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# Global Journal

## of Management and Business Research: A

# Administration and Management

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Highlights

Influence of Supplier Training

The Impact of Environmental Factors

Discovering Thoughts, Inventing Future

VOLUME 20 ISSUE 17 VERSION1.0

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Administration and Management

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# Redefining Performance Evaluation: General Electric, Deloitte and Adobe

By Milan Jacob Sam

*Abstract-* Performance Management System (PMS) is often used by managers to align the goals of the organization to the goals of their employees, and ensure productivity and efficiency. PMS has always been a crucial function of human resource management. However recent studies have shown that in the long term, the traditional system of performance management damages morale, motivation, teamwork, and stunts creativity and contribution. As a result, companies are doing away with the old ways of performance reviews and are opting for more flexible and efficient processes. This study aims at understanding the deficiencies in the old system and the reasons for adopting more relevant and upcoming trends in the field of performance management.

*Keywords: performance management; employee engagement; annual performance; check-in; review.*

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*Keywords: performance management; employee engagement; annual performance; check-in; review.*

## I. Introduction

Several resources indicate that the concept of performance management was invented by W.D Scott during World War I, but it was only during the mid-1950s when formal systems were established. These systems, however, did not include the element of self-appraisal-which was introduced in the 1960s. Towards the end of the '60s, the focus shifted towards the goals and objectives of the organization along with self-appraisal. It was in the 1970s when the element of bias was realized in the existing systems. In the next 20 years, there was a focus on engagement and employee motivation with the help of metrics like self-awareness, conflict management etc. It was found that 40-60% of the companies modified their performance management systems to a large extent which, however, were found to be static [1]. In the past decade; concepts like 360 degree mechanisms were introduced in order to make performance management more effective [2].

Employees are the greatest asset any firm has. An organization revamping their performance management systems boils down to one primary factor - their workforce deserves more. Frequent and honest communication between managers and employees will provide employees with clarity on the organization's goals and objectives [3]. The benefits are twofold, as it overcomes two of the biggest challenges that all companies face- employee engagement and retention rates [4].

The demand for continuous feedback cannot be fed merely by an annual review. Take for instance, the millennial generation that makes up the largest part of the U.S workforce-42% of them expect a weekly feedback on their performance. Apart from this, there is immense competition in terms of innovation when new concepts are threatened by newer and more innovative concepts. Teams need to react with agility to implement new ideas; else they risk being left behind in the dust. For instance, Honeywell was highly innovative until Nest came along. The role of a 'manager' has evolved from being a taskmaster (there is software to fulfill this purpose now) to being a coach as this actually helps employees improve their skills.

Several biases are brought about during the course of a performance appraisal, which may appear to be unavoidable from the perspective of an employee. Reviewing an employee's recent behavior may also lead to managers holding a bias, regardless of the employee having held a prior stellar track record. About 88% of the workforce prefers a collaborative work culture instead of a competitive one. While ratings and annual reviews drive competition, transparency and openness drive collaboration thus making transparency the norm [3]. The organizations have shown little consideration to the evolution of these standards and measures post implementation. Therefore, it is necessary for companies to modify their Performance Management Systems in accordance with the change in performance measures which have been modified based on the changes in business objectives and employee mind-sets [1].

## II. Evolution in Performance Management Systems

### a) General Electric

In mid-2015, GE found that their performance management system known as EMS (established in 1976) was starting to lose value and research showed that there was a need for a system that was continuous and flexible. The goal of the performance development system was to look forward to future action than a formal review of past performance once a year. GE changed their approach from Performance Management to Performance Development where the component of development was futuristic, centred on coaching and accepted from all levels in an employee's network [5].

In order to execute the approach, an app called 'PD@GE' was developed which facilitated exchange of inputs through voice and text with an aim to bring about meaningful conversations between managers and their

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teams. However, since the development was focused at the individual, suggestions on improvement were also welcomed from anyone in the organization. This app acted as a tool to record conversations. The main areas determining the outcome of the new approach were priorities, touch-points, insights, career dialogue, and coaching [6].

The app helped managers and their team members to utilise data which was higher in quality. The setting of goals, meaningful conversations and the exchange of ideas helped analyse the performance of each employee with a focus on betterment than a normal review of work done in the past year.

The challenges with the implementation of this approach was change management. There was a need to have a different type of conversation based on how the manager and the employee could bring about improvement and enhance productivity.

Managers had to fulfil two major responsibilities:

1. How would they identify and develop employees at work?
2. How would they decide on compensation, benefits, rewards etc?

Managers would have to analyse the kind of goals set, the rate of achievement of the same and how much the individual has grown in a particular period of time. The compensation decisions were based on various assessments from different people the individual is professionally related to. While pilot testing this approach, they implemented the system with a rating system and without. Without the rating system, aspects such as compensation and merit bonuses were not impacted and the output was significantly higher in quality [7].

They looked inwards on behaviours and mind-sets of employees. Only time will be able to tell whether the changes made to the concept of performance evaluation at GE will be effective but one can be assured that these changes have already produced positive results across various aspects [8].

*b) Deloitte*

*"We set out to develop a framework that was simple, local and focused on real-time data and on individuals' strengths,"* said Deloitte's National Leader, People and Performance, Alec Bashinsky.

Deloitte found that their previous performance management approach and the 360 degree review mechanism took 2 million hours of their working time. They also found that their system was inefficient and did not meet their constantly evolving objectives. Furthermore, they found that their performance levels dropped drastically too. They realised that their solution had to be simple, focused on the individual and based on a real-time scenario.

Deloitte aimed at creating an approach which had no 360-degree reviews and once-in-a-year performance reviews but instead focused on speed, agility and a free-sized mechanism of constant learning with reliable data. The three objectives of the contemporary approach were:

1. Recognize Performance
2. Obtain Clarity
3. Fuel performance.

With the help of Gallup's 1.4 million employee study, Deloitte identified 60 high performing teams within the organization and the most common factor determining the success of the employees in these teams was the belief that they had an opportunity to work to their strengths each day. It was now clear that the first goal was to help employees achieve their maximum potential.

With the first goal established, there came an aspect which challenged the process. The team leader was the best person to articulate the strengths of each person but the perception of strengths was subjective. How does one really determine the strengths of an individual without bias from the rater? How does one remove the idiosyncratic rater effect in the process to prevent the data from being skewed? Thus, the second goal was to obtain clarity.

It was found that an individual was consistent in rating their performance but was inconsistent in rating other's. Deloitte determined that it was better to ask the team leader questions focused on what they would do regarding the team member across multiple scenarios. Here are the statements Deloitte asked leaders to select about an employee in order to overcome the idiosyncratic effect:

1. Given what I know of this person's performance, and if it were my money, I would award this person the highest possible compensation increase and bonus–this measures overall performance and unique value.
2. Given what I know of this person's performance, I would always want him or her on my team–this measures ability to work well with others
3. This person is at risk for low performance–this identifies problems that might harm the customer or the team on a yes-or-no basis
4. This person is ready for promotion today–this measures potential on a yes-or-no basis [9]

Having obtained clarity, the next step to this approach was to improve performance which is the ultimate goal of performance management. Deloitte pointed out that the optimal frequency of performance reviews was weekly. They also found that there was a significant difference when the team member decided the weekly check-ins [10] with the team leader as compared to the other way around.

*c) Adobe*

Adobe's traditional method of performance management was the same as that of most companies in the marketplace. In March 2012, they realised that their growth was stagnant and while they were considered as a reliable company, their potential for progress was low. This is when they decided that they were doing away with the annual performance reviews as a part of their approach to reinvention. The annual performance reviews consisted of many steps including various administrative activities and the average time spent on these were 8 hours per employee. Each manager had about 5 employees in their team which meant an investment of 40 hours by the manager. Adobe had about 2000 people managers and that totals to 80,000 hours spent on performance reviews which is the equivalent of working time of 40 full-time employees.

