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Highlights

- Fiscal Horizontal Transfers
- A Study on Technology Problems
- Private-Partnership Influence
- Factors Influencing Exchange Rate

Discovering Thoughts, Inventing Future

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Fiscal Horizontal Transfers and Fiscal Autonomy in Local Government: Evidence of Public-Private-Partnership Influence in Uganda

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Abstract- Drawing on the pure theory of local expenditure and fiscal federalism theory, we investigated whether fiscal horizontal transfers are antecedents of fiscal autonomy in local government. Moreover, it was also examined if public-private-partnerships possibly mediate the fiscal horizontal transfers-fiscal autonomy relationship. In order to test the hypothesized model, data were collected from 27 districts, 9 municipalities and 243 sub-counties scattered in the eastern region of Uganda, East Africa. Over the years, the country has been applauded for its relatively efficient fiscal federalism system in the region. Data were then subjected to both regression and structural equation modeling statistical analysis. Results indicated that fiscal horizontal transfers predict changes in fiscal autonomy and public-private-partnerships have an intervening influence on the fiscal horizontal transfers-fiscal autonomy linkages. Implications to both theory and practice are accordingly discussed and future research path is proposed.

Keywords: local government, fiscal horizontal transfers, fiscal autonomy, public-private partnerships.

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I. Introduction

Current scholarship, theory, and practice concur that the basic goal of decentralization is for central government to extend part of its political, administrative and fiscal management powers and mandate to lower levels of government. However, power and mandate delegation to sub-national entities is required to be accompanied by an equally sizeable level of operational autonomy and leverage. Autonomy is pertinent if decentralization basic goals of effective resource allocation, efficiency and economic growth have to be realized (Fessha & Kirkby, 2008).

Sub-national and specifically local government fiscal autonomy; one of the most pivotal aspects of resource allocation, has been a focus of fiscal federalism research for quite a long time. Most studies (e.g. Akindele, Olaopa & Obiyan, 2002; Fessha & Kirkby, 2008; Oulasvirta & Turala, 2009) claim that majority entities in both the developed and developing world are rarely fiscally- autonomous in practical and real terms. For instance, Fessha and Kirkby (2008) observe that in Sub-Saharan Africa, central governments simply dictate local revenue mobilization, grant management, and expenditure terms.

Unfortunately, none of the current studies nor theory and practice conclusively explains what precisely leads to fiscal autonomy gaps in local entities. Nevertheless, findings from some studies (e.g. Bird & Smart, 2002; Liu, 2014; Rao & Das Gupta, 1995) suggest that fiscal horizontal transfers management is the most dominant and problematic phenomenon to autonomy. A number of fiscal horizontal transfer attributes; notably, equalization, accountability, and risk management are said to predict fiscal autonomy dynamics (Bird & Smart, 2002; Liu, 2014). Moreover, other scholars (Lameck, 2009; Hood & Mcgarvey, 2002) associate local entity fiscal autonomy status in both developed and developing countries to public-private partnerships.

Guided by the pure theory of local expenditure (Tiebout, 1956) and fiscal federalism theory (Musgrave & Musgrave, 1973; Oates, 2005), the current study examines fiscal horizontal transfers-fiscal autonomy linkages in 27 districts, 9 municipalities and 243 sub-counties in Uganda's eastern region. It also investigates whether public-private-partnership actually mediates the relationship between fiscal horizontal transfers-fiscal autonomy in those entities. The East African country operates on a political-administrative machinery of seven regions; namely, south-western, central, north-western, northern, north-eastern, and eastern regions. Over the years, Uganda has been commended for its fiscal federalism proficiency (Akindele et al., 2002; Albouy, 2012; Shankar & Shah, 2003).

Whereas there is accumulated prior research on local entity fiscal autonomy in Western, South American, and South-East Asian countries (e.g. Akindele et al., 2002; Awortwi, 2011; Shankar & Shah,2003), few studies address the following related and salient concerns in regard to Sub-Saharan Africa and particularly Ugandan-based entities:

1. What specific roles do individual fiscal horizontal transfers components; namely, equalization, accountability, and risk management play in entity fiscal autonomy?
2. How do public-private-partnerships matter in the fiscal autonomy structure?

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3. Do empirical results on fiscal horizontal transfers-public private partnerships-fiscal autonomy connectivity hold in the Sub-Saharan Africa region and particularly Uganda?

In responding to the foregoing concerns, this study makes a number of contributions to conventional fiscal federalism literature and specifically that of fiscal autonomy. First, we examine the otherwise and often empirically-overlooked influence of fiscal horizontal transfers on local fiscal autonomy.

The attention paid to the three fiscal horizontal transfers constructs (equalization, accountability, and risk management) enriches its research, theory and practice in a special way given that previous studies (e.g. Bird & Smart, 2002; Oulasvirta & Turala, 2009; Shankar & Shah,2003) largely focused on fiscal vertical transfers as an antecedent of fiscal autonomy.

Second, the study identifies public-private-partnership as a potential mediator to fiscal horizontal transfers-fiscal autonomy linkages. This provides a general yet novel input in fiscal autonomy analysis given that in the Sub-Saharan African setting (Akai & Sato, 2008; Fessha & Kirkby,2008)majority local entities derive enormous service support from the private sector.

Third, by contextualizing this investigation to Sub-Saharan Africa and Uganda, the present research enhances empirical comparison and replication of investigation in other parts of the world. As variously noted in related studies (e.g. Awortwi, 2011; Oulasvirta & Turala, 2009; Rao & Das Gupta, 1995), most decentralizing countries in the developing world face almost similar fiscal autonomy challenges. However, majority of them tend to underscore fiscal vertical transfers activities as such transfers dominate the budgetary machinery (Oulasvirta & Turala, 2009).

II. Theoretical Background and Hypotheses

a) Fiscal Autonomy

Whether in developed or developing countries, fiscal autonomy granted to local government jurisdictions is often perceived the most salient indicator of effective fiscal decentralization. Fiscal federalism theory (Musgrave & Musgrave, 1973; Oates, 2005) proposes that effective fiscal decentralization must ensure that local entities are free to impose their own taxes.

Moreover, the entities should independently manage fiscal transfers from central government, and allocate any other funding with minimal external interference (Oates, 2005). Consistent with the Tiebout (1956) pure theory of local expenditure model, sub-national units and especially local governments will then spend strategically and avoid resource waste.

That level of fiscal leverage does not only enable the entities to competently set and execute their budgets but it also enhances accountability, transparency, and quality service delivery. Conventional research (e.g. Akindele et al., 2002; Oulasvirta & Turala, 2009) provides evidence that fiscal autonomy leads to budgetary efficiency and ultimately economic growth. Given the numerous tasks (mandatory and permissible) local entities are constitutionally required to execute; the fiscal autonomy concept can best be appreciated from the income-source and expenditure-mandate perspectives (Fessha & Kirkby, 2008; Oulasvirta & Turala, 2009).

Traditional public finance literature (e.g. Musgrave & Musgrave, 1973; Oates, 2005; Tiebout, 1956) holds that central government is responsible for two major fiscal responsibilities: macroeconomic stabilization and income re-distribution. As noted by Musgrave and Musgrave (1973), the two assignments are of nation-wide nature and entail massive resource outlays to accomplish. Thus, local entities are excluded from handling the obligation (Oates, 2005).

Besides, the pure theory of local expenditure model advanced by Tiebout (1956) posits that naturally, local entities operate limited economies of scale and their benefits spill-over to other jurisdictions is equally minimal. Thus, such units stop at merely providing goods and services to their communities (Awortwi, 2011; Oulasvirta & Turala, 2009; Tiebout, 1956).

In various developing economies such as those of Africa, fiscal federalism policies are seemingly founded on the foregoing theoretical underpinnings (Albouy, 2012; Hood & Mcgarvey, 2002; Oulasvirta & Turala, 2009; Shankar & Shah, 2003). For instance, in Ethiopia, Ghana, Nigeria, South Africa, and Uganda; to cite but a few, local governments are denied total discretion to levy certain taxes. Hence, the entities rarely levy import duty on international trade or inter-entity trade transactions, employee pay-as-you-earn tax, and corporation tax (Hood & Mcgarvey, 2002; Shankar & Shah, 2003). Similar restrictions abound in relation to expenditure especially from conditional grants periodically remitted from central government.

Accordingly, some scholarly (e.g. Akindele et al., 2002; Fessha & Kirkby, 2008) argue that given that open-ended policy of local fiscal autonomy is often restrictive, it is of little doubt that such economies frequently experience administrative complexities, inequalities, and persistent resource allocation distortions. In Uganda, government has resorted to creating more districts and other local governments with a view of addressing the inequality and resource allocation distortions.

But consistent with empirical evidence (Albouy, 2012; Awortwi, 2011; Shankar & Shah, 2003), unnecessarily large numbers of districts have instead bred budgetary incapacitations and fiscal horizontal transfers problems. The country's fiscal decentralization also pays little attention to the socio-economic development and political maturity realities of its largely rural communities. Shankar and Shah (2003) noted that these factors are crucial for local fiscal autonomy in that they guarantee maximum benefit amidst rampant rent-seeking, corruption, and fraud practices.

b) *Fiscal Horizontal Transfers*

Also referred to fiscal equalization transfers, fiscal horizontal transfers are grants extended to sub-national entities particularly local governments to achieve inter-entity fiscal efficiency and equity (Liu, 2014; Rao & Das Gupta, 1995). Both political and socio-economic policies advocate for these transfers on the grounds that they assist recipient entities to provide public goods and services at comparable tax rates without being compelled to do so (Albouy, 2012; Liu, 2014).

Accordingly, proponent literature (e.g. Akai & Sato, 2008; Bird & Smart, 2002; Shankar & Shah, 2003) claims that in resource-constrained localities such as those of Africa, equalization transfers do not only enhance entity preference diversity but also promote pursuit of preferred policies. However, Bird and Smart (2002) remarked that resultant fiscal ability is only feasible in entity fiscal capacity-fiscal needs equilibrium environments. Without fiscal capacity-fiscal needs symmetry, majority entities take advantage of outright lack of local entity fiscal autonomy, to operate inefficiently (Bird & Smart, 2002; Shankar & Shah, 2003).

From a theoretical angle, both the fiscal federalism theory ((Musgrave & Musgrave, 1973; Oates, 2005), and the Tiebout (1956) pure theory of local expenditure model, emphasize the relevance of always weighing fiscal horizontal benefits against associated entity-efficiency costs. In particular, Oates (2005) notes that central government policy intended to institute equalization grants must not overlook the fact that by nature, entities are resource-endowed differently. Thus, equalization support meant to correct fiscal inequalities in such diversity may not only spark-off inter-regional resource allocation inefficiency but compromises fiscal autonomy.

Relatively, such experience does not only dominate Sub-Saharan African local entities (Rao & Das Gupta, 1995) but has also hit developed entities in German recently (Akai & Sato, 2008; Albouy, 2012; Shankar & Shah, 2003).Conventional research on local government fiscal autonomy generally associates fiscal horizontal transfers with three predictive attributes: equalization (Akai & Sato, 2008; Shankar & Shah, 2003), accountability (Bird & Smart, 2002; Rao & Das Gupta, 1995), and risk management (Albouy, 2012; Liu, 2014).

i. *Equalization*

According to public finance norms (Bird & Smart, 2002; Rao & Das Gupta, 1995), the primary objective of fiscal federalism policy in majority decentralized jurisdictions is to achieve vertical fiscal balance (VFB). Moreover, the dream is that VFB be realized on a sustainable basis. Much as Bird and Smart (2002) consider vertical fiscal balance a largely illusionary notion, in practice it amounts to that fiscal state when revenue and expenditure at all levels of government are consistently equal to one another. Thus, any divergence from the revenue-expenditure equilibrium amounts to some fiscal gap. Given their capacity to generate their own revenue, more recent empirical evidence (e.g. Akai & Sato, 2008; Albouy, 2012; Liu, 2014), indicates that rich and well resource-endowed localities are often able to narrow down their fiscal gaps.

On the contrary, fiscal gaps in poor and unfortunate less resource-endowed entities are rarely filled. Thus, they commonly constitute a very complex operational situation (Akai & Sato, 2008). Often accused of significantly contributing to the current fiscal autonomy complications in majority Sub-Saharan Africa localities (Albouy, 2012; Liu, 2014; Shankar & Shah, 2003), it is argued that fiscal gaps can only be appreciated from a horizontal fiscal balance context.

In Africa, as is common elsewhere, horizontal fiscal balance is not easy to achieve. Also simply referred to as equalization (Akai & Sato, 2008, Shankar & Shah, 2003), horizontal fiscal balance is generally believed to be a multi-interpretational dimension. Thus, various countries hold differing preferences as far as its attainment is concerned. It is this multitude of often conflicting preferences, that Bird and Smart (2002) attribute to exacerbated local entity fiscal autonomy malaise in the region.

For instance, equalization largely ignores actual entity revenue mobilization and expenditure capacity realities. Several countries tend to release more transfers to low tax-generating but high expenditure-prone localities considering them naturally disadvantaged. Ultimately, this approach does not only discourage tax-raising efforts but also seriously promotes over-spending and rent-seeking practices (Albouy, 2012; Bird & Smart, 2002).

Accordingly, the universal empirical stand (see Rao & Das Gupta, 1995; Shankar & Shah, 2003) is that: inter-entity equalization would be rational if central governments made adequate transfers to all localities. Most resource-constrained economies of Africa, Uganda inclusive, can rarely afford to make such transfers on a regular and sustainable basis.

Recently, Liu (2014) observed that; for instance, Ugandan's current fiscal decentralization policy does not only restrict local government supplementary budgets but has further tightened grant conditionalities. Supplementary budgets are a reflection of transfers inadequacy while stiff conditionalities portray constrained fiscal autonomy (Akai & Sato, 2008; Bird & Smart, 2002; Liu, 2014).

Based on the foregoing equalization-fiscal autonomy deliberations, the following is proposed:

Hypothesis 1: In local government, equalization relates positively with fiscal autonomy.

ii. *Accountability*

Both the pure theory of local expenditure (Tiebout, 1956) and fiscal federalism theory (Musgrave & Musgrave, 1973; Oates, 2005) stress the need for accountability in sub-national entities. According to Musgrave and Musgrave (1973), citizens should always be able to hold local entity authorities responsible for the way fiscal resources (local tax revenue, transfers, and donor funding) are expended.

Thus, the grantor (central government) has to design and tailor fiscal transfers to local operational circumstances in a manner that enhances accountability efficiency. Accordingly, recipient entities must also be accountable to both the grantor and citizens for resource-utilization integrity and output. Expenditure output or results must then be evidenced by prompt and high quality service delivery (Musgrave & Musgrave, 1973; Oates, 2005).

Fiscal autonomy proponents including (Akindele et al., 2002; Fessha & Kirkby, 2008; Oulasvirta & Turala, 2009) assert that theory-assumed accountability can never be realized in practice. This is more so in corruption-ridden and fiscal autonomy-deprived countries of the developing world. For instance, Fessha and Kirkby (2008) identified two critical factors that foster pessimism of fully realizing accountability efficiency in such countries.

First, majority of their entities lack technical capacity. Local governments in various decentralized Sub-Sahara Africa countries; with no exception Uganda, largely rely on unqualified manpower. Often sourced on political, sectarian and tribal basis, the work-force can rarely deliver to required standards and cannot be disciplined for habits such as corruption. The resultant inefficiency has been aggravated by extremely weak or non-existant internal control systems operated by most entities (Fessha & Kirkby, 2008; Shankar & Shah, 2003).

Second, various rural-based local governments operate manual accounting and budgetary systems. Much as such entities are the majority recipients of horizontal fiscal transfers, their manual systems inhibit operational performance and particularly compromise accountability efficiency (Fessha & Kirkby, 2008; Oulasvirta & Turala, 2009).

On the basis of the foregoing empirical dialogue, the current study makes another novel contribution to the local fiscal autonomy literature. Specifically, it attempts to unlock the accountability-fiscal autonomy relationship dilemma. For example by implication, some existant evidence (Akindele et al., 2002; Fessha & Kirkby, 2008; Oulasvirta & Turala, 2009) seems to suggest that basically it is lack of accountability which breeds fiscal autonomy in local entities.

