax burden of 0.76 and interest burden of 0.98.Whereas it has EBIT margin of 0.05.The asset turnover ratio of this company is 1.98 and it has financial leverage of 1.70.The average ROCE of this company is 0.13.

ORION has tax burden of 0.83 and interest burden of 1.05.Whereas it has EBIT margin of 0.27.The asset turnover ratio of this company is 1.00 and it has financial leverage of 2.38.The average ROCE of this company is 0.56.

ACI Formulations has tax burden of 0.74 and interest burden of 0.74.Whereas it has EBIT margin of 0.11.The asset turnover ratio of this company is 0.77 and it has financial leverage of 1.74.The average ROCE of this company is 0.08.

Far chemicals has tax burden of 1.00 and interest burden of 1.03.Whereas it has EBIT margin of 0.25.The asset turnover ratio of this company is 0.70 and it has financial leverage of 1.07.The average ROCE of this company is 0.20.

Beacon has tax burden of 0.69 and interest burden of 0.25.Whereas it has EBIT margin of 0.23.The asset turnover ratio of this company is 0.30 and it has financial leverage of 1.6.The average ROCE of this company is 0.019.

Beximco has tax burden of 0.73 and interest burden of 0.86.Whereas it has EBIT margin of 0.23.The asset turnover ratio of this company is 0.38 and it has financial leverage of 1.37.The average ROCE of this company is 0.07.

As ROCE, EBIT margin, Financial leverage of GlaxoSmithKline pharmaceutical company is good enough comparing with other pharmaceutical companies and its tax burden, interest burden and asset turnover are also comparatively good than other pharmaceutical companies then it can be evolved that GlaxoSmithKline pharmaceutical company has the best performance than the other pharmaceutical companies.

V. Conclusion

This paper is based on six main research questions. First of all, analyze the tax burden condition for ten companies. Tax burden ratio indicates the Beacon pharmaceutical company is better than other pharmaceutical companies as it has lowest tax burden. Secondly, analyze the interest burden condition of selected pharmaceutical companies. The Beacon Pharmaceutical Company is in better position in this case also as it has lowest interest burden compared that with other pharmaceutical companies. Thirdly, analyze the EBIT margin. The GlaxoSmithKline pharmaceutical Company is better in this case as it has highest EBIT margin comparing with other pharmaceutical companies. Fourthly, analyze the asset turnover ratio which indicates IBNSINA pharmaceutical company is in good condition than other pharmaceutical companies as it has highest asset turnover ratio. At Fifth stage, financial leverage/equity multiplier measure indicates that GlaxoSmithKline pharmaceutical company is in good position in this case as it has employed highest amount of leverage in investment of 7.65 which contributes to highest ROCE during the year 2011 -2015 than the other pharmaceutical companies. The GlaxoSmithKline pharmaceutical company has also some increasing measures and decreasing measures but decreasing point is moderately better than other Pharmaceutical Companies. So GlaxoSmithKline Pharmaceutical Company is moderately good than other companies as it has highest ROCE, highest EBIT margin and financial flexibility.

At the final representation, it can conclude that the GlaxoSmithKline Pharmaceutical Company has the average best performance considering its ROCE than the other Pharmaceutical Companies.

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Exploring the Prerequisites of Institutionalizing Crowd funding Process in Bangladesh as an Alternative Financing Option for the Start-ups

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Abstract- Nowadays, Crowdfunding (raising capital for a startup business through the Internet) is becoming a prominent platform as an alternative source of finance for the entrepreneurs. On this ground, three objectives are set here to meet. First, exploring the regulatory reformations needed to institutionalize crowdfunding in Bangladesh. Second, assessing stakeholder's (i.e., investors and entrepreneurs) bilateral technological readiness for crowdfunding process. Third, analyzing the determinants of their behavioral intention to participate in CF process. An in-depth interview with the experts is conducted to assess the regulatory reformations and reconciliations needed to institutionalize CF in Bangladesh. On the other hand, a structured questionnaire based survey on 250 respondents (investors and entrepreneurs) is conducted to meet the second and third objectives. Result based on descriptive statistical analysis shows significant differences between the investors and entrepreneurs regarding their technological readiness.

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GJMBR-C Classification: JEL Code: F65

EXPLORINGTHEPREREQUISITESOFINSTITUTIONALIZINGCROWDFUNDINGPROCESSINBANGLADESHASANALTERNATIVEFINANCINGOPTIONFORTHESTARTUPS

Strictly as per the compliance and regulations of:

Exploring the Prerequisites of Institutionalizing Crowd funding Process in Bangladesh as an Alternative Financing Option for the Start-ups

Md. Rakibul Hasan [α], Md. Shakil Ahmad [σ], Mohammad Saidur Rahman [ρ] & Mohammad Tariqul Islam [ω]

Abstract- Nowadays, Crowdfunding (raising capital for a startup business through the Internet) is becoming a prominent platform as an alternative source of finance for the entrepreneurs. On this ground, three objectives are set here to meet. First, exploring the regulatory reformations needed to institutionalize crowdfunding in Bangladesh. Second, assessing stakeholder's (i.e., investors and entrepreneurs) bilateral technological readiness for crowdfunding process. Third, analyzing the determinants of their behavioral intention to participate in CF process. An in-depth interview with the experts is conducted to assess the regulatory reformations and reconciliations needed to institutionalize CF in Bangladesh. On the other hand, a structured questionnaire based survey on 250 respondents (investors and entrepreneurs) is conducted to meet the second and third objectives. Result based on descriptive statistical analysis shows significant differences between the investors and entrepreneurs regarding their technological readiness. Structural Equation Modeling (SEM) is used to find out the determinants of stakeholder's behavioral intention to participate in CF, which results in technology awareness, perceived expectations, and costs, availability of resources, social psychology, and access to other finance options are the significant determinants.

Keywords: crowdfunding, readiness level, behavioral intention, alternative finance, entrepreneurs, bangladesh.

I. Introduction

New ideas and innovations foster the economy of a country as a boon. But owing to several factors, this economy becomes paralyzed in supporting new ideas and innovations. Therefore, for the lack of support from the participants of the economy, these ideas get squelched and lose their ability to boost the economy. The primary factor that hinders new ventures is the lack of financial support, whereas financial supporters have their reasons for their attitude towards new venture financing. On the other hand, the intensifying competition among the business houses and the survival possibility of the new ventures within this are snowballing the opportunity cost of startup financing. This overall process puts us in a paradox whereas economy itself is biting short its opportunity. On the backdrop of this scenario, the quest of the researchers of this article is to identify the alternative financing option for the entrepreneurs in Bangladesh, and here we find the solution of this paradox, which is familiar by the name of "Crowdfunding."Crowdfunding is the process of asking the public for donations that can subsidize the need for capital for the startups (Steinberg & DeMaria, 2012). Furthermore, this process is enabled by modern internet technology whereas potential investors are asked or requested by the entrepreneurs for financial assistance through the internet (Steinberg & DeMaria, 2012). "Crowdfunding involves an open call, essentially through the Internet, for the provision of financial resources either in the forms of donations (without rewards) or for something like monetary or non-monetary rewards and voting rights to support initiatives for specific purposes" (Belleflamme, Lambert, & Schwienbacher, Crowdfunding: Tapping the Right Crowd, 2010). The contributors may become appurtenant as they provide both financial support and valuable insights (Buysere, Gajda, Kleverlaan, & Marom, 2012). Moreover, they may not look for any direct or immediate return from the venture (Buysere, Gajda, Kleverlaan, & Marom, 2012). In developed countries, this source for financing venture capital has been proved successful. But in case of developing countries, the necessity for assessing the context and environment of institutionalizing crowdfunding platform (infoDev, 2013) is addressed on this research. Because, the economic environment of developing countries is different in terms of regulatory framework for financial institutions, technological awareness among stakeholders (i.e., entrepreneurs and investors), transparency and assurance of the financial settlements, etc.

The economy of Bangladesh is growing with GDP growth rate of 7.05%, whereas the inflation rate is only 5.53%, vis-à-vis (Ministry of Finance, 2016; The World Bank, 2016), which is phenomenal. However, the financial market is critical for financing any venture and lack of stability since the capital market crisis in 2010-11. Lack of investor's confidence and transparency, their

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gambling attitude, and regulatory flaws were some of the reasons behind the stock market crash on that period (Wahab & Faruq, 2012; Unnayan Onneshan, The Innovators, 2013). Despite the hard struggle of the concerned authorities, some of these problems are appeared to be persistent currently.

In this juxtaposed situation, it is worthy enough to assess the socio-economic environment of Bangladesh to know suitability and feasibility of crowdfunding. For addressing this issue three objectives or expected outcomes are set for this study. First, exploring the regulatory reformations needed to institutionalize crowdfunding in Bangladesh. Second, assessing stakeholder's (i.e., investors and entrepreneurs) bilateral technological readiness for crowdfunding process. Third, analyzing the determinants of their behavioral intention to participate in CF process.

II. Literature Review

Crowdsourcing is considered as the predecessor concept of crowdfunding, whereas crowdfunding only deals with the task of raising fund through internet (Ibrahim & Verliyantina, 2012; Brabham, 2008). In crowdsourcing, different things like ideas, opinions, resources, feedbacks, etc. are obtained from the public (Howe, 2006). At the same way, crowdfunding means collecting or raising money from the crowd in exchange of nothing (this process is known as the donation) or something (reward or return), while an internet-based community platform may work as a mediator (Nesta, 2014). Although this is the old concept started from the very beginning of humans, but now this process is based on modern technologies and new approaches. The crowdfunding process may consist of three parties based on three distinctive roles played by them on the CF process (Cunningham, 2012). These are: (a) entrepreneurs, (b) crowd-funder (a.k.a. sponsor, backer, investor), and (c) crowdfunding platform (a third party or mediator provides online platform, like as Kickstarter, Indiegogo, RocketHub, etc.).

The picture of crowdfunding may be enlightened from the story of the successful crowdfunding campaign ever happened in the history, where Kickstarter (a crowdfunding platform) has raised $10,000,000 (but the initial goal was to collect $100,000) for Eric Migicovsky (Current CEO of Pebble Technology) within six months. So, that is the capability of this platform (Scholz, 2015).

Based on the motivations of the investors crowdfunding can be categorized into four categories of (1) Donation, (2) Equity/Profit Sharing, (3) Pre-selling, and (4) Lending/Loan (infoDev, 2013). On the other hand, based on the crowdfunding platform (an intermediary institution) provider's intention and business type, there are several business models of CF.

a. Threshold Pledge Model: pledging to raise a promised amount by the CF platform, though only after reaching the target amount they can get their fees/charges from the fund seekers. Micro-lending Model: collecting fund from the crowd in small amount and returning the money to the crowd-lenders after the promised time.
b. Investment or Equity Model: offering equity-based CF option for the funders.
c. Holding Model: making a subsidiary company invested by each individual crowd-funders. The Club Model: providing community-based fund raising option (infoDev, 2013).

Several studies are available on crowdfunding, but very few have focused the context of Bangladesh. Only, Adhikary & Kutsuna (2015) have excavated the systematic problems of Bangladesh relating to the gaps in financing options for the startups and evaluated crowdfunding as an alternative solution. According to their argument, crowdfunding can fill up these gaps left by other financial institutions (e.g., banks, NBFIs, microcredits, etc.) without replacing the venture capitalists and business angels. At the same logical ground, Rubinton (2011) has compared crowdfunding with investment banking, whereas the investment can take the forms of donation.

However, this paper is the first comprehensive and rigorous study on crowdfunding and its feasibility in the context of Bangladesh. The focal points of other research initiatives conducted worldwide consist of different aspects of CF like the legal feasibility, technological specifications, entrepreneur's or funder's interest and behavioral dynamics, comparison of CF models, economic implications of CF, significance of campaign and communication networks, etc. The following section provides the snapshots of the literary works done in this discipline.

Regarding the structure of crowdfunding process in a developing country, Ibrahim & Verliyantina (2012) have proposed a model for Indonesia. They have used Web-based Platform and Social Networking Sites (i.e., Facebook, Twitter) as the center of the model. This model dictates that entrepreneurs and crowd-funders will use this Web Based Platform and Social Networking Sites for their respective purposes. Another inseparable part of crowdfunding mechanism is the information system because information system is the prime enabler of crowdfunding process. Shaping the user interfaces, platform, software and other hardware specifications as per the need of executing crowdsourcing campaign defines the level of success in a noticeable extent (Leimeister et al., 2009; Feller et al., 2012). These studies have addressed the technical specification and know-how of the participants of crowdfunding platform in Indonesia. But, the necessity to pre-assess the participant's readiness was not accommodated.

On the other hand, some of the researchers have studied on the aspects of policy maker's role in CF process and the regulatory obligations, those are deemed to be another critical element for any CF initiative (Zimmerman & Zeitz, 2002; Burkett, 2011). A research work conducted by Sancak (2016) in Turkey shows that the successful implementation of crowdfunding platform in a country depends on regulatory flexibility. But considering the context of Bangladesh, this is not the only issue is going to be addressed in this research work, because the introduction of CF requires much more attention and transformation of the status quo.

Turan (2015) has identified that in developed countries security market regulations are being rectified to incorporate the rules of the WEB 3.0 as a supporting tool of CF. His investigation yielded some recommendations for crowdfunding, such as increasing transparency concerning shareholders' rights, having third-party auditor to evaluate the projects, adopting a code of conduct for bringing professionalism in the industry. His recommendations were particularly important for profit-oriented crowdfunding efforts (Pitschner & Pitschner-Finn, 2014). Along with these, Hazen (2012) has analyzed laws and securities for protecting investor's interest in theUSA.

However, Steinberg & DeMaria (2012) believe that the success of crowdfunding is analogous to the psychological satisfaction and motivation of the stakeholders, where effective promotion can contribute on this aspect (Cholakova & Clarysse, 2015). From the empirical evidence, it is noticeable that the success of such models depends on the ways of promoting these. Jegeleviciute & Valenciene (2015) have meticulously portrayed that how developed countries are doing well in crowdfunding because of their promotional campaigns took place before launching crowdfunding. But the worrisome fact is, in developing countries like Bangladesh same approach may not work at the expected level because of the lack of awareness and consciousness among the people (Adhikary & Kutsuna, 2015).

Kraus et al. (2016) has adopted the theory of communication which was initially developed by Schulz von Thun (2000) and showed that how communication with the stakeholders plays a vital role as the success factor of crowdfunding. Though, these studies have merely focused on the communication and promotional aspects, but broader than other contemporary analyses.

Lukkarinen et al. (2016) find that pre-determined characteristics (i.e., the minimum amount of investment, campaign duration, financial provisions, etc.) of crowdfunding campaigns and the utilization of private/public networks (i.e., online and offline) for campaign. Artis (2015) has also stated same thing on "Social and Solidarity Finance" model. Similar kinds of models are also suggested in different studies, whereas the personal relationship between entrepreneurs and investors can be beneficial (Burtch, Ghose, & Wattal, 2011; Busenitz et al., 2003; Cardon, Sudek, & Mitteness, 2009; Cornelius, 2006; Dushnitsky, 2009; Gorman, 1989).On the other hand, Belleflamme et al., (2010)argue that personal benefit of the investors is considered while they are making investment decisions, so keeping this on mind entrepreneurs should shape their crowdfunding campaign.

Mollick (2014)has proposed that along with communication or promotional campaign, "project quality" (i.e., profitability, duration or sustainability of the project) and "geographic characteristics"(i.e., project objective, project area, target customers) of the project are also significant. Furthermore, Agarwal et al. (2015) show that how the geographic distance between fund-lenders and fund-recipients influences investment decisions of the funders. Both online and offline social interaction are emphasized here to makeover this discrepancy.

However, there are also some other studies concentrating on the behavioral traits and interests of both investors and entrepreneurs. Zvilichovsky et al. (2015) have proposed a crowdfunding platform and emphasized its reciprocity role of preserving the interests of both parties (entrepreneur and investor). Belleflamme et al., (2015) have argued from the crowdfunding platform provider's perspective. They have suggested two-sided market (recipient and funder) approach, whereas information asymmetry between both parties can ensure a win-win situation. Zhao et al. (2016) applied "Social Exchange Theory" to examine the factors behind the financing intention of the investors. They found that commitment of the entrepreneurs, perceived risk of investment, and trust factors had a significant impact on the financing intention of the investors. Ryu & Kim (2016) have found that type of investor's personality (e.g., openness, conscientiousness, agreeableness, extraversion, neuroticism) (Devraj, Easley, & Crant, 2008), demographic characteristics, project's profitability and other features can significantly affect investor's motivation to invest. Moreover, they have also showed that investors expect six different types of incentives like interest, playfulness, philanthropy, reward, relationship, and recognition. Based on this, investors are categorized into four ways like (i) angelic investor, (ii) reward-oriented investor, (iii) enthusiastic investor, and (iv) tasteful hermit. Apart from the sponsors, Gleasure (2015) has exposed a new insight relating to the behavioral complexity of the participants of a crowdfunding campaign. When other researchers are quite busy in unveiling the underlying factors affecting the behavioral intention of the investor, there Gleasure has identified the factors (i.e., opportunity cost, risk related to disclosure, failure or deterioration of expected outcomes of the projects) uplifting the resisting behavior of the entrepreneurs. Hernando (2016) has highlighted the loan-based crowdfunding, which can attract household savings for meeting-up the capital requirements of a crowdfunded project.