In addition to the time spent on annual performance review, there was also a negative effect on employee engagement. The process of the traditional review was rated low and many asked for this process to be made less tedious. The problem was that by the time the feedback was delivered to the employee, they would have lost significant amount of time during which certain behaviours could have been altered and made effective. There were also instances when the manager faulted in delivering constructive feedback thus making all the effort go in vain.

A team of more than 10 was formed to scrap the traditional method and introduce a refined, simpler and much more effective approach to shape a performance management process labelled as 'Check-in'. In contrast to the previous approach, this method was a conversation between the manager and the employee which included:

1. Setting written expectations at the start of the year. The company suggests quarterly meetings at the minimum. A form to set goals is provided but there is no specific format required to be followed.
2. Providing continuous feedback based on performance all throughout the year ideally as real time as possible.
3. Removing all mandates around timing, methods and written reviews.
4. Determining budgets for increments and stock grants which happens on an annual basis where managers and senior leaders can adjust the rewards based on their best judgement.

Check-in conversations were to happen once in a quarter, but teams were given the liberty of setting a time frame of their convenience. While it was preferred that face to face conversations were conducted, teams working across countries and remote had their check-in conversations through audio or video conference. In a global employee engagement survey conducted in 2014, 72% of the employees said that they received regular check-ins from their managers.

Budgets are determined by senior leaders to allocate rewards and stock grants which are then put into an online tool called the Rewards Tool. Within this budget, people managers adjust employee's raise based on the performance compared to the goals and objectives of the organization. These adjustments are reviewed by senior leaders and they allocated stock to the top performers as well. The recommendations entered into the tool takes about 30-60 minutes.

One of the significant challenges while introducing this approach was that some countries such as Germany and France have work councils and countries such as China have particular performance processes. Another challenge was the intense change management as managers had to be trained to give constructive feedback than being critical and they had to be taught how to base rewards and adjust compensation based on performance. However, it was found that there was increased accountability taken by managers in their decisions [11].

## III. Result of These Changes

The mobile application at GE helps managers keep a track of ever changing business objectives. It also serves as a platform to receive feedback and acts as a medium to keep a record of the same. This application facilitates feedback on performance, determines which tools to use in order to bring about learning and development and helps guide the employee on what to do in order to progress to the next role. The new performance development system is building the foundation of high-performing teams– Trust. The insights given and taken through this new method of reviewing performance is very different and higher in quality when compared to that of the methods such as the 360 degree reviews in the past.

While the team acknowledges that it was difficult in the beginning, this approach to performance management has enabled managers to become vulnerable which in today's corporate world is a commendable skill. The transition from an environment which was controlling to one which is focused on empowering and inspiring has resulted in an increase in productivity by 5 times the previous one before the implementation of the changes.

This proves that GE was successful in its attempt to reinvent their understanding of performance management.

Deloitte asked four questions to its managers and these responses create a reliable set of data that helps make significant decisions about succession planning, development strategies, performance analysis etc. The end result of the performance management process is called a 'performance snapshot'. The new

performance management system includes frequent 'check-ins' initiated by the employee in order to make sure that the team leaders are in constant touch with employees. The automated system allows the employee to evaluate his/her performance based on the feedback received from other stakeholders and enables the team leader to provide feedback. These check-ins and performance snapshots are used by other processes that are intended to measure, reward and enhance performance. This displays the efforts Deloitte has made to understand each employee's strengths and abilities [12].

Adobe introduced their revamped performance management approach into their recruiting efforts. 8 out of 10 of their new hires have asked about the 'check-in' process prior to their first day at work. With the check-in process, managers have been able to actively review performance and provide feedback. Terminations are made if necessary and under-performing employees resign after a discussion with their manager. Since the implementation of the check-in process, involuntary turnover and non-regrettable attrition has increased by 2%-3% which is considered a good outcome. This helps the organization to evaluate and maintain the quality of the workforce. In a survey evaluating exit surveys provided to employees, 75% of them state that Adobe is a great place to work [11].

## IV. Conclusion

While there are pages of statistics for a sportsperson to determine the player's worth and a series of tests for psychometric evaluations, the traditional methods of performance management focus on labelling an employee with a single number when there is variety and subtle distinctions in human beings within a single number. There are multiple factors which affect an individual's performance and generalizing the same in order to quantify it in a pre-determined format is unfair especially when the objectives and priorities of an organization is bound to change by the hour. Time is indeed money and the traditional methods result in a loss of significant amounts of time during which the employee could have potentially made necessary changes to enhance productivity. This is why the annual performance reviews are no longer efficient in carrying out its purpose.

When compared to the mind-sets of individuals from a few decades ago, the trend in today's marketplace is to look for meaning in work done and fulfilment from personal growth & development is a major intrinsic factor of motivation to show up to work the next day. Extrinsic factors such as money have lesser value compared to other intrinsic factors. This is why Google changed their approach to performance management because they had a high attrition rate and their top performers were not motivated by income raises and were looking for opportunities to contribute to a purpose and therefore the company had to create the same to keep them engaged.

The common factors across GE, Deloitte, Adobe and many other firms which have modified their performance management system are Simplicity and Trust. Employees wanted a simpler method to evaluate performance and receive feedback than wait for the year-end to make these changes. There was a need for a mechanism which involved simple real-time conversations focusing on how to be better in various aspects. With the transparency in the new methods of performance management, the trust between a manager and an employee increases which lays the foundation for teamwork. This factor plays a crucial role in making progress and enhancing productivity.

The 'check-ins' fulfilled the requirement but it would not have been easy because managers and employees would need to learn how to give constructive feedback rather than being critical. It is necessary for both parties to build this important 'people skill' in order to be a part of a high performing team. This is applicable to situations where the employee is promoted or rewarded because of the technical competence and not the possession of people skills.

The scrapping of the previous methods of evaluating performance has resulted in the creation of simpler methods but they are not fool-proof. Companies are still probing to see how they can collect more reliable data in order to be able to comprehend the richest version of the individual. In order to put forward the best version of each individual, companies must get a hold of the diversity in each individual and then conclude from it. The new performance management methods rely heavily on the judgement of managers and senior leaders but the aspect regarding a possibility of incompetence in seniors is not yet addressed.

These companies champion the cause to redefine the concept of evaluating and managing performance. The next step could be to determine a multi-dimensional understanding of each employee's potential. The future scope of this study could be to quantify the results of the new methods in these companies and determine a particular framework to transition from the older to newer mechanisms. However, it is indeed ironic how these technologically rich companies have moved away from technology to address this need using the human touch.

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# The Impact of Environmental Factors on Organizational Adoption of Human Resource Analytics in Sri Lankan Large-Scale Apparel Companies

By K. M. Hettiarachchi, H. M. S. D. Bandara, M. C. G. Amarasinghe, U. S. Sirigampola & C. L. Kuruppu

*Abstract-* This study focuses on investigating the impact of environmental factors on organizational level of adoption to Human Resource Analytics in Sri Lankan apparel companies. Four variables were considered to develop the conceptual model under environmental factors impacting the adoption of Human Resource Analytics performed in prior studies. The sample consists with 210 Human Resource professionals which were taken based on nine out of thirteen key apparel companies in Sri Lanka. The findings revealed that the environmental factors and the organizational level of adoption have a positive relationship. The results indicated that the environmental factors lead to a strong positive impact on the organizational level of adoption.

*Keywords: human resources analytics, organizational adoption, environmental factors, data availability, fear appeals, social influence, tool availability.*

*GJMBR-A Classification: JEL Code: O15*


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K. M. Hettiarachchi [α], H. M. S. D. Bandara [σ], M. C. G. Amarasinghe [ρ], U. S. Sirigampola [ω] & C. L. Kuruppu [¥]

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*Keywords: human resources analytics, organizational adoption, environmental factors, data availability, fear appeals, social influence, tool availability.*

## I. Introduction

### a) Background of the Study

Human Resources are any individual who is able to commit their expertise, labor, time with the anticipation of compensation or reward with the intention of strengthening and reinforcing organizational performance and success (Heathfield, 2020). At the period of Industrial Revolution (1750-1850), where the transition of economy from the agricultural sector to industrial sector took place, the requirement of managing workforce has arisen with the setting up of the employees' wages, welfare and other issues (Khanduja, 2012). Then, with the post-industrial revolution itself, the concept of Human Resource Management had been paid a massive attention where experiments and studies were conducted which gave a new prominence to the Human Resource Management (Khanduja, 2012). Over the period, along with the rapid progression of the technology, Human Resource Management itself had a tendency to rather concentarte on the concept of Human Resorce Analytics to stengthen organizational performance than it operated and currently operates since in present scenario, it has grown to be a concurrent phenomenon. Further, according to Kumar and Lochab (2018), data with related to the every aspect of employees in the organization must be well examined and analyzed to make effective decisions concerning the issues related to employees.