But examined closely, and consistent with evidence in (Awortwi, 2011; Bird & Smart, 2002; Liu, 2014), one can also infer that it is the denial of sufficient fiscal autonomy to local governments that actually restrains their spending capacity. Consequently, the entities are disenabled engaging rightful technical personnel and acquiring relevant latest technological-based accounting systems. Whatever the direction, this hypothesis will be tested to generate proper appreciation:

Hypothesis 2: Accountability has a positive relationship with fiscal autonomy.

iii. *Risk Management*

As noted earlier, the essence of horizontal fiscal transfers is to create inter-entity or broadly inter-regional fiscal equity. However, practice and past research (e.g. Akai & Sato, 2008; Albouy, 2012; Rao & Das Gupta, 1995; Shankar & Shah, 2003) have demonstrated that equalization payments are associated with serious risk. The transfers engender risk to the grantor, beneficiary entities, and to the citizens which cannot be easily managed in the short-run.

Rao and Das Gupta (1995) and Shankar and Shah (2003) have observed that horizontal fiscal grants exert tremendous risk to central government in respect to pertinent inter-entity resource allocation complications. In Africa, and specifically Uganda, resultant inefficiencies generate political turmoil and distrust to the ruling and administrative system. Accordingly, Shankar and Shah (2003) explain that the equalization payments hamper technical manpower re-locations to otherwise more productive entities. This renders most administrative regions fiscally-undeveloped and inefficient.

Other scholars (e.g. Akai & Sato, 2008; Albouy, 2012; Bird & Smart, 2002) claim that it is largely due to resource allocation inefficiency risk that countries in Sub-Saharan Africa institute tight measures on local fiscal autonomy. Such measures are meant to protect central government from eminent budget support which may not be easily affordable (Bird & Smart, 2002).

To beneficiary local governments, equalization transfers create unmanageable risk of high level accountability and efficient resource management. As noted Albouy (2012) and Liu (2014), the transfers do not only compound the internal control shortfalls in majority African localities, but also breed inter-entity disunity.

Beneficiary entities face a big risk of operational discrimination and heightened competition. Ouite often, it is such a situation that compels central governments to restrain local fiscal autonomy (Albouy, 2012; Shankar & Shah, 2003).

Finally, local communities and indeed the entire citizenry cannot easily escape the risk management-fiscal autonomy challenge. Citizens face a big risk of resultant local tax uncertainties, service delivery quality, and production inefficiency. In a nutshell, the communities risk the loss of obtaining what Rao and Das Gupta (1995) termed agglomeration or collective benefits.

Against the risk management-fiscal autonomy debate above, it is proposed:

Hypothesis 3: Risk management and fiscal autonomy in local entities are positively related.

c) Public-Private Partnerships

In the developing world, governments at both national and sub-national level are often faced with the challenge of extraordinary demand for public goods and services particularly related to social infrastructure. Thus, despite the tight fiscal and budgetary constraint environments they operate in, authorities are obliged to set-up educational, health, and water and sanitation facilities, and construct road networks (Awortwi, 2011; Oulasvirta & Turala, 2009; Shankar & Shah, 2003).

Recent empirical evidence (e.g. Hood & Mcgarvey, 2002; Lameck, 2009) suggests that various sub-national and particularly local jurisdictions in Africa apply public-private partnerships (PPP) to address social infrastructure concerns. According to Hood and Mcgarvey (2002), PPPs are normally public entity-private organization contracts entered into to help in the construction and maintenance of public entity infrastructure on a value-for-money basis.

The contracts; usually with a fixed lifespan, combine a fixed price or no payments-in-progress component with that of a long-term service value(Hood & Mcgarvey, 2002).However, depending on the contract terms, either the local entity owns the infrastructure outright or the contractor holds it until the contract is completed. Related service installment-payments are then made after construction (Lameck, 2009).

Advocates of the public-private partnerships approach (Akindele et al., 2002; Hood & Mcgarvey, 2002) argue that PPPs constitute the most effective procedure to public-private sector cooperation. Relative to conventional procurement (design-and-construct) contracts, the partnerships create enormous local fiscal efficiency gains. Moreover, when properly designed and their terms of reference adhered to, the partnerships are also able to generate government-service provider arms-long relationships. Traditionally, arms-long relationships are considered important for their capacity to enhance effectiveness in contract enforcement (Akindele et al., 2002; Lameck, 2009).

Research and practice also view well-structured public-private partnerships as the most ideal option for social infrastructure development for local entities with limited skills and technology. According to Hood and Mcgarvey (2002), today several African countries endeavor to promote PPPs as the only viable means of filling their local government manpower capacity gaps.

In reality, however, restrictions in fiscal autonomy and associated public performance limitations render anticipated public-private partnership benefits unrealizable. The frustrations are very rampant in African-based local governments (Fessha & Kirkby, 2008; Hood & Mcgarvey, 2002; Oulasvirta & Turala, 2009). In Uganda, for instance, numerous institutional capacity limitations and scanty public-private project processes undermine local fiscal autonomy.

Further, they hamper public-private partnership prospects in several aspects. First, much as the country's legal framework clearly specifies public-private partnerships basic requirements, the system cannot ably resolve arising disputes.

Recent research (e.g. Akai & Sato, 2008; Shankar & Shah, 2003) indicates that at the local level, Uganda's current legal system even finds it a challenge to cancel contracts and manage stepping-in rights meaningfully. This regulatory flaw has undermined budgetary efficiency in less-competitive and fiscal horizontal transfers recipient entities (Shankar & Shah, 2003).

Second, pre-mature partisan politics (Albouy, 2012; Bird & Smart, 2002) and lack of proper fiscal resource governance (Oulasvirta & Turala, 2009) undermine public-private partnership goals in African local entities. Accordingly, investors and the donor community (funders of most social infrastructure projects), doubt contract authenticity. The scholars especially Albouy (2012) and Oulasvirta and Turala (2009) assert that, in general, it is the politics-governance triangulation that has undermined fiscal equalization in such countries and therefore complicated the fiscal autonomy dynamics.

Third, a combination of salient factors such as: weak administrative structures, inadequate project cost-benefit analysis capacity, corrupt contract bidding-awarding systems, and unpredictable regulatory environments, eventually generate contract cost over-runs and recurring re-negotiations. Thus, and in congruence with empirical evidence (Bird & Smart, 2002; Hood & Mcgarvey, 2002; Lameck, 2009; Shankar & Shah, 2003), the foregoing factor combination surrounding majority local jurisdictions, prompts central government authorities to restrict local fiscal autonomy. This position is rational in local public entity-private partnership arrangements and particularly in fiscal

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horizontal transfers recipient localities (Hood & Mcgarvey, 2002; Shankar & Shah, 2003).

The preceding seemingly-endless fiscal horizontal transfers-public private partnership-fiscal autonomy debate suggests the following proposal:

Hypothesis 4: Public-private partnership mediates the relationship between fiscal horizontal transfers and fiscal autonomy.

III. Methods

a) *Participants and Procedures*

In order to test the hypothesized model of the current study, 295questionnaires were distributed to 27 districts, 9 municipalities and 243 sub-counties (units of analysis) located in the eastern region of Uganda, East Africa. Two types of questionnaires were used, one for administrators and the other for employees and councilors. Bettis, Gambardella, Helfat and Mitchell (2014) recommend collection of survey data from a multitude of sources approach as it enhances effective predictor-mediator-criterion variable evaluation. Moreover, the separation significantly minimizes effects of potential same data-source bias (Bettis et al., 2014; Edwards & Lambert, 2007).

The administrators: Chief administrative officers, resident district commissioners, local council 5 chairpersons and heads of department, were purposively selected. Employees and councillors were selected on a pure-random basis(Edwards & Lambert, 2007).From the 295 questionnaires distributed to the participants,only 257 of them were received back (response rate: 87%). Furthermore, another 2 instruments were eliminated due to un-matched responses and related problems.

Thus, only 252 questionnaires were left for use in the final analysis (final response rate: 85%). Among the respondents, 56% were male with the mean age of 35 (SD = 7.69) and largely of married category. 34% of them were diploma holders and 43% held a bachelor's or higher degree qualifications. On average, 48% of the participants had worked in their respective entities for 6.47 years (SD = 2.14).

b) *Measures*

All the study variables and constructs were assessed using established scales and subsequently measured on a five-point Likert type scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

i. *Income Source*

In order to assess income source, the author employed three multiple sub-scales measures from the works of Akindele et al. (2002) and Fessha and Kirkby (2008). The comprehensive scale Cronbach's alpha was (0.93). Sample items included: "…income source is very reliable." and "…the source enhances entity fiscal flexibility."

ii. *Expenditure Mandate*

Expenditure mandate was assessed using a modified seven-item scale developed by Oulasvirta and Turala (2009). Sample items: "This local government has full authority to spend on relevant community-based areas and projects" and "All expenditure is often transparently accounted for." The corresponding Cronbach's alpha coefficient was (0.89).

iii. *Equalization*

Employing scales developed by Bird and Smart (2002) but systematically modified, the eight items related to equalization used in the study exhibited (α = 0.91). Some of the items included the following: "Grants meant to achieve equalization in this entity have unnecessarily stringent conditionalities" plus "…equalization undermines entity competitiveness instead."

iv. *Accountability*

Eight items (α = 0.96) were adopted for the scale that measured accountability as a construct of fiscal horizontal transfers in this research. The scale was derived from previous empirical work (Akai & Sato, 2008; Rao & Das Gupta, 1995) but adjusted accordingly. Typical item: "The approach used by this entity to achieve fiscal accountability requirements is very effective."

v. *Risk Management*

The construct risk management was analyzed on the basis of measurement scales employed by Liu (2014) and Shankar and Shah (2003). The seven items (α = 0.97) used in the assessment included: "…fiscal autonomy cannot be attained in this locality due self-created risks."

vi. *Public Private Partnership*

Measurement scales rooted in the work of Lameck (2009) and that of Hood and Mcgarvey (2002) but tailored to suit local circumstances of the current study, were used to evaluate the variable public private partnership. Related seven items embraced, including: "Public private partnership has compromised fiscal autonomy achievement drive in this local government" had a Cronbach's alpha coefficient of (0.85).

c) *Control Variables*

Five demographic variables of participants' gender, age, marital status, education, and period served were included in the study model as control variables. Previous studies (e.g. Asparouhov & Muthen, 2009; Edwards & Lambert, 2007) have shown that demographic variables are closely related to local fiscal autonomy and thus have a potential influence on its undertakings. Accordingly, gender was measured as a dichotomous variable coded as (0) for male [141] and (1) for female [111]. Age in years was coded as [(25-35) 27%; (36-45) 48%; (46+) 25%]; Marital status: (Single

31%; Married 46%; others 23%); Education: (Certificate 23%; Diploma 34%; Degree+ 43%); and Period Served in years: (1-5) 29%; (6-10) 48%; (11+) 23%; n=252.

Furthermore, one latent variable was espoused to support analysis of the study instrument validity assessment.As recommended by previous research (Asparouhov & Muthen, 2009; Bollen & Stine, 1992), validity can effectively be verified by subjecting such a factor to Harman's one factor confirmatory factor analysis (CFA). The essence of CFA is to depress potential suppressive effect latent variables may have on hypothesis analysis results. The latent variable was therefore controlled for in order to achieve that goal.

d) Analytical Approach

In order to test the study's proposed hypotheses effectively, structural equation modelling (SEM) using AMOS (v.10) was performed. Past simulation experience (Asparouhov & Muthen, 2009; Bollen & Stine, 1992; Edwards & Lambert, 2007) suggests that SEM approach enables a concurrent evaluation of all study variables in hypothesized models thus enhancing verification of model-test data consistence. This can certainly be attained if the hypothesized model is subjected to a bi-analytical (measurement model and structural model) strategy (Bollen & Stine, 1992; Edwards & Lambert, 2007).

In the present study, the measurement model was the first to be examined. The verification was executed by means of CFA and as indicated by Edwards and Lambert (2007), no control variables was involved. Secondly, a structural model was instituted to establish the hypothesized model fit as per the measurement model output. Ideally, the structural model is meant to foster hypothesized mediation estimation (Asparouhov & Muthen, 2009; Bollen & Stine, 1992).

Besides, error variances of latent constructs related all control variables were fixed at zero (0) value. Asparouhov and Muthen (2009) noted that fixing error variances at zero facilitates manifestation of only one item for each control variable and enhances control variable latent constructs to be loaded on mediation and dependent variables in designated paths more easily.

e) Results

i. *Descriptive Statistics and Correlations*

Table 1 presents the descriptive statistics, reliability and inter-variable correlation coefficients of the study. While a number of relationships were in the expected direction, several of them were not. Notably, public-private partnership relates positively and significantly with risk management to the extent of ($r = .28$, $p < 0.01$) and also with accountability ($r = .17$, $p<0.05$) but negatively albeit significantly with equalization ($r = -.33$, $p < 0.05$).

Moreover, while fiscal autonomy has a positive and significant association with public-private partnership ($r = .16$, $p < 0.01$), it relates negatively with accountability and equalization at levels ($r = -.27$, $p < 0.05$) and ($r = -.35$, $p < 0.01$) respectively. At variable level, fiscal autonomy relates positively and significantly with fiscal horizontal transfers to the magnitude of ($r = .42$, $p < 0.05$) and as indicated earlier, with public-private partnership ($r = .16$, $p < 0.01$). The results also show that all variable and construct items meet the reliability threshold ($\alpha \geq .75$) (Bettis et al., 2014; Hood & Mcgarvey, 2002).

Table 1: Variable Means, Standard Deviations, Reliability Coefficients, and Correlations

#	Variable	M	SD	1	2	3	4	5	6	7	8
1.	Equalization	3.32	1.52	.84							
2.	Accountability	3.06	1.56	-.37**	.81						
3.	Risk Management	3.02	1.52	-.26	.39**	.79					
4.	FHT	2.88	1.58	.44	.36	.43**	.89				
5.	PPP	3.00	1.54	-.33*	.17*	.28**	.31**	.83			
6.	Income Source	3.12	1.55	.42	.15**	.38**	-.24	-.42**	.77		
7.	Expenditure Mandate	2.94	1.57	-.14**	.39	.17	.29**	-.22	.31**	.86	
8.	FA	2.90	1.59	-.35**	-.27*	.24	.42*	.16**	-.28*	.32**	.85

*Notes: FHT = Fiscal Horizontal Transfers; PPP = Public-Private-Partnership; FA = Fiscal Autonomy; **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed); Reliability coefficients are in parentheses; n=252.*

f) Hypothesis Testing

Before testing the proposed study hypotheses, presence of multi-collinearity threat to the data set was established. Past research (e.g. Asparouhov & Muthen, 2009; Bollen & Stine, 1992) notes that multi-collinearity can significantly compromise hypotheses results if not properly addressed. Data tolerance values (TV) and variable inflation factors (VIF) at ($TV \leq 1.0$) and ($VIF \leq 10.0$) levels respectively imply absence of the threat to data (Bollen & Stine, 1992). As shown in Table 2, the various TV and VIF results suggest that the study data set was safe from the multi-collinearity problem.

Moreover, the results were confirmed by poor Harman's single factor model goodness-of-fit indices($\chi 2 = 9.382$; df = 14; $\chi 2$/df = 0.670; IFI = 0.591; TLI = 0.763; CFI = 0.887; RMSEA = 0.218; L.052, H.236) relative to those in the measurement model($\chi 2 = 14.845$; df = 16; $\chi 2$/df = 0.928; IFI = 0.991; TLI = 0.975; CFI =

0.983; RMSEA = 0.017; L.019, H.114) (Bettis et al., 2014;Bollen& Stine, 1992). The weak Harman's single factor model goodness-of-fit indices further suggest that data were safe from the common methods variance threat and had quite a robust discriminate and construct validity set-up (Edwards & Lambert, 2007).