In a report of World Bank, some other aspects are mentioned essential for any crowdfunding framework. This is the only report recommending the necessity to assess the readiness or preparedness level of a country regarding four dimensions (i.e., technology, culture, capital, and regulation), those are essential pre-requisites of implementing CF process (infoDev, 2013).But, no research is conducted yet analyzing the probable acceptance of crowdfunding in Bangladesh. Before initializing crowdfunding platform, it isnecessary to know whether the peopleare ready to invovle with CF or not.That is the issue going to be investigated in this study.

III. Theoretical Framework & Hypotheses

Based on rigorous literature review, variations and insights are found related to the methodological aspects, objectives and the context of the study. The research objectives of this study are formulated by considering these outcomes and the socio-economic condition of Bangladesh. The objectives of this study are to analyze and asses (1) regulatory framework, (2) stakeholder's bilateral technological readiness, and (3) the factors as the determinants of their behavioral intention to participate in CF process. A theoretical framework is developed to represent the 3rd objective and the associated constructs of the study subjected to empirical analysis (See: Figure 1).

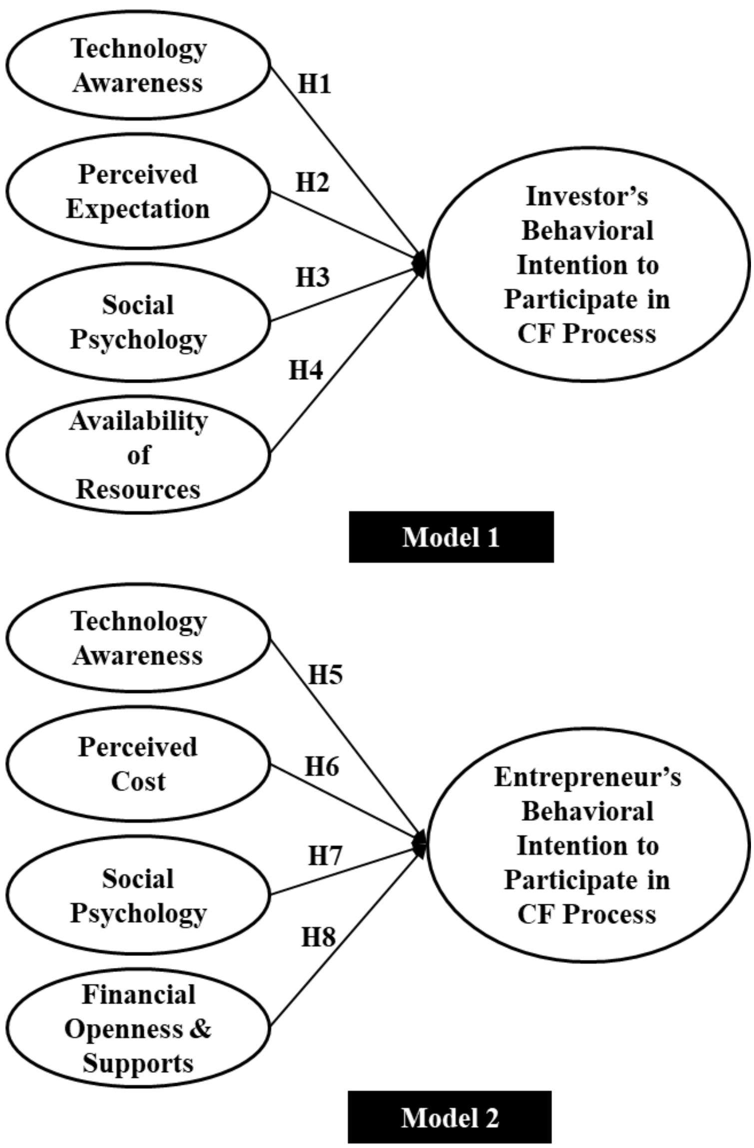

Figure 1: Theoretical Framework to Assess Behavioral Intention

Table 1: Hypotheses of the Model

H1:	"Technology Awareness" significantly affects "Investor's Behavioral Intention to Participate in CF Process."
H2:	"Perceived Expectation" significantly affects "Investor's Behavioral Intention to Participate in CF Process."
H3:	"Social Psychology" significantly affects "Investor's Behavioral Intention to Participate in CF Process."
H4:	"Availability of Resources" significantly affects "Investor's Behavioral Intention to Participate on CF Process."
H5:	"Technology Awareness" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."
H6:	"Perceived Cost" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."
H7:	"Social Psychology" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."
H8:	"Financial Openness & Supports" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."

Table 2: Concepts and Constructs of the Model

Availability of Resources	Availability of resources (i.e., the sufficiency of savings or capital) is the primary requirement needed to be possessed by a person for being an investor, and this may affect investor's intention to invest (Hernando, 2016; Cardon et al., 2009; Ryu & Kim, 2016).
Technological Awareness	The process of crowdfunding is information and communication technology aided (Zvilichovsky et al., 2015; Majchrzak & Malhotra, 2013), so it is necessary to assess the level of technical know-how of the entrepreneurs and the investors in Bangladesh. The parameters of assessing technological awareness include their access to the smart devices (i.e., smartphone, a personal computer), internet facilities, appearance in social media (e.g., Facebook, Twitter), usage of e-mail service, e-banking, mobile application based services, etc. (infoDev, 2013).
Perceived Expectation	Researchers show that vast majority of crowdfunding efforts provides the investors with promised return (Belleflamme et al., 2010; Burtch et al., 2011). Matching between the commitment of the entrepreneurs and the expectations of the investors from the crowdfunded projects is responsible for the success of the projects (Lambert & Schwienbacher, 2010), therefore, it becomes essential to assess investor's perceived expectations (infoDev, 2013).
Social Psychology	Social psychology denotes the attitude of the society towards the entrepreneurs, crowdfunding process, trustworthiness to others, partnership business, innovative ideas, profit/loss, risk, etc. (Sajjad et al., 2012; Ajzen, 1991; Bird, 1988; Hayton et al., 2002). Entrepreneur's and investor's perceptions about these socio-psychological issues represent their readiness level required for crowdfunding (Grinbatt & Keloharju, 2001; infoDev, 2013).
Perceived Cost	Perceived cost is related to issues like; (a) entrepreneur's opportunity cost related to the decision of accepting crowdfunded capital rather than not selecting other options, (b) the risk of the deterioration of expected project outcome, and (c) failure of CF campaign (Gleasure, 2015).
Financial Openness and Support	Entrepreneurs, what are they thinking and perceiving about the fairness of their opportunity to access any financing options provided by the government or any other financing authorities (i.e., Banks, NGOs, Leasing companies, etc.) in Bangladesh.

IV. Research Design and Methodology

a) Methodological Approach

From the methodological point of view, a mixed approach is applied here. In this study, based on a desk research and literature review the constructs and the variables are determined. On the other hand, causal and conclusive research techniques are applied to test the hypotheses. As it is known that methodological approach represents the plan of a research study containing the issue of how the objectives of a research initiative will be meet (Zikmund et al., 2010; Cooper & Schindler, 2008). Table 3 contains detail about the methodological approach of this study.

b) Instrumentations, Sampling, and Collection of Data

The target population of this study is the experts including government officials, bankers, and academicians, which is related to the first objective of this study of conducting in-depth interview to identify the regulatory reconciliations and reformations needed to initiate CF process in Bangladesh. On the other hand, regarding the second, third and fourth objectives, the target population are the investors and the entrepreneurs in Bangladesh. Non-probabilistic sampling techniques (i.e., judgment and snowball sampling techniques) are applied to select the sample units of experts, entrepreneurs, and investors. For conducting an in-depth interview, eighteen experts comprising of five government officials, six bankers, and seven academicians on the related discipline are selected and interviewed by using an open-ended and somewhat unstructured questionnaire (See: Table A1). Along with this, 268 respondents are surveyed based on a structured questionnaire (See: Table A2). After screening, 250 respondent's data (125 entrepreneurs and 125 investors/funders) are used for further analysis. The items of the structured questionnaire represent 31 variables used to measure the 8 readiness factors (See Figure 1 and Appendix: 2). Most of the variables are measured in a five-point Likert scale (1-Strongly agree, 2-Agree, 3-Neutral, 4-Disagree, and 5-Strongly disagree) and the few are measured in nominal scale generating categorical/binary (Yes/No) response patterns. In PLS-SEM analysis, the variables measured in Likert scale are only used. Data were collected by field survey conducted in Dhaka city, which was carried by 25 field enumerators, those were trained before data collection.

Table 3: Methodological Approach

	Objectives of the Study	Data Collection Techniques	Data Analysis Tools	Nature of Analysis
1	Exploring and identifying the regulatory compliance and reformations needed to institutionalize crowdfunding in Bangladesh.	In-depth Interview with the Experts	Descriptive or Desk Research	Qualitative
2	Assessing stakeholder's (i.e., investors and entrepreneurs) bilateral technological readiness.	Structured Questionnaire based Field Survey	Descriptive Statistical Tools	Quantitative
3	Analyzing the determinants of stakeholder's behavioral intention to participate in the crowdfunding process.	Structured Questionnaire based Field Survey	Partial Least Square-Structural Equation Modelling (PLS-SEM)	Quantitative

V. Findings, Interpretations, and Implications

Three issues are analyzed, interpreted, and addressed here. These are: (1) What are the regulatory compliance and reformations needed to institutionalize crowdfunding in Bangladesh based literature review and in-depth interview? (2) Do the entrepreneurs and investors have enough technological readinessto participate in crowdfunding? (3) What are the factors determining their behavioral intention to participate in a crowdfunded project?

a) Regulatory and Legal Feasibility of Crowdfunding in Bangladesh

Crowdfunding is not a new concept throughout the world, but recently it is brought under some specific rules and regulations to monitor the processes related to this. Likewise, on October 23, 2013, the Securities and Exchange Commission of USA implemented the "Jumpstart Our Business Startups" Act (a.k.a. the JOBS Act) for legally supporting the CF processes (kelleydrye.com, 2013). On November 16, 2015, they also approved the new regulations and permitted companies to offer and sell their securities through authorized crowdfunding platforms in reliance on the exemption under Section 4(a)(6) of the Securities Act of 1933 (Tate, 2015).

But in Bangladesh, there is no such legal framework for controlling and regulating crowdfunding process. In the backdrop of this fact, a few crowdfunding platforms are initiated here in Bangladesh till now. Some crowdfunded projects are implemented with the help of the platforms like Kickstarter, crowdfunder.co.uk, StartSomeGood.com, etc. "Project Aim at Sreepur Village," "Tripty Project: Ethically Made in Bangladesh," and "Positive Light" are some of the examples of crowd-funded projects ever happened in Bangladesh, those were non-profit oriented (kickstarter, 2016; whydev, 2012). A self-motivated entrepreneur Waiz Rahim has introduced the first local CF platform named as "project.com" in Bangladesh (Reaz, 2015). The functional cycle of project.com consists of four stages; (a) Creating project, (2) Sharing information, (3) Collecting fund, and (4) Doing more or others.

So, above examples suggest that crowdfunding has a future in Bangladesh and it becomes necessary to know how much we are ready to accept this. But the current scenario of CF in Bangladesh is something like a dog without a master. Based on the in-depth interview, it is anticipated that whenever CF is going to take place here in a broader way, but it will be messy without any legal and regulatory frame. So, the experts think that this is the right time to formulate customized rules and regulations for CF in Bangladesh which will ensure the maximum interest of entrepreneurs and also the safety of investors. On the other hand, as we know that the people here in Bangladesh have gone through some unfortunate financial fraudulent experience such as Destiny2000 limited, unipay2u, stock market crash, etc. in the recent past and these activities can be attributed to the deficiency and loopholes of the legal framework. So, expert's opinions are suggesting that having legal boundaries will prevent similar fraudulent event likely to arise from crowdfunding.

There are certain types of financial instruments available in Bangladesh those are like crowdfunding, mutual fund schemes, for instance. Crowdfunding is like this regarding the collection of the fund, amount of subscription, and underlying. But the usage of the fund is different from each other. Fund collection mechanisms and the concerned law of mutual fund depicted in Securities and Exchange Commission Rules of 2001 can be utilized in preparing a regulatory framework for CF. Along with this; we can also use Investors' Fund Protection Regulations of 1999 to keep them safe from being betrayed. Crowdfunding is new and tech-savvy than any other traditional financial instruments. To create a legal framework covering these aspects, we can also follow the newly approved Regulatory Framework of USA. Following points give a very brief idea about this law (kelleydrye.com, 2013):

- Eligible companies can raise the maximum amount of $12 million on a 12-month rolling basis.
- Investors will not need to meet any wealth thresholds, but they will have a limit on the amount of investment made in 12 months.
- Crowdfunded offerings will need to be conducted through a registered broker or a registered funding portal.
- Crowdfunding will be restricted to online-only platforms.
- Before crowdfunding offering the issuer must disclose all the facts of the projects and that substantial information should be audited by independent audit firms.
- After the successful offering of crowdfunding, the issuer will be required to submit annual reports to the SEC until it becomes a public limited company.

These basic rules can be implemented in any country given the infrastructural support. The regulatory authorities of Bangladesh such as the Bangladesh Bank, Securities and Exchange Commission, Registrar of Joint Stock Companies, Ministry of Finance, etc. should be coordinated. With their regulatory support, a legal framework can be created for the future crowdfunding initiative. It will not only create a safe and sound environment for the entrepreneurs and investors but also inspire them to go for such initiatives as they will have a fixed path to follow.

b) *Demographic Characteristics and Readiness of the Stakeholders*

i. *Demographic Features of the Respondents*

Demographic data(See: TableA3) of the respondents (investors and entrepreneurs) show that most of the entrepreneurs (total 83%) are belonging to the age groups of 21-30 and 31-40 when the investors are from 41-50 and 51-40 (total 65%). There is also a significant difference between investors and entrepreneurs regarding their education level and profession. 36% of the entrepreneurs are not involved with any other job, and 22% are having their own business. On the contrary, 45% investors are businessmen. The surprising part is the lack of gender diversity, but women entrepreneurs and investors should be encouraged and patronized to come forward to contribute to the socio-economic development and CF process in Bangladesh.

ii. *Bilateral Technological Readiness of the Respondents*

On the other hand, significant differences are observed (See: Dashboard 1) between the investors and entrepreneurs in accessing and using modern technologies and technology-aided services in Bangladesh. Such as, the usage of smartphone, personal computers, Internet, social media (e.g., Facebook), e-mail services, online/mobile banking, etc. As it is observed that 79% entrepreneurs have internet access, where 58% of the investors are not continuously connected to the Internet. It may cause a significant impact on the usage and acceptance of CF process by them.

However, Dashboard1contains the actual scenario related to the technological readiness level of the investors and entrepreneurs towards crowdfunding as a new initiative in Bangladesh. Bilateral technological readiness is measured by five indicators (See the observed variables 2, 4, 6, and 10 of the construct of "Technology Awareness" from Appendix A2), whereas the responses against each indicator were collected in a 5-point Likert scale. For the sake of simplicity, responses are grouped into three categories. These are: (1) Favorable to CF Process ("Strongly Agree" and "Agree" in the Likert scale), (2) Probable Favorableto CF Process ("Neutral" in the Likert scale), and (3) Unfavorable to CF Process ("Disagree" and "Strongly Disagree" in the Likert scale). It is obvious that, technologically, entrepreneurs are more prepared to accept crowdfunding in Bangladesh rather than the investors. Based on these facts, two suggestions can be

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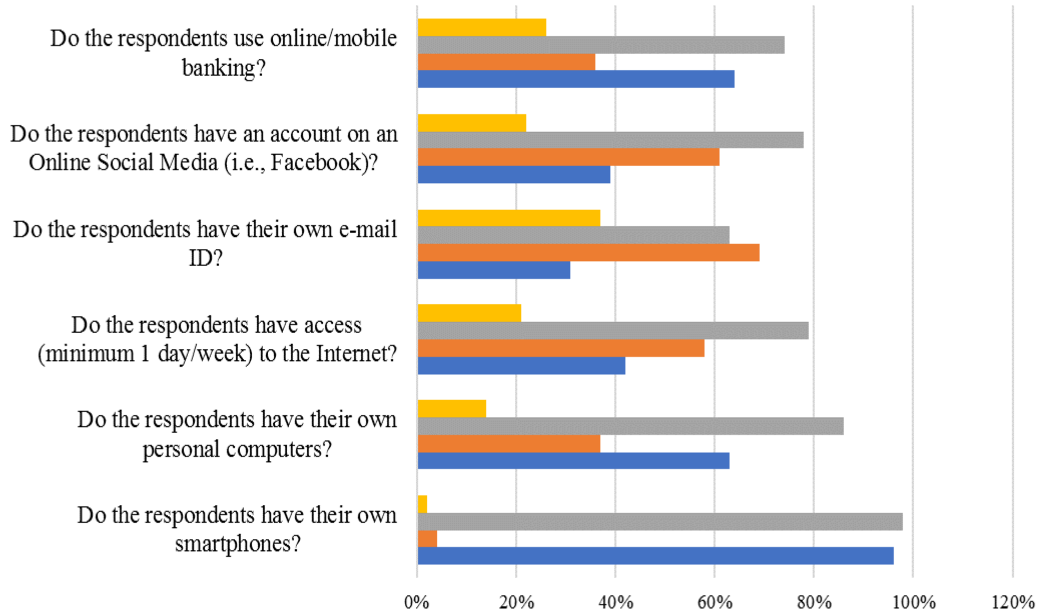
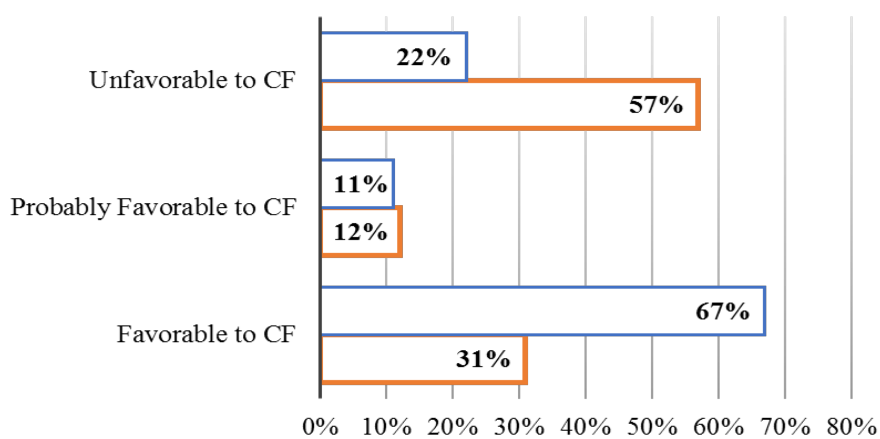
derived for the potential CF platform providers; (1) "Snatching the Opportunity" – those are in favor of CF can be capitalized to do business with them as an intermediary; (2) "Grooming-up them" – those are in neutral and unfavorable position can be motivated and trained up to transform them into favorable participants.