In the present study, Apparel Sector has become one of the significant contributors on Sri Lankan economy further known as Gross Domestic Production. With the induction of socio-oriented open economy implemented in 1977 the effect of industrial sector contained apparel sector had took place over the effect of agricultural sector to Gross Domestic Production in Sri Lanka (Lakshman and Tisdell, 2000). According to the data gathered by annual report (2014) of Central Bank of Sri Lanka, industrial sector has impacted with 32% to the national economy which is the second largest contributor (Embuldeniya, 2018). Furthermore, as noted by Embuldeniya (2018), the significant expansion of 11.4% has been recorded by the industrial sector in relation to 2013 which is 9.9%. According to the past studies it was revealed that there had been limited research conducted around the globe in relation to the adoption of Human Resource Analytics among organizations. Nevertheless, it has not been completed a study on investigating the impact of environmental factors on the Organizational Level of Adoption to Human Resource Analytics in large-scale apparel companies in Sri Lanka.

### b) Problem Statement

Human Resource Analytics has become an important aspect in the dynamic business environment. Many scholars have centered on the evolution of Human Resource over the decades. Human Resource Analytics was found to be an appropriate and more practical use of the Human Resource component of technological developments in order to guide companies to achieve a competitive advantage. According to Uri Gal et al.

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(2017), in order to manage people through analytics, Human Resource Analytics can be used as a data driven strategy. As per the information sources Volini et al. (2017), of the Global Human capital trends suggested that majority of the firms wants to consider that adoption of Human Resource Analytics is a major concern, which is around 71%. However, the improvement of Human Resource Analytics adoption has been in a lesser rate. Globally, around 23% of the corporations has commonly embraced Human Resource Analytics into organizational level, whereas mainstream has been unsuccessful in adopting Human Resource Analytics into organizational level. Boudreau (2017), states in Harvard Business Review that, for the development of almost every organization, Human Resource related information is essential factor. In previous studies conducted among Asian and European countries, dynamic forces that affect the individual adoption level into Human Resource Analytics have been established, despite the fact that impact of environmental factors on Organizational Level of Adoption to Human Resource Analytics is scarcely ingested. It was also highlighted the flaws of Human Resource practitioners while adopting into Human Resource Analytics, whereas Human Resource is widely acknowledge as a "Cost Focus Strategy" (Rafter, 2013). Conversely, contained by the Sri Lankan perspective, the utilization of analytics is still at a preliminary phase (Jayasundara, 2019). Industrial expertise views propose that Human Resource Analytics was implemented nearly five years ago into Sri Lankan corporate sector, nevertheless the adoption of analytics into Human Resource is at a lower point. Keerthi and Reddy (2018), have emphasized that the impact of certain variables has caused in lack of Human Resource Analytics adoption. Consequently, the impacts of the environmental factors upon the Organizational Level of Adoption to Human Resource Analytics are however considered as limited among the Sri Lankan firms. Although, the empirical gap has been identfied,a lesser amount of studies were established in the Sri Lankan perspective, that embraces problem statement for this research work. To be more specific concerning the problem, this study centered upon large- scale apparel sector, that has been the "second – largest" demand contributor in to Sri Lankan Gross Domestic Product. Thus, a query emerges "Whether there is an impact of environemtal factors on Organizational Level of Adoption on Human Resource Analytics within Sri Lankan large-scale apparel companies? Besides, "What is the extent of impact of enviromental factors on Human Resource Analytics?".

*c) Scope of the Study*

The scope of the study will be the influence of environmental variables on the organizational adoption of Human Resource Analytics among large-scale apparel companies in Sri Lanka. Samples from nine selected apparel firms were taken according to the Export Development Board report. Thus, by providing an insight into the future of Human Resource Analytics in the context of Sri Lanka, researchers will focus on making a modest contribution to the understanding of Human Resource Analytics. Toward the end of this study, large-scale apparel firms will be able to establish the necessary policies for incorporating the Human Resource Analytics into their organizations.

*d) Significance of the Study*

The latest age of Human Resource Management is Human Resource Analytics. In order to obtain and maintain a competitive advantage, this research enables large-scale Sri Lankan apparel companies to improve operational execution. The main reasons for obtaining benefits are to make the modest contribution to understanding Human Resource Analytics by giving a brief insight into the fate of Human Resource Analytics in Sri Lanka. This research enables all companies to realize Human Resource Analytics 's usefulness. Human Resource Analytics helps to increase the return on investment and boost workers' productivity. Each association must have analytical processes to establish a superior workplace. After doing this study, large-scale apparel companies will be able to set up the necessary policies to integrate the Human Resource Analytics into their organizations. Getting a good vision can steer workers in the right direction and help to convey leadership and employee viewpoints from management. Furthermore, policy decisions often lead to the rules and procedures that apply to all employees being specified.

As indicated by Van den Heuvel and Bondarouk (2017), Human Resource Analytics will affect dynamic in relationship in the coming years. In addition, Human Resource Analytics would likely influence Human Resource Management 's synthesis and function as a capability. It will help to ensure lean and dexterous organizational structures that rely on an ideal combination of the qualities and abilities of individuals from one point of view and emphasis on the other. Human Resource Analytics can potentially alter authoritative models in this manner.

*e) Objectives of the Study*

Following General objective and Sub objectives were developed for this study.

*f) General Objective*

To investigate the impact of environmental factors on the Organizational Level of Adoption to Human Resource Analytics among large-scale apparel companies in Sri Lanka.

*g) Sub Objectives*

1. To determine the impact of Data Availability on the Organizational Level of Adoption to Human Resource Analytics.

2. To determine the impact of Fear Appeals on the Organizational Level of Adoption to Human Resource Analytics.
3. To determine the impact of Social Influence on the Organizational Level of Adoption to Human Resource Analytics.
4. To determine the impact of Tool Availability on the Organizational Level of Adoption to Human Resource Analytics.

## II. Literature Review

The Prior literatures revealed that the adoption of Human Resource Analytics is at a lower level and a lesser number of research and certain studies conducted have paid attention on organizational adoption to Human Resource Analytics.

*a) Factors of Organizational Adoption*

It is a necessity to analyze the variables which impact on the acceptance of an invention to ascertain factors impacting to innovation adoption. Rogers (1983), states that innovation adoption is a stagnant procedure and the pace at that diffusion of innovation causes to be a requirement for individuals or organizations combined with innovation adoption. According to Pillans and Levenson (2017), that 69% of the organizations are comprising of approximately ten thousand workers or have a Human Resource team, on the basis of recent studies performed by the Corporate Research Forum. Accordingly, a study conducted by MIT and IBM confirmed that the firms had 8% growth in sales, 24% growth in net operating income and 55% higher sales per employee was earned with the adoption of Human Resource Analytics into strategic level of the firms (Barman and Choudhury, 2016). In current scenario, there is further considerable drive aimed at Human Resource experts on adopting and utilizing analytics in order to alter themselves to the organizational process and economic part of the company (Fitz-Enz, 1995). Convincingly, this study paid attention on the environment factors impacting on the Organizational Level of Adoption which be; Fear Appeals (Johnston, 2006), Social Influence of (Johnston and Warkentin, 2010), Tool Availability (Johnston, 2006) and Data Availability (Johnston, 2006). The impact of above variables under environmental factors to Human Resource Analytics adoption into organizational level is discussed in this study.