Table 2: Hypotheses Analysis

Dependent Variable: Budgetary Efficiency					
Particulars	β	SE	t	TV	VIF
Direct Effects					
Equalization→ Fiscal Autonomy	$.36^{**}$	.15	1.69	.88	1.14
Accountability→Fiscal Autonomy	$.16^{*}$	.17	1.83	.71	1.42
Risk Management→Fiscal Autonomy	$.42^{**}$	.86	1.16	.73	1.38
Indirect Effect					
Fiscal Horizontal Transfers →PPP→ Fiscal Autonomy	$.39^{**}$	1.69	2.63	.86	2.75
Adjusted R^2 [.697]					
Bootstrapping Results: Indirect Effect (CI) [-0.084↔-0.001]					

Notes: SE = Standard Error; TV = Tolerance Value; VIF =Variable Inflation Factor; PPP = Public - Private Partnership; $^{*}p < .05$; $^{**}p < .01$; Bootstrap Sample Size = 2500;CI = Confidence Interval; Standardized Coefficients Reported; n = 252.

The study hypotheses were tested using the regression analysis-structural equation modeling combined approach consistent with previous research (Asparouhov & Muthen, 2009; Bollen & Stine, 1992; Bettis et al., 2014; Hood & Mcgarvey, 2002; Oulasvirta & Turala, 2009).Structural models with fairly strong goodness-of-fit indices (Asparouhov & Muthen, 2009; Bollen & Stine, 1992; Edwards & Lambert, 2007; Oulasvirta & Turala, 2009) was engaged in testing hypotheses both direct and indirect (mediation) effects.

i. *Direct Effect*

The indices for the direct effect model were as follows: $(\chi^2_{df})=1.437$; df=1; p=.231; $(\chi2/df)=1.437$; GFI=.988; NFI=.988; RFI=.884; IFI=.996; TLI=.962; CFI=.996; RMSEA=.043 (L.000; H.186) at 90. In reference to the various hypotheses, it was proposed in Hypothesis 1 that in the surveyed local governments, equalization has a positive relationship with fiscal autonomy. Table 2 results (β = .36, p < 0.01, t-value = 1.69) indicate that data actually offer support to that presumption.

The results further suggest that available data support Hypothesis 2 (β = .16, p < 0.05, t-value = 1.83) position that in those entities, accountability activities relate positively with fiscal autonomy endeavors. In addition, Hypothesis 3 which predicted a positive association in the investigated localities between risk management and fiscal autonomy also received data backing. Besides, Adjusted R^2 = .697value affirms that the study predictor constructs explain changes in fiscal autonomy to a quite large magnitude of nearly 70%.

In sum, what the foregoing results imply is that: The more the entities endeavor to attain equalization, accountability, and good risk management practices, the stronger the drive to achieve entity fiscal autonomy and independence also becomes.

ii. *Indirect (Mediation) Effect*

The study employed test a model with indices $(\chi^2_{df})=1.949$; df=1; p=.163; $(\chi2/df)=1.949$; GFI=.976; NFI=.988; RFI=.992; IFI=.969; TLI=.971; CFI=.967; RMSEA=.061 (L.000; H.192) at 90 to investigate its indirect effect. In Hypothesis 4, it had been predicted that public-private partnership undertakings mediate the relationship between fiscal horizontal transfers and fiscal autonomy.

Conventional structural equation modeling (Edwards & Lambert, 2007) method results (Table 2) (β = .39, p < 0.01, t-value = 1.69), indicate that data support that proposal. Numerous studies (e.g. Bird & Smart, 2002; Bollen & Stine, 1992; Lameck, 2009) often cast doubt on regular SEM-derived mediation effects claiming they are not substantive enough. Thus, 2500 sub-samples were created and accordingly tested for mediation based on bootstrapping methodology (Bollen & Stine, 1992).

The results (Table 2), suggest that the generated 95% bias-corrected and significant confidence interval (CI)[-0.084↔-0.001] confirm Hypothesis 4; public-private partnership mediation in the fiscal horizontal transfers-fiscal autonomy relationship. Bird and Smart (2002) consider the indirect effect statistically-significant since the (CI)[-0.084↔-0.001] contains no zero value within it.

IV. Discussion and Study Contribution

Contemporary fiscal federalism research (e.g. Akai & Sato, 2008; Albouy, 2012; Awortwi, 2011; Oulasvirta & Turala, 2009) emphasizes that in local government, fiscal horizontal transfers and specifically the equalization, accountability, and risk management attributes are intimately tied to fiscal autonomy. The close connectivity is generally viewed as capacity to fully explain whatever changes take place in fiscal autonomy endeavors.

Related empirical opinion advanced by Hood and Mcgarvey (2002) and Lameck (2009) also asserts that while fiscal horizontal transfers are quite pertinent in the attainment of local entity fiscal autonomy, the intervention of public-private partnership (PPP) is very critical. Central governments in several Sub-Saharan African countries opt for PPP given entity technical capacity gaps and widespread corruption and rent-seeking practices.

Hood and Mcgarvey (2002) and Lameck (2009) argue that it is PPP that therefore indirectly promotes fiscal autonomy restraints in local entities. Although the foregoing debate rageson, existant literature has so far failed to provide a conclusive answer to one fundamental question: "What precisely explains the fiscal autonomy problem in local government ? "The current study therefore attempts to make some contributions to the theoretical underpinnings upon which it is founded and to the local fiscal autonomy knowledge body.

First, the study is driven by an integrative fiscal horizontal transfers-public private partnership-fiscal autonomy conceptual model capable of systematically outlining underlying construct linkages. Simulation scholars (e.g. Asparouhov & Muthen, 2009; Bettis et al., 2014; Bollen & Stine, 1992; Edwards & Lambert, 2007) associate such frameworks with meaningful critical analysis and fairly reliable inter-variable connectivity evaluation results.

Furthermore, the model was founded on classical and contemporary theories, namely, pure theory of local expenditure (Tiebout, 1956) and the fiscal federalism theory (Musgrave & Musgrave, 1973; Oates, 2005). Accordingly, the investigation contributes to the pure theory of local expenditure by clarifying how the equalization-accountability-risk management networks in fiscal horizontal transfers are key mechanisms in promoting related fiscal expenditures in local entities. Understandability of the mechanisms may significantly influence fiscal autonomy decisions. Similarly, the model also impacts the conventional fiscal federalism theory (Musgrave & Musgrave, 1973; Oates, 2005). Previously overlooked by the theory, the study illuminates the contribution of fiscal autonomy flexibility in attaining effective fiscal federalism.

Such independence is manifest able in transparent horizontal fiscal transfers' management supported by public-private partnerships. In line with Hypothesis 1, the study results showed that the higher the equalization level, the more fiscal autonomy can be realized in local entities. As indicated earlier, equalization also referred to as horizontal fiscal balance, is registered when central government makes adequate and equal transfers to all its local entities in a particular period. In practice, however, and consistent with previous empirical evidence (Akai & Sato, 2008, Shankar & Shah, 2003), few countries in the developing world attain acceptable fiscal equalization standards on a regular basis.

According to Shankar and Shah (2003), relentless resource and technical capacity constraints in Sub-Saharan Africa, often render equalization in most local entities a myth. Resultant horizontal fiscal gaps create revenue imbalances and therefore complicate expenditure especially that related to social infrastructure. It is also further observed by Akai and Sato (2008) that this often unnoticed equalization-related frustration has serious repercussions on local fiscal autonomy.

Rather than the commonly believed entity lack of accountability and transparency, it is that frustration that is largely responsible for central government denial of full fiscal autonomy mandate to most entities. The present study therefore suggests that central governments adopt realistic equalization policies capable of promoting local entity fiscal autonomy. This will enhance realization of fiscal federalism advocated for recently by Oates (2005) in the fiscal federalism theory.

Results for Hypothesis 2 indicated that there is a direct relationship between accountability and fiscal autonomy. This relationship is expected given prior pure theory of local expenditure (Tiebout, 1956) position and empirical evidence (e.g. Akai & Sato, 2008; Rao & Das Gupta, 1995). For instance, Rao and Gupta (1995) posited that when local entities properly account for all resources granted to them particularly those arising from fiscal horizontal transfers; it tremendously enhances their fiscal autonomy flexibility. In Uganda, accountability in most local entities is derailed by partisan politics, rampant corruption, and rent-seeking behavior (Akai & Sato, 2008; Shankar & Shah, 2003).

Moreover, it had been anticipated in Hypothesis 3 that risk management practices in local government have a direct relationship with fiscal autonomy. These results provide support for what Liu (2014) and Shankar and Shah (2003) described as inevitable requirement for local fiscal autonomy. Localities must set-up control mechanisms capable of identifying various administrative and operational risks that tend to curtail fiscal efficiency. As noted by Tiebout (1956) in the pure local expenditure theory, all entity expenditure is a function of deliberate and unavoidable shortcomings.

The current research calls on central governments to often support sub-national entity authorities run effective risk management structures for effective expenditure control. In line with Shankar and Shah (2003) observation, several local entities in South East Asia enjoy liberal fiscal autonomy due to spending trust grantors have in them. Their counterparts in Africa, specifically, Ugandan-based entities are yet to attain that level (Liu, 2014; Shankar & Shah, 2003).

Finally, it had also been proposed as Hypothesis 4 that public-private partnerships (PPP) mediate the fiscal horizontal transfers-fiscal autonomy relationship. Coincidentally, that hypothesis was supported by the study data. Previous scholarly work (e.g. Lameck, 2009; Hood & Mcgarvey, 2002) stress the pivotal role PPP frequently plays in developing, construction, and management of major social infrastructures in Sub-Saharan Africa.

Most of such projects are funded by conditional and equalization grants but entrusted to third parties in the private sector. Hood and Mcgarvey (2002) claims that local authorities are often sidelined due to questionable accountability and transparency capacities. This is a direct manifestation of constrained fiscal autonomy.

V. Theoretical and Practical Implications

The present research advances theoretical and practical understanding of fiscal autonomy in local entities in at least two important ways. First, past theorizing on the topic largely focused on exemplar assumptions surrounding local fiscal autonomy in ideal economies of the developed world. This study emphasizes an in-depth investigation of fiscal autonomy parameters in resource-constrained countries of Sub-Saharan Africa and particularly those of Uganda.

Since such economies operate generally weak fiscal policies often undermined by partisan politics, fiscal autonomy analysis on a prototype basis is significantly avoided. As observed by Musgrave and Musgrave (1973) and quite recently Oates (2005), effective fiscal federalism and by implication local fiscal autonomy, must always avoid prototypicality.

Second, the study was developed to assess novel aspects of fiscal autonomy in local government particularly fiscal horizontal transfers and public-private partnership. Past studies (e.g. Awortwi, 2011; Bird & Smart, 2002; Fessha & Kirkby, 2008) emphasize local entity-central government balanced interactions in realizing local fiscal efficiency. Thus, local entity leaders are encouraged to place less focus on fiscal autonomy setbacks but rather appreciate the fiscal horizontal transfers-public-private partnership input to fiscal autonomy. Moreover, central government policy formulators need to adopt fiscal policies that are practical to local entity situations in order to realize the fiscal equilibrium (Bird & Smart, 2002; Fessha & Kirkby, 2008).

VI. Limitations and Future Research Direction

Despite the abovementioned contributions of this study, some potential limitations should be noted. First, only five fiscal horizontal transfers-fiscal autonomy constructs (equalization, accountability, risk management, income source, and expenditure mandate) were adopted in the research analysis. Much as these five attributes are often considered the most influential (Akindele et al., 2002; Albouy, 2012; Oulasvirta & Turala, 2009; Rao & Das Gupta, 1995), it would be meaningful to investigate other factors that are not particularly main stream. Such factors may include technical capacity, entity location, politics, and tribalism.

Second, the current study may have a potential reversal causality risk given that a cross-sectional research design was employed. It is recommended that future investigations employ more time-flexible designs such as longitudinal design to mitigate the reversal causality complications.

Third, the study variables and constructs were rated by same sources. This remains a potential threat to the validity of the study results. Upcoming studies are therefore advised to gather data from a range of sources.

VII. Conclusion

The present results supported the notion that in local government, fiscal horizontal transfers impact fiscal autonomy. Moreover, public-private partnerships play a critical mediation role in fiscal horizontal transfers-fiscal autonomy linkages. We hope that this study will not only serve as a benchmark for future research, but is also suggestive of a number of local fiscal autonomy areas for future investigation.

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Factors Influencing Exchange Rate: An Empirical Evidence from Bangladesh

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Abstract- Literature effect of exchange rate fluctuations is caused by some macro-economic variables but there have not enough study in this important field. Our purpose was to generalize the main factors behind exchange rate fluctuations of Bangladesh from 1987-2017. We used ADF and PP test for stationary analysis that is unit root test satisfied preconditions for Johansen co-integrating test. Correlation matrix shows the relationships of independent variables with dependent one and agreed with FMOLS test. We find no serial correlation in Q-statistics, LM and Heteroscedasticity test. Johansen co-integration test specifies that there are no co-integrating equations for long run relationship rather the relationship is short run. VAR model and Ganger causality test shows there is a significant effect of Remittance, GDP growth and International trade to Exchange rate fluctuations because R-squared values are more than 60%. Wald test supports the VAR model results by ensuring that there also joint effect of independent variables. Results from FMOLS test concluded that GDP growth and International trade positively affect exchange rate. Remittance has negative effect on exchange rate.

Keywords: exchange rate volatility, johansen co-integrating test, independent variables, dependent variables, GDP growth, remittance, international trade.

GJMBR-C Classification: JEL Code: F31

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Strictly as per the compliance and regulations of:

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Md. Shohel Rana [α], Tanvir Hasan Anik [σ] & Md. Nurul Kabir Biplob [ρ]

Abstract- Literature effect of exchange rate fluctuations is caused by some macro-economic variables but there have not enough study in this important field. Our purpose was to generalize the main factors behind exchange rate fluctuations of Bangladesh from 1987-2017. We used ADF and PP test for stationary analysis that is unit root test satisfied preconditions for Johansen co-integrating test. Correlation matrix shows the relationships of independent variables with dependent one and agreed with FMOLS test. We find no serial correlation in Q-statistics, LM and Heteroscedasticity test. Johansen co-integration test specifies that there are no co-integrating equations for long run relationship rather the relationship is short run. VAR model and Ganger causality test shows there is a significant effect of Remittance, GDP growth and International trade to Exchange rate fluctuations because R-squared values are more than 60%. Wald test supports the VAR model results by ensuring that there also joint effect of independent variables. Results from FMOLS test concluded that GDP growth and International trade positively affect exchange rate. Remittance has negative effect on exchange rate. Finally, we can say that rise in GDP growth and international trade, increase the exchange rate volatility but rise in Remittance reduces the exchange rate volatility. We found the relevance of this study with existing the literature in its related filed.

Keywords: exchange rate volatility, johansen co-integrating test, independent variables, dependent variables, GDP growth, remittance, international trade.

I. Introduction

Exchange rate has a broad history different from today's marketing system. In the twentieth century, the exchange rate system was fixed. The increase or decrease of currency value is totally covered by the government. Before First World War, the major currencies of world were fixed in terms of gold. But the changes are made after Second World War. U.S dollar got importance for currency evaluation of most currencies. Despite this, some of the world's most important currency trading rates change frequently. Thus, the equilibrium exchange rate is determined in the market where demand and supply of currencies intersect. The demand of currency is caused by the net export and supply of the currency is based on the net foreign investment. Demand and supply change caused the change in the value of currency in the market place. The increase in the demand makes the currency more valuable than the low demanded currency. The constraint in the supply has a great effect in its value. Under floating exchange rate system, higher currency demand appreciates its value (exchange rate) while the higher currency supply depreciates its exchange rate in the foreign exchange market place. The foreign exchange rate is called Forex rate internationally. It is the rate by which the relative economic soundness of a country determined. The exchange rate stabilization is important while in transmitting money among the countries. A country can be caused in the losses for currency appreciation or depreciation. The foreign exchange department of every country specially watch and analyze the exchange rate to save their position. The trading, manufacturing companies and commercial banks are highly depend on the exchange rate because they have to deal with foreign clients in terms of profit and capital transformation. So, whether you are individual or industry receiving or sending money from the foreign countries need to keep a spontaneous eye on exchange rate of currencies because it is fluctuating in nature. The changes of exchange rates may occurred daily based on the market forces from one country to another the forces are demand and supply. The market forces concept is narrow based while there are some major factors, have long term effect on exchange rate for this the exchange rate fluctuates are our main concern to be analyzed. This study investigates some major factors that have a great importance for the variation in the exchange rates and reason of their volatility can be described accordingly. In this study we have four variables (Remittance, GDP growth and international trade) to show whether there is long term relationship with exchange rate.