Access to Technology by the Stakeholders

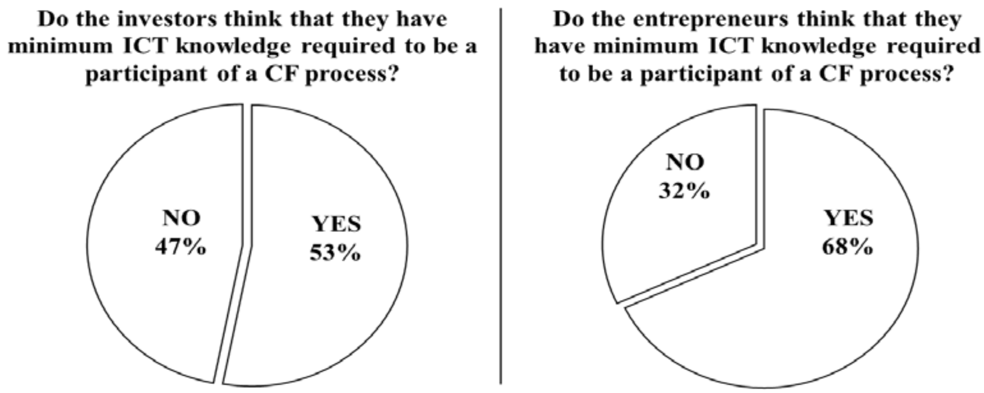


	Do the respondents have their own smartphones?	Do the respondents have their own personal computers?	Do the respondents have access (minimum 1 day/week) to the Internet?	Do the respondents have their own e-mail ID?	Do the respondents have an account on an Online Social Media (i.e., Facebook)?	Do the respondents use online/mobile banking?
Entrepreneurs (No)	2%	14%	21%	37%	22%	26%
Entrepreneurs (Yes)	98%	86%	79%	63%	78%	74%
Investors (No)	4%	37%	58%	69%	61%	36%
Investors (Yes)	96%	63%	42%	31%	39%	64%

Bilateral Technological Readiness of the Stakeholders



	Favorable to CF	Probably Favorable to CF	Unfavorable to CF
Entrepreneurs	67%	11%	22%
Investors	31%	12%	57%



Dashboard 1: Technological Readiness of the Investors and Entrepreneurs

c) Behavioral Intention of the Stakeholders

Figure 2 and 3contain the results of PLS-SEM analysis representing the statistically significant and insignificant factors determining the behavioral intention of investors and entrepreneurs to participate in CF process, respectively. Summary of the structural models of this analysis can be synthesized in the following table. The findings of this analysis bring a lot of insights about the potential business model of crowdfunding platform and prerequisite context of crowdfunding in Bangladesh. The findings of this study can be applied to realize – what are the factors should be considered and how much will it be successful if anyone goes for initiating crowdfunding in Bangladesh. These will help them to develop rigorous action plan associated with crowdfunding. Table 4 contains the threshold values used to compare with the estimated values depicted in figure 2 and 3.

Table 4: Notations, Parameters and Acceptable Values (Hair, Jr., Hult, Ringle, & Sarstedt, 2014)

li	Factor/Outer Loadings of the indicators to their respective constructs (More than 0.708 is considered as statistically significant)
IRi	IR (Indicator reliability) is the squared values of the loadings representing the amount of variance in the indicator variables explained by the corresponding constructs in a reflective measurement model (value more that 50% is significant)
ρc	Composite Reliability is calculated to assess the internal consistency of the measurement model (values from 0.70 to 0.90 are considered statistically significant)
α	Cronbach's Alpha is as much as like composite reliability used for the same purpose (values from 0.70 to 0.90 is acceptable)
AVE	AVE (Average Variance Extracted) is equal to the summations of Iris divided by the number of indicators (values from 0.70 to 0.90 is acceptable)
f2	f2 (Effect size) denotes the contribution of the exogenous constructs in the R2 value of the endogenous construct (value>0.35 represents strong effect)
Q2	It means the predictive relevance of the independent constructs over the dependent construct (value>0.35 represents strong effect)
FL= √AVE	FL (Fornell-Larcker Criterion) represents discriminant validity of the measurement model (FL value of a construct > correlation with any other constructs is acceptable)
VIF	VIF (Variance Inflation Factor) represents the degree of multicollinearity among the exogenous constructs (values < 5 denotes no multicollinearity)
β	Path Coefficients among the constructs (Acceptable if it is significant at 1%, 5%, or 10% level of significance)
t	Calculated value of t-statistic which is compared with the critical value of 2.52 (at 1%), 1.96 (at 5%), and 1.64 (at 10%)
R2	Coefficient of Determination denotes the degree of variance in the dependent construct explained by the independent constructs (value > 0.50 is acceptable)

Based on the Table 4, and Figure 2 and 3 following inference can be derived regarding the hypotheses of this study.

Table 5: Status of the Hypotheses of the Structural Models

H1:	"Technology Awareness" significantly affects "Investor's Behavioral Intention to Participate in CF Process."	Accepted
H2:	"Perceived Expectation" significantly affects "Investor's Behavioral Intention to Participate in CF Process."	Accepted
H3:	"Social Psychology" significantly affects "Investor's Behavioral Intention to Participate in CF Process."	Accepted
H4:	"Availability of Resources" significantly affects "Investor's Behavioral Intention to Participate on CF Process."	Accepted
H5:	"Technology Awareness" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."	Accepted
H6:	"Perceived Cost" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."	Accepted
H7:	"Social Psychology" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."	Not Accepted
H8:	"Financial Openness & Supports" significantly affects "Entrepreneur's Behavioral Intention to Participate in CF Process."	Accepted

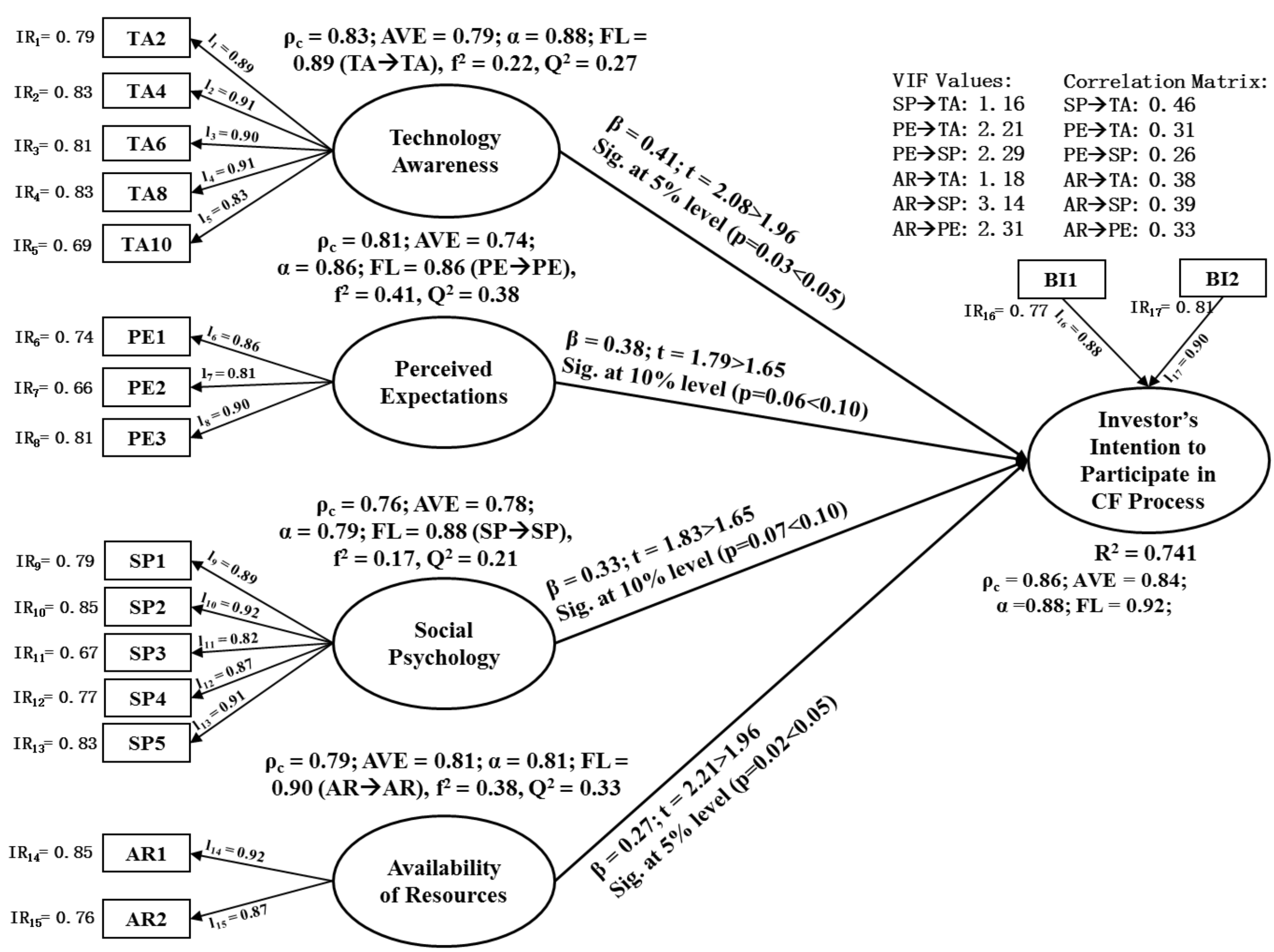


Figure 2: Measurement and Structural Model of PLS-SEM Analysis (Respondents: Investors)
(Values are generated by SmartPLS Software, and the figure is drawn by the authors)

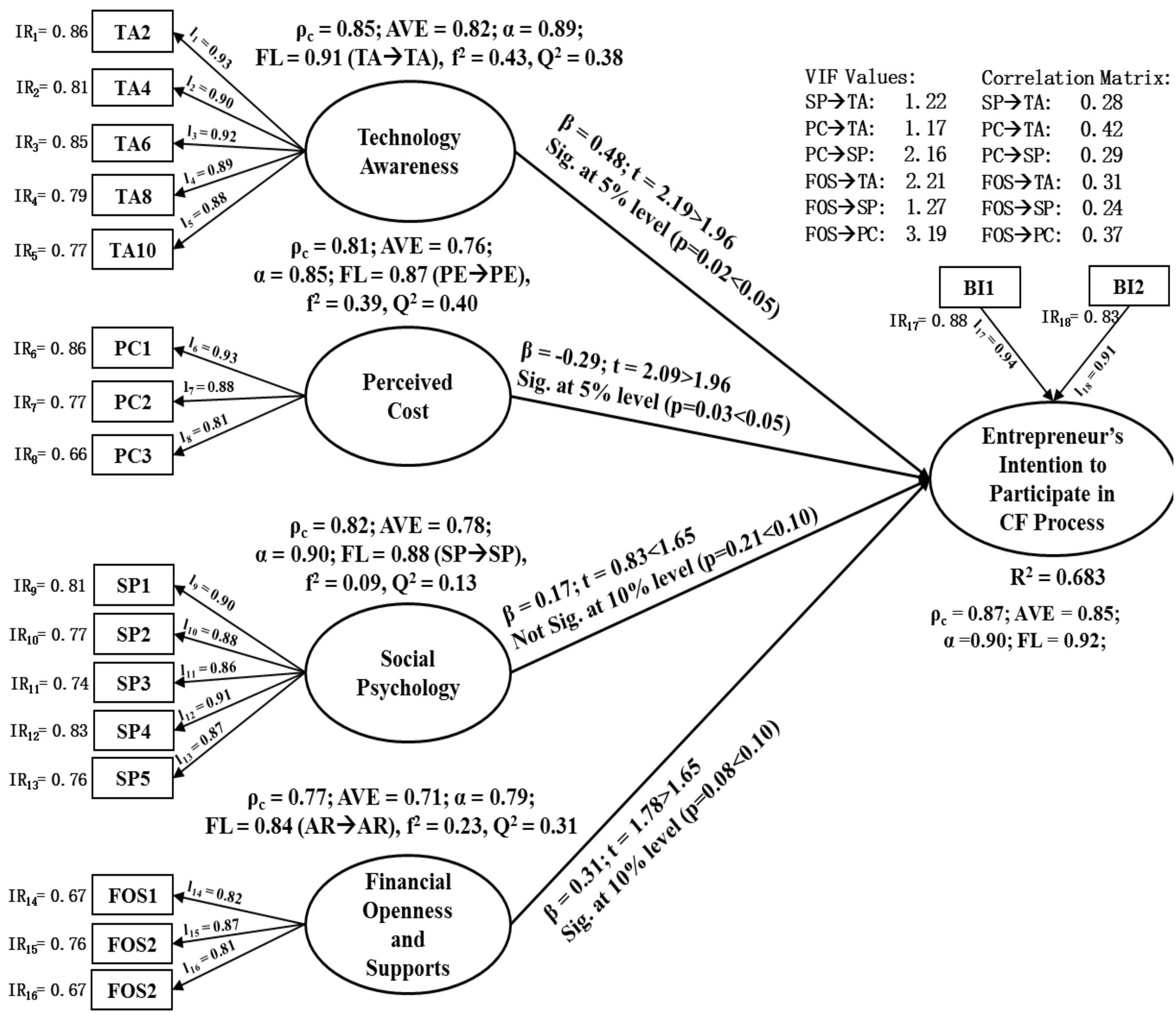


Figure 3: Measurement and Structural Model of PLS-SEM Analysis (Respondents: Entrepreneurs)
(Values are generated by SmartPLS Software, and the figure is drawn by the authors)

VI. Limitations

The primary limitation of this study is related to two aspects. One is the research area, and another is the demographic impact on the findings. This study is mainly conducted in Dhaka city due to the time and resource limitations; which may not be an ideal represent of the rural scenario. On the other hand, demographic characteristics of the respondents may have the mediating or moderating effect on the outcomes derived by PLS-SEM analysis.

VII. Conclusion

The findings of this study will be helpful enough for the policy makers, government, corporate bodies, CF platform initiators, investors, entrepreneurs, and NGOs. This study is carrying a clear and comprehensive picture of the status of the pre-requisite context of crowdfunding. The initiative of institutionalizing crowdfunding process in Bangladesh as an alternative source of long-term finance for the startups or new ventures may follow the findings of this study. Crowdfunding can be the most promising source of finance and may be a strong alternative to other financial intermediaries in Bangladesh. This study is conducted by realizing this fact and for fostering the pace of CF.

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Appendices

Table A1: Questionnaire Items of FGD (Related to the 1st Objective)

1	Is there any opportunity of Crowdfunding in Bangladesh? What do you think?
2	Will it be a potential financing method for the entrepreneurs in Bangladesh?
3	Is there enough regulatory flexibility in Bangladesh for institutionalizing CF?
4	Do we need to update or introduce any rules or regulation for CF in Bangladesh?
5	What are the regulatory obstacles you are expecting for CF in Bangladesh?
6	Does the social-economic condition of Bangladesh in favor of CF?
7	Will the current regulatory framework protect the investor's interest?
8	Does the current regulatory framework friendly to the entrepreneurs?
9	Are the entrepreneurs in Bangladesh appraised and assisted by the government policies?
10	Are the SMEs in Bangladesh going to be facilitated by this financing method?
11	Do you have any further suggestions about institutionalizing CF in Bangladesh?