*b) Data Availability*

The administrative process of Human Resource can be classified as detailing metrics, filling available positions, recruitment expenses and submitting other important paperwork (Manyika et al., 2011). It is not that easy to obtain information from different heads of departments and it is a cost to the company to buy or share data by outsourcing. According to Gale (2012), various platforms have been used by organizations to store information. Hence, a trouble tends to occur towards Human Resource experts in order to get an overview about differences and similarities of the data sets. The value of recruiting and retaining top talent is acknowledged by highly effective organizations. According to CIPD (2013), the nature of data retained by Human Resource groups fulfils various requirements on mobility requirements across different departments of the organization. Organizations which do not integrate all data due to confidentiality of data and those needs to be extra secured. Furthermore, handling and knowing the purposes of data is another essential feature (Cappelli, 2017).

*c) Fear Appeals*

Data Analysts need to consider mathematical metrics such as analytical thinking; though, these skills have not yet been acquired by an exceptional dominant part of Human Resource experts, leaving organizations with the preference of realizing individuals with such expertise. Fear Appeals can be conveyed through formal or informal discussion by corporate leaders, technical leaders and trustworthy colleagues (Johnston, 2006). According to Bersin (2013a), organizations should identify people that have the capacity and ability to evaluate Human Resource information. The manner in which the message was delivered and the way it threatens applies to Fear Appeals that are used and have a positive or negative impact on the utilization of Human Resource professionals. (O'Keefe, 2015), indicated that a role of authority is inferred by sexual preference, and it is easier to persuade females than males. In view of the cultural proposal that males have more awareness of metrics and data analysis and the investigation poses the question of whether there is a link between sexual orientation-based impact, Fear Appeals, and choice of investigation.

*d) Social Influence*

Accordingly, to past literature, social influence refers to the level of influence made by a social group to an individual's behaviors in adopting into an innovation (Talukder and Quazi, 2011). This states that how people are changing their behaviors, in order to address the socio-cultural expectations. Furthermore, Venkatesh et al. (2003), suggests that "the level which an individual sees that others consider that the individual should utilize the new framework" which functions to utilize an innovation or practice as a determinant of behavioral intent. An individual's adoption growth has a possibility to get converted into dynamic, in advance of individual considers that acquiring will be productive (Frambach and Schillewaert 2002). Conversely, scholars has identified that unless the attitudes of an individual's remain unfavorable towards an innovation adoption, that individual may oppose the adoption (Jeyaraj and Sabherwal 2008). Social Influence can be clearly seen

within cooperate level. Where majority of the people get influenced not due to the advantages or perhaps the utility of the adopted novelty nevertheless due to the peer pressure (Talukder, 2012). This was demonstrated through an observational study where respondents reported that their desires on certain adoption innovations were focused on Social Influence. This study was measured under two factors which are "People who are important to me think that I should use the system" and "People who impacts upon my behaviors, thinks that I should use the framework". These measures define that individual perception regarding the Social Influence.

*e) Tool Availability*

Johnston (2006), denotes that the amount of resources (tools) applied to up-to-date applications and systems, as well as the required collection of skills, acceptability, degree of power and influence, known as the Tool Availability. Mostly with emergence of new technology, people have access to huge storage systems and smoother wireless networks which leads to quicker storing of data and improved functioning. While there is a substantial role for the devices and applications, scholars suggest that to classification of data, analysis, evaluate and interpretation of data for reporting and decision-making purposes, it is a critical factor to provide people with a relevant range of skills (Carlson and Kavanagh, 2011). This shows that people with the requisite set of skills are required to use analytics more significantly, besides the equipment and networks. Therefore, according to Behzad (2013), scarcity of appropriate systems, tools and people with expertise skills related to Human Resource and analytical experience has remained a concern impacting Organizational Level of Adoption into Human Resource Analytics. Estimations of past years which was made by the scholars states that there has been surplus of over 140,000 qualified analysts and the need for individuals who are possessed with "solid analytical abilities" for the Human Resource sector (Brown, Michael et al., 2011). Which strongly confirms the fact that tool availability has an impact on the individual level along with the Organizational Level of Adoption in to Human Resource Analytics. Manyika, et al. (2011), states that to make efficient decisions to achieve overall objectives, organizations must consider Human Resource Analytics as a critical adoption, besides in order to reduce the confusions and disputes, it is a perfect strategy for an organization not to have several distinct applications.

*f) Organizational Level of Adoption*

Adoption is characterized as the mechanism by which an invention is adopted by a person or organization, while diffusion describes the degree of accumulation of an innovation by consumers (Rogers, 1995). Furthermore, it has been known that the degree of acceptance and innovation is based on two decisions. "The decision of an organization to adopt an innovation and the decision to use a revolution by a person within an organization" (Frambach and Schillewaert, 2002). In the current scenario, analytics has always been a popular trend in every part of the company, and Human Resource is not far behind the Human Resource organizations' metrics or analytics that go not only with people but with processes such as hiring, retention, rewards, training and growth (Barman and Choudhury, 2016). While companies are strongly convinced that their growth period is Analytics (Keerthi and Reddy, 2018).

Moreover, hierarchical degree of appropriation of an advancement or creation is examined that it is basic for the turn of events, increment efficiency, gotten serious and in any event, for the perseverance in a practical market (Arpaci et al., 2012). This clarifies the essence of introducing an innovation at the corporate level. Implementing Human Resource Analytics at the organizational level is very important in this report when dealing with Human Resource problems. Previous literature indicates that the rapid rise in current Human Resource data and the strong evidence that Human Resource and talent management has been advanced by the analysis of these data, leading to sound organizational results (Boudreau, 2017). Furthermore, the study noticed that the organizational level of adoption into an innovation or Human Resource framework is intensely influenced by hierarchical status, which alludes to level of financial capital available, the shortage of specialized sources inside an association for the appropriation of Human Resource development (e.g., mechanical skill, foundation and essential frameworks) while the writing offers proof that the authoritative degree of Human Resource Analytics reception level relies upon a few variables of activities and climate.

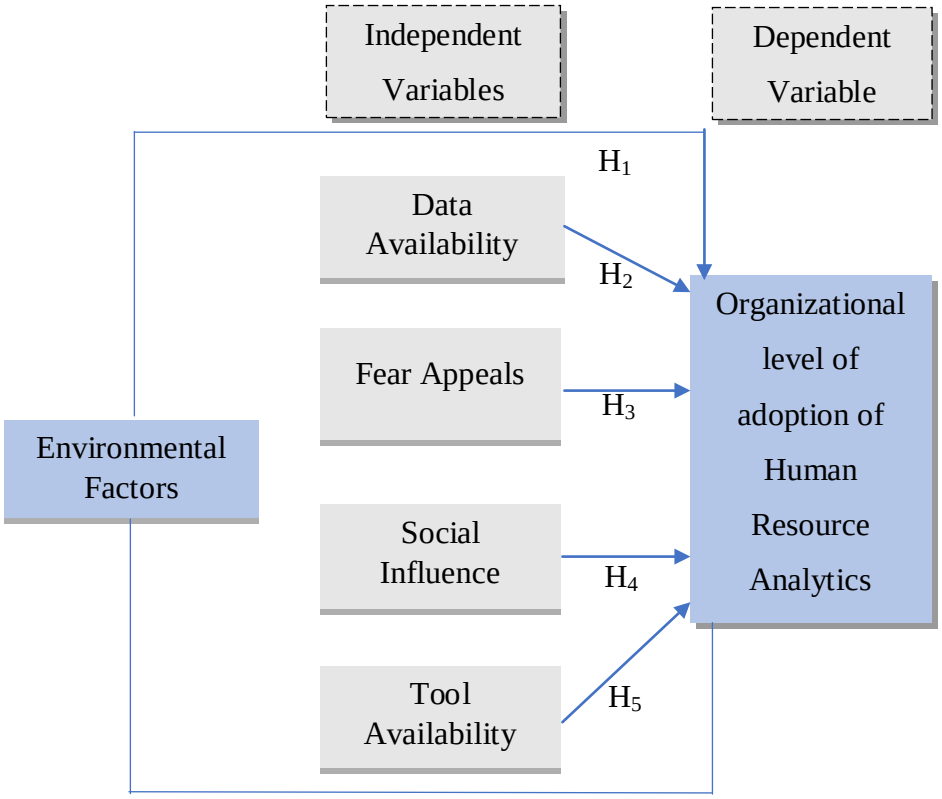


*Figure 1:* Conceptual Framework

According to the Figure 1 the key independent variables tested in this study are 'Environmental Factors' which are 'Data Availability', 'Fear Appeals', 'Social Influence', 'Tool Availability'. The scales were constructed by referring prior studies and justified in order to adopt to the Sri Lankan context. 'Organizational Level of Adoption' to 'Human Resource Analytics' is the dependent variable for this study and is measured by the scales constructed by prior researchers. Further, the theory suggests that environmental factors along with Data Availability, Fear Appeals, Social Influence and Tool Availability have a significant impact on the Organizational Level of Adoption to Human Resource Analytics.