In our theoretical logic the remittance has an effect on the exchange rate. But the effect may appreciates or depreciates the currency. The logic for depreciation of real effective exchange rate is the developing countries having small economy and living family members abroad remitting their earnings to the home country. The inflows of huge remittance creates no problem when the economy is large and absorbs the excess money received from the foreign country .But the problem occurs when the economy is small and the absorption of huge remittance cannot be compatible. The negative effective on exchange rate is experienced

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because the currency recipient in home country on behalf of the working members doing job in foreign country received the excess money and spends the money in the local market for purchase of assets and commodities. The purchase creates the local inflation causing home currency depreciation against foreign currency. The government takes the traditional way to fight the inflation imposing higher interest rate but the problem affect the businessmen and local people who are not in the remittance circle. Because the capital for financing business from local becomes expensive. GDP growth is one of the main factors which have significant influence on exchange rate. Currency appreciates by a stable growth in GDP. International trade is a summary of the import and export of a particular country. A country needs to purchase something from another country. In the opposite side, other countries also need to purchase something from outside of the residence. This imbalance of demand and supply creates international trade. Because the home country is unable to fulfill the demand made by its people that creates import from a foreign country. When there is a surplus of product and services after meeting the existing demand, the Export intension is preferable to a foreign country. When the export is greater than import a country is benefited. This causes currency more valuable than other currency and currency appreciates.

II. Objective of the Study

General objectives is to find out the significant factors influencing exchange rate movement. How much they influence the exchange rate is to be determined. We at first selected five independent variables named inflation, interest rate, remittance, GDP growth and international trade in our analysis to show the effect on exchange rate. But for stationary test of ADF and PP in Eviews software, Inflation and Interest rate are stationary at level. Our requirement for at level is Non-stationary. These two variables did not fill our requirement except others. So, we dropped them.

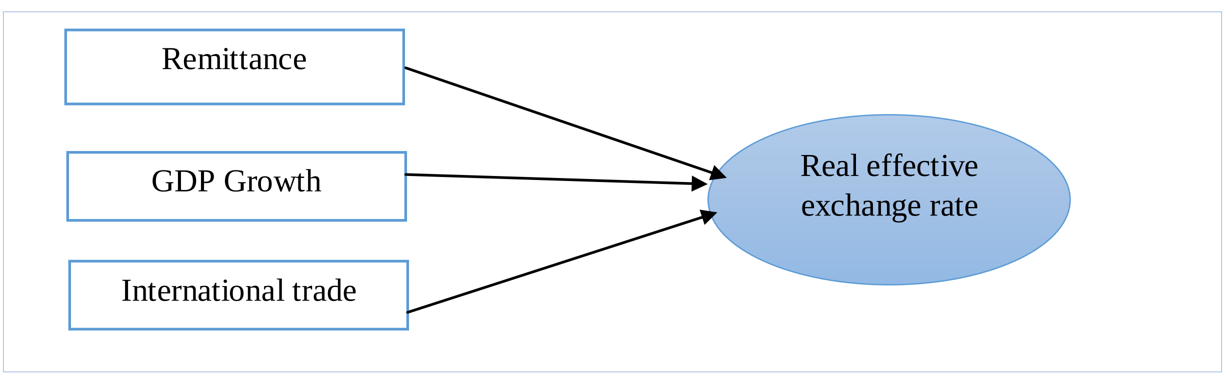
The main objectives are:

1) To analyze the determinants of Foreign Exchange Rate in Bangladesh.
2) To know which of the determinants is playing the main role in foreign exchange rate.
3) To make appropriate suggestions for suitable policy implementation for problems arising from the appreciation/depreciation of currency in the light of finding of the study.
4) To make summary of relationship among the independent and dependent variables.

III. Conceptual Framework

The conceptual model depicts the proposed causal model. Here the real effective exchanger rate is dependent variable which has direct impact from the major three independent variables. Although there have some other variables our focus point is on the Remittance, GDP growth and international trade.

Table 1: Conceptual framework



IV. Literature Review

a) Remittance and exchange rate

Remittance have positive effect evidenced by several analysts in Pakistan. Among them, Nishat 'and Bilgrami (1991) state that remittances increase GNP. They found the positive relation between remittance and GNP analyzing Keynesian macro model and three stage-least squares method using data from 1960 to 1988. Moreover, Haque and Montiel (1992) found that the worker's personal remittance appreciated the exchange rate movement from 1982 to 1991.Ahmed ara and Hyder 2005 investigated in their VAR (vector autoregression analysis). They found the foreign remittance has a significant effect on exchange rate variation in Pakistan. They included it as foreign shocks and the significance of foreign shocks got priority since the year of September 11, 2001. They showed the foreign remittance is a reason being an external shock for exchange rate variation. But, another variable such as trade has little impact on exchange rate, national output and prices of goods in Pakistan. However, the conclusion was external output shrink leads to exchange rate devaluation. The positive effects of remittance form abroad lead to an enhancement of domestic output appreciating exchange rate of Pakistan. Barajas et al. (2010) found in their analysis that decreasing trade and capital openness is a result of remittance effect for countries and Fayad's (2010) indicated that FDI (foreign direct investment) attenuation appreciates remittance.

b) GDP Growth and Exchange rate

Adusei and Gyapong (2017) investigated in their analysis, included GDP growth as one of the important variables besides foreign debt. Without that, they include inflation, money supply and trade. Among the factors, they concluded GDP growth and external debt as significant factors to predict the exchange rate for Ghana. Stancik(2007) and Oaikhenan ve Aigheyisi, (2015) states that the country's specific factors such as trade, capital flows, economic growth rate, foreign reserve, foreign debt and current exchange rate. They concluded that the effect of factors on the exchange rate is not significant rather the effect is based on techniques of evaluation, analysis periods and the country's financial conditions. Abbas et al (2012) and Ramasamy and Abar (2015) study was based on 15 periods data of ten African countries from the year 1996 to 2010. They tried to show that interest, inflation and GDP has an impact on the exchange rate. But, they found that only GDP has influence for the exchange rate movement but not the others. The same result is found in the analysis of Nucu (2011) in Romania. The analyst uses data from 2000 to 2010 based on the country of Romania. The study concluded that GDP growth increases rate of exchange fluctuation. But the increased imports decreases current account balance hence currency depreciates. They also indicated that USD/RON as their currency is not related to GDP directs to other determinants not included in their study. Parveen et al (2012) in their study named "factors affecting exchange rate variability in Pakistan" from the year 1975 to 2000. They uses statistical tests such as ADF, Linear regression specified by OLS for results. Factors were Export, import, economic growth rate and inflation. They found that 98% variability in exchange rate just because of these factors.

c) International trade and exchange rate

Excessive exchange rate volatility leads to delays in investment decisions, causing uncertainty in the economy. The uncertainty that is caused by volatility also negatively affects economic growth by affecting investment and investor confidence, productivity, consumption and international trade and capital flows (Oaikhenan and Aigheyisi, (2015: 49). In the study of Baldwin and Krugman (1989), they investigated capital inflow and trade balance to show the relationship with real exchange rate. In their analysis, the conclusion was large inflow of foreign capital primarily appreciates exchange rate. But, when they tried to show the relationship with trade balance, the conclusion was the depreciation of exchange rate is caused by Trade balance.

V. Data and Methodology

a) Sample description

This study used annual data for the period 1987-2017. Different sources for the data were approached (world development indicator, private sector, and international organizations) to find out the nature of the available data. All these sources of data are recognized, accepted and the provided information that has been used widely in the country. So, data and information of the sources incorporated in this analysis are reliable.

b) Research design

The stationarity of data is determined, by using Augmented Dickey-Fuller (ADF) test. To select the optimum ADF lag, Akaike Information Criterion (AIC) is used. Stationarity of the variables are checked once with an intercept is included only, and again when both an intercept and a linear deterministic trend is included. Johansen co-integration test is used to determine the co-integration in the regressions used for analysis. In order to analyze the factors affecting the exchange rate, a linear regression model has been used. The two stage least square method has been used for estimating the important linear regression equation models.

The following is the main linear regression model which will be used for analysis:

$$LREER = \alpha + \beta 1\ (LREMIT) + \beta 2\ (LGDPG) + \beta 3\ (LINTTRADE) + \mu$$

Where LREER is real effective Exchange rate, LREMIT is Remittance, LGDPG is GDP Growth rate, LINTTRADE is International Trade and μ is the residual term.

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c) *Variables Description and Data collection*

Abbreviation	Definition	Source
LREER	Real effective exchange rate (CPI based) considering 67 trading countries, (19787-2017)	Bruegel Database 2017
LREMIT	Personal remittance received from (1987-2017)	The World Bank (WB) (World Development Indicators 2018)
LGDPG	GDP growth (% of GDP) (1987-2017)	The World Bank (WB) (World Development Indicators 2018)
LINTTRADE	International trade (% of GDP) (1987-2017)	The World Bank (WB) (World Development Indicators 2018)

d) *Model Specification*

To investigate the factors influencing real effective exchange rate, we used the econometric model. We used three independent variables and one dependent variables. Independent variables in the model are namely Remittance, GDP growth, and International trade. The dependent variable is real effective exchange rate. We converted all the variables in log transformation because the nature of date are not same. Log Normal conversion helps to equalize the base of variables.

The econometric model is,

REER= F(REMITTANCE, GDP GROWTH, INTERNATIONALTRADE).........(1)

LREER = α + β1(LREMIT) + β2(LGDPG) + β3(LINTTRADE) + εi ....(2)

Where:

L=Log.

REER= Real effective exchange rate

REMIT= Personal remittance received

GDPG= GDP growth rate

INTTRADE= International trade

β1 is the co-efficient for remittance

β2 is the co-efficient for GDP growth

β3 is the co-efficient for International trade

εi is error terms

In our study, we used Statistical tools like as Agumented dickey fuller test, Phillips-Perron test, Johansen co-integration test, fully modified ordinary least square, Regression model by Eviews 10 statistical software. In our analysis ADF and PP test is used to investigate the variables are Stationary or not. Because, the data must be non stationary at level and stationary at 1st difference. Regression model is used to specify the coefficients of different variables. Johansen co-integration test is used to find whether there are long-run economic relationship between the variables or not. FMOLS (Fully modified ordinary least square) is used to determine the significance of independent *variables* to influence the dependent variable.

i. *Unit Root Test*

Many macroeconomic data is nonstationary data. Therefore, it has to be converted those non-stationary data to stationary data. Unit Root test is carried out to test whether the series is level stationary (I (0)) or first difference stationary (I (1)).ADF and PP test of stationary is performed by the Eviews 10 software where the three independent variables (Remittance, GDP growth and International trade) and the dependent variable is real effective exchange rate. The results of test is shown below. The ADF and PP test must confirm that the variables are non-stationary at level and stationary at 1st difference. Then we can be able to test the johansen co-integration test and regression analysis.

Unit Root Test is based on the following three regression forms:

Without Constant and Trends: $\Delta Y_t = \delta Y_{t-1} + U_t$ .... (3)

With constant: $\Delta Y_t = \propto + Y_{t-1} + U_t$ .... (4)

With constant and trend: $\Delta Y_t = Bt + \delta Y_{t-1} + U_t$ .... (5)

The Hypothesis is H0: δ=0 (Unit Root)

H1: δ≠ 0

ii. *Regression Model*

The regression model helps to determine the influence of independent variables over the dependent variable. How much change in independent variable cause the change in the dependent variable can be detect easily through the regression analysis. It helps to determine the coefficients of different variables.

iii. *Johansen Co-integration Test*

The test of co-integration helps to detect whether there is any long run association between variables or not. In this study, we tried to show the long run association between of independent variables (remittance, GDP growth and international trade) and real effective exchange rate. Johansen co-integration test need two conditions to be filled up in Unit root test statistics. One is the data should be non- stationary at level and another is the data should be stationary at first difference. In our analysis the unit root test is performed by Augmented Dicky-Fuller Test and Phillips–Perron test. This test includes two types of results one is trace test statistics and other is maximum eigenvalue test.

Trace Test Statistics

The trace test statistic can be specified as: The output of the trace test assumes that the null hypothesis assumes in which the number of distinct co-integrating vector(s) be less than or equal to the number of co-integration relations (r).

In Trace statistics-

Null hypothesis: The number of co-integrating vectors are equal to r.

Alternative hypothesis: The number of co-integrating vectors are more than r.

Maximum Eigenvalue Test

The maximum eigenvalue test examines the null hypothesis of exactly r co-integrating relations against the alternative of r+1 co-integrating relations with the test statistic.

In maximum Eigen value test-

Null hypothesis: The number of co-integrating vectors are equal to r.

Alternative hypothesis: The number of co-integrating vectors are r+1.

iv. *Standard VAR*

We use Standard Var when we detect in the series that there have not exist long run associations between variables. In that case, we use Standard Var to investigate short run properties in the series. Then we may go for Granger causality tests/Wald block Test under Standard VAR environment to establish causal links between variables.

v. *Wald test statistics*

Wald test is named after the famous statistician Abraham Wald especially for parametric statistical test. When we check whether the individual independent variable has the significant effect on the dependent variables or not, we use OLS test. But we use *Wald test* to check whether there are any joint effect of independent variables to the dependent variable ignoring their coefficients [C=(0)]. If the P value is less than 5% then we can tell that the independent variables have joint effect to explain the dependent variable. The test is based on true statistics because it uses parameters only from the sample statistics.

Assumptions about the Error Terms:

The expected residuals are zero: $E\,\varepsilon_{i,t} = 0$

With i=1, 2

The error terms are not auto correlated:

$E\,\varepsilon_{i,t}\,\varepsilon_{j,\tau} = 0$ with $t \neq \tau$

VAR-Model does not allow us to make statements about causal relationships. This holds when VAR-Model is only approximately adjusted to an unknown time series Process, while a causal interpretation requires an underlying economic model. However, VAR-Models allow interpretations about the dynamic relationship between the indicated variable.