Table A2: Questionnaire Items of Field Survey (Related to the 2nd& 3rd Objectives)

Questionnaire Items			Response Patterns
		Technology Awareness (Respondents: Both Investors and Entrepreneurs)	
1	TA1	Do you have a smartphone?	Yes/No
2	TA2	Having a smartphone is essential for me.	Strongly Agree-Disagree (5-point Likert scale)
3	TA3	Do you have a PC?	Yes/No
4	TA4	Having a PC is indispensable for me.	Strongly Agree-Disagree (5-point Likert scale)
5	TA5	Do you have access to Internet (minimum 1 day/week)?	Yes/No
6	TA6	Having internet connection is essential for my daily activities.	Strongly Agree-Disagree (5-point Likert scale)
7	TA7	Do you have a Facebook account or any other SNSs?	Yes/No
8	TA8	I think have a Facebook account is good for me.	Strongly Agree-Disagree (5-point Likert scale)
9	TA9	Do you have an e-mail ID?	Yes/No
10	TA10	I think e-mail service is very helpful for my daily activities.	Strongly Agree-Disagree (5-point Likert scale)
11	TA11	Do you use online/mobile banking?	Yes/No
12	TA12	I think I have enough ICT knowledge to conduct my daily activities.	Strongly Agree-Disagree (5-point Likert scale)
		Social Psychology (Respondents: Both Investors and Entrepreneurs)	
12	SP1	People of our country think that our society needs more entrepreneurs	Strongly Agree-Disagree (5-point Likert scale)
13	SP2	In our society entrepreneurs are always appreciated by the people.	Strongly Agree-Disagree (5-point Likert scale)
14	SP3	People of my society think that entrepreneurs need more financial support.	Strongly Agree-Disagree (5-point Likert scale)
15	SP4	Society thinks entrepreneurs are trustworthy in terms of financial matter.	Strongly Agree-Disagree (5-point Likert scale)
16	SP5	People are thinking that there is no risk to do business with them.	Strongly Agree-Disagree (5-point Likert scale)
		Perceived Expectation (Respondents: Investors)	
17	PE1	I think that my investment will cause financial benefits for me	Strongly Agree-Disagree (5-point Likert scale)

18	PE2	I expect that the project will be profitable, where I am going to invest.	Strongly Agree-Disagree (5-point Likert scale)
19	PE3	My motivation to invest in a project is to maximize my return on investment	Strongly Agree-Disagree (5-point Likert scale)
		Perceived Cost (Respondents: Entrepreneurs)	
20	PC1	I think my project will not always be in a profitable condition.	Strongly Agree-Disagree (5-point Likert scale)
21	PC2	I think that investors are going to only focus on their financial returns/benefits	Strongly Agree-Disagree (5-point Likert scale)
22	PC3	I think the opportunity cost of accepting investment from individuals will be higher than other institutional options	Strongly Agree-Disagree (5-point Likert scale)
		Availability of Resources (Respondents: Investors)	
23	AR1	I think I have enough savings to invest in any innovative projects	Strongly Agree-Disagree (5-point Likert scale)
24	AR2	I think I can bear the risk of lending money to others	Strongly Agree-Disagree (5-point Likert scale)
		Financial Openness and Supports (Respondents: Entrepreneurs)	
25	FOS1	In Bangladesh government is doing well in terms of helping entrepreneurs	Strongly Agree-Disagree (5-point Likert scale)
26	FOS2	Entrepreneurs are getting enough supports from financial institutions	Strongly Agree-Disagree (5-point Likert scale)
27	FOS3	In Bangladesh, different NGOs are working in favor of the entrepreneurs	Strongly Agree-Disagree (5-point Likert scale)
		Behavioral Intention of the Investors	
28	BII1	I think CF is an effective way to help entrepreneurs	Strongly Agree-Disagree (5-point Likert scale)
29	BII2	I think I can invest through CF process in Bangladesh	Strongly Agree-Disagree (5-point Likert scale)
		Behavioral Intention of the Investors	
30	BIE1	I think CF is an effective way to get financial assistance from others	Strongly Agree-Disagree (5-point Likert scale)
31	BIE2	I think I can raise capital through CF process for my new venture	Strongly Agree-Disagree (5-point Likert scale)

Table A3: Demographic Characteristics of the Respondents

	Entrepreneurs	Investors		Entrepreneurs	Investors
Age			Education Level		
Less than 21	6%	0%	Primary	0%	6%
21-30	54%	5%	Secondary	0%	17%
31-40	29%	18%	Higher Secondary	10%	30%
41-50	9%	37%	Graduation	21%	19%
51-60	2%	28%	Post-graduation	54%	22%
More than 60	0%	12%	Vocational/Technical Education	15%	7%
Gender			Profession		
Male	98%	100%	Business	22%	45%
Female	2%	0%	Private Job	31%	24%
			Public Job	10%	31%
			Unemployed	36%	0%

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Dividend and Stock Repurchase Announcement in Tunisia: A Signaling Approach

By Taleb Lotfi

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In the case of the first kind of event, the results obtained are not consistent with information content of dividend: The market does not react significantly to the announcement of dividend. Although a negative reaction is observed when the announcement is a decrease of dividend level. This announcement may be interpreted as a negative signal.

For stock repurchase announcement also, we do not observe significant reaction of the market around the event period but a significant and a negative reaction is observed over the event period.

This results do not support the signaling theory the Tunisian market may be fully anticipate ant that so incorporate this events on the market price.

Keywords: dividend announcement, share repurchases, event study, emerging market, signaling theory.

GJMBR-C Classification: JEL Code: B13

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Strictly as per the compliance and regulations of:

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JEL Classification: G14; G32; G35

I. Introduction

Several explanatory theories have been proposed to explain the behavior of firms when setting his payment but no consensus was until now found. Firm can distribute cash by several methods in particularly by dividend or by stock repurchase.

Under the assumption of perfect market Modigliani and Miller (1961) demonstrate that the dividend policy no matter and then firm's dividend policy does not affect its value. They show that what really counts is the firm's investment policy as long as investment policy doesn't change. In other words in an ideal world (without tax and any restrictions) therefore dividend payments would have no impact on the shareholders' value. In the real world, however a change in the dividend policy is often followed by change in the market value of stocks. The economic argument for investor' preference to dividend income was offered by Graham-Dodd (1951). Subsequently, Walter (1956) and Gordon (1959 and 1962) forwarded the dividend relevancy idea, which has been formalized into a theory, postulating that current stock price would reflect the present value of all expected dividend payments in the future.

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Under the assumption of imperfect market many others theories were also developed, in particularly the signaling approach and the information content of dividend. This theory state that dividends are a significant source of information and then can communicate valuable information about present or maybe future value of the firm. Under this approach, firms with good news, rather making a simple announcement, can choose to increase the distribution of the cash for shareholders either by dividend or by stock repurchases despite the costs associated with paying those dividends or repurchases.

In this article we propose to examine the payout policy of the Tunisian firms under the signaling hypothesis and then to test the reaction of the announcement of dividend and stock repurchase made by firms listed in Tunisian Stock Exchange (TSE).

This article is organized as follow: Section 1 we developed a review of studies of the dividend policy and stock repurchase under signaling approach. Section 2we present the application of the methodology of event studies to test dividend and stock repurchase announcement in Tunisia Section 3 concludes.

II. Dividend Policy and Stock Re-Purchase under Signaling Hypothesis: A Survey

a) *Dividend Policy*

Many signaling model were developed in theory the best known are those of Ross (1977); Bhattacharaya (1979)), Miller and Rock (1985), Kalay (1980), Bar-Yosef and Hoffman (1986), John and Williams (1987), Bernheim (1991), Kumar (1988). All these theory and models proposed explain how firms can use the dividend as a signal and then may explain why firms pay out so many dividends. These models assumed that firms use dividend changes to signal changes in future earnings or cash flows and then associated to current or future profitability of the firm.

Other models show that the good news in a dividend increase is not about (expected) increases in future cash flow but it might concern also a decline in (systematic) risk. This result is tested particularly by Grullon, Michaely, and Swaminathan (2002) with their maturity hypothesis. According to this hypothesis, firms increase dividends when growth opportunities decline, which leads to a decrease in the firm's systematic risk and profitability.

Empirically most paper tries to test the signaling power of dividend and then the hypothesis of information content of dividends. According to this hypothesis changes in dividends can convey information to the market about also current and future earnings.

Trying to test to information content of dividend Pettit (1972) showed that a significant price increase follows announcements of dividend increases, and a significant price drop follows announcements of dividend decreases in the same way, Aharony and Swary (1980) showed that these price changes hold even after they controlled for contemporaneous earnings announcements. Using a comprehensive sample of dividend changes of at least 10% over the period 1967-1993, Grullon, Michaely, and Swaminathan (2002) found that the average abnormal return to dividend increases was 1.34% and the average abnormal market reaction to dividend decreases was 3.71%

Asquith and Mullins (1983) (dividend initiations), Healy and Palepu (1988), and Michaely, Thaler and Womack (1995) (dividend initiations and omissions) focused on extreme changes in dividend policy. Their research showed that the market reacts quite severely to those announcements. The average excess return is 3.4% for initiation and -7% for omissions.

Michaely, Thaler, and Womack (1995) examined this issue and found that when they controlled for the change in yield, the announcement of an omission had a larger impact on prices than did an announcement of an initiation. They also reported that the effect of a unit change in yield had a greater effect on prices for initiations than it did for omissions. The price impact may explain, to some extent, why managers are so reluctant to cut dividends.

Watts (1973) was the first to test the proposition that the knowledge of current dividends improves the predictions of future earnings, over and above knowledge of current and past earnings. Using 310 firms with complete dividends and earnings information for the years 1946-67, and annual definitions of dividends and earnings, Watts tested whether earnings in year t+1 could be explained by the current (year t) and past (year t-1) levels of dividend and earnings. For each firm in the sample, Watts estimated the current and past dividend coefficients (while controlling for earnings). Although he found that the average dividend coefficients across firms were positive, the average t-statistic was very low. In fact, only the top 10% of the coefficients were marginally significant. Using changes in levels yielded similar results.

Benartzi, Michaely, and Thaler (1997) investigate the relation between dividend changes and future changes in earnings. They measure earnings changes relative to the industry average changes in earnings that they adjusted for earnings momentum and for mean reversion in earnings. Two robust results emerge. First, there is a very strong lagged and contemporaneous correlation between dividend changes and earnings changes. When dividends are increased earnings have gone up. There is no evidence of a positive relation between dividend changes and future earnings changes. In the two years following the dividend increase, earnings changes were unrelated to the sign and magnitude of the dividend change.

Using the three-factor model of Fama-French, Grullon, Michaely and Swaminathan (2002) find abnormal returns of around 8.3% during the three years following the year of the increase but they did detect no abnormal performance for firms that have cut their dividends. Michaely, Thaler and Womack (1995) found an adjusted market return of about 25% after three years following an introduction and an abnormal return of 15% for the three years following a failure.

Nissim and Ziv (2001) offer yet another look at this problem. They attempt to explain future innovation in earnings by the change in dividend, like Benartzi, Michaely, and Thaler (1997). They argue that a good control for mean reversion is the ratio of earnings to the book value of equity (ROE) and add it as an additional explanatory variable. They advocate the inclusion of ROE to improve the model of expected earnings and using several independent variables in addition to ROE, Benartzi, Michaely, and Thaler (1997) do not find any significant relation between current changes in dividends and future changes in earnings.

In another study, Deangelo, Deanglo and Skinner (1996) examined a sample of 145 companies whose annual earnings change is negative after 9 consecutive years of positive changes. And year 0 is considered the first year of decline for several years. Their test is based primarily on the decision taken during the year 0, which have scared some information content for investors and ensure is that this decline is temporary or permanent. The empirical results of DeAngelo, De Angelo and Skinner (1996) do not support the hypothesis that a favorable decision which is manifested by an increase in dividends is a signal for future earnings of the firm. There is no evidence for the 99 firms studied that increased profits always leads to an increase in the same direction of dividends. Thus the results of this study do not go with the signaling theory and especially that dividends can be used as an informational vehicle.

Ofer and Siegel (1987) used a sample of 781 observed change in dividends to examine how financial analysts adjust their forecasts of current earnings as a response to the change observed at the level of dividends. They found that analysts react to changes made at the level of dividends and revise their forecasts by an amount which was positively correlated with the

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size of the changes made at the level of dividends. They in addition, put in evidence that the revised forecast is positively correlated with the market reaction to the announcement of the dividend.

In a different context than the U.S., Amihud and Murgia (1997) examined dividend policy of German companies, where dividends are taxed less than most capital gain. In this context, and based on the model of signaling in the presence of signaling costs as developed by John and Williams (1995), Bernheim (1991) and Allen, Bernardo and Welch (2000), Amihud and Murgia (1997) find no informational power from a change in the dividends of German companies. Indeed no price reaction was observed around a change in dividends. However despite this disappointing result for the signaling hypothesis,

So from this review of empirical work we can say that the empirical evidence does not validate the models of signaling by dividends: the relationship between the change in dividends and earnings change is the opposite of what the theory implies. Indeed, if firms are distinguished by the dividends, the signal does not provide information or future earnings or growth of the cash flows of the firm and the market does not perceive the signal. There is a slight variation during the years after the change but this change is not attributed to the dividend as a vector informational but rather a change in the level of risk as perceived by the market.

b) Share Repurshase

Most researchers and managers agree that share repurchases convey information, which reflects the economic motivations behind repurchase decisions (Brav, Graham, Harvey, and Michaely (2005)). The literature proposes two potential ways that managers can use share repurchases as signals to overcome the information asymmetry that exists between principal and agents. The first rationale is the signaling hypothesis (Bhattacharya (1979), Miller and Rock (1985), and Vermaelen (1984)), which suggests that managers who have private information about future cash flows can use repurchases as a signal of future profitability. The signaling hypothesis implies that profitability will improve after share repurchases. The second rationale is the free cash-flow hypothesis, which suggests that firms repurchase their shares to mitigate potential waste of cash by management (Jensen (1986)). The theory suggests that firms that have been experiencing a reduction in growth opportunities are more likely to repurchase their shares, leaving fewer funds available to invest in uneconomic projects. When the value of growth options represents a lower portion of the firm's total value, the overall risk of the firm will decline (because the growth options of the firm are likely to be riskier than the assets in place). Therefore, the free cash-flow hypothesis also implies that firms‟ systematic risk will decrease after repurchase decisions.

According to the signaling theory we found models that imply dividends and repurchases as perfect substitutes (Bhattacharya (1979)), the signaling cost is the transaction cot associated with raising new capital, and in Miller and Rock (1985), it is the cost of reducing investments. Neither is related to the choice of payout. An exception is the John and Williams (1985) model, in which the higher taxes on dividend are the costs of the signal. This model suggests that share repurchases and dividends are not interchangeable. Allen, Bernardo, and Welch (2000) develop a model in which share repurchases and dividends are not substitutes because the latter payout method attracts institutions.

Many studies also tried to test the price impact of announcement of stock repurchase program. Dann (1981), Vermaelen (1981), Comment and Jarell (1991), Stephens and Weisbach (1998), Ikenberry et al. (1995), Grullon and Michaely (2004all find a significant abnormal price increase surrounding repurchase authorization announcements in the US of around 3%, indicating that repurchase announcements have a positive economic benefit for shareholders. Ikenberry et al. (1995) argue that if managers can detect undervaluation of the firm's shares and therefore decide to buy back shares, the announcement of the repurchase program is a valuable signal to the less informed marketplace. If the capital market is semi-efficient, the new equilibrium price should immediately fully reflect the "true" value of the new information. However, studies such as Ikenberry et al. (1995, 2000), Chan et al. (2004), Zhang (2005), and Peyer and Vermaelen (2009) find long-run abnormal returns up to 48 months following repurchase announcements. Thus, the market seems to under react to the information conveyed in repurchase announcements. Why the market reaction extends for such a long time is still puzzling. One explanation for the reported long-run excess returns is that they could be caused by chance and may be sample specific as argued by Kothari and Warner (1997), and Fama (1998).

Bartov (1991), Comment and Jarrell (1991), and Lie (2005) favor the signaling hypothesis, whereas Jagannathan and Stephens (2003), Grullon and Michaely (2004), and Li and McNally (2007) favor the free cash flow hypothesis. This controversy may be due to the uncommitted nature of repurchase announcements (Lie (2005).

III. The Effect of Annoucement of Dividend and Repurchases on Tunisian Shareholders

a) Methodology

In this section we try to test the impact of the announcement of the dividend and stock repurchase observed in TSE. Therefore we adopt to test our hypotheses, the methodologies of event studies. This

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approach was initially used by Ball and Brown (1968) to study the impact of the announcement of annual results of companies on stock prices and was later opted b by Fama, Fisher, and Roll (1969) who, based on monthly data and referring to the market model have demonstrated the benefit of this approach for measuring the impact of an announcement on stock prices and hence the degree of market efficiency.

To apply this methodology of event studies we must define a number of parameters in particularly to define the event, the event of and the event window. The event studies suppose also to determine the selection criteria to calculate the abnormal return (AR) which is the actual return over the event window minus the normal return over the event period. The normal return is defined as the expected return without conditioning on the event taking place.

For firm i and event date t the abnormal return can be given as follow:

$$AR_{it} = R_{it} - E(R_{it}) \qquad (1)$$

Where E(Ri,t) is can be computed using various methods. The methods tested in this paper include Mean Adjusted Abnormal Returns (MEAR) and Market Adjusted Abnormal Return (MAAR).

MEAR: Is the mean of adjusted return calculated over the estimation period

MAARit is the market adjusted abnormal return for security i over time t

Rit is the time t return on security i, calculated as (Pit – Pit-1)/Pit-1. Where, Pit is the market losing price of stock i on day t. Pit-1 is the market closing price of stock i on day t-1.

Rmt is the time t return on the Tunisia stock exchange all-share price index calculated as (It–It-1)/It-1. Where, Iit is the market index on day t. It-1 is the market index on day t-1.

The market adjusted abnormal return (MAAR) or the Mean Adjust Abnormal Return (MEAR) shows the change in individual stock's value due to the dividend announcement. As the percentage change in mean (average return) or market index (average market price) is deducted, the remainder gives us the unsystematic portion of the value change, which is specific to that particular stock resulting from its dividend announcement. MEAR or MAAR are calculated over a period starting to –25 days to +25 days relative to the dividend announcement day (0-day)

The second measure used is cumulative abnormal returns (CAR), which measures the investors' total return over a period starting from well before the announcement of dividend to well after the dividend announcement day. We use a window period starting from -25-day to +25-day relative to the dividend announcement day (0-day).