Thus, the following hypotheses can be developed for the study,

*$H_1$:* The environmental factors have significant impact on the Organizational Level of Adoption to Human Resource Analytics.

*$H_2$:* Data Availability has a significant impact on the Organizational Level of Adoption to Human Resource Analytics.

*$H_3$:* Fear Appeals has a significant impact on the Organizational Level of Adoption to Human Resource Analytics.

*$H_4$:* Social Influence has a significant impact on the Organizational Level of Adoption to Human Resource Analytics.

*$H_5$:* Tool Availability has a significant impact on the Organizational Level of Adoption to Human Resource Analytics.

## III. Methodology

The study was conducted employing the deductive approach since the study was built on the basis of existing theories to be assessing the impact of environmental factors on organizational adoption of Human Resource Analytics in large-scale apparel companies in Sri Lanka. Data was collected particularly based on primary data. The quantitative approach was applied in the study since the survey was adopted as the research strategy while, a structured questionnaire be served as the main instrument. The questionnaire was created in a way of consisting all the four environmental constructs considered together with demographical profile of sample obtained to the study. Seven-point Likert scale was employed to distinguish the chosen option by the respondent and furthermore, the reliability and the validity of the constructs were analyzed by the use of a pilot study where the results obtained to be reliable with Cronbach's alpha which have been 0.960. The sample population of the study contained with Human Resource professionals who be in the designation of executive & above being employed in the large-scale apparel companies in Sri Lanka. For the objective of study, nine out of thirteen key leading apparel companies in Sri Lanka were selected in accordance with the report of (Export Development Board, 2020). According to Krejcie and Morgan (1970), the sample was obtained as two hundred and ten respondents which gets specified as executive & above being employed in the area of Human Resource,

irrespective of the role, job title, and the time period consumed within the department of Human Resource. The sample of companies have been chosen via the probability sampling method viz. cluster sampling method. When cluster sampling be considered, the population was divided into separate groups termed clusters. Then with the usage of simple random sampling, clusters were chosen from the population. Furthermore, the techniques which had been employed achieving in objectives were descriptive statistics, correlation analysis and regression analysis while, the tool had been used for analysis at arriving results and interpretation was SPSS version 25.

## IV. Analysis and Discussion

### a) Descriptive Analysis

The demographic profile of Human Resource professionals from the selected sample is shown in the Table 1.In relation to gender, most respondents were female which is 62. 86% and the age of most Human Resource professionals ranged from 20-30, comprising the highest value which is 67.1% of the respondents. Majority of respondents possessed a bachelor's degree comprising 78.1% of the sample while the least percentage of respondents have other professional qualifications which is 1.9% when evaluating the educational level of respondents.

*Table 1:* Descriptive summary of Human Resource executive level and above professionals

| | Frequency (N) | Percentage (%) |
|---|---|---|
| Gender | | |
| Male | 78 | 37.14 |
| Female | 132 | 62.86 |
| Age | | |
| 20-30 | 141 | 67.1 |
| 31-40 | 66 | 31.4 |
| 41-50 | 3 | 1.4 |
| Education | | |
| Bachelor's Degree | 164 | 78.1 |
| Master's Degree | 42 | 20 |
| Other | 4 | 1.90 |

### b) Pearson Correlation Coefficient

The Pearson correlation has been applied to evaluate whether there is a significant relationship between the variables as stated in the conceptual framework.

*Table 2:* Correlations of Environmental factors and organizational level of adoption to Human Resource Analytics

| Correlations | | | | | | |
|---|---|---|---|---|---|---|
| | | DA | TA | FA | SI | OLA |
| DA | Pearson Correlation | 1 | .800** | .781** | .739** | .829** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 |
| | N | 210 | 210 | 210 | 210 | 210 |
| TA | Pearson Correlation | .800** | 1 | .706** | .751** | .714** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 |
| | N | 210 | 210 | 210 | 210 | 210 |
| FA | Pearson Correlation | .781** | .706** | 1 | .746** | .742** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 |
| | N | 210 | 210 | 210 | 210 | 210 |
| SI | Pearson Correlation | .739** | .751** | .746** | 1 | .714** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 |
| | N | 210 | 210 | 210 | 210 | 210 |
| OLA | Pearson Correlation | .829** | .714** | .742** | .714** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | |
| | N | 210 | 210 | 210 | 210 | 210 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |

According to the Table 2, there is a very strong positive correlation of 0.829 between the independent variable and the dependent variable Organizational Level of Adoption at a significant level of 0.01. this shows that it mostly precedes the adoption of Human Resource Analytics in the organization when there is a higher Data Availability among Human Resource professionals. When considering the variable Tool Availability, there is a strong positive correlation of 0.714 between Tool Availability and Organizational Level of

Adoption at the significant level of 0.01. This indicates that Tool Availability among Human Resource professionals leads to the adoption of Human Resource Analytics in the organization. Furthermore, there is a strong positive correlation between Fear Appeals and Organizational Level of Adoption of 0.742 which is at a significant level of 0.01. This depicts that when the Fear Appeals of an individual is higher, it contributes to the adoption of Human Resource Analytics in the organization. Social Influence and Organizational Level of Adoption also having a strong positive correlation of 0.714, representing the of Social Influence among Human Resource professionals linked to the adoption of Human Resource Analytics in selected organizations. Consequently, the relationship between Data Availability and Organizational Level of Adoption is the strongest out of other factors.

*c) Regression Analysis*

This section of the study offers a wider and more in-depth overview based on the previous sections of prevailing impacts from Environmental factors to the dependent variable Organizational Level of Adoption to Human Resource Analytics. The impact of independent variables was determined by the linear regression model on the dependent variable. Multiple regression models were used to explain how the variance in independent variables reflects the variance in the impact of the dependent variable.

$H_1$: Impact of Environmental factors on the Organizational level of adoption to Human Resource Analytics

*Table 3:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .843[a] | .710 | .700 | .454 |

a. Predictors: (Constant), Fear Appeals, Tool Availability, Social Influence, Data Availability

According to Table 3, the value of Adjusted R Square=0.700, which determines 70% of the Organizational Level of Adoption to Human Resource Analytics variance. It is explained by the predictor variables Fear Appeals, Tool Availability, Social Influence and Data Availability.

*Table 4:* Anova

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 55.048 | 4 | 13.762 | 69.054 | .000[b] |
| Residual | 22.919 | 115 | .199 | | |
| Total | 77.967 | 119 | | | |

a. Dependent Variable: Organizational Level of Adoption
b. Predictors: (Constant), Fear Appeals, Tool Availability, Social Influence, Data Availability

The above Table 4shows whether the environmental factors have a substantial impact on the dependent variable. Consequently, the significance value is less than 0.05, which is 0.000 and it determines that there is a significant variance between environmental factors and the Organizational Level of Adoption. This suggests that the Organizational Level of Adoption to Human Resource Analytics depends on the mindset of the Human Resource executive level and above practitioners towards the environmental variables. Therefore, the Null Hypothesis should be denied.