VI. Result and Discussion

a) *Descriptive statistics*

	LREER	LREMIT	LGDPG	LINTTRADE
Mean	4.768538	1.589159	1.630063	3.398506
Median	4.752097	1.653009	1.656232	3.366170
Maximum	5.076545	2.359716	1.985709	3.873509
Minimum	4.588409	0.902149	0.882220	2.814678
Std. Dev.	0.118668	0.503139	0.265062	0.319650
Skewness	1.189897	0.175185	-0.989733	-0.241886
Kurtosis	4.346288	1.472260	3.735890	1.938742
Jarque-Bera	9.656385	3.173300	5.760598	1.757061
Probability	0.008001	0.204610	0.056118	0.415393
Sum	147.8247	49.26394	50.53197	105.3537
Sum Sq. Dev.	0.422461	7.594472	2.107736	3.065284
Observations	31	31	31	31

The descriptive statistics is basically used to explain the nature of data based on the few indicators. The base of skewness is 3. When the skewness value is greater than the base, the skewness is positive meaning that it has a long right tail. If the value is less than the referred base then we can call it mirrors normal skewness and platykurtic. The jarque bera test statistics measures the difference of the skewness and kurtosis of the series with those from the normal distribution. Here, the Jarque-Bera test statistics significantly favours the remittance, GDP growth and international trade because the probability is significant.

b) Unit root test

The unit root test is performed by Augmented Dicky-Fuller Test and Phillips–Perron test. The results are as below:-

	ADF (at 5%)		Phillips-Perron (at 5%)		
Variable	Level (Intercept)	1st Difference (Intercept)	Level (Intercept)	1st Difference (Intercept)	Order of integration
LREER	-1.023373 (-2.967767)	-3.622682 (-2.967767)	-0.183213 (-2.96397)	-3.630361 -2.967767	I(1)
LREMIT	-2.331987 (-2.976263)	-1.084847 (-2.976263)	-1.106911 (-2.963972)	-3.354757 (-2.967767)	I(1)
LGDPG	-2.587014 (-2.963972)	-5.069809 (-2.981038)	-2.375314 (-2.963972)	-9.879061 (-2.967767)	I(1)
LINTTRADE	-1.846738 (-2.963972)	-5.019223 (-2.967767)	-1.865249 (-2.963972)	-5.014660 (-2.967767)	I(1)

The test statistics value are in number without having first bracket and the critical value in the parenthesis. We can see that at level the test statistics value is less than critical value meaning that the data is non stationary. And at first difference the test statistics value is greater than critical value meaning that the data is stationary.

c) Correlations matrix

	LREER	LREMIT	LGDPG	LINTTRADE
LREER	1.000000	-0.044355	0.116216	0.101870
LREMIT	-0.044355	1.000000	0.651187	0.911895
LGDPG	0.116216	0.651187	1.000000	0.771432
LINTTRADE	0.101870	0.911895	0.771432	1.000000

d) Serial correlation test

The test for serial correlation is performed by three test those are Q-statistics test, LM test and Breusch-Pagan-Godfrey's Heteroskedasticity Test. The results are:-

<table>
<tr><th colspan="7">Q-statistic probabilities adjusted for 1 dynamic regressor</th></tr>
<tr><th>Autocorrelation</th><th>Partial Correlation</th><th></th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob*</th></tr>
<tr><td>. |**. |</td><td>. |**. |</td><td>1</td><td>0.255</td><td>0.255</td><td>2.1485</td><td>0.143</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>2</td><td>0.012</td><td>-0.057</td><td>2.1531</td><td>0.341</td></tr>
<tr><td>. *| . |</td><td>. *| . |</td><td>3</td><td>-0.145</td><td>-0.144</td><td>2.9040</td><td>0.407</td></tr>
<tr><td>. *| . |</td><td>. | . |</td><td>4</td><td>-0.078</td><td>-0.004</td><td>3.1293</td><td>0.536</td></tr>
<tr><td>. |* . |</td><td>. |* . |</td><td>5</td><td>0.090</td><td>0.121</td><td>3.4403</td><td>0.632</td></tr>
<tr><td>. |* . |</td><td>. | . |</td><td>6</td><td>0.133</td><td>0.066</td><td>4.1512</td><td>0.656</td></tr>
<tr><td>. *| . |</td><td>. *| . |</td><td>7</td><td>-0.083</td><td>-0.167</td><td>4.4368</td><td>0.728</td></tr>
<tr><td>. *| . |</td><td>. | . |</td><td>8</td><td>-0.137</td><td>-0.061</td><td>5.2550</td><td>0.730</td></tr>
<tr><td>. | . |</td><td>. |* . |</td><td>9</td><td>-0.003</td><td>0.113</td><td>5.2553</td><td>0.812</td></tr>
<tr><td>. *'| . |</td><td>. *| . |</td><td>10</td><td>-0.098</td><td>-0.168</td><td>5.7171</td><td>0.838</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>11</td><td>-0.012</td><td>-0.028</td><td>5.7245</td><td>0.891|</td></tr>
<tr><td>. *| . |</td><td>. *| . |</td><td>12</td><td>-0.131</td><td>-0.117</td><td>6.6449</td><td>0.880</td></tr>
<tr><td>.**| . |</td><td>.**| . |</td><td>13</td><td>-0.293</td><td>-0.244</td><td>11.504</td><td>0.569</td></tr>
<tr><td>.**| . |</td><td>.**| . |</td><td>14</td><td>-0.307</td><td>-0.248</td><td>17.169</td><td>0.247</td></tr>
<tr><td>. | . |</td><td>. |* . |</td><td>15</td><td>-0.004</td><td>0.090</td><td>17.170</td><td>0.309</td></tr>
<tr><td>. | . |</td><td>. | . |</td><td>16</td><td>0.034</td><td>-0.040</td><td>17.248</td><td>0.370</td></tr>
</table>

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.044983	Prob. F(2,23)	0.3678
Obs*R-squared	2.498965	Prob. Chi-Square(2)	0.2867

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.625343	Prob. F(4,25)	0.1991
Obs*R-squared	6.191514	Prob. Chi-Square(4)	0.1853
Scaled explained SS	3.383385	Prob. Chi-Square(4)	0.4958

The test of serial correlation helps to detect whether there are any serial correlations between the variables or not. The null hypothesis= No serial correlations and alternative hypothesis = There are serial correlations. The decisions can be made on P value. When the P value is greater than 5% the null hypothesis support that there is no serial correlations. Here, all three types (Q-statistics, LM and Heteroscedasticity) of Serial correlation test statistics signifies that there is no any serial correlation.

e) Determination of Lag Length and Appropriate Model

Lag	LogL	LR	FPE	AIC	SC	HQ
0	39.17611	NA	1.04e-06	-2.425939	-2.237346	-2.366874
1	136.5548	161.1786*	3.85e-09*	-8.038264*	-7.095302*	-7.742940*
2	142.2057	7.794302	8.43e-09	-7.324531	-5.627198	-6.792948

** indicates lag order selected by the criterion*

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

In the lag length table, most desirable number of lag length is model for unrestricted VAR because it favors the information criteria of LR, FPE, AIC, SC and HQ. The optimal lag length determination is one of the preconditions for testing Johansen co-integration test statistics. The long run associations between variables can be determined after the optimal lag length selection. When we test the Johansen co- integration test, we must notice that constant, parameter and trend that are affect by the variables we selected. The Akaike and Schwarz value is important when we select appropriate model. The minimum value get preference while selection and becomes a quadratic deterministic trend model.

f) Johansen co-integration test

Johansen co-integration test statistics is developed by the Johansen (1988) and Juselius (1990). The model can be used though there are more than one co-integrated associations between variables and the VAR takes all endogenous variables. Co-integration test is basically the long run associations between variable that are non-stationary at their levels and stationary at 1st difference.

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.506951	34.97980	47.85613	0.4491
At most 1	0.257488	14.47256	29.79707	0.8131
At most 2	0.145788	5.838786	15.49471	0.7145
At most 3	0.042817	1.269074	3.841466	0.2599
Trace test indicates no co-integration at the 0.05 level				
** denotes rejection of the hypothesis at the 0.05 level*				
***MacKinnon-Haug-Michelis (1999) p-values*				

Trace test shows that there is no any co-integrating equations. That means there are no long run relationships among the variables at 5% significance level.

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.506951	20.50724	27.58434	0.3071
'At most 1	0.257488	8.633775	21.13162	0.8608
At most 2	0.145788	4.569712	14.26460	0.7949
At most 3	0.042817	1.269074	3.841466	0.2599
Max-eigenvalue test indicates no cointegration at the 0.05 level				
** denotes rejection of the hypothesis at the 0.05 level*				
***MacKinnon-Haug-Michelis (1999) p-values*				

Johansen co-integration test associates to statistics one is Trace statistics and other is Maximum eigenvalue statistic. According to the both statistic the null hypothesis (r = 0), there is no co-integrated associations between variables is rejected against alternative hypothesis that is co-integrated associations. The result shows that there are no co-integrating equations at 5 % significance level in both trace and maximum eigenvalue statistics.

g) VAR model

Vector auto-regressive model (VAR) is used to test the short run relationship among the variables. The lagged one variables are the independent variables of dependent variables (REER, LREMIT, LGDPG, and LINTTRADE). Here, the numbers are coefficients, Standard errors are in 2nd bracket and t-statistics in the 3rd bracket. The result is,

	LREER	LREMIT	LGDPG	LINTTRADE
LREER(-1)	1.009403	-0.686565	0.224090	-0.239511
	(0.09706)	(0.17507)	(0.37287)	(0.15340)
	[10.4002]	[-3.92163]	[0.60099]	[-1.56137]
LREMIT(-1)	0.004419	0.794698	0.076991	0.115976
	(0.04992)	(0.09005)	(0.19179)	(0.07890)
	[0.08852]	[8.82487]	[0.40143]	[1.46983]
LGDPG(-1)	-0.019447	0.080309	0.173932	0.098354
	(0.06006)	(0.10833)	(0.23073)	(0.09492)
	[-0.32381]	[0.74132]	[0.75385]	[1.03616]
LINTTRADE(-1)	0.072215	0.222218	0.344923	0.681986
	(0.09360)	(0.16884)	(0.35960)	(0.14794)
	[0.77150]	[1.31611]	[0.95917]	[4.60981]
C	-0.255211	2.727361	-1.000043	1.900599
	(0.43913)	(0.79211)	(1.68703)	(0.69405)
	[-0.58118]	[3.44317]	[-0.59278]	[2.73842]
R-squared	0.840370	0.970232	0.505621	0.937908
Adj. R-squared	0.814829	0.965469	0.426520	0.927973
Sum sq. resids	0.067437	0.219424	0.995319	0.168460
S.E. equation	0.051937	0.093685	0.199531	0.082088
F-statistic	32.90304	203.7042	6.392123	94.40683
Log likelihood	48.89821	31.20103	8.520179	35.16564
Akaike AIC	-2.926547	-1.746735	-0.234679	-2.011043
Schwarz SC	-2.693014	-1.513202	-0.001146	-1.777510
Mean dependent	4.768487	1.604659	1.640142	3.417967
S.D. dependent	0.120696	0.504157	0.263483	0.305866

We see that the adjusted R-square value of three dependent variables are better representative of combined effect of independent variables. But how much an independent variable is significant to explain the dependent variable is shown by ordinary least square method using proc equations as follows.

LREER = C(1)*LREER(-1) + C(2)*LREMIT(-1) + C(3)*LGDPG(-1) + (4)*LINTTRADE(-1) + C(5)-- (6)

LREMIT = C(6)*LREER(-1) + C(7)*LREMIT(-1) + C(8)*LGDPG(-1) + C(9)*LINTTRADE(-1) + C(10)---------------------------------- (7)

LGDPG = C(11)*LREER(-1) + C(12)*LREMIT(-1) + C(13)*LGDPG(-1) + C(14)*LINTTRADE(-1) + C(15)-----------------------------(8)

LINTTRADE = C(16)*LREER(-1) + C(17)*LREMIT(-1) + C(18)*LGDPG(-1) + C(19)*LINTTRADE(-1) + C(20)------------------------(9)

Here, the proc makes four equations that includes 20 coefficients. The t-statistics is the result of coefficient divided by standard error. Now after estimating the OLS (ordinary least squares) method we get the probability (P) value. The decision can be given using P value. When the p value is more than 5 %, the particular independent variable is not significant to explain the dependent variable.

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.009403	0.097056	10.40024	0.0000
C(2)	0.004419	0.049923	0.088519	0.9296
C(3)	-0.019447	0.060057	-0.323806	0.7468
C(4)	0.072215	0.093604	0.771496	0.4422
C(5)	-0.255211	0.439128	-0.581176	0.5624
C(6)	-0.686565	0.175071	-3.921634	0.0002
C(7)	0.794698	0.090052	8.824867	0.0000
C(8)	0.080309	0.108332	0.741318	0.4602
C(9)	0.222218	0.168844	1.316114	0.1911
C(10)	2.727361	0.792108	3.443170	0.0008
C(11)	0.224090	0.372866	0.600993	0.5492
C(12)	0.076991	0.191793	0.401426	0.6890
C(13)	0.173932	0.230726	0.753847	0.4527
C(14)	0.344923	0.359605	0.959172	0.3398
C(15)	-1.000043	1.687031	-0.592783	0.5547
C(16)	-0.239511	0.153398	-1.561366	0.1216
C(17)	0.115976	0.078904	1.469834	0.1447
C(18)	0.098354	0.094921	1.036161	0.3026
C(19)	0.681986	0.147942	4.609807	0.0000
C(20)	1.900599	0.694050	2.738420	0.0073

The probability value helps to see which independent variable is significant to explain the dependent variable. The decision is to be taken at 5 % significance level. If the p value is greater than 5% than null hypothesis is rejected that is there is no significant relationship between independent and dependent variable with their respective coefficients. Here, C (1), C (6), C (7), C (10), C (19) and C (20) is significant at 5% significant level where the P value is less than 5% in the following four equations above.

h) Wald Test statistics

Wald test statistics helps to identify whether there are any short run causality or not. The null hypothesis explains there is no short run causality and alternative hypothesis favors the short run relationship. P value determines accept or reject null hypothesis. When it cross 5%, Null hypothesis is accepted and there is no short run causality.

Wald Test:			
System: %system			
Test Statistic	Value	d/f	Probability
Chi-square	4.890965	2	0.0867
Null Hypothesis: C(2)=C(4)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(2)		0.453830	0.227491
C(4)		-0.029163	0.053320

We use the equation number six for wald test to determine whether the joined variables have short run causality or not to explain the dependent variable. The result from C (2) and C (4), coefficients of REMIT and INTTRADE signifies that there are short run relations at 5% significance level. Because the P value is greater than 5%.

Wald Test:			
System: %system			
Test Statistic	Value	Df	Probability
Chi-square	4.352429	2	0.1135
Null Hypothesis: C(2)=C(3)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(2)		0.453830	0.227491
C(3)		0.029428	0.111789

The result from C (2) and C (3), coefficients of REMIT and GDPG signifies that there are short run relations at 5% significance level. Because the P value is greater than 5%.

i) Ganger causality test statistics

Null Hypothesis:	Obs	F-Statistic	Prob.
LREMIT does not Granger Cause LREER	30	4.70589	0.0390
LREER does not Granger Cause LREMIT		11.6294	0.0021
LGDPG does not Granger Cause LREER	30	2.20910	0.1488
LREER does not Granger Cause LGDPG		0.50224	0.4846
LINTTRADE does not Granger Cause LREER	30	5.31615	0.0290
LREER does not Granger Cause LINTTRADE		4.95205	0.0346
LGDPG does not Granger Cause LREMIT	30	1.69732	0.2036
LREMIT does not Granger Cause LGDPG		5.50706	0.0265
LINTTRADE does not Granger Cause LREMIT	30	0.48273	0.4931
LREMIT does not Granger Cause LINTTRADE		3.44885	0.0742
LINTTRADE does not Granger Cause LGDPG	30	7.41094	0.0112
LGDPG does not Granger Cause LINTTRADE		0.72710	0.4013

Here, the decision depends on probability. If the P value less than 5% then we can tell that that independent variables affects dependent variable. Here, we can see that the LREMIT(Remittances received) and LINTTRADE (International trade) significantly affect the REER (real effective exchange rate) at 5% significant level.

j) Analysis of Variables Affecting Real Effective Exchange Rate FMOLS

The johansen co-integration test helps to detect the long run and short run relationship between variables according to test results. But the severity and the direction is tested by associating the fully modified ordinary least square (FMOLS) test statistics by Phillips and Hansen (1990). The preconditions for FMOLS test is the variables should be stationary at first difference and having no co-integrated relationship between variables.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LREMIT	-0.168211	0.075180	-2.237438	0.0340
LGDPG	0.019098	0.086303	0.221294	0.8266
LINTTRADE	0.254514	0.146977	1.731663	0.0952
C	4.161396	0.328534	12.66657	0.0000
R-squared	0.091675	Mean dependent var		4.768487
Adjusted R-squared	-0.013131	S.D. dependent var		0.120696
S.E. of regression	0.121486	Sum squared resid		0.383730
Long-run variance	0.005928			

R-squared value indicates about 9.17 % of real effective exchange rate volatility is due to the volatility of independent variable. The strong significant relations is hold when the R-squared value is greater than 60 %. Our calculated value is less than the standard. But we should also think that we used three independent variables excluding all other variables affect the real effective exchange rate. So, we cannot underestimate the result because other 80% of the variation of real effective exchange rate as a results of the other variables such as inflation, interest rate, FDI, monetary and fiscal policy and so on. The t-statistics shows that the remittance have negative effect on real effective exchange rate, as my description in introduction part but other two variables (GDP growth and International trade) have positive effect.