CAR is computed as follows:

$$CAR_t = \sum_{t=1}^{j} MEAR_t \qquad (2)$$

And

$$CAR_t = \sum_{t=1}^{j} MAAR_t \qquad (3)$$

Where, CARt is cumulative abnormal return, MAARtand MEARt are defined above, j denotes the day -25 through day +25.

Finally, we used parametric test to determine the statistical significance of market adjusted average abnormal return of dividend paying stocks over the window period (-30 day to +30 day relative to dividend announcement). The t-statistics were calculated the standard deviation of abnormal returns of the portfolio of 196 dividend-paying stocks. Moreover, t-test suggested in Brown and Warner (1980) is also applied to test the statistical significance of the cumulative abnormal returns.

b) *Samples Description*

The sample includes 39 companies listed on the Tunisian Stock Exchange (TSE) who announced dividends between years 1996-2004. The total announcement of dividend is about of 196 announcements. This sample is afterwards subdivided afterwards according to the variation of dividend then we have three sub-samples: The first with firms that increase their dividend level between year t and year t-1 with 64observations, the second include firms that decide do not change their dividend ratio between year t and year t-1 with83 observations and finally firms that decrease their dividend between year t and t-1 with 49 observations.

Concerning the announcement of stock repurchases we consider a 17observed between years 2001-2002.

c) *Empirical Findings and Analyses*

i. *Dividend Annoucement*

Findings (insert Table 1and Graph 1) shows that average mean adjusted abnormal return (MEAR) on the day of dividend announcement were only 1.4 percent, which was not statistically significant. This could be due to the fact that the information of dividend payment often leaks out to the market a few days before the announcement made by the company. Hence, the announcement of dividend normally carries' no surprise to the market.

This findings was confirmed by the use of the Market Adjusted Abnormal Return (MAAR)(insert Table2); the abnormal return is about 1.42 percent but it's not statistically significant. Also we don't find any abnormal return during days before the announcement. During the post announcement periods (day +1 to +25), all MAARs are insignificant. Overall, MAAR results suggest that the effect of dividend announcement is not strong in Tunisian Stock Exchange.

In the case of increase of dividends, which is interpreted according to the theory of signal as a positive signal sent to the market and allowing information about an improvement in firm performance, the results (insert table 3 and graph 4) do not validate the hypothesis of the theory of signal, as long as no statistically significant and positive reaction was observed. This result found witch not consistent with the hypothesis of information content of dividends may be explained by the fact that the decision of increase in TSE was already anticipated by the market.

The only abnormal adjusted return observed decrease about -0.14 percent is observed a day following the announcement of dividend day without being statistically significant. This abnormal return can be explained by the attitude of some investors who are assumed to be uninformed and who had anticipated an increase and then try to revise their anticipations.

In the case of maintaining of the same dividend level of the previous year, the findings (insert table 4 and graph4)showed no significant abnormal returns around the announcement date, the abnormal returns are near zero. This result, which implies that the announcement is fully anticipated by the market and that prices incorporate such information, to confirm the hypothesis that the Tunisian companies mostly try do not change their payout ratio. Thus, all investors in the TSE, even those uninformed, can know in advance the level of dividend to be paid even before its official publication. The absence of any observed reaction may also be due to the ownership structure of Tunisian companies or other explanations.

In the case of a decrease of the dividend level between year t and t-1 the findings show (table5)that these are a negative mean adjust abnormal return MAR and also a negative market adjusted abnormal return MAAR for the 5-day and 4-day before the announcement date with respectively an abnormal return of about 1058% (t-statistic -3.44) and -1.42% (t-statistic -1.18) Similarly, and consistent with the shape of CAR (insert graph 4), both in the case where the reference is the mean average return or the market index we note the existence of a statistically and significant cumulative profitability from the fourth day of the announcement date and this profitability is maintained for all the days of our estimation period.

Given the results found on the Tunisian context and when the event is an announcement of dividend, it appears that the assumptions of the theory of signaling are partially validated.

ii. *Stock Repurshase*

Finding (insert Table 6, table 7 and Graph 5) show that there's no significant reaction during the event's date or the event period. We observed only a positive abnormal return 0.57 in the day of announcement and about 1.26 in 4-day after the repurchase announcement event but this positive reaction is not statistically significant.

This finding do not confirm the hypothesis of information content and then the signaling hypothesis on Tunisian context. After the event period and especially on the seventh and ninth day following the announcement of stock repurchase, we observe a negative and statistically significant abnormal return, respectively about 2.93 percent and 2.11 percent. This evidence suggests that investor perceive this vent as a negative signal but the reaction is delayed. This can be explained that the principle purpose for stock repurchase in TSE is to maintain and then regulate the market price of company's shares. This finding confirm the Ikenberry et al. (1995, 2000), Chan et al. (2004), Zhang (2005), and Peyer and Vermaelen (2009) results for a possible delayed reaction to stock repurchases.

IV. Concluding and Remarks

In academic literature, it was suggested that dividend payments have no impact on the shareholders' value (Miller and Modigliani, 1961) in the absence of taxes and other market imperfections. A dividend payment provides cash flow to the shareholders but it reduces firm's recourses for investment. Hence, firms should not pay dividend if they have any positive net present value project in hand. However, Walter (1956) and Gordon (1959 and 1962) showed that valuation of stock depends on the expected future dividends. If company pays out all the earnings to shareholders, funds for future investment will decrease and dividend may not increase in the future. Therefore, theoretical literature suggested that dividends payout should not be desirable provided that companies can better invest their funds. Moreover, cash dividend is not desirable if investors need to pay taxes on their dividend income. Given the valid reasons for not paying dividends, an announcement of dividend payments may carry some information for the market and stock prices may be adjusted accordingly.

Based on the 39TSE listed companies declaring dividends during the period 1996-2004, we found that the only abnormal return is observed when the firm decreases their dividend level between year t and t-1. In this case we observed a negative reaction in the 7-day and 9- day following the announcement of dividend.

In this paper we examined also the announcement of 17repurchase programs during the period 2001-2002 on TSE. The empirical results show that the market does not react instantly in the event period but during the estimation period we observe a negative abnormal adjusted return on the 7- day and 9-day after the announcement date.

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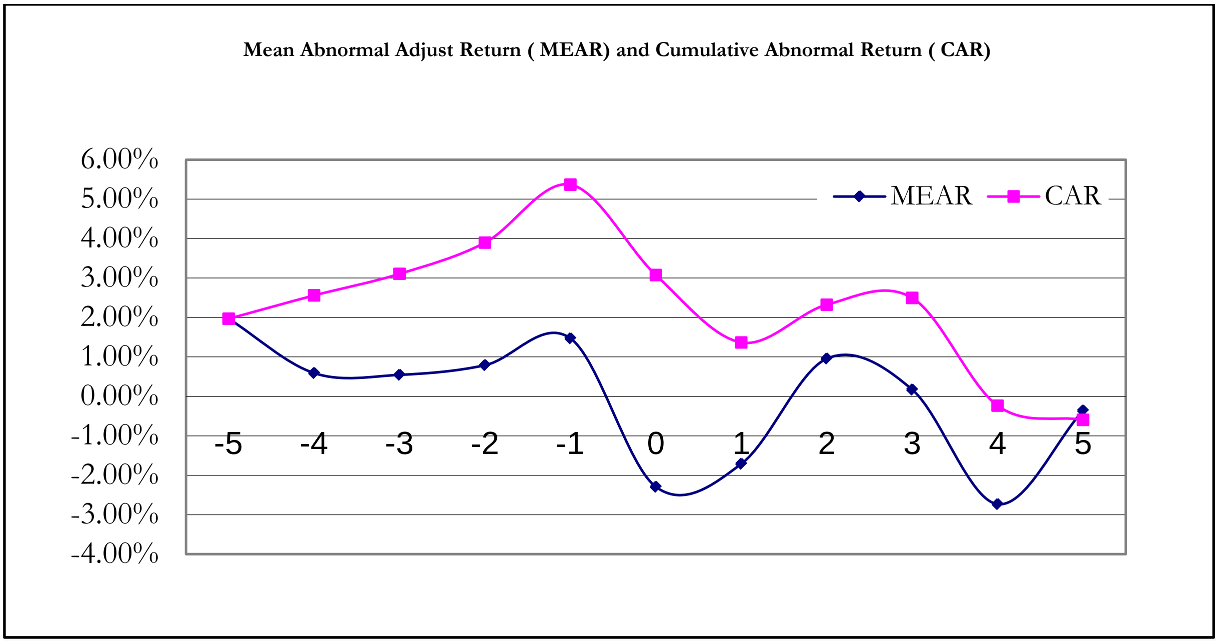
Table 1: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –25 to day +25 relative to dividend announcement day (0-day) and associated Cumulative Abnormal Return (CAR) over the event period.

Day relative to dividend announcement	Average MEAR	t-statistic	CAR	t-statistic
-26				
-25	0,87978013	0,8481318		
-24	0,95409552	0,91977385		
-23	0,81595778	0,78660534		
-22	0,85930782	0,82839594		
-21	0,5870373	0,56591981		
-20	0,79019943	0,76177359		
-19	0,95494915	0,92059677		
-18	0,8701122	0,83881166		
-17	0,81685803	0,7874732		
-16	0,72409857	0,69805058		
-15	1,39366416	1,34352988		
-14	1,17298003	1,13078443		
-13	0,78588176	0,75761124		
-12	0,78326666	0,75509022		
-11	0,65181463	0,62836691		
-10	0,80313646	0,77424523		
-9	0,80137021	0,77254253		
-8	0,66728471	0,64328048		
-7	0,62429378	0,60183606		
-6	0,8882792	0,85632514		
-5	0,89750769	0,86522165	0,89750769	0,22747385
-4	0,81352916	0,78426408	1,71103685	0,43366329
-3	0,86877472	0,8375223	2,57981157	0,65385475
-2	0,63303879	0,61026649	3,21285036	0,8142988
-1	0,90135237	0,86892803	4,11420273	1,04274708
0	1,4139213	1,36305832*	5,52812403	1,40110626
1	1,56072229	1,50457844	7,08884632	1,79667224
2	1,04679029	1,00913411	8,13563662	2,06198185**
3	1,76072666	1,69738805	9,89636328	2,50823905**
4	1,39542577	1,34522813	11,291789	2,86191052**
5	0,9621902	0,92757734	12,2539792	3,10577819***
6	1,43940863	1,38762879		
7	1,4713649	1,4184355		
8	1,74253837	1,67985405		
9	0,76029627	0,73294614		
10	1,33349658	1,28552672		
11	1,14330014	1,10217221		
12	0,8513694	0,82074309		
13	1,14620505	1,10497262		
14	1,37487473	1,32541637		
15	1,20851814	1,16504413		
16	1,22552871	1,18144277		
17	1,24864028	1,20372295		
18	1,07915836	1,0403378		
19	1,15650324	1,11490036		

20	0,95563842	0,92126125		
21	0,99183182	0,95615266		
22	0,84222201	0,81192477		
23	0,94280642	0,90889085		
24	0,80300887	0,77412224		
25	7,33057708	7,06687428		

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level.



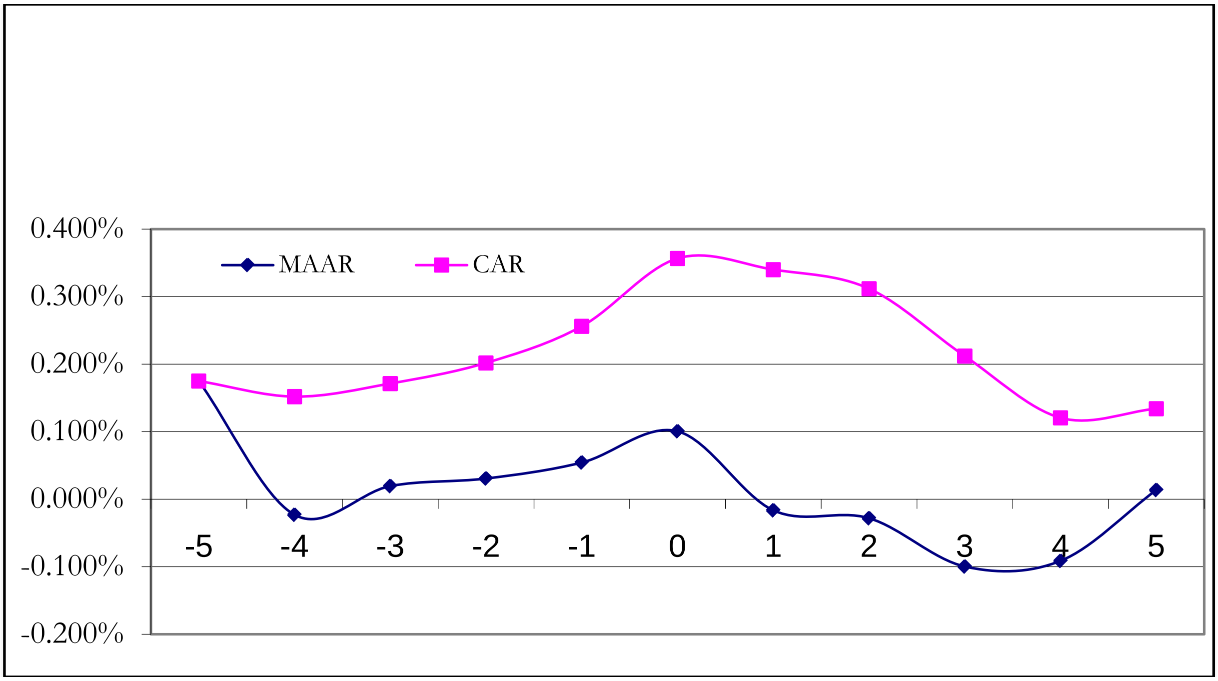
Graph 1: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –5 to day +5 relative to dividend announcement day (0-day) and associated Cumulative Abnormal Return (CAR) over the event period.

Table 2: Market adjusted abnormal return (MAAR) of 39 dividend-paying TSE stocks over a window period starting from day –25 to day +25 relative to dividend announcement day (0-day and associated Cumulative Abnormal Return (CAR) over the event period.

Day relative to dividend announcement	Average MEAR	t-statistic	CAR	t-statistic
-26				
-25	0,8805419	0,84784654		
-24	0,95775312	0,92219083		
-23	0,81630382	0,78599368		
-22	0,85954902	0,82763315		
-21	0,58723636	0,56543171		
-20	0,79040676	0,7610582		
-19	0,95500572	0,91954544		
-18	0,87097659	0,8386364		
-17	0,81686174	0,78653089		
-16	0,72474291	0,69783252		
-15	1,39370451	1,34195493		
-14	1,17336877	1,12980047		
-13	0,78588264	0,75670207		
-12	0,78568532	0,75651207		
-11	0,65584811	0,63149585		

-10	0,80318459	0,77336158		
-9	0,80137602	0,77162016		
-8	0,6678744	0,64307559		
-7	0,6327875	0,6092915		
-6	0,89040254	0,85734104		
-5	0,90197958	0,86848822	0,90197958	0,2278707
-4	0,8164923	0,78617516	1,71847188	0,43414441
-3	0,87111368	0,83876839	2,58958555	0,65421733
-2	0,64183277	0,61800091	3,23141833	0,8163661
-1	0,90327065	0,86973135	4,13468898	1,04456297
0	1,42042909	1,36768721	5,55511807	1,40341164
1	1,5616394	1,50365424	7,11675747	1,79793483
2	1,04748494	1,00859082	8,1642424	2,06256512**
3	1,76237934	1,69694051	9,92662174	2,50780205**
4	1,40665953	1,35442892	11,3332813	2,86317206**
5	0,96583691	0,92997447	12,2991182	3,10717529**
6	1,48795764	1,43270835		
7	1,48179759	1,42677703		
8	1,74829629	1,68338038		
9	0,76563271	0,73720404		
10	1,33654653	1,28691929		
11	1,14333605	1,1008829		
12	0,85178013	0,82015272		
13	1,14645575	1,10388676		
14	1,3751276	1,3240678		
15	1,21122693	1,16625292		
16	1,23065967	1,18496411		
17	1,24990545	1,20349527		
18	0,90932252	0,87555851		
19	1,1564729	1,11353196		
20	0,95780834	0,922244		
21	0,99225214	0,95540887		
22	0,84827479	0,81677754		
23	0,94287067	0,90786099		
24	0,80626266	0,77632536		
25	7,33324185	7,06095159		

Note: Asterisks in the last column denotes that the corresponding MAAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level.



Graph 2: Market adjusted abnormal return (MAAR) of 39 dividend-paying TSE stocks over a window period starting from day –5 to day +5 relative to dividend announcement day (0-day) and associated Cumulative Abnormal Return (CAR) over the event period.

Table 3: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –25 to day +25 relative to dividend announcement day (0-day) for firms that increase their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) over the event period and subsequent days.