*Table 5:* Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | .363 | .261 | | 1.388 | .168 |
| SI | .110 | .081 | .120 | 1.368 | .174 |
| TA | .166 | .097 | .171 | 1.715 | .089 |
| DA | .450 | .108 | .454 | 4.163 | .000 |
| FA | .184 | .095 | .163 | 1.925 | .057 |

a. Dependent Variable: Organizational Level of Adoption

The above Table 5 displays, the predictor / independent coefficient of variables, which are Fear Appeals, Tool Availability, Social Influence and Data Availability factors. The first hypothesis (H1) was to examine whether environmental variables had a significant impact on Organizational Level of Adoption to Human Resource Analytics. For environmental variables, the significant value is 0.111, 0.029, 0.000, 0.057, which is less than 0.05. By accepting H1, the environmental factors are influenced by Organizational Level of

Adoption or Organizational Level of Adoption is depending on the attitudes of the Human Resource professionals towards the Fear Appeals, Tool Availability, Social Influence and Data Availability. According to the above table, unstandardized coefficient has been considered because the data that has taken from a standard scale and resulted in B1= 0.131, B2 = 0.202, B3 = 0.407 and B4 = 0.184. This demonstrates, when the Social Influence increases by one unit, the Organizational Level of Adoption to Human Resource Analytics expected to extend by 0.131 units, when the Tool Availability increases by one unit, the Organizational Level of Adoption to Human Resource Analytics expected to extend by 0.202 units, and when the Data Availability increases by one unit, the Organizational Level of Adoption expected to extend by 0.407 units and when Fear Appeals increases by one unit, 0.184 units from the Organizational Level of Adoption expected to extend. Therefore, Data Availability features a more impact on Organizational Level of Adoption to Human Resource Analytics.

*$H_2$:* Impact of Data Availability on the organizational level of adoption to Human Resource Analytics

*Table 6:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .817[a] | .668 | .665 | .468 |

a. Predictors: (Constant), Data Availability

According to Table 6, the value of Adjusted R Square = 0.665, which determines 66.5% of the Organizational Level of Adoption to Human Resource Analytics variance. It is explained by the predictor variable Data Availability.

*Table 7:* Anova

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 52.081 | 1 | 52.081 | 237.412 | .000[b] |
| Residual | 25.886 | 118 | .219 | | |
| Total | 77.967 | 119 | | | |

a. Dependent Variable: Organizational Level of Adoption
b. Predictors: (Constant), Data Availability

Table 7 shows, whether the Data Availability has a major impact on the dependent variable. Consequently, the significance value is less than 0.05, which is 0.000 (0.000 < 0.05), and it specifies that the difference between Data Availability and Organizational Level of Adoption is significant. This signifies the Organizational Level of Adoption to Human Resource Analytics is relying upon the Data Availability of Human Resource experts. Hence, it is possible to reject the Null Hypothesis.

*Table 8:* Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | .791 | .233 | | 3.399 | .001 |
| DA Mean | .809 | .052 | .817 | 15.408 | .000 |

a. Dependent Variable: Organizational Level of Adoption

The above Table 8 shows the coefficient of predictor/independent variable Data Availability. The second hypothesis (H2) was to check whether Data Availability has significant impact on the Organizational Level of Adoption to Human Resource Analytics. The significance value for Data Availability is 0.000 which is a smaller amount than 0.05. Thus, accepting H2 reveals that the Data Availability impacted on Organizational Level of Adoption which the Organizational Level of Adoption is reckoning on the Data Availability towards the Human Resource Professionals. Consistent with the Table 8, unstandardized coefficient has been considered because the data that has taken from a standard scale and resulted in B1= 0.809. That means when the Data Availability increases by one unit, the Organizational Level of Adoption expected to extend by 0.809 units.

*$H_3$:* Impact of Fear Appeals on the Organizational Level of Adoption to Human Resource Analytics

*Table 9:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .724[a] | .524 | .520 | .561 |

a. Predictors: (Constant), Fear Appeals

According to Table 9, the value of Adjusted R Square=0.520), which determines 52.4% of the Organizational Level of Adoption to Human Resource Analytics variance. It is explained by the predictor variable Fear Appeals.

*Table 10:* ANOVA

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 40.842 | 1 | 40.842 | 129.813 | .000[b] |
| Residual | 37.125 | 118 | .315 | | |
| Total | 77.967 | 119 | | | |

a. Dependent Variable: Organizational Level of Adoption
b. Predictors: (Constant), Fear Appeals

Table 10shows whether the Fear Appeals has a major impact on the dependent variable. Consequently, the significance value is less than 0.05, which is 0.000 (0.000 < 0.05) and it determines that between Fear Appeals and Organizational Level of Adoption there is a significant variance. This means that the Organizational Level of Adoption to Human Resource Analytics depends on the attitudes towards Fear Appeals of Human Resource executive level and above professionals. Thus, it is possible to reject the Null Hypothesis.

*Table 11:* Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | .688 | .323 | | 2.131 | .035 |
| FA Mean | .812 | .071 | .724 | 11.394 | .000 |

*Dependent Variable: Organizational Level of Adoption*

The above Table 11 shows, the coefficient of predictor/independent variable Fear Appeals. The third hypothesis (H3) was to check whether Fear Appeals has significant impact on the Organizational Level of Adoption to Human Resource Analytics. The significance value for Fear Appeals is 0.000 which is a smaller amount than 0.05. Thus, accepting H3 reveals that the Fear Appeals impacted on Organizational Level of Adoption which the Organizational Level of Adoption is looking on the Human Resource Professionals' attitudes towards the Fear Appeals. Consistent with the Table 11, unstandardized coefficient has been considered because the data that has taken from a typical scale and resulted in B1= 0.812. This means when the Fear Appeals increases by one unit, the Organizational Level of Adoption expected to extend by 0.812 units.

*$H_4$:* Impact of Social Influence on the organizational level of adoption to Human Resource Analytics

*Table 12:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .720[a] | .518 | .514 | .564 |

a. Predictors: (Constant), Social Influence

According to table 12, the value of Adjusted R Square = 0.514, which determines 51.4% of the Organizational Level of Adoption to Human Resource Analytics variance. It is explained by the predictor variable Social Influence.

*Table 13:* ANOVA

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 40.416 | 1 | 40.416 | 127.003 | .000[b] |
| Residual | 37.551 | 118 | .318 | | |
| Total | 77.967 | 119 | | | |

a. Dependent Variable: Organizational Level of Adoption
b. Predictors: (Constant), Social Influence

Table 13 indicates whether the predictor variable Social Influence has a major impact on the dependent variable Organizational Level of Adoption. The significance value is also less than 0.05, which is 0.000 (0.000 < 0.05), and it determines that there is a substantial difference between the SI and the Organizational Level of Adoption to Human Resource Analytics. That means Organizational Level of Adoption to Human Resource Analytics depends on the mindset and capacity of the Human Resource executive level towards the Social Influence of Human Resource executive level and above professionals. Hence, it is possible to reject the Null Hypothesis.

*Table 14:* Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.575 | .249 | | 6.334 | .000 |
| SI Mean | .663 | .059 | .720 | 11.270 | .000 |

a. Dependent Variable: Organizational Level of Adoption

The above Table 14 shows, the coefficient of predictor/independent variable Social Influence. The fourth hypothesis (H4) was to check whether Social Influence has significant impact on the Organizational Level of Adoption to Human Resource Analytics. The significant value for Social Influence is 0.000 which is a smaller amount than 0.05. Therefore, by accepting H4 reveals that the Social Influence impacted on Organizational Level of Adoption which the Organizational Level of Adoption is counting on the Human Resource Professionals' attitudes towards the Social Influence. According to the Table 14, unstandardized coefficient has been considered because the data that has taken from a standard scale and resulted in B1= 0.663. That means when the Social Influence increases by one unit, the Organizational Level of Adoption expected to extend by 0.663 units.

*H5:* Impact of Tool Availability on the organizational level of adoption to Human Resource Analytics.

*Table 15:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .770[a] | .594 | .590 | .531 |

a. Predictors: (Constant), Tool Availability

According to Table 15, the value of Adjusted R Square=0.590, which determines 59% of the Organizational Level of Adoption to Human Resource Analytics variance. It is explained by the predictor variable Tool Availability.