VII. Conclusion

Our purpose was to investigate the factors affect real effective exchange rate. We used factors that affect real effective exchange rate fluctuations for the 1987-2017 period in Bangladesh. The use of statistical software helps us to show relationship among the dependent and independent variables and significance with one another.ADF and PP test statistics ensured us to go for further analysis. Correlogram test helps us to certify that the variables are non-stationary at level and stationary at 1st difference. Q-statistics, LM and Heteroscedasticity shows that there is no serial correlations among variables.

After fulfilling these conditions we went for analysis to test whether there is any long run relationship or short run relationship with real effective exchange rate. Johansen co-integration test result shows that there is no long run co-integrating relationship at 5% significance level according to trace maximum eigenvalue test. The short run relationship specifies us to use VAR model to determine how much lagged independent variables affect the dependent variables. The VAR model ensued us that there is a combined effect on dependent variables because their adjusted R-squared value is statistically significant. OLS test helps us to detect the variables significantly affect the dependent variable. We saw that real effective exchange rate has its own significance having a constant growth over the years and other independent variables affect it such as international trade, remittance. The joint effect is tested by the Wald test where we saw that “Remittance and international trade, Remittance and GDP growth” have combined effect on real effective exchange rate volatility. Ganger causality test statistics indicates LREMIT (Remittances received) and LINTTRADE (International trade) significantly affect the REER (real effective exchange rate) at 5% significant level. The FMOLS test now tell that the Remittance affects real effective exchange rate negatively. International trade (trade openness) and GDP growth have positive effect on real effective exchange rate volatility. The FMOLS test also certifies the result of correlation matrix having negative correlation with remittance and other two independent variables (GDP growth and International trade) have positive correlations with real effective exchange rate.

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Senior Citizens' Intention to use Digital Banking (With Special Reference to Selected Commercial Bank in Sri Lanka)

By Kuruppu. C, Jayawardena. A, Weerasinghe. S, Samarathunga. D & Mihipal. R
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Abstract- This paper examines Senior Citizens' intention towards using digital banking in a context where there is a rapid development in online banking systems in Sri Lanka. It was revealed that most of the Senior Citizens are away from the digital banking platform even though bank has made huge investments for the implementation of the digital banking systems. Therefore, the aim of this research is to investigate the impact of perceived usefulness and perceived ease of use, on the behavioral intention of Senior Citizen to use the digital banking system with the application of Technology Acceptance Model (TAM). The structured questionnaire used as the main instrument in gathering primary data from 200 respondents from 20 branches of the selected commercial banks using convining sampling method. This study investigated that there is a positive relationship between perceived usefulness and beheviroal intention, also between perceived ease of use and beheviroal intention.

Keywords: *senior citizen, digital banking, technology acceptance model, perceived usefulness, perceived ease of use.*

GJMBR-C Classification: *JEL Code: E59*

SENIORCITIZENSINTENTIONTOUSEDIGITALBANKINGWITHSPECIALREFERENCETOSELECTEDCOMMERCIALBANKINSRILANKA

Senior Citizens' Intention to use Digital Banking (With Special Reference to Selected Commercial Bank in Sri Lanka)

Kuruppu. C [α], Jayawardena. A [σ], Weerasinghe. S [ρ], Samarathunga. D [Ѡ] & Mihipal. R[¥]

Abstract- This paper examines Senior Citizens' intention towards using digital banking in a context where there is a rapid development in online banking systems in Sri Lanka. It was revealed that most of the Senior Citizens are away from the digital banking platform even though bank has made huge investments for the implementation of the digital banking systems. Therefore, the aim of this research is to investigate the impact of perceived usefulness and perceived ease of use, on the behavioral intention of Senior Citizen to use the digital banking system with the application of Technology Acceptance Model (TAM). The structured questionnaire used as the main instrument in gathering primary data from 200 respondents from 20 branches of the selected commercial banks using convining sampling method. This study investigated that there is a positive relationship between perceived usefulness and beheviroal intention, also between perceived ease of use and beheviroal intention.

Keywords: senior citizen, digital banking, technology acceptance model, perceived usefulness, perceived ease of use.

I. Introduction

In the present world technology plays a major role in the society. With the rapid growth of the technology, banks get special help from the internet to do their day to day transactions. Internet banking or Digital banking is a banking method that customers can do their transactions via internet without coming to the bank premises.

In the present situation the older population is surrounded by technology, mobile based zone. By 2020 it is anticipated that there will be more than one billion adults using the advantage of digitization. Through digital banking, the users can transfer and receive money, pay bills, initiate fixed deposits and perform transactions and other tasks.

At the same time this research is giving the attention to the concerns of older adults and their ability to access digital banking systems. Banking institutions have been creating websites for many years now, although these cannot be said to be user-friendly for older users.

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Now a days there are online banking systems in every bank, and senior citizens are afraid to use those systems. They think paper works are more accurate and safety than using such technological systems. Also, most of the mobile apps are not user friendly to the older adults because of the lack of knowledge about technology.

Biophysical again includes "changes in sensory and intellectual functioning if the organism, diminished mobility and physical strength, changes in outer appearance again and death of cells" (Moschis, 1995, p. 115) .

In the presence of developing the societies are being led to increase the maturity of the customer. Due to this the customers are more understandable on the needs and interest of them. The market structures should be reconstructed.

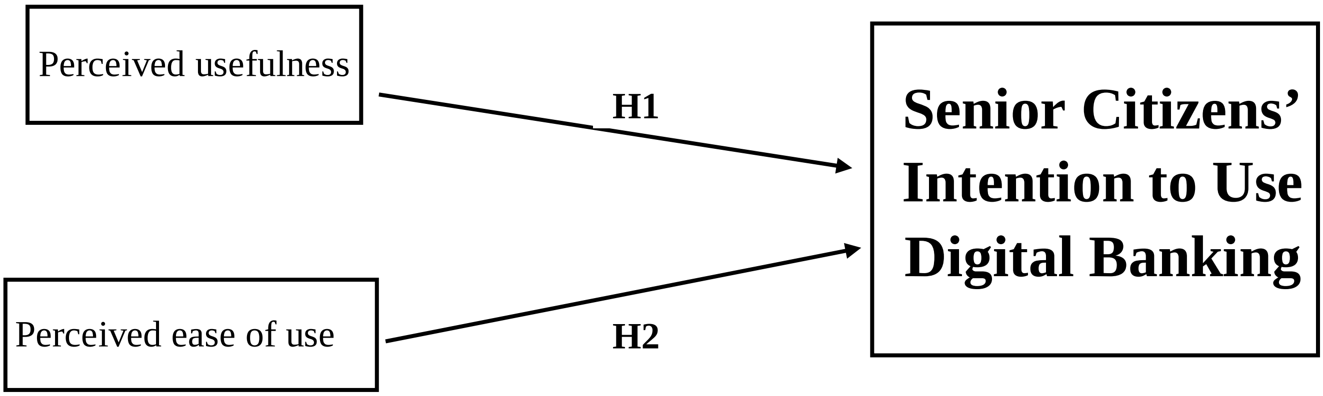
The mature customers' needs, and power is rapidly higher in the todays' market. They are investing more and more sum of money for the future. Some of the studies are being concluded that there are mature or senior customers who will be controlled a considerable amount of money in the future. One of the carelessness of system developers are, they think only about the easiness and friendliness of the systems. They are much more concerned on the younger generation.

In order to do this research, the Colombo region branches of Specific commercial banks are being selected. According to Asia money best bank awards 2018: Sri Lanka, this bank is the best digital bank in 2018. Therefore, customer's attention towards digital banking is very important to the bank. But Most of the senior citizens are used to visit branches rather than use digital banking platforms. Specific commercial banks are investing more on digital banking platforms, because younger generations are more attracted to digital banking systems where they can make their day to day transactions easier. According to Strategic direction that bank has published, they have a vision on improvement of digital banking and attract the rest of the customers towards digital banking in 2020.

The selected bank is an innovative private bank in Sri Lanka. As a new step of digital banking, bank has launched on its own digital wallet and payment app called "SOLO" link with other banks in Sri Lanka. It provides freedom to customers on digital payments.

SOLO is very flexible mobile app and can used anywhere even in a taxi.

According to researchers, if the selected bank can attract the rest of the senior citizens who use manual working, the bank can achieve their vision in 2020 and it will lead to their success, Therefore, the output of this study will be helpful to the bank in order to create practical solutions to the matter.



Source: (Kiran J. Patel, Hiren J. Patel, 2017)

The model showcase of the conceptual frame work Technology Acceptance Model (TAM) which was used to find senior citizen's intention to use digital banking. Framework includes four variables, each variable is use to build a hypothetical relationship against the intention towards digital banking platform. The hypothesis were mainly develop on the information in the past research paper which have undertaken in other countries.

H1: Perceived usefulness has a significant impact on Senior Citizens intentions to use digital banking.

H2: Perceived ease of use has a significant impact on Senior Citizens intentions to use digital banking.

II. Material and Methods

In this study, researchers will be using primary data in the form of structured questionnaires. A sample size of 200 senior citizens from selected commercial bank in the Colombo Region will be used and convenience sampling method will be used as the sampling method. In this study we use deductive approach and it is used to test an existing theory.

Researchers have selected the variables in Technology Acceptance Model (TAM) to fit the study under consideration.

- Perceived Usefulness (PU)
- Perceived Ease Of Use (PEOU)

Descriptive Analysis was used in order to analyze the factors influencing Senior citizens' intention towards digital banking. Descriptive statistics were used to describe the characteristics of a data set in a study by using both numerical methods such as mean, median, maximum, minimum, standard deviation, coefficient of variance.

III. Results

- Relationship between Perceived usefulness and Behavioural Intention

The correlation was used to identify the level of correlation between Perceived usefulness and Behavioural Intention as Table 1.

Table 1: Correlation between perceived usefulness and behavioural intention

Correlations

			Perceived_usefulness	Behavioural_intention
Spearman's rho	Perceived_usefulness	Correlation Coefficient	1.000	.691**
		Sig. (2-tailed)	.	.000
		N	30	30
	Behavioural_intention	Correlation Coefficient	.691**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

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

According to the Table 1, it shows that there is a significant correlation between Perceived usefulness and Behavioural Intention. It can be noticed that spearman's r value is 0.691and there is a positive relationship between the two variables.

Hypothesis Test

Ho: Perceived usefulness has no significant impact on Behavioural Intention of senior citizens.

H1: Perceived usefulness has a significant impact on Behavioural Intention of senior citizens.

As Table 1 illustrates, the p-value is 0.000(<0.05). In other words, the p-value is lesser than alpha. Therefore, there is sufficient evidence to reject the null hypothesis. Therefore, it is concluded that there is a statistically significant positive correlation between the two variables Perceived usefulness and Behavioural Intention.

- Relationship between Perceived ease of use and Behavioural Intention

The spearman's correlation was used to identify the level of correlation between Perceived ease of use and Behavioural Intention as Table 2.

Table 2: Correlation between perceived ease of use and behavioural intention

Correlations

			Perceived_ease_use_of_use	Behavioural_intention
Spearman's rho	Perceived_ease_use_of_use	Correlation Coefficient	1.000	.736**
		Sig. (2-tailed)	.	.000
		N	30	30
	Behavioural_intention	Correlation Coefficient	.736**	1.000
		Sig. (2-tailed)	.000	.
		N	30	30

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

According to the Table 2, it shows that there is a significant correlation between Perceived ease of use and Behavioural Intention. It can be noticed that spearman's r value is 0.736 and d there is a positive relationship between the two variables.

Hypothesis Test

H_o: Perceived ease of use has no significant impact on Behavioural Intention of senior citizens.

H_1: Perceived ease of use has a significant impact on Behavioural Intention of senior citizens.

As Table 4 illustrates, p-value is 0.000 (<0.05). In other words, the p-value is lesser than alpha. Therefore, there is sufficient evidence to reject the null hypothesis. Therefore, it is concluded that there is a statistically significant positive correlation between the two variables Perceived ease of use and Behavioural Intention.

a) Multiple Regression Analysis

Multiple regression is an extension of simple linear regression. It is used when we want to predict the value of a variable based on the value of two or more other variables. Statistical Package for the Social Science (SPSS) Statistics generates three main tables of output for a multiple regression analysis as below. (Table 3- 4).

Model Summary

Table 3: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773a	.597	.533	.32575

a. *Predictors:(Constant),Perceived_usefulness,Perceived_ease_use_of_use*

The "**R**" column represents the value he *multiple correlation coefficient which* is the correlation between the observed and predicted values of the dependent variable. It is 0.773. R^2 value (coefficient of determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables is 0.597. i.e., the independent variables explain 59.7% of the variability of our dependent variable, behavioual intention.

Estimated Model Coefficients

Table 5: Model Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.182	1.373		-.133	.896	-3.010	2.646
	Perceived_usefulness	.442	.553	.208	.799	.432	-.697	1.580
	Perceived_ease_use_of_use	.578	.325	.524	1.778	.088	-.092	1.248

a. *Dependent Variable: Behavioural_intention*

Based on the above output, the general form of the equation to predict behavioual intention from perceived usefulness, perceived ease use of use is;

Predicted behavioual intention = -0.182 + 0.442*Perceived_usefulness + 0.578*Perceived_ease_use_of_use

IV. Conclusion

According to the study it will be concerned how the above-mentioned independent variables are affected the dependent variable. It also concerns on how strength the dependent variable is affected by the independent variables. The senior citizens will be more attracted through increasing their performance through the usage of the technology. Increase of the technology methods such as, user friendly interface, attractive colors and lesser features increase the behavioral intention of the senior citizen's perception on digital banking. When the adults can use the digital banking technology without anyone's help, it will increase their perception. The social influence from the outsiders is increase the senior citizen's perception on digital banking. This is where the one who believes that another person who is using the digital banking is important and where he or she is inherently starting to use it. Where the digital banking is increasing the security of the person's through financially, psychologically and the performance, it will confirm the security of person's who uses the digital banking. This will ultimately lead to increase the perception of the senior citizen's perception on digital banking.

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A Study on Technology Problems of Rural Industries in Madurai District

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Abstract- The rural industrial sector stands next only to agriculture in terms of employment; on value addition its share is about fifty percent of the total value of goods produced in the manufacturing sector and in the matter of exports, its share is more than one third of the total exports made by the country. Outdated technology was a major problem for rural industries in the early years of Independence. Lack of technological improvement resulted in the production of articles which did not command wide consumer preference and they could fetch only low prices. Consequently, the earnings of rural industries were low. After the collection of data, the filled up interview schedules were edited properly. A master table was prepared to sum up all the data. With the help of the master table, classification tables were prepared and they were adopted directly for analysis. The suggestion based on the findings of the study for the growth and development of rural industries in Madurai district can be considered: Outdated technology was identified as a problem of rural industries. The study suggests that governments should redouble their efforts in the provision of infrastructure, especially in the area of technology upgradation of rural industries.

Keywords: rural industrial, technological, special skill, infrastructure and production.

GJMBR-C Classification: JEL Code: F69

ASTUDYONTECHNOLOGYPROBLEMSOFRURALINDUSTRIESINMADURAIDISTRICT

A Study on Technology Problems of Rural Industries in Madurai District

Selvaraj N α & Santhanamari R σ

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Keywords: rural industrial, technological, special skill, infrastructure and production.

I. Introduction

The rural industries occupy a premiere position of eminence in the industrial structure of the Indian economy. They provide employment opportunities to a large section of working force and contribute significantly towards the manufacture and export of goods. The rural industrial sector stands next only to agriculture in terms of employment; on value addition its share is about fifty percent of the total value of goods produced in the manufacturing sector and in the matter of exports, its share is more than one third of the total exports made by the country. The rural industrial sector consists of two segments viz. modern and traditional. The village and cottage industries such as handloom, khadi and other allied village industries, handicrafts, Seri-culture and coir form the traditional segment while the modern sector comprises a wide range of modern small scale industries.