Day relative to dividend announcement	Average MEAR	t-statistic	CAR	t-statistic
-25	0,001259	0,86530626	0,00125898	
-24	0,000709	0,48739068	0,00196811	
-23	0,001334	0,91685304	0,00330209	
-22	- 0,000109	-0,07468562	0,00319343	
-21	0,000845	0,58070749	0,00403833	
-20	0,000815	0,5600527	0,00485319	
-19	0,000951	0,65345463	0,00580393	
-18	0,001150	0,79013588	0,00695355	
-17	- 0,001007	-0,69200468	0,00594671	
-16	0,000623	0,42811517	0,0065696	
-15	- 0,000056	-0,03839662	0,00651373	
-14	0,001647	1,13166397	0,00816025	
-13	0,001265	0,86958148	0,00942546	
-12	0,000097	0,06637474	0,00952203	
-11	0,000380	0,26126465	0,00990216	
-10	0,000710	0,48792337	0,01061206	
-9	0,000636	0,43728798	0,0112483	
-8	0,000939	0,6451926	0,01218703	
-7	- 0,000585	-0,40178975	0,01160244	
-6	0,000673	0,46249052	0,01227534	
-5	0,001751	1,20344556	0,0140263	5,15423008
-4	- 0,000231	-0,15885841	0,01379517	5,06929628

-3	0,000194	0,13304785	0,01398875	5,14043044
-2	0,000305	0,20994356	0,01429421	5,25267697
-1	0,000542	0,37255114	0,01483625	5,4518618
0	0,001005	0,69065589	0,01584113	5,82112165
1	- 0,000165	-0,1134938	0,015676	5,76044208
2	- 0,000282	-0,19406621	0,01539364	5,65668439
3	- 0,000998	-0,68586177	0,01439574	5,28998772
4	- 0,000914	-0,62852243	0,01348127	4,95394759
5	0,000135	0,09297168	0,01361654	5,00365499
6	- 0,001198	-0,82338128	0,01241856	
7	0,001037	0,71263626	0,01345541	
8	- 0,000308	-0,21177074	0,01314729	
9	0,000352	0,24199308	0,01349938	
10	- 0,000260	-0,17896743	0,01323899	
11	0,000012	0,00858253	0,01325148	
12	0,000433	0,29778043	0,01368474	
13	- 0,000827	-0,56808382	0,0128582	
14	- 0,001302	-0,89504626	0,01155595	
15	0,001963	1,34915514	0,01351891	
16	0,000216	0,1482253	0,01373457	
17	- 0,002251	-1,54696175	0,01148381	
18	- 0,001223	-0,84054964	0,01026085	
19	- 0,000901	-0,61943197	0,0093596	
20	- 0,000975	-0,67014447	0,00838457	
21	0,000648	0,44530582	0,00903247	
22	0,000251	0,17277697	0,00928385	
23	- 0,000453	-0,31114264	0,00883115	
24	0,001222	0,84022123	0,01005364	
25	- 0,007002	-4,81274624	0,00305131	

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level.

Table 4: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –25 to day +25 relative to dividend announcement day (0-day) for firms that not change their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) over the event period and subsequent days.

Day relative to dividend announcement	Average MEAR	t-statistic	CAR	t-statistic
-25	0,001022	1,144792953		
-24	- 0,000282	-0,31582245		
-23	- 0,000045	-0,050221139		
-22	- 0,000722	-0,808480085		
-21	0,000192	0,215214653		
-20	0,000633	0,708299283		
-19	0,000915	1,024280382		
-18	0,002998	3,356983566		
-17	0,000544	0,608945932		
-16	0,002072	2,319560424		
-15	0,001006	1,126740706		
-14	0,001742	1,950898881		
-13	0,000365	0,408279815		
-12	0,000819	0,917145811		

-11	0,000775	0,867453814		
-10	0,002263	2,533493531		
-9	- 0,000865	-0,969060975		
-8	- 0,000767	-0,859184463		
-7	0,001139	1,275053053		
-6	- 0,000467	-0,522703549		
-5	0,000608	0,680441982	0,000607722	0,001751
-4	0,000213	0,238486837	0,000820722	0,001520
-3	0,000649	0,727074185	0,001470093	0,001713
-2	0,000158	0,177461224	0,001628589	0,002019
-1	0,000381	0,426294062	0,002009324	0,002561
0	- 0,001405	-1,572893352	0,000604528	0,003566
1	- 0,001043	-1,167424937	-0,000438133	0,003401
2	0,000876	0,981347257	0,000438336	0,003118
3	- 0,001352	-1,513553767	-0,000913462	0,002120
4	- 0,000508	-0,568918177	-0,00142158	0,001206
5	0,001165	1,304661903	-0,000256348	0,001341
6	- 0,000678	-0,759380585		
7	- 0,001163	-1,30166536		
8	0,000233	0,260587341		
9	- 0,000084	-0,0941876		
10	0,001391	1,557375612		
11	0,000211	0,236360797		
12	0,000539	0,603278604		
13	0,000002	0,002015878		
14	- 0,000422	-0,472213702		
15	- 0,000539	-0,603489755		
16	- 0,000169	-0,189278603		
17	- 0,000074	-0,082300368		
18	0,000112	0,125592702		
19	- 0,000301	-0,337503702		
20	0,000067	0,074980498		
21	- 0,000223	-0,249803204		
22	- 0,000036	-0,040539026		
23	0,000633	0,708192849		
24	0,000483	0,541038691		
25	0,001027	1,14941928		

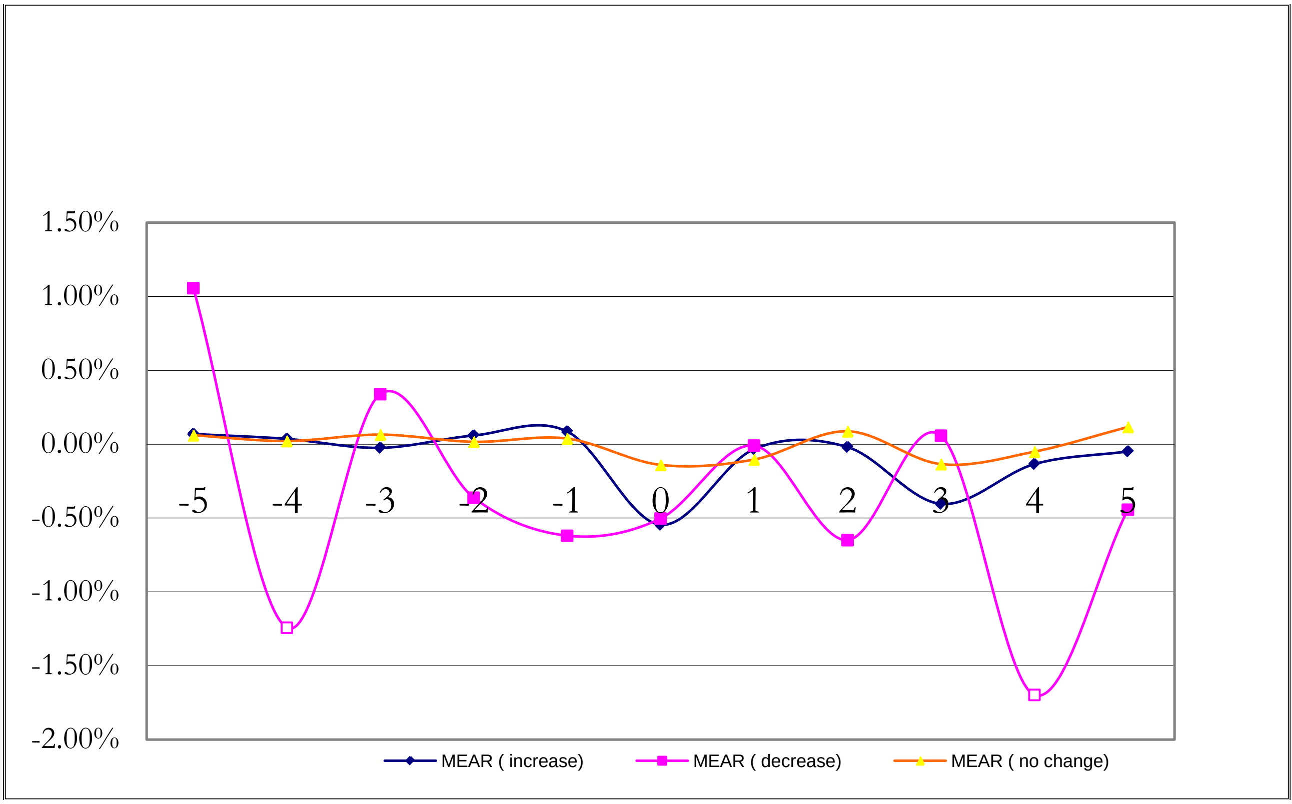
Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level

Table 5: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –25 to day +25 relative to dividend announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Day relative to repurchase announcement	Average MEAR	t-statistic	CAR	t-statistic
-25	0,003%	0,00614694		
-24	-0,238%	-0,48158831		
23	0,317%	0,64227547		
-22	-0,317%	-0,64213089		
-21	0,205%	0,415622		
-20	-0,642%	-1,30166844		
-19	-0,100%	-0,20262791		
-18	0,549%	1,11355411		
-17	0,234%	0,47424756		
-16	0,580%	1,17574257		
-15	-0,385%	-0,78099295		
-14	0,134%	0,2708623		
-13	-0,164%	-0,33246183		
-12	0,298%	0,60465653		
-11	0,642%	1,30233524		
-10	-0,048%	-0,09765555		
-9	0,462%	0,93590345		
-8	0,162%	0,32895142		
-7	-0,326%	-0,66091995		
-6	0,196%	0,39774982		
-5	1,058%	2,14437403***	0,01057708	0,34417319
-4	-1,242%	-2,51845094	-0,00184513	-0,06003955
-3	0,339%	0,68803158	0,00154857	0,05038989
-2	-0,362%	-0,73387591	-0,00207125	-0,06739759
-1	-0,619%	-1,25563092	-0,00826463	-0,26892702
0	-0,503%	-1,02021118	-0,0132968	-0,43267147
1	-0,009%	-0,01908946	-0,01339095	-0,43573534
2	-0,649%	-1,31640344	-0,01988409	-0,6470188
3	0,058%	0,11731335	-0,01930544	-0,62818994
4	-1,697%	-3,44142209***	-0,03628018	-1,18054005**
5	-0,443%	-0,89795422	-0,04070932	-1,32466218**
6	-0,809%	-1,6399765	-0,04879847	-1,58787929**
7	0,170%	0,34438611	-0,04709979	-1,53260514**
8	-0,367%	-0,74439705	-0,05077152	-1,65208126**
9	-1,398%	-2,83503052***	-0,06475524	-2,10710519***
10	-0,382%	-0,77404891	-0,06857322	-2,23134046***
11	-0,559%	-1,13384775	-0,0741659	-2,41332363***
12	0,435%	0,88154304	-0,06981771	-2,2718355***
13	-0,285%	-0,5785364	-0,07267133	-2,3646909***
14	-0,848%	-1,71967948	-0,08115361	-2,64070039***
15	1,060%	2,1486513	-0,07055544	-2,2958407***
16	-0,561%	-1,13755946	-0,07616642	-2,4784196***
17	-0,113%	-0,22938024	-0,07729784	-2,51523525***
18	0,194%	0,3933658	-0,07535757	-2,45209983***
19	-0,790%	-1,60075964	-0,08325328	-2,70902262***

20	-0,072%	-0,14655659	-0,08397617	-2,73254503***
21	0,444%	0,90029013	-0,07953551	-2,58804798***
22	0,263%	0,53334362	-0,0769048	-2,50244604**
23	0,629%	1,27611332	-0,0706104	-2,29762916***
24	0,004%	0,00781736	-0,07057184	-2,29637447***
25	-0,405%	-0,82199334	-0,0746263	-2,42830485***

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level



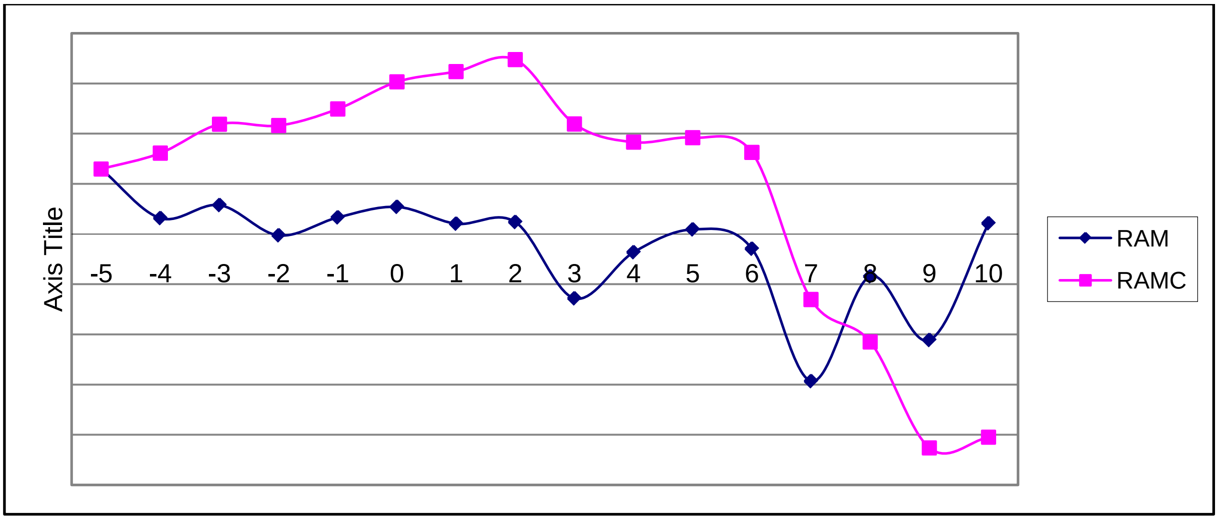
Graph 3: Mean adjusted abnormal return (MEAR) of 39 dividend-paying TSE stocks over a window period starting from day –5 to day +5 relative to dividend announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Table 6: Market adjusted abnormal return (MEAR) of 17repurchase-paying TSE stocks over a window period starting from day –25 to day +25 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Day relative to repurchase announcement	Average MEAR	t-statistic	CAR	t-statistic
-26				
-25	0,609813	-0,49032579		
-24	0,670426	-0,414157105		
-23	0,355244	-0,810228415		
-22	0,438983	-0,70499819		
-21	0,660156	-0,427063039		
-20	0,331441	-0,840140436		
-19	0,579918	-0,527892689		
-18	0,56769	-0,543258985		
-17	1,108022	0,135744572		

-16	0,716867	-0,355797445		
-15	0,3008	-0,878645004		
-14	0,466763	-0,670088655		
-13	0,460595	-0,677839803		
-12	0,928566	-0,089766815		
-11	0,589713	-0,515584726		
-10	0,738574	-0,328518977		
-9	1,331335	0,416369116		
-8	0,264878	-0,923785288		
-7	0,524043	-0,598107835		
-6	1,118651	0,149101359		
-5	1,054742	0,068790916	0,01297	0,329954927
-4	0,588839	-0,516682151	0,01614	0,410481171
-3	0,725915	-0,34442689	0,02190	0,55702352
-2	1,847332	1,064794128	0,02163	0,55026132
-1	1,37603	0,472535145	0,02493	0,6343300
0	0,537658	-0,580998296	0,03034	0,771817039
1	1,248439	0,31219957	0,03239	0,823993381
2	0,428072	-0,718709121	0,03477	0,884619871
3	1,105407	0,132459198	0,02194	0,558280524
4	1,026912	0,03381843	0,01831	0,465847316
5	0,440249	-0,703407521	0,01922	0,488968777
6	0,9207	-0,099652334	0,01628	0,414192887
7	3,796026	3,513605674***	- 0,01304	-0,331854623
8	1,97896	1,230203113	- 0,02149	-0,546762465
9	2,999612	2,512798113***	- 0,04262	-1,084258635
10	0,673248	-0,410609917	- 0,04049	-1,030114567
11	0,271712	-0,915197597	- 0,03932	-1,000228989
12	0,781923	-0,274044541	- 0,03649	-0,928256978
13	0,457693	-0,681485982	- 0,04027	-1,024532011
14	1,758602	0,953292148	- 0,04362	-1,109801369
15	3,212176	2,779914489***	- 0,05943	-1,511849128
16	1,33656	0,422935495	- 0,06452	-1,641404597
17	0,803535	-0,246885978	- 0,06398	-1,627600701
18	1,369517	0,46435073	- 0,05505	-1,400558825
19	0,853564	-0,18401797	- 0,06017	-1,530816967
20	0,293225	-0,888164115	- 0,06001	-1,526559308
21	1,016945	0,021293384	- 0,06284	-1,598648997
22	0,70694	-0,368272259	- 0,06247	-1,589176047
23	0,7549	-0,308002847	- 0,05936	-1,510124514
24	1,529653	0,665585042	- 0,04594	-1,168651562
25	1,182494	0,229329248	- 0,04530	-1,15230538