*Table 16:* ANOVA

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 50.575 | 1 | 50.575 | 179.661 | .000[b] |
| Residual | 34.625 | 123 | .282 | | |
| Total | 85.200 | 124 | | | |

a. Dependent Variable: Organizational Level of Adoption
b. Predictors: (Constant), Tool Availability

Table 16 indicates whether the predictor variable Tool Availability has a major impact on the dependent variable Organizational Level of Adoption. Consequently, the significance value is less than 0.05, which is 0.000 (0.000 < 0.05) and it specifies that the difference between Tool Availability and Organizational

Level of Adoption to Human Resource Analytics is significant. That means the Organizational Level of Adoption to Human Resource Analytics depends on the Human Resource executive level and above practitioners towards the Tool Availability. Hence, it is possible to reject the Null Hypothesis.

*Table 17:* Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.137 | .242 | | 4.697 | .000 |
| TA Mean | .738 | .055 | .770 | 13.404 | .000 |

a. Dependent Variable: Organizational Level of Adoption

The Table 17 shows, the coefficient of predictor variable Tool Availability. The hypothesis (H5) was to check whether Tool Availability has significant impact on the Organizational Level of Adoption to Human Resource Analytics. The importance value for Tool Availability is 0.000 which is a smaller amount than 0.05. Hence, accepting H5 reveals that the Tool Availability impacted on Organizational Level of Adoption which the Tool Availability of Human Resource Professionals' impacting towards adoption of Human Resource Analytics. According to Table 17, unstandardized coefficient has been considered because the data that has taken from a standard scale and resulted in B1= 0.738. That means when the Tool Availability increases by one unit, the Organizational Level of Adoption expected to extend by 0.738 units.

## V. Conclusion

The industrial experts suggest that the adoption of Human Resource Analytics into Organizational Level of Adoption is at an initial stage in Sri Lankan context. Scholarly articles suggest that it this gap has been occurred due to the environmental factors including Fear Appeals, Tool Availability, Social Influence and Data Availability. The research is focused on question "What is the level of impact of environmental factors on organizational level of adoption to Human Resource Analytics?" Derived from the research question the main objective was to investigate the impact of environmental factors on the organizational level of adoption to Human Resource Analytics among large scale apparel companies in Sri Lanka. Hence, Human Resource professionals of the Sri Lankan large scale apparel companies were considered as the research sample for the study. A deductive approach was conducted within the study. Accordingly, the outcome of the correlation analysis suggested that the environmental factors have a strong positive relationship towards the Organizational Level of Adoption when adopting Human Resource Analytics. This denotes that Fear Appeals, Tool Availability, Social Influence and Data Availability have a significant impact towards the Human Resource Analytics adoption. Therefore, it was acknowledged that the environmental factors influence the Human Resource Analytics adoption among large-scale apparel companies in Sri Lanka. This proves that in order to adopt Human Resource Analytics to organizational level, environmental factors should be considered by the Human Resource professionals and management. The causes may vary from each organization. Nevertheless, the organizations should identify these factors deeply when adopting Human Resource Analytics into organizational level. Moreover, it can be suggested to investigate the economic impact of adopting Human Resource Analytics into an organization, the impact of behavioral factors on the adoption of Human Resource Analytics to the organizations and the individual adoption of Human Resource professionals based on the Human Resource Analytics in Sri Lankan context for further studies.

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# Moderating Role of Portfolio Risk Manaemgement on Performance of Water Service Boards in Kenya

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*Keywords:* *project portfolio management, performance, kenya water service boards.*

*GJMBR-A Classification:* *JEL Code: G32*


*Strictly as per the compliance and regulations of:*

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*Keywords: project portfolio management, performance, kenya water service boards.*

## I. Introduction

The Project Management Institute (2013) defines project portfolio management (PPM) as the centralized or coordinated management of one or more portfolios, which included identifying, prioritizing, authorizing, managing, and controlling projects, programmes, and other related work, to achieve specific strategic business objectives. They recognized that "portfolio management produces valuable information to support or alter organizational strategies and investment decisions" (PMI, 2013) and allowed decision-making that controlled the direction of portfolio components as they achieved specific outcomes. In PPM resources are allocated according to organizational priorities and are managed to achieve the identified benefits. The management of the portfolio requires that the alignment between objectives and portfolio components be maintained. A change in circumstances (external or internal) could result in a change in the portfolio mix.

Delays in projects are a global phenomenon and have become a typical part of the project manager's concern (Zidane *et al.,* 2015). For effective company strategy implementation, there is an increasing need to address the importance of project portfolio management. Portfolio management is the coordinated management of one or more portfolios to achieve organizational goals, objectives, and strategies. It includes interrelated organizational processes by which an organization evaluates, selects, prioritizes, and allocates its limited resources to best accomplish organizational strategies consistent with its vision, mission, and values. Portfolio management produces valuable information to support or alter organizational strategies and investment decisions (Abrantes & Figueiredo, 2014).

The ultimate goal of linking portfolio management with organizational strategy is to establish a balanced, executable plan that will help the organization achieve its goals. The impact of the portfolio plan upon strategy is attained by the six areas: maintaining portfolio alignment to strategic objectives, allocating financial resources, allocating human resources, allocating material or equipment resources, measuring portfolio component performance, and managing risks (Killen *et al.,* 2015). According to Rahayu and Edhi (2015), project portfolio management has for some time been the most used principle for managing the development of organizations, as organizations increasingly become multi-project environments more work is organized by projects. Thus, today project portfolio management is considered to be one of the most important areas for organizational development and business success especially in the real estate sector (Barney, 2013).

The assumption of project portfolio management as a rational decision process that could improve business success includes four underlying characteristics that have a major impact on how project portfolio management has been studied and executed in companies. Firstly, the rational approach appears to

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assume that projects are obedient servants that exist primarily to fulfill the strategy of the parent organization (Martinsuo, 2014). However, innovation projects are frequently used to purposefully question the strategy and are no longer necessarily limited to one company's strategic interests only. Secondly, project portfolio selection and management frameworks tend to assume that projects compete for the same resources and that all relevant resources are known and controlled by the company itself. Hence for successful optimization of resources, organizations need to rely on this framework (Dutra *et al.,* 2014).

The portfolio management standards are the establishment whereupon fruitful portfolio management is assembled; they give a favorable authoritative environment in which there is powerful standards operation of portfolio definition and conveyance (Helfat & Martin, 2015). Heising (2012) emphasized that projects in the portfolio may share risks that may become increasingly relevant business issues at the portfolio level and, therefore, need to be taken into account by managers. PPM has risen to prominence as a method of selecting and managing an organization's projects in water service boards (Verganti, 2013). PPM is now used for the composition of project portfolios in such diverse fields as product development, information technology, and construction (Kopmann *et al.,* 2015). If a project's risk profile (budget, resource demands) changes after its initiation, the portfolio profile and therefore the selection of future projects accordingly needs to reflect this change (McNally *et al.,* 2013). The initial and continuous evaluation of the projects in a portfolio creates a high demand for high-quality, up-to-date internal and external information, which can put considerable strain on an organization; this is put forward as the main reason for the inattentiveness to this aspect of PPM in many organizations (Oh and Lee, 2012).

*a) Project Portfolio Management and Performance at Kenya Water Service Boards*

Kenya's Water Services Boards are dependent upon five water resources derived from the five major water towers (Mt Kenya, the Aberdare Ranges, the Mau Complex, Mt Elgon, and the Cherangani Hills). This implies that water has to be transmitted across counties to support the economic hubs identified under Vision 2030 (WASREB, 2013). In Kenya, the water sector reform secretariat (WSRS) was formed as a transitional institution to oversee the formation of the new institutions which have been established and are working. The Department of Water and Irrigation transferred its functions, regulations, responsibilities, assets, and equipment's to the new institutions with effect from July 1, 2005 (World Bank, 2007). Kenya Vision 2030 was prepared in 2007 and in it, a new development blueprint for the country was presented. Water was defined as essential resources to support the development activities planned in Kenya Vision 2030.