II. Statement of the Problem

Rural industries play an important role in employment creation, resource utilization, income generation and in helping to promote changes in a gradual and phased manner. The rural industry in India had particularly emerged as a vibrant and dynamic segment of the economy. It is a matter of pride that India has a distinct position of its own among the developing countries particularly in the area of rural industries. The rural industries sector was developing under the protective umbrella of the government. Since Independence, the government had been adopting protective policies and implementing a number of promotional measures to nurture rural industries sector.

The Government agencies had identified the areas constraining the growth of rural industries as inadequate supply of raw materials, lack of modern technology, insufficient finance and inefficient marketing practices. Hence, the study had been designed to enquire into the present state of affairs of these industries in respect of availability of raw materials, present state of technology, quality of training, finance and marketing. Madurai district had been taken up as a case in point to be chosen to study these problems pertaining to the rural industries.

III. Scope of the Study

This study aims at analyzing the various problems and prospects of rural industrial units in Madurai district including agro and forest-based units, engineering and allied units, textile and polymer-based industrial units, leather and leather-based units, chemical-based units and miscellaneous units situated in rural areas and identifying the factors influencing the growth of them.

IV. Objectives of the Study

The main objectives of the study are to find out the various problems faced by the rural industries and to identify the factors influencing the growth of rural industries in Madurai District. Under these main objectives, the following specific objectives were framed for the present study:

- To study the growth and development of rural industries in Madurai District.
- To examine the technology problem faced by them.
- To identify the factors influencing their growth and
- To offer suggestions based on the findings of the study for their future growth.

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V. Period of the Study

To evaluate the growth and development of rural industries in Madurai district a ten year period from 2009-10 to 2018-19 was chosen.

VI. Collection of Data

The study is empirical in nature based on survey method. The entire data required for the study were collected at three stages. The primary data relating to the rural industries were collected by interviewing the entrepreneurs with the help of an interview schedule. The secondary data relating to the study were obtained from various published and unpublished records, annual reports, bulletins, booklets, journals, magazines, etc,. Lastly, discussions were held with the officials of various departments and with the officials of KVIC, co-operative societies and District Industries Centre. These discussions were helpful in identifying the problems for the study.

VII. Sampling Design

Madurai District had been selected for the study since there were a wide range of rural industrial units which provided considerable employment in and around Madurai. As census sampling survey method is not feasible, it was proposed to follow proportionate convenient sampling method. Out of 1,622 units 240 units, being 15 per cent of the universe, had been selected for this study. The rural industrial units located in Madurai District were agro and forest based, engineering and allied sectors, khadi and polymer based, leather and leather based, chemical based and miscellaneous units.

VIII. Data Processing

After the collection of data, the filled up interview schedules were edited properly. A master table was prepared to sum up all the data. With the help of the master table, classification tables were prepared and they were adopted directly for analysis.

IX. Tools of Analysis

The general plan of analysis ranges from simple descriptive statistics to 'F' test. The extent and variation of growth and development of rural industries were measured through scale and analysis on the basis of the scores of components.

In order to analyze the problems faced by the rural industries, Garrett's ranking technique has been used to rank the important problems faced by the small scale industries. The variables like formal education, nature of units, awareness of government schemes and period of existence were tested with the problems relating to rural industries by using the statistical tool of 'Chi – Square Test'.

a) Chi – Square Test

The Chi – Square test represents a useful method of comparing experimentally obtained data with those expected theoretically. The following formula has been used:

- Chi-square test $(x^2) = \Sigma \dfrac{(fo-fe)^2}{fe}$
- Where, fo = Observed frequency.
- fe = Expected frequency.
- Degree of freedom (d.f) = (r-1) (c-1)
- If the calculated value was greater than the table value at a particular significant level, say 0.05 level, it was concluded that the factor was dependent on variable for which Chi–Square is computed. If the calculated value was less than the table value, it was concluded that the factor was independent on the variable.

b) Garrett's Ranking Technique

Garrett's Ranking Technique was used to rank the important problems faced by the rural industries. The collected pieces of information from the rural industrial units were arranged and converted into mean score values which were in turn ranked using Garrett's Ranking Technique.

- Per cent position = $\dfrac{100\,(R_{ij}-0.05)}{N_i}$
- Where,
- R_{ij}: Rank gives for its factor by the j^{th} individual.
- N_{ij}: Number of reasons ranked by the j^{th} individual.
- A factor wise analysis was made. The dependent variable 'growth' was related to independent factors influencing the same. The units were grouped according to these factors. Based on these groups their mean and range of 'growth scores' for each factor group was calculated. In order to find out the significance of the difference between the average, analysis of variance, 'F' test, co-efficient of correlation analysis and partial regression analysis were applied.

X. Limitations

This study pertains to the performance, problems and prospects of the small scale industrial sector in Madurai District during a particular period only. This study is applicable to areas having similar physical, environmental and infrastructural conditions.

XI. Problems Relating to Technology

Outdated technology was a major problem for rural industries in the early years of Independence. Lack of technological improvement resulted in the production of articles which did not command wide consumer preference and they could fetch only low prices. Consequently, the earnings of rural industries were low. Further, traditional methods involved very strenuous and tedious operations to manufacture goods. Again, the emergence of the organized sector producing similar articles in a standardized form using modern technology at lower cost posed a serious threat to the survival of rural industries. To make the products of rural industries competitive with those of small and large industries, there was need for modernization of technology. By increasing production, it can enhance the earnings of artisans to a level that makes it attractive for them to continue in their occupations. There was great emphasis on technological aspect of these industries in the successive Five Year Plans. Both the Central and State Governments had established a number of research institutions. Because of the efforts of above research institutions, the production techniques of rural industries had undergone a change. Partial mechanization had taken place in various sectors. The priority of employment generation required the development of widely dispersed, mass consumption of goods produced and labour intensive rural industries.

The problems relating to technology were identified as a) lack of technical improvement b) lack of infrastructure c) increase in cost of production d) low return on investment and e) lack of special skill. The aim of this analysis is to identify the foremost problem related with the technology. Table 1 shows the various problems relating to technology with their mean score and rank.

Table 1: Problems Relating To Technology and their Mean Scores

S.No.	Problem	Mean Score	Rank
1	Lack of technical improvement	63.48	I
2	Lack of infrastructure	47.21	III
3	Increase in cost of production	44.13	IV
4	Low return on investment	39.74	V
5	Lack of special skill	56.19	II

Source: Calculated Data.

It is observed that lack of technical improvement had the highest mean score of 63.48 and it ranked first among the various problems associated with the technology. Lack of special skill with a mean score of 56.19 and lack of infrastructure with a mean score of 47.21 held the second and the third ranks respectively. Increase in cost of production with a mean score of 44.13 held the fourth rank. To analyse further, the problems relating to technology and the calculated mean score values are plotted in Figure 1.

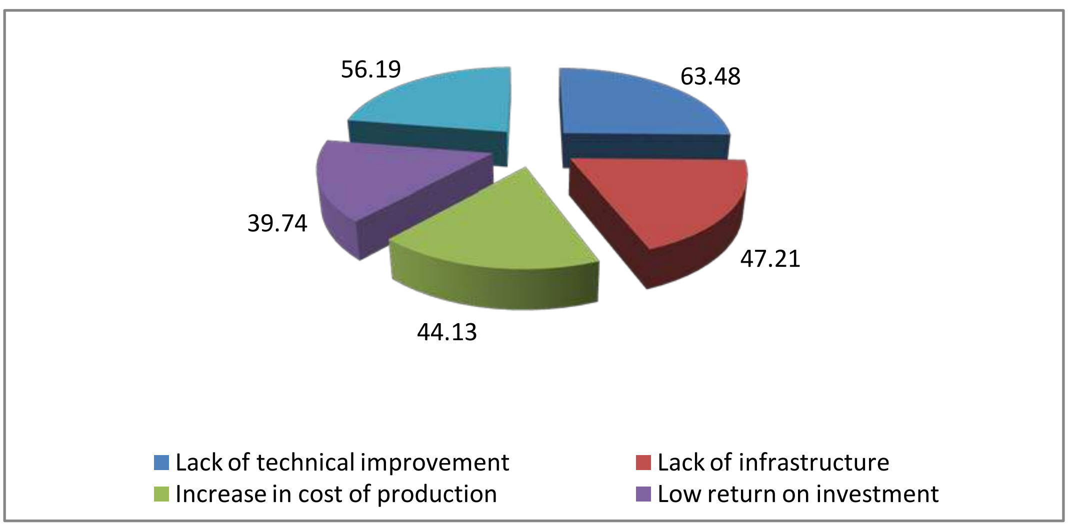

Figure 1: Problems Relating to Technology and their Mean Scores

It could be inferred from the figure that lack of technical improvement was the major problem associated with technology.

a) Formal Education and Problems Relating to Technology

The level of educational qualification acquired by the artisans had been taken into account for the study. Some qualified artisans had the ability to start the rural unit and did not want to seek employment with others. By and large, those artisans who had formal qualification realized the need for rapid expansion and modernization of their units. Thus, it was generally believed that qualified artisans could contribute more to the growth of rural industries.

The management of rural industrial units was often left to one man, who operates on a 'rule of thumb' method, leading the business to a short life span. Most of the units became sick because of ineffective management or mismanagement. They did not allow others to take part in the decision-making. When correct decisions were taken, a unit could be run without any difficulty.

The formal educational qualification of the artisans was divided into three sections -namely Illiterate, primary, and secondary school level of education. Problems relating to technology were tested education-wise. For this, it was hypothesized that 'There is a significant relationship between education and problems relating to technology'. The ranking scores of rural units belonging to various educational qualifications of the artisans are furnished in Table 2.

Table 2: Education and Problems Relating to Technology

S.No.	Problem	Illiterate	Primary	Secondary	Total
1	Lack of technical improvement	212	663	209	1084
2	Lack of infrastructure	128	396	124	648
3	Increase in cost of production	132	365	81	578
4	Low return on investment	108	306	50	464
5	Lack of special skill	170	520	136	826
Total		750	2250	600	3600

Source: Calculated Data.
Calculated value of $x^2 = 24.07$
Table value at 5% significant level for 8 d.f = 15.51

The calculated value was greater than the table value. It implied that the hypothesis 'There is a significant relationship between education and problems relating to technology' held good. This confirmed statistically that there is a significant relationship between education and problems relating to technology.

b) Nature of Units and Problems Relating to Technology

Problems relating to technology were tested with the nature of units. For this, it was surmised that 'There is a significant relationship between nature of unit and problems relating to technology'. The ranking scores of the units belonging to different forms of organization are furnished in Table 3.

Table 3: Nature of Units and Problems Relating to Technology

S.No.	Problem	Nature of units			Total
		KVIC	Co-operative Societies	Others	
1	Lack of technical improvement	281	546	257	1084
2	Lack of infrastructure	182	339	127	648
3	Increase in cost of production	155	288	135	578
4	Low return on investment	117	225	122	464
5	Lack of special skill	240	447	139	826
	Total	975	1845	780	3600

Source: Calculated Data.
Calculated value of $x^2 = 22.76$
Table value at 5% significant level for 8 d..f = 15.51

The calculated value was greater than the table value. It implies that the hypothesis 'There is a significant relationship between nature of units and problems relating to technology' held good. This statistically revealed that there is a significant relationship between nature of the units and problems relating to technology.

c) Awareness of Government Schemes and Problems Relating to Technology

The awareness of government schemes was tested with problems relating to technology. For this, it is surmised that 'There is a significant relationship between awareness and problems relating to technology'. The ranking scores of the units are furnished in Table 4.

Table 4: Awareness of Government Schemes and Problems Relating to Technology

S.No.	Problem	Awareness		Total
		Aware	Not-aware	
1	Lack of technical improvement	306	778	1084
2	Lack of infrastructure	158	490	648
3	Increase in cost of production	134	444	578
4	Low return on investment	118	346	464
5	Lack of special skill	289	537	826
Total		1005	2595	3600

Source: Calculated Data.
Calculated value of x^2 = 32.46.
Table value at 5% significant level for 4 d.f = 9.49.

The calculated value was greater than the table value. It implied that the hypothesis 'There is a significant relationship between awareness and problems relating to technology' held good. Thus, it was statistically revealed that there is a significant relationship between awareness and problems relating to technology.

d) Period of Existence and Problems Relating to Technology

The period of existence enhances the mental strength to overcome any problem. To study this factor, the length of the period of existence of the units was divided into three groups as those who have been working for 15 years (short), for 16 years to 25 years (medium) and for 25 years above (long). It is surmised that 'There is a significant relationship between period of existence and problems relating to technology'. The ranking scores of the units are furnished in Table 5.

Table 5: Period of Existence and Problems Relating to Technology

S.No.	Problem	Period of Existence			Total
		Short	Medium	Long	
1	Lack of technical improvement	348	495	241	1084
2	Lack of infrastructure	216	297	135	648
3	Increase in cost of production	192	272	114	578
4	Low return on investment	139	214	111	464
5	Lack of special skill	245	342	239	826
Total		1140	1620	840	3600

Source: Calculated Data.
Calculated value of x^2 = 22.51.
Table value at 5% significant level for 8 d.f = 15.51.

The calculated value was seen to be greater than the table value. It implied that the hypothesis 'There is a significant relationship between period of existence and problems relating to technology' held good. This revealed statistically that there is a significant relationship between period of existence and problems relating to technology.

XII. Findings of the Study

It was observed that lack of technical improvement had the highest mean score of 63.48 and it ranked the first among the various problems associated with the technology. It was concluded that lack of technical improvement was the major problem associated with technology.

XIII. Suggestions

The suggestion based on the findings of the study for the growth and development of rural industries in Madurai district can be considered: Outdated technology was identified as a problem of rural industries. The study suggests that governments should redouble their efforts in the provision of infrastructure, especially in the area of technology up gradation of rural industries.

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Effect of Corporate Disclosures on Market Returns of Commercial Banks Listed at the Nairobi Securities Exchange

By Mercy Moraa Nyakundi & Dr. Oluoch Oluoch
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Abstract- This study aimed to assess the effect of corporate disclosures on market returns of commercial banks at Nairobi security exchange (NSE). Specific objectives were to assess the effect of environmental disclosures, social responsibility disclosures. The study adopted the institutional theory, market efficient theory and agency theory to support the literature review on corporate disclosures in looking at banks income statement, statement of financial position and additional notes to establish its profitability, liquidity over time frame annual reports. This study adopted descriptive research design. The study targeted 11 commercial banks. Secondary data was collected using data collection schedule. Data was analyzed using descriptive and inferential statistics, a multiple linear regression model was used to establish the relationship between variables. The study was of great importance to theory of development and literature for investors, shareholders, managers and law makers in making knowledgeable decisions and regulations considering the financing patterns and strategies of financial stability in Kenya, based on findings, recommendation and suggestions to further the study. The correlation analysis was used in this study and regression model to establish the effect between corporate disclosure and market returns of commercial banks.

GJMBR-C Classification: JEL Code: E50

EFFECTOFCORPORATEDISCLOSURESONMARKET RETURNS OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE

Strictly as per the compliance and regulations of:

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Mercy Moraa Nyakundi [α] & Dr. Oluoch Oluoch [σ]

Abstract- This study aimed to assess the effect of corporate disclosures on market returns of commercial banks at Nairobi security exchange (NSE). Specific objectives were to assess the effect of environmental disclosures, social responsibility disclosures. The study adopted the institutional theory, market efficient theory and agency theory to support the literature review on corporate disclosures in looking at banks income statement, statement of financial position and additional notes to establish its profitability, liquidity over time frame annual reports. This study adopted descriptive research design. The study targeted 11 commercial banks. Secondary data was collected using data collection schedule. Data was analyzed using descriptive and inferential statistics, a multiple linear regression model was used to establish the relationship between variables. The study was of great importance to theory of development and literature for investors, shareholders, managers and law makers in making knowledgeable decisions and regulations considering the financing patterns and strategies of financial stability in Kenya, based on findings, recommendation and suggestions to further the study. The correlation analysis was used in this study and regression model to establish the effect between corporate disclosure and market returns of commercial banks. There was a positive effect between environmental disclosure and market returns. The study recommended that governance disclosure should be enhanced with other governance details. The study recommended that corporate social cost should be enhanced within social responsibility. The study was limited to corporate disclosure on market returns. Another limitation was based on data collection from annual reports and additional notes. Study findings were applicable to only commercial banks. The study suggested for future study to be conducted on the effect of corporate disclosures on market returns on other institutions.