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level



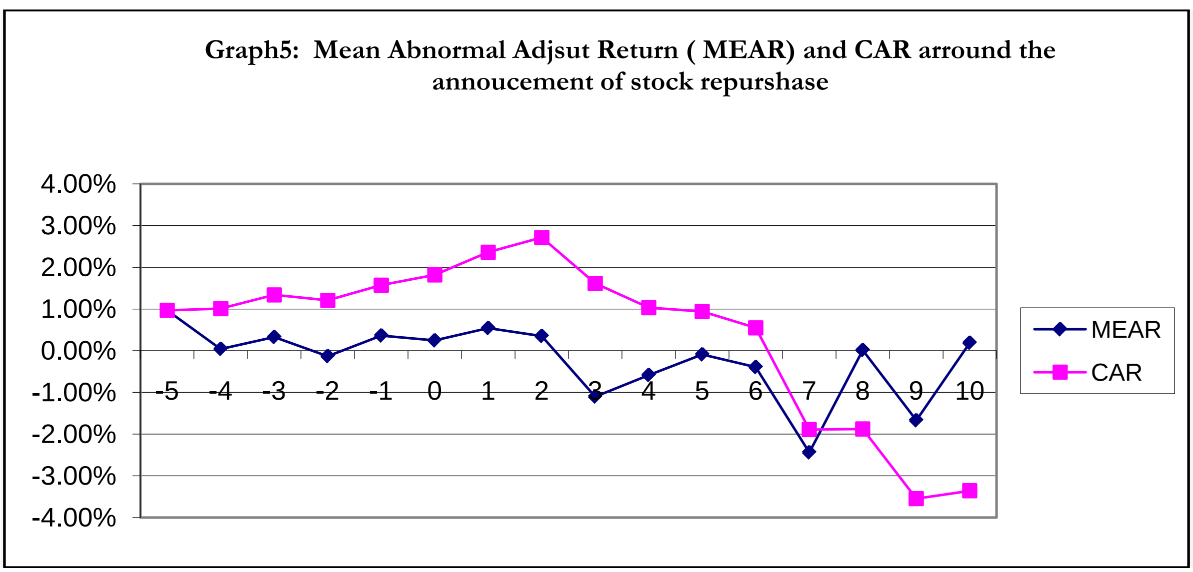
Graph 4: Market adjusted abnormal return (MEAR) of 17 repurchase-paying TSE stocks over a window period starting from day –25 to day +25 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Table 6: Mean adjusted abnormal return (MEAR) of 17 repurchase-paying TSE stocks over a window period starting from day –25 to day +25 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Day relative to repurchase announcement	Average MEAR	t-statistic	CAR	t-statistic
-25	0,36%	0,59119881		
-24	0,61%	1,01648807		
and-23	0,06%	0,09545055		
-22	-0,09%	-0,14781817		
-21	0,46%	0,76408428		
-20	-0,03%	-0,05476158		
-19	0,53%	0,87964506		
-18	0,31%	0,51806159		
-17	0,42%	0,68984062		
-16	0,26%	0,43284297		
-15	-0,06%	-0,09155938		
-14	0,46%	0,7538951		
-13	0,28%	0,45672479		
-12	0,52%	0,85938823		
-11	0,23%	0,38892771		
-10	0,07%	0,11299225		
-9	-0,21%	-0,34448695		
-8	0,05%	0,0893111		
-7	-0,45%	-0,74291223		
-6	0,46%	0,75787472		
-5	0,97%	1,6027543	0,009680	0,32995493
-4	0,04%	0,06939931	0,010099	0,41048117
-3	0,33%	0,54147298	0,013369	0,55702352
-2	-0,13%	-0,21543997	0,012068	0,55026132
-1	0,36%	0,6027901	0,015709	0,63433
0	0,25%	0,40881625	0,018178	0,77181704

1	0,54%	0,89908714	0,023608	0,82399338
2	0,35%	0,58265464	0,027127	0,88461987
3	-1,10%	-1,8215372	0,016126	0,55828052
4	-0,58%	-0,96569331	0,010293	0,46584732
5	-0,09%	-0,14701113	0,009405	0,48896878
6	-0,39%	-0,65085369	0,005475	0,41419289
7	-2,44%	-4,03759205	- 0,018911	-0,33185462
8	0,01%	0,02388667	- 0,018767	-0,54676246
9	-1,67%	-2,76379485	- 0,035459	-1,08425863
10	0,19%	0,31354837	- 0,033565	-1,03011457
11	-0,06%	-0,10655087	- 0,034209	-1,00022899
12	-0,23%	-0,38190236	- 0,036515	-0,92825698
13	-0,50%	-0,82544972	- 0,041501	-1,02453201
14	-0,54%	-0,89551985	- 0,046909	-1,10980137
15	-0,74%	-1,22390984	- 0,054301	-1,51184913
16	-0,06%	-0,10343778	- 0,054926	-1,6414046
17	0,38%	0,63203404	- 0,051109	-1,6276007
18	0,87%	1,4354234	- 0,042439	-1,40055882
19	-0,03%	-0,05448561	- 0,042768	-1,53081697
20	0,04%	0,06222498	- 0,042393	-1,52655931
21	-0,14%	-0,23735262	- 0,043826	-1,598649
22	0,21%	0,34815396	- 0,041723	-1,58917605
23	0,45%	0,75314722	- 0,037175	-1,51012451
24	0,69%	1,14771506	- 0,030243	-1,16865156
25	-0,28%	-0,460472	- 0,033024	-1,15230538

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level



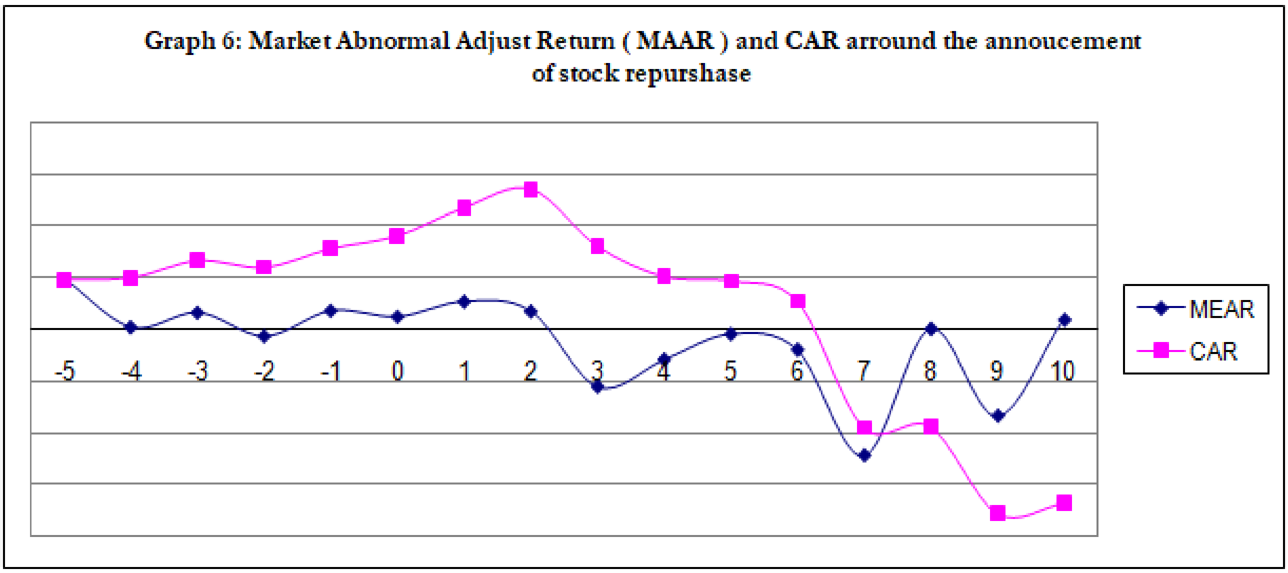
Graph 5: Mean adjusted abnormal return (MEAR) of 17 repurchase-paying TSE stocks over a window period starting from day –25 to day +25 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Table 7: Market adjusted abnormal return (MAAR) of 17 repurchase-paying TSE stocks over a window period starting from day –25 to day +25 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

Day relative to repurchase announcement	Average MEAR	t-statistic	CAR	T Statistic
-26				
-25	0,36%	0,59119881		
-24	0,61%	1,01648807		
-23	0,06%	0,09545055		
-22	-0,09%	-0,14781817		
-21	0,46%	0,76408428		
-20	-0,03%	-0,05476158		
-19	0,53%	0,87964506		
-18	0,31%	0,51806159		
-17	0,42%	0,68984062		
-16	0,26%	0,43284297		
-15	-0,06%	-0,09155938		
-14	0,46%	0,7538951		
-13	0,28%	0,45672479		
-12	0,52%	0,85938823		
-11	0,23%	0,38892771		
-10	0,07%	0,11299225		
-9	-0,21%	-0,34448695		
-8	0,05%	0,0893111		
-7	-0,45%	-0,74291223		
-6	0,46%	0,75787472		
-5	0,97%	1,6027543	0,00968	1,63616901
-4	0,04%	0,06939931	0,01010	1,70701517
-3	0,33%	0,54147298	0,01337	2,25977695
-2	-0,13%	-0,21543997	0,01207	2,03984542
-1	0,36%	0,6027901	0,01571	2,65520267
0	0,25%	0,40881625	0,01818	3,07254204
1	0,54%	0,89908714	0,02361	3,99037363
2	0,35%	0,58265464	0,02713	4,58517563
3	-1,10%	-1,8215372	0,01613	2,72566247
4	-0,58%	-0,96569331	0,01029	1,73983609
5	-0,09%	-0,14701113	0,00941	1,58976003
6	-0,39%	-0,65085369	0,00547	0,92533715
7	-2,44%	-4,03759205	- 0,01891	-3,19643184
8	0,01%	0,02388667	- 0,01877	-3,17204717
9	-1,67%	-2,76379485	- 0,03546	-5,99346245
10	0,19%	0,31354837	- 0,03357	-5,67337713
11	-0,06%	-0,10655087	- 0,03421	-5,7821494
12	-0,23%	-0,38190236	- 0,03652	-6,17201377
13	-0,50%	-0,82544972	- 0,04150	-7,01467271
14	-0,54%	-0,89551985	- 0,04691	-7,92886263
15	-0,74%	-1,22390984	- 0,05430	-9,17828892
16	-0,06%	-0,10343778	- 0,05493	-9,28388319
17	0,38%	0,63203404	- 0,05111	-8,63867231
18	0,87%	1,4354234	- 0,04244	-7,17332277

19	-0,03%	-0,05448561	- 0,04277	-7,22894432
20	0,04%	0,06222498	- 0,04239	-7,16542206
21	-0,14%	-0,23735262	- 0,04383	-7,40772308
22	0,21%	0,34815396	- 0,04172	-7,0523107
23	0,45%	0,75314722	- 0,03717	-6,28346164
24	0,69%	1,14771506	- 0,03024	-5,11181867
25	-0,28%	-0,460472	- 0,03302	-5,58189073

Note: Asterisks in the last column denotes that the corresponding MEAR is statistically significant. The asterisks ***, ** indicate the level of significance (based on the *t* values) at respectively the 1, 5 percent level



Graph 6: Market adjusted abnormal return (MAAR) of 17 repurchase-paying TSE stocks over a window period starting from day –5 to day +10 relative to stock repurchase announcement day (0-day) for firms that decrease their dividend level between year t and year t-1 and associated Cumulative Abnormal Return (CAR) in the event period and estimation period and subsequent days.

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The Role of Electronic Payment System on the Financial Performance of Financial Institutions in Rwanda

By Jean Bosco Harelimana

Abstract- The study entitled '' the role of electronic payment system on the financial performance of financial institutions in Rwanda: a case study of Equity Bank Ltd was carried out under the period from 2012 to 2016. Both primary and secondary data were collected from 253 total populations from which a sample of 155 was drawn. A questionnaire and interview was used in data collection. Data collected was analyzed using descriptive statistics and linear multiple regression analysis and then presented in statistical tables. The results show that the factor influencing access to electronic payment was simple application procedures for loan with 33.5 percent. This was followed by low collateral requirements with 20 percent Low costs of accessing finance with 20 percent and Low interest rates which had 4.5 percent. Guarantee from government with a 22 percent was the least factor that influencing customer's access to electronic payment. This shows that all the determinants of electronic payment were considered relevant by respondents in accessing electronic payment system. Other role of electronic payment by equity bank ltd is to meet expenditures which accounted for 21.9 percent of the responses. It was found that the four independent variables moderately predict the performance of Equity bank ltd that means the model explains 68.6 % the variance on the performance of equity bank ltd. The results confirm the hypothesis because the linear regression F-test results ($F = 8.741$; and 5 df) are significant at $p < 0.05$.

Keywords: electronic payment, financial performance.

GJMBR-C Classification: JEL Code: C58

THEROLEOFELECTRONICPAYMENTSYSTEMONTHEFINANCIALPERFORMANCEOFFINANCIALINSTITUTIONSINRWANDA

Strictly as per the compliance and regulations of:

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Keywords: electronic payment, financial performance.

I. Introduction

Many organizations have been using the information system which can be viewed essentially as a social system with some technological elements. This indicates a shift from an initial techno-centric focus to a more integrated technology, management, organization and social focus. It also emphasizes the application of technology and the interactions between people and organizations and the technology. In the wake of recent development information and communication technologies majority of banking operations have been computerized by most of banking institutions in public as well as in private sector, especially in the last two decades and the process is still on for extension and up gradation of computerization of financial services in banking industry (Mutombo,2006).

The computerization is done for front-office operations involving interface with customers as well as back office operations involving internal house–keeping/accounting, and books balancing, external accounting and settlement with other branches and bank institutions domestically and internationally (Chapma,2016).

Electronic banking provides a bouquet of new channels like internet banking, telephone banking and ATM –which are different from traditional, telephone banking and ATM –which are different from traditional brick and motors branches banking and which have made it possible "anywhere and anytime" banking. It contributed to speed, accuracy and confidentiality of customer's transactions while enhancing customer convenience. Funds transfers, checks clearing and collection of bill of exchange are also done electronically with accuracy, speed and safety (Kaufman, 2007).

According Kaufman (2007) Internal housekeeping is done accurately and much faster through programmed packages /software at the branch and also at centralized platform different operation internationally (cross-banking, foreign banking).

In order to properly place themselves in favorable positions for competitions and be one of those corporations to be reckoned with the new century, banks are making use of internet to execute mobile banking, this developed from bringing PCS together to form local and wide area networks through ugh client/server technology(Richard, 1987).

Many banks have installed modern computer inter-connectivity backbone that would enable them achieve communications of data and multimedia over internets, intranet and Extranets. They also realize that they have to achieve not only management/staff wide

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computer literacy but what could be called information literacy for example knowing how to locate, analyze, store and use information. All staff and managers in a modern bank need to be able to search and gather data from several types of sources analyze them, select relevant ones and organize them in such a manner to allow them make decisions based on the organized data (Kaufman, 2007).

The above sound the same as EQUITY BANK Ltd. Its mission is to offer inclusive, customer focused financial services that socially and economically empower our clients and other stakeholders, while providing a competitive return to its shareholders and contribute to the overall development effort of the region. A company has the latest technology, and possesses all the financial backing it needs even the most talented workers but if the employees are not properly motivated or satisfied with their job all the above factors will not be able to work together and make the company successfully attain its goals. This is true whether the organization is privately or publicly owned. Organization management will be better served by studying the organization as a system. Employers demand results. Without results the organization will not survive. Managing electronic payment is a requirement for productivity.

In this contemporary corporate world, every organization aims to get the best possible performance from technology via internet. Electronic payment system is of a big importance in the management decision making in banking because electronic payment system must meet certain objectives to keep your business running efficiently (Gallati, 2003).

The technological changes that are occurring in business environment, normal bank working hours tend to become very short as people would wish to operate twenty four hours in order to cope with those changes. There a strong need for electronic payments systems within which customers may do banking transactions without having to stand on long queue waiting to pay bills, deposit or retrieve their money.

The usual method of banking such as cash payment, checks, payment order and bank transfer is very costly and time consuming as customers have to wait to the bank for long hours, yet they are limited by bank closing hours.

Electronic system is so important in promoting investments not only in Rwanda but also in other countries. The card that is mostly used is domestic debit card that is used only by account holders E-banking has been used by many banking institutions, rather they have used other forms of information technology (IT) in order to enhance their efficiency and effectiveness through speeding up their activities. However, the extent to which IT services are used is not sufficient and fully embraced whereby in many banks you find long lines of bank customers on the floors waiting for banking services. This has created some problems like time wasting, loss of customer's reputations, thereby unconvincing and hindering the international travelers such as tourists (Gallati, 2003).

Rwanda is growing up with a vision of being a business country, knowing that the Bank is very useful to the majority of Rwanda and this is a gate of economic growth of Rwandan citizens (www.dbs.com, private bank assessed on 25 thJuly 2014). In the past few years the banking institutions were experiencing a problem of ineffectiveness and inefficiency of using electronic payment system. This has led to poor performance of the banking sector as very high proportion of fund as locked up into no – performing assets which deprives the economy of continuous flow of funds that would be used to finance investment projects(BNR,2007).

According to Sundharam and Varshney (2002), said that the most profitable activity of finance institutions is lending and every institution strives to optimize its net profit by employing its surplus cash into different activities. However, non-performing loans impair the finance institution profitability rendering it unable to meet obligations of customers and they may end up losing their reputations in the market.

II. Objectives

The general objective of this study is to assess the role of electronic payment on financial performance in banking institutions in Rwanda. Specifically:

1. To assess the determinants of electronic payment in Equity Bank Ltd.
2. To analyze the level of financial performance in Equity Bank Ltd.
3. To establish the relationship between determinants of electronic payment and level of financial performance in Equity Bank Ltd.

III. Literature Review

Different definition has been given to what is called electronic payment. According to Chapma (1996), electronic payment is an important part of business or an organization. Electronic payment system is a form of inter-organizational information system for monetary exchange, linking many organizations and individual users. This may require complex interactions between the stakeholders, the technology and the environment. Electronic payment is also referred to us as a financial exchange that takes place online between buyers and sellers (William, 1997). The content of this exchange is usually some form of digital financial instrument (such as encrypted credit card numbers, electronic cheques or digital cash) that is backed by a bank or an intermediary, or by a legal tender.

Before defining financial performance, a deep understanding of performance is needed. Performance is defined as an approach determining the extent to which set objectives of an organization are achieved in a particular period of time. The objectives or goals can be in financial or non-financial terms. Performance may be determined by macro and micro-factors. According to Oliver (2000) macro-economic factors are those pertinent to a broad economy at the regional or national level and affect a large population rather than a few select individuals. Macro factors include GDP growth, inflation, unemployment, interest rates, exchange rate and level of competition. Micro factors include individual risk exposure, operating strategies and degree of management strategies. According to Cooper (1992), factors which influence business performance are experience, education, occupation of parents, gender, race, age and entrepreneurial goals. Lerner and Hisrich (1997) conducted a study on Israel women entrepreneurs and found that their performance was influenced by factors that he grouped in 5 perspectives: motivation and goals, social learning theory (entrepreneurial socialization), network affiliation (contacts and membership in organization); human capital (level of education and skills) and environmental influences (location, sectored participation and social political variables).