As per the National Water Master Plan 2030, Investments by Water Service Boards (WSB) are keyto the achievement of the right to water and public health services. The investments are expected to translate to improvement in the investment-related indicators at the utility level. The indicators expected to show improvement are water and sewerage coverage, hours of Supply, and NRW reduction. Investments by the WSBs for the period 2014/15 amounted to Ksh 11.28 billion, a decrease of Ksh 8.2 billion (42%) compared to the total investments in 2013/14. This decline in the amount of investment implies that the investment gap for water and sanitation infrastructure continues to widen. The figure of Ksh 11.28 billion translates to a meager 10% of the investment needs in the water services sector, estimated at Ksh 110.27 billion annually if the targets under Vision 2030 have to be met.It is imperative to note that for water projects, there is a need for proper portfolio management (Kester *et al.,* 2014). Hence, the need for these companies to adopt proper project portfolio management practices which would impact on their business success (Kelly and Mc Quinn, 2013).

Portfolio Management primary point is to boost aggregate estimation of projects through accomplishing their most extreme adjust of cost, returns, and the dangers inside the organization assets restricted in this way deciding the ideal asset for conveyance and to timetable exercises to best accomplish an organization's operational and budgetary objectives (Odhiambo, 2013). Having formal portfolio management in water service boards could help them handle different projects to achieve the organization's key objectives, permits the organizations to stage activities to dodge asset bottlenecks, and enhances the checking of the proposed project asks for that can be formally affirmed (Martinsuo, 2014).

According to the vision 2030, Kenya is a water-scarce nation with limited water resources, and therefore it is imperative to ensure that improved water supply is available and accessible to all. To realize the targets under vision 2030, the water sector needs to grow by at least 3% points annually for the next 13 years. Therefore, using the projections in the master plan and half times the current levels to meet demand, it requires a sustained investment of a minimum of Ksh 100 billion annually. Under the Water Act (2002), there was the implementation of water sector reforms which was to bring services closer to the people and the institutions which were expected to directly provide water services to consumers was the Water Service Providers (WSPs) which are regulated through a water service provision agreement issued by the Water Service Boards and all the water projects are to be implemented by the Water Service Boards.

Several factors could have contributed to the failure of water projects which could be: lack of community involvement/participation during the implementation of projects, high recurrent costs, poor maintenance of the water facilities in terms of operations and maintenance, use of inappropriate technology, politics and of lack of proper teaching of the requisite skills. Research is done by scholars and authors such as (Binder, 2008; Dungumaro & Madulu, 2003) argued that common descriptions, pointers, and measures of execution and sustainability that can guide service administration of resources in a way that safeguards paybacks for both current and future generations. They specify the significance of community involvement and correct project organization management skills for the effective execution of development projects. Besides, they indicated that community involvement is low in developing countries. In Kenya, there are eight (8) service boards and these are Athi, lake Victoria North, Lake Victoria south, Northern, Coast, Tana, and Tanaathi water service boards.

*b) Statement of the Problem*

As per the Countrywide Water Services Strategy (NWSS) (2007 -2015) "Kenya is exposed to serious problems in availing sustainable access to safe drinking water which is projected at around 60% in metropolitan and 40% in rural settings. According to the WASREB report (2017), the total investment made by Water Service Boards (WSBs) in Kenya between 2015 and 2017 amounted to Ksh34, 456 billion. This investment was aimed at increasing water supply, reducing non-revenue water (NRW), an increasing number of hours of water supply but, this has not been realized. There is no correlation between a constantly growing development budget and a positive impact on the Kenyan people. According to the WASREB impact report, (2018), Kenya's water coverage stands at 55 percent against a 2015 National Water Services Strategy (NWSS) target of 80 percent. This indicator has not registered any significant growth in the last three (3) years and non-billed water (NBW) is at 42% against a target of 30% and the hours of supply has dropped to 14 hours from 18 hours in 2015, despite numerous implementation of water projects and a minimum investment of 29 billion Kenya shillings.

The prevailing water condition in Kenya shows that only 57 % of the population has access to clean and safe drinking water as per Kenya National Water Services Strategy (2010). Many factors could have contributed to the failure of water projects which could be: lack of community involvement/participation during the implementation of projects, high recurrent costs, poor maintenance of the water facilities in terms of operations and maintenance, use of inappropriate technology, politics and of lack of proper teaching of the requisite skills. Research is done by scholars and authors such as (Binder, 2008; Dungumaro & Madulu, 2003) argued that common descriptions, pointers, and measures of execution and sustainability that can guide service administration of resources in a way that safeguards paybacks for both current and future generations. They specify the significance of community involvement and correct project organization management skills for the effective execution of development projects. Besides, they indicated that community involvement is low in developing countries.

Evidence on the factors explaining project portfolio management performance is still limited and more research is needed to test all aspects of the frameworks especially in the real estate sector where organizations are investing in multiple portfolios. With the call for more evidence, this study seeks to fill this knowledge gap by investigating the influence of portfolio management practices on the performance of water service boards in Kenya. Besides, it is clear several studies (Mc Nally *et al*., 2013; Jugend and da Silva, 2014; Dutra *et al.,* 2014; Kester *et al*., 2014; Kock *et al.,* 2015 Kopmann *et al.,* 2015) have been done in developed countries with limited empirical literature in Kenya. It is in this light that the current study sought to fill the existing research gap by studying the project portfolio management practices on the performance of water service boards in Kenya.

*c) Objectives of the Study*

This study sought to investigate the influence of project portfolio management practices on the performance of water service boards in Kenya.

The study tested the following hypothesis.

$H_{01}$: There is no significant influence of project selection and prioritization as a project portfolio management practice on the performance of water service boards in Kenya.

$H_{02}$: There is no significant influence of project evaluation as a project portfolio management practice on the performance of water service boards in Kenya.

$H_{03}$: Portfolio risk management does not moderate the relationships between project portfolio management practice and performance of water service boards in Kenya

## II. Literature Review

This study was based on the theories; Modern Portfolio theory, Multi-Criteria Utility theory, control theory, Systems theory, and Complexity theory. Modern Portfolio Theory was developed by Harry Markowitz in the early 1950sIn applying the concepts of variance and covariance, Markowitz showed that a diversified portfolio of financial assets could be optimized to deliver the maximum return for a given level of risk". This theory determines the highest return on a specific mix of investments for a given level of risk. According to

Markowitz (1952), several assumptions must be formulated concerning investor behavior in portfolio management. The assumptions include; the investor views each investment alternative to be represented by the distribution probability of the expected returns throughout the investment was held. Also, there is the maximization of expected utility for one period the curves of utility demonstrate marginal wealth utility, utility curves of investors are a function of expected risk and returns because investors solely base decisions on expected risk and return. He also argued that less risk will always be preferred by investors for any given expected return level (Markowitz, 1952).

Mc Farlan (1981) suggested that the selection of projects based on the risk profile of the portfolio could reduce the risk exposure to the organization. However, Mc Farlan does not go into any detail regarding the portfolio management methodology, approach, or definition but merely introduces the concept of portfolio management from a perspective of risk management. Nevertheless, the application of portfolio theory in a new field, specifically real estate investment, has resulted in further study towards developing methods and standards for applying portfolio theory to Project portfolio management. Modern portfolio theory (MPT) is relevant for this research as it provides a financial investment metaphor that can be applied to project portfolio management. Projects, programs, and operational initiatives can be viewed as investments that must be aligned to organizational goals. The project portfolio mix should be balanced in terms of risk exposure and investment returns. To understand the full impact of decisions regarding individual portfolio components, the aggregate must be considered, as opposed to the singular, projects, programs, and operational initiatives.

Multi-Criteria Utility Theory (MCUT) considers the decision maker's preferences in the form of the utility function, which is defined over a set of criteria (Goicoechea, Hansen, and Duckstein, 1982 as cited in Stewart and Mohamed (2002). The utility is a measure of desirability or satisfaction and provides a uniform scale to