I. Introduction

Corporate disclosure aims to communicate what the firm does to shareholders and stakeholders in terms of market returns to inform investors (Diamond, 2014). This communication is not only called for by shareholders and investors to analyze the relevance of their investments. Disclosure is the provision of relevant information that results in a transparent and accurate picture of a corporate operations, and governance (Simiyu, 2013). Corporate disclosure raises systematic risk for the banking disclosures through its annual reports which has been one of the rapidly growing areas fields (Dawkins, 2014).

In United Kingdom, corporate disclosure is known as the process of communicating social and environmental effects of organizations activities to particular groups at large (Kimani, 2015). Corporate disclosure is the communication of information by people from internal commercial banks towards external people (Namakonz & Inanga, 2014). This information is based on financial reports aimed at creating confidence of the customers and investors. Corporate disclosures prompt other investors and depositors of other banks to question their market returns. Corporate disclosure enable investors to get information about the failed bank and try predict the solvency of other banks to reflect shares prices (Omollo, 2014).

In European Union, the disclosing bank information is about their corporate performance by cost and incomes (Kahlenborn, 2012). However, while market returns may be imperfect, so that banks can apply regulation, or other firms are supported by own regulations, private lawsuits, and market discipline with adequate incentives to disclose information at socially optimal levels, but also by the other stakeholders (Polocheki, 2013). This is particularly for information about corporate social, environment, financial policies and human resource disclosures.

Market return is the income expected from the market above its risk free rate (Thielemann, 2012). Market returns are influenced by different factors such as government actions, and general economic conditions. Market returns in security performance in an economy takes different forms between disclosures among capital markets. Growth of market returns is influenced by financial disclosure, interest rates, exchange and inflation rate. The trading securities valuation affects disclosure of commercial banks on lending declaration before liquidation. They classify disclosures as strategic, non-financial and financial information. They classify the disclosures depending on what they are intended for the content (Roberts, 2013).

Kenyan commercial banks are licensed and regulated pursuant to the provisions of the Banking Act and the regulations and prudential guidelines issued by the Central Bank of Kenya. Currently banking sector is known as financial due diligence banking. Matengo

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Bansal, P. and I. Clelland: (2014) emphasized that corporate disclosures are associated with technology and has totally changed the banking system and that is further tuned by the competition in the banking industry in Kenya. Kahlenborn (2012) reflected that perplexing commercial environment surrounded by the banking system has formed more improvement in the fields of product, process and market. Information disclosed has given rise to new ideas in the product designing and their delivery in the banking and finance industries

a) Statement of the Problem

Corporate disclosures are meant to influence the interpretation of financial reports which later influences the market returns. In recent times, stocks have earned a lower rate of market return in share prices, thus, the lower rate of return. Fluctuation of share prices has led to low market returns, even though corporate disclosures are used it is not clear which disclosure can enhance it. It is evidenced by a study of Peter (2015) who noted that actual stocks of 7% real market return was recorded in its historical average in 2016. In the year 2017, market returns assumed some variation in its initial period followed by its decline rate to 6.3%. Therefore, corporate disclosure can be utilized to establish whether it influences market returns in commercial banks listed in Kenya. Thus, this study intends to investigate the effect of corporate disclosures on market returns on commercial banks at Nairobi security exchange.

b) Specific Objectives

The general objective was used with the following specific objectives;

i. To assess the effect of environmental disclosures on market returns of commercial banks in at Nairobi security exchange.
ii. To examine the effect of social responsibility disclosures on market returns of commercial banks at Nairobi security exchange.

c) Theoretical Literature Review

The study was guided by Institutional Theory which was modified by Dahawy, (2009). The theory states that the value of conformity with the institutional environment is the adherence to external rules and societal norms (Leuz, Verrecchia, Douglas et al (2014). The assumption of the theory is that contracts with institutions comply with institutional norms and requirements as a requisite for approval to operate in the public sphere. It assumes that the increased disclosure reflects corporate awareness of its responsibility to society and shows the extent to which the company has embraced the prevailing societal values. It is also a means of integrating companies with their stakeholders and strengthening the social bonds between the companies and their stakeholders (Dastgir, Haw Bowman, 2014).

FamaZareian, (2012) noted that managers who intend to make capital market transactions have motivations to disclose information voluntarily to decrease the information asymmetry problem and thus decrease the external financing cost. The capital need theory predicts that increased financial disclosure of information by the company's managers will enable them to lower the company's cost of capital through reducing investor uncertainty. This theory is relevant as it can be used to establish the relationship that exists between shareholders' interests and agent's interests. The management at the top act as the principles and trust the lowers management at the branch and subordinates in the assumptions of providing corporate disclosures. The theory of agency indicates that the principal expects to continue with corporate disclosures and his agents, but the agent interests vary.

d) Conceptual Framework

This is the diagrammatic representation of conceptual framework which shows how the variables are related. Environmental disclosure, social responsibility are independent variables but market returns is a dependent variable, which was measured by opening share price and closing share price on the occurrences of the said independent variables.

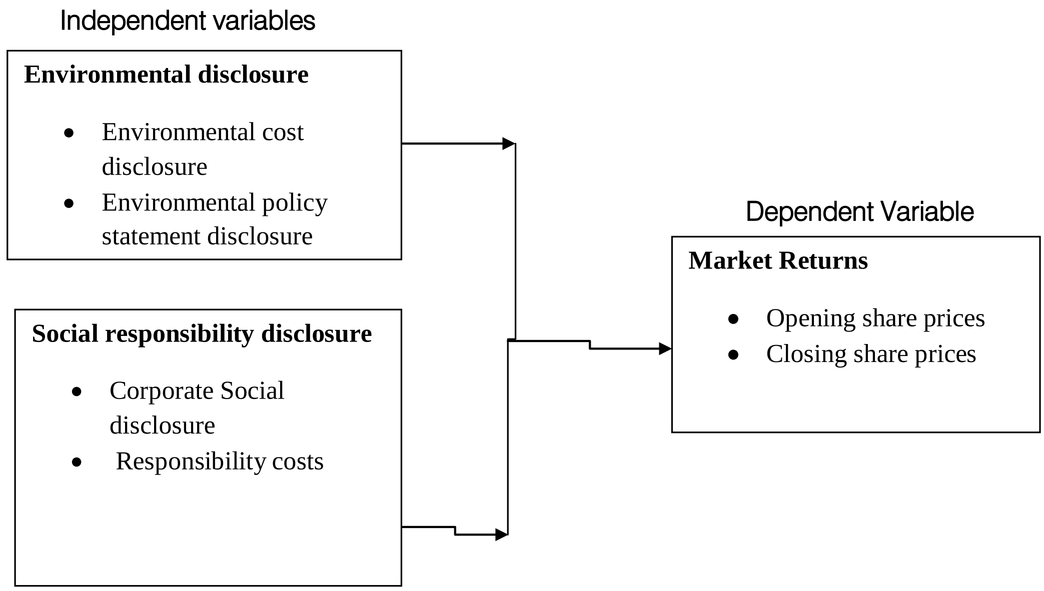

Figure 2.1: Conceptual framework

II. Empirical Literature

a) *Environmental Disclosures*

Environmental disclosure is the information about the firms' environments and how it influences or about its resources (Malik, 2018). Environmental disclosure affects financial accountability of firms. In agency theory with the intention of environmental disclosure is financially disclosed reports. It can increase the company financial reputations. It manages transparency and disclosure in all kinds of activities. Bank business environments are well briefed before disclosed meetings. Thus, there is need to emphasize in all practices and disclosure levels should not be restricted to annual reports. It is noted that large firms disclose more information as compared to small firms (Dawkins and Fraas, 2015). This study focuses on environmental disclosures in commercial banks.

b) *Corporate Responsibility Disclosure*

Corporate social responsibility is the business approach that contributes to sustainable development by delivery of economic, social and environmental benefit for all stakeholders (Odote 2013). Gray (2012) conducted a study on the effect of social responsibility disclosure reporting on financial returns of firms. The aim of the study was to examine the effect of social reporting on financial returns of firms. The study found that financial account to the owners of capital; in particular, shareholders affect financial returns. The company consistently disclose major and market sensitive information punctually, it publishes/announce semi-annual reports within two months of the end of the half-year. Such an extension is predicated upon the assumption that companies do have wider responsibilities than simply to make money for their shareholders.

III. Research Methodology

The study adopted descriptive research design. The proposed study comprised of the 11 commercial banks listed in the NSE. The study used annual published financial statements of the commercial banks. This was done by use of data collection sheet to collect secondary data. The data obtained was analyzed using descriptive and inferential statistics, correlation analysis and multiple linear regression analysis.

IV. Results and Discusion

a) *Environmental disclosure*

The study sought to determine the effect of environmental disclosures on market returns of commercial banks listed at Nairobi security exchange.

Table 1: Environmental Disclosures

	Minimum	Maximum	Mean	Std. Deviation
Environmental cost	2	473	100.56	134.190
Environmental policy	1	169	37.98	44.955

The results showed that environmental cost had a minimum value of 2 to maximum value of 473 with a mean of 100.5 and standard deviation of 134.190. Environmental policy had minimum value of 1 to a maximum value of 169 as compared with a mean of 37.98 and standard deviation of 44.955.

b) Social Responsibility

The study sought to establish the effect of social responsibility on market returns of listed commercial banks.

Table 2: Social responsibility

	Minimum	Maximum	Mean	Std. Deviation
Corporate social cost	34	568	189.73	118.183
Responsibility costs	29	256	156.91	48.291

The results showed that corporate social cost with a mean of 189.73 and standard deviation of 118.183, responsibility cost had a mean of 156.91 and standard deviation of 48.291.

The calculated R and R^2 values was presented in table 3. The R value is the multiple Pearson's correlation coefficient and the study found it to be .383 which means that the correlation between predicted and observed values of market returns is relatively small. The R^2 value indicates how much of the total variation in the dependent variable (market returns) can be explained by the independent variables (Environmental Disclosure and Social Responsibility). In this case 14.6% (R Square = 0.146) of the variation in market returns can be explained by corporate disclosures regardless of their significance in the model. However, considering only the significant independent variables in the model, 10.9% (adjusted R Square = 0.109) of the variation in market returns could be explained by disclosures that were significant that is to say, the independent variables whose p-values for t-statistic were less than the standard threshold of 5%.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.383[a]	.146	.109	3.204

a. Predictors: (Constant), , Environmental Disclosure, Social Responsibility

Table 4: Regression Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.948	1.724		5.189	.000
Environmental disclosure	.913	.193		4.721	.000
Social responsibility	.271	.034	.556	8.019	.000

a. Dependent Variable: Market returns

$$Y= \alpha+\beta_1 X_1 + \beta_2 X_2+.....\varepsilon$$

Which would be: $Y= 8.948+.913 X_1 + .271 X_2$ Y=Dependent Variable (market returns)

x_1= environmental disclosure, x_2= corporate social responsibility

The regression analysis reveals that a unit increase in environmental disclosure increased market returns by 8.948 (p-value <0.0001) if a unit increase in social responsibility increases market returns by 0.913 (p-value <0.0001) if environmental disclosure, other factors held constant; a unit increased by .271 at p-value .000.

The general form of the equation can be used to predict market returns. For every unit increase in corporate disclosures (environmental disclosure, social responsibility with other factors held constant as reflected by the value (8.948) could improve to market returns and it was statistically significant at 5%.

V. Conclusion and Recommendation

The first objective sought to determine the effect of environmental disclosures on market returns of commercial banks in at Nairobi security exchange. Most commercial banks were not aware of environmental cost disclosures when disclosing their financial reports. There

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was a positive association between environmental disclosure and market returns.

The second objective sought to establish the effect of social responsibility on market returns of listed commercial banks. Based on correlation analysis, social responsibility had a positive association to market returns.

Based on the findings, the study recommended that commercial banks should manage environmental cost to improve market returns. The study recommended that corporate social cost should be enhanced within social responsibility. The study focused on disclosures of commercial banks, thus, there is need to conduct another study on the relationship between Social Responsibility using financial performance in general.

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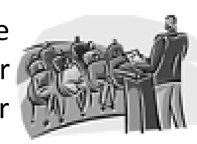

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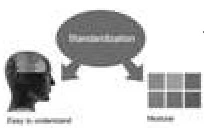
As FARSBA, you will be given a renowned, secure and free professional email address with 100 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.



The FARSBA will be eligible for a free application of standardization of their researches. Standardization of research will be subject to acceptability within stipulated norms as the next step after publishing in a journal. We shall depute a team of specialized research professionals who will render their services for elevating your researches to next higher level, which is worldwide open standardization.

The FARSBA member can apply for grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A. Once you are designated as FARSBA, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria. After certification of all your credentials by OARS, they will be published on your Fellow Profile link on website https://associationofresearch.org which will be helpful to upgrade the dignity.

The FARSBA members can avail the benefits of free research podcasting in Global Research Radio with their research documents. After publishing the work, (including published elsewhere worldwide with proper authorization) you can upload your research paper with your recorded voice or you can utilize chargeable services of our professional RJs to record your paper in their voice on request.

The FARSBA member also entitled to get the benefits of free research podcasting of their research documents through video clips. We can also streamline your conference videos and display your slides/ online slides and online research video clips at reasonable charges, on request.

The FARSBA is eligible to earn from sales proceeds of his/her researches/reference/review Books or literature, while publishing with Global Journals. The FARSBA can decide whether he/she would like to publish his/her research in a closed manner. In this case, whenever readers purchase that individual research paper for reading, maximum 60% of its profit earned as royalty by Global Journals, will be credited to his/her bank account. The entire entitled amount will be credited to his/her bank account exceeding limit of minimum fixed balance. There is no minimum time limit for collection. The FARSC member can decide its price and we can help in making the right decision.

The FARSBA member is eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get remuneration of 15% of author fees, taken from the author of a respective paper. After reviewing 5 or more papers you can request to transfer the amount to your bank account.

MEMBER OF ASSOCIATION OF RESEARCH SOCIETY IN BUSINESS (MARSBA)

The ' MARSBA ' title is accorded to a selected professional after the approval of the Editor-in-Chief / Editorial Board Members/Dean.

The “MARSBA” is a dignified ornament which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., MARSBA or William Walldroff, M.S., MARSBA.

MARSB accrediting is an honor. It authenticates your research activities. After becoming MARSBA, you can add 'MARSBA' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, Visiting Card and Name Plate etc.

The following benefitscan be availed by you only for next three years from the date of certification.

MARSBA designated members are entitled to avail a 25% discount while publishing their research papers (of a single author) in Global Journals Inc., if the same is accepted by our Editorial Board and Peer Reviewers. If you are a main author or co-author of a group of authors, you will get discount of 10%.

As MARSBA, you will be given a renowned, secure and free professional email address with 30 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The MARSBA member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSBA, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

It is mandatory to read all terms and conditions carefully.

Auxiliary Memberships

Institutional Fellow of Open Association of Research Society (USA)-OARS (USA)

Global Journals Incorporation (USA) is accredited by Open Association of Research Society, U.S.A (OARS) and in turn, affiliates research institutions as "Institutional Fellow of Open Association of Research Society" (IFOARS).

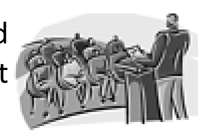
The "FARSC" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., FARSC or William Walldroff, M.S., FARSC.

The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as "Institutional Board of Open Association of Research Society"-(IBOARS).

The Institute will be entitled to following benefits:

Global Journals Inc.

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA) The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.
The author fees of such paper may be waived off up to 40%.



The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

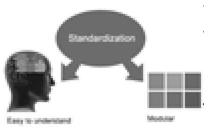
The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of "Open Association of Research Society, U.S.A (OARS)" so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

Journals Research
inducing researches

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.



After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.
The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

Other:

The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

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- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

Copyright

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Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

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.

21. 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.

22. 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.

23. 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:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- 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:

- Explain the value (significance) of the study.
- 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.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- 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

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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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