Thus according to Rieva (2000) a company financial performance is directly influenced by its market position. Profitability can be split into its main components; net turnover and net profit margin. Ross, Westerfield and Jatte (1996) argue that both components influence profitability. High turnover means better use of assets owned by the company and therefore better efficiency while a higher profit margin means that the entity has a substantial market power. Electronic and growth influences a firm's financial performance. Since market value is conditioned by company's results, the level of using electronic payment system can cause changes in its market value. High electronic payment system should have high returns. Economic growth helps a firm to achieve a better position on the financial markets, because market value also takes into consideration expected future profits.

The study was conducted on the role of electronic payment system on financial performance in banking institutions.The main objective was assessing the determinants of electronic payment system and analyzing the indicators of financial performance of banking sector where it highlights important findings from many researchers. The last have examined the relationship between determinants of electronic payment system and indicators of financial performance.

One of the examplesis for William (1997) who argues electronic is inherent in every economic activity and every organization has to manage it according to its size and nature of operation because without electronic payment system no organization can survive in the long run. This is because remittance today are faced with far greater challenges than before due to the fact that economical, technological and legal interdependence are becoming more prevalent and pronounced. It would be assumed that electronic payment system and internal control systems will vary from remittance to remittance based on their size. It is therefore logical to assume that every bank has put in place a strong electronic payment system structure and internal control systems to help achieve its goals. These are fundamental to the successful operation and day-to-day running of a remittance and assist a bank in achieving its objectives. On the basis of the findings of this research paper, it could be concluded that electronic payment system has a significant effect on organizational effectiveness among the construction of bank institutions. The study found that good management of electronic payment system enhances performance of banking institutions. The study also found that electronic payment system leads to good financial reports and also leading to better decision-making of the investors.

In the study entitled the contribution of electronic payment system to the growth of financial institutions was carried out. The purpose of the study was to analyze electronic payment system of customers in day per day activities banking in order to reduce long line in bank and other different organizational. Ken (2013) exposed that because of the many clients that are borrowers with computerized accounting System more importantly its ability to produce and present relevant and faithful representative financial reports to end users, the government of Rwanda is assisting microfinance to transfer into a common computerized Accounting System. This is going to serve as a platform in which all the rural microfinance in the country are going to be networked to each other to facilitate faster and efficient banking. He concluded that electronic payment system is necessary to identifying, analyzing, assessing, treating, monitoring and communicating of organization. Electronic payment system therefore plays five main functions in an organization. The first requirement of control is to devise a system of measuring the contributions made by each teller.In addition, electronic payment system helps banking institution to identify, analyze, assess, treat, monitor and communicate by each participant and distribute the needed information. Furthermore, electronic payment system identify the borrower and market factors that enter into the credit decision to find replacements for borrower who did not paid the loan. Finally, electronic payment system makes some information available in the form of common knowledge to help reduce conflict among borrowers at the time they negotiate their contracts (Ken ,2013).

Narwal and Jindal (2015) examined the impact of corporate governance on the profitability of Indian textile sectors. They collected data from annual reports of textiles companies for the period of five year ranging

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of 2009 to 2014. The profitability has been taken as dependent variable and board size, audit committee members, board meetings, non-executive directors, directors remunerations as independent variables. Correlation and OLS was used for data analysis. A strong positive association was observed between director's remuneration and profitability. The Audit Committee members was observed negative associated with the profitability and then conluded board size, board meeting and non-executive directors do not significantly associated with the profitability.

Contrary, Ojulari (2014) explores the relationships that exist between corporate governance and the profitability of financial institutions. He selected twenty five companies listed in the Nigerian stock exchange. The results show that the two variables (i.e. corporate governance and financial profitability) are more positively related on an individual proxy basis than on an overall proxy basis. The overall impact of corporate governance on the profitability is also negative so also are the result of the regression models. This result shows that although there is a relationship between the two variables, the predictive power of corporate governance on companies' profitability is too low to be meaningful. Therefore, based on the literature, the researcher decided to conduct a study the role of electronic payment system on the financial performance of financial institutions in Rwanda in order to come up with a reasonable reason of exploit.

IV. Methodology

Inthissectiontools, techniquesandmethods was usedto achieve the researchobjectives where both primary and secondary data were collected then analyzed so that the correlation and strength between variables can be determined.

a) *Data Analysis*

The research is analytical and empirical in nature and makes use of primary and secondary data.The population is the staffs and the clients from Equity Bank Ltd. The data has been sourced from documents, observations, questionnaires and interviews that were availed to the targeted population. The sample period undertaken for the objective is from 2012 to 2016.

b) *The sample and the sample flame*

Douglas (2006) defined a sampling frame as a list or other device used to define a researcher's population of interest. The sample frame in this study is all staffs and clients at Equity Bank 253 represented by 155 respondents.

c) *Research Instruments*

Primary data and second data collection had been used in order to achieve the research purpose. A questionnaire and interview were developed to a number of 155 respondents at Equity Bank Ltd obtained using Yamane (1967)formula. References have been made to textbooks, journals, newspapers and other published literature, electronic journal and the internet provide as valuable sources of data. Archival method was important for this research. It consisted to gather data from written resources concerning research topic in order to understand the present situation. The literature review bought about comprehensive review involving the collection of both academic theories and research directly related to the study.

d) *Models and Techniques*

The multiple regression models were used to determine the relationship between the variables of the study. In doing so, the regression model below was used:

$$y = \beta 0 + \beta 1x1 + \beta 2x2 + \beta 3x3 + \beta 4x4 + \varepsilon.$$

where y = dependent variable (Financial Performance) such as Net profit margin, return on asset, return on equity, sustainable growth rate and risk management; $\beta 0 - \beta 4$ = model parameters or coefficients; $x_1 - x_4$ = independent variables (Electronic payment system) like Electronic Card Banking, Mobile banking (azzy24/7), Internet Banking, Online remittance and ε = error term.

The relationship between electronic payment system and financial performance of Equity bank ltd. multiple regression analysis was used to determine this relationship. The SPSS program 16.0 version was used to analyze the data. Correlation and regression analysis were utilized to the role of electronic payment system on financial performance of Equity bank ltd.

V. Findings and Results

a) *Electronic Payment in Equity Bank Ltd*

Electronic payment system shows us individuals to obtain financial services, including credit, deposit, payment, insurance, and other risk management services. Those who involuntarily have no or only limited access to financial services are referred to as the unbanked or under banked, respectively.

The most customers specialized in a number of using electronic payment as found; 52.9 % of Equity Bank Ltd in the study used electronic card banking respectively 21.9 % used Mobile banking, 13.6% used Internet banking and also 11.6 % used Online remittance. The most of customers of Equity Bank Ltd uses electronic payment system by electronic card banking.

- ✓ *Electronic Payment sought:* The result shows that more than half of the respondents (34.2%) sought for electronic fund transfer from the equity bank ltd. This finding is in line with other studies that have shown that equity bank ltd has different type of electronic payment but all most customers use

Electronic Fund Transfer. 14.8% of respondents used Electronic cash, 20% of respondents used payments cards, 29.7% of respondents used electronic wallets.

- ✓ *Challenges of accessing electronic payment by customers in Equity Bank ltd*: Many customers in the study applied for electronic payment but not all of them were successful in getting it. The results indicate 1.3 % of respondents had never sought electronic wallets. Only 28.4 % of those who applied for electronic payment failed to get it was lack of internet, this is followed closely by the fact that the customers are lack of knowledge (26.5%) and have insufficient information (20.6%). Other reasons why some customers never sought electronic payment were that they lack experience (13.5%); they could not meet requirement while some of them was not give their reasons (11. It is in that framework the researcher formulated questions to manager and customers operating in Equity bank ltd to assess the role of electronic payment on the level of financial performance.
- ✓ *Preparation of financial information inequity bank ltd:* Findings show 37.4 % of the respondents indicated that they prepare financial information in the form of income statement, statement of financial position, statement of cash flow, variance analysis or financial ratios. However, majority of the employees and customers of Equity Bank ltd in the study 25.8 percent did not prepare any form of financial information while 36.8 percent did not give answers to the requested question. This result has not good perspective on accessing finance as the financial information affect accessing to finance.
- ✓ *Financial information prepared by Equity Bank ltd:* In supporting equity bank ltd decisions respondents proposed that Customers use electronic payment because they realized that electronic payment help them in the way of saving time. The findings from the above table, shows that statement of financial position is the used with 41.2 % and it followed by income statement and business plan with 22.6 % and cash flow statement 19.6% and Financial ration 5.2% respectively. The two financial information classified as the least was financial ratios and cash flow statement with 19.6% and 5.2% respectively. The reason may be because customers and employees do not Known if Equity bank uses the financial information.

b) *Analysis of the level of electronic payment to financial performance*

Based on the findings the first factor influencing access to electronic payment was Simple application procedures for loan with 33.5 %. This was followed by low collateral requirements with 20 % low costs of accessing finance with 20 % and low interest rates which had 4.5 %. Guarantee from government with a 22 % was the least factor that influencing customer's access to electronic payment. This shows that all determinants of electronic payment were considered relevant by respondents in accessing electronic payment system.

- ✓ *Financial institutions factors of electronic payment Considered to provide financial services to customers of Equity bank ltd.*

Writings stated that because of uncertainty and risk financial institution before providing financial services to their clients they considered many factors. According to the table calculated above the first factors considered is financial management practices which encompasses 20.6 % followed by firm characteristics which encompasses 33.5% and finally by entrepreneur characteristics which encompasses 43.3%. The results further indicate that the most customers of equity bank ltd in operating well are the first one to attract financial services providers.

c) *Identification level of financial performance in Equity bank ltd.*

Writings assert that firm's financial performance is measured by how better off the shareholder is at the end of a period, than he was at the beginning. The main objective of shareholders in investing in Equity bank is to increase their wealth. Thus the measurements of performance of Equity bank ltd are as follows:

- ✓ *Financial ratio analysis*

As argued by many literatures with ratios, financial statements can be interpreted and usefully applied to satisfy the needs of the reader. Financial ratio are involves to investigate, analyze financial information provided in the financial statement. The researcher used the financial information of equity bank ltd.

- ✓ *Return on Assets*

ROA is an indicator of how profitable an entity is relative to its total assets. ROA gives an idea as to how efficient management is at using its average assets to generate earnings. Calculated by dividing a company's annual earnings plus interest by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment".

$$\text{Return on assets (ROA)} = \frac{Netincomeaftertax}{Averagetotalassets} \times 100$$

$$\text{Or} \quad = \frac{\text{Netincomeaftertax}}{\text{Totalassets}} \times 100$$

Table 1: Return on Asset of equity bank ltd

Year	2012	2013	2014	2015	2016
Net income"kenya shillings"	10,997	12,642	5,213	7,761	11,470
Total assets " kenya shillings"	215,829	238,508	63,217,192	69,588	73,446
Ratio in %	5.1%	5.3%	0.008%	11.2%	15.6%

Source: financial statement of Equity bank ltd (2012-2016)

The table above shows the return on asset ratio during the covered period from2012up to2016, the ratio on return on assets are 5.1%,5.3%and 0.008%,11.2% and 15.6% respectively. The above results shows that bank of equity bank ltd is profitable during the covered period because the standard ratio of return on asset is 0.008% may factors are the cause of that profitability but the quality service are the main cause of the increase of it profitability.

✓ *Return on Equity*

ROE is an indicator of how profitable an entity is relative to its total equity. ROA gives an idea as to how management is efficient in using its average equity to generate earnings. Using this ratio the profitability is measured in terms of the relationship between net profit and equity. It shows whether the equity sources are being properly utilized or not. The following formula shows how to calculate the return on equity.

$$\text{Return on equity (ROE)} = \frac{\textit{Net income after tax}}{\textit{Averagetotal equity}} \times 100$$

$$\text{Or ROE} = \frac{\text{Netprofitaftertax}}{\text{Total equity}} \times 100$$

Table 2: Return on Equity of Equity bank ltd

Year	2012	2013	2014	2015	2016
Net income "Kenya shillings"	10,997	12,642	5,213	7,761	11,470
Total Equity " kenya shillings"	42,671	50,686	62,313,580	66,964	70,887
Ratio in %	25.8%	24.9%	0.008%	11.5%	16.2%

d) *The role of accessing electronic payment for financial performance in Equity bank ltd*

In the literature, Equity bank ltd seek finance for several reasons such as a way of increasing the number of customers who will be;as a way of satisfying customers in effective way andas marketing strategy. Thus, to further ascertain the role of electronic payment for financial performance in equity bank ltd, respondents were asked to indicate the role of electronic payment system for customers and employees on financial performance.

Findings reveals major reasons why customers sought electronic payment were as a way of increasing the number of customers who will be used electronic payment (33.5%) as a way of satisfying customers in effective way (9.7%), as marketing strategy (38.1%), 18.7% all the above are needed. Other reason why equity bank ltd sought electronic payment is to save time for customers and employees.

e) *Analysis of the relationship between electronic payment and financial performance*

Model Summary

Model	*R*	*R* square	Adjusted *R* square	Standard error of the estimate
1	.828[a]	.686	.608	15.51109

Source: Researchers' computation from SPSS, October 2017

Table above shows a model summary and indicates the adjusted *R* square used as test for model fitness. The *F*-test was carried out to test the significance of the regression model in predicting the dependent variable (financial performance of equity bank ltd). From the results, it was found that the four independent variables (electronic card banking; Mobile banking, Internet banking and online remittance on the performance of Equity bank ltd (adjusted *R* squared = .686). That means the model explains 68.6 % the variance in the financial performance of equity bank ltd; 41.2 % of variations are brought about by factors not captured in the objectives. Therefore, further research should be conducted to investigate the other factors (9.7 %) that affect financial performance of equity bank ltd. The regression equation appears to be very useful for making predictions since the value of R^2 is close to 1.

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1. Regression	2102.958	1	2102.958	8.741	.042[a]
Residual	962.375	4	240.594		
Total	3065.333	5			

Source: Researchers' computation from SPSS, October 2017

According to table 15 the findings shows that the null hypothesis was rejected because the linear regression *F*-test results ($F = 8.741$; and 5df) are significant at $p < 0.05$. Therefore, the null hypothesis (H_o) was rejected and concluded that the regression model linearly explains the performance of Equity bank ltd. Therefore, the study accepted the alternative hypothesis.

H_{a1}: There is a relationship between electronic card banking and the financial performance of equity bank ltd;

H_{a2}: There is a relationship between Mobile banking and the financial performance of equity bank ltd;

H_{a3}: There is a relationship between Internet banking for electronic and the financial performance of Equity bank ltd;

H_{a4}: There is a relationship between online remittance and the financial performance of equity bank ltd.

Regression model coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1. (Constant)	1.138	.3917		2.905	.000[a]
X1	.258	.1304	.387	1.979	.003
X_2	.367	.413	.188	1.987	.004
X_3	.423	.1897	.609	2.229	.031
X4	.157	.0724	.238	2.169	.033
X5	.345	.222	.077	1.134	.001

a. Dependent Variable: Financial Performance of Equity bank ltd

Source: Researchers' computation from SPSS, October 2017

The study conducted a multiple regression analysis so as to determine the regression coefficients (β) which shows that $\beta 0 = 1.138$and which means that all the independent variables low costs of accessing finance, low interest rates, simple application procedures for loan, simple collateral requirements, and guarantees from government have an a significant contribution to Equity bank ltd performance even if the x variable equal to zero means Y= 1.138 and according to table 23 the model equation become $Y= 1.138+0.258X_1 + 0.367X_2+ 0.423X_3+.157X_4+ o.345X_5$

The findings of the study was relevant due, use of electronic payment, are critical factors for financial performance as measured by ROA, ROE& Net income. It concluded that the interactions use of electronic payment of the factors create an impetus for financial performance as measured by ROA, ROE& Net income.

VI. Recommendations

It is suggested that Equity bank ltd should train all customers how to use electronic payment system such as Electronic fund transfer; mobile banking, internet banking and online remittance Because training and experience of the customers were found to significantly impact access to electronic payment system, therefore the managers need to design short courses in the area of using electronic payment system in order of saving time and money particularly those with lower educational background as education is an important factor in accessing electronic payment system.

Firstly, further research could determine if the findings of this research are consistent across different banks. Since the study concentrated on equity bank ltd, a further research into other bank will throw more light on the findings of this study. In addition, there is the need to duplicate the research in other parts of Rwanda to confirm if the results of this research can be generalized across the whole country.

Though the study found relationship between the variables tested and electronic payment system the model in all cases was not able to give a 100% prediction. This means that there are other equally important variables that were not considered in this study. A further research to look at other variables not included in this study will be a useful exercise.

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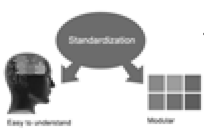

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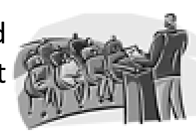

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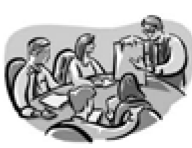

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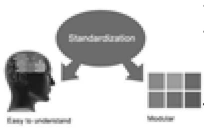

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Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.
Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.

- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- o Single section and succinct.
- o An outline of the job done is always written in past tense.
- o Concentrate on shortening results—limit background information to a verdict or two.
- o Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- o Explain the value (significance) of the study.
- o Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- o Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- o Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

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Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

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Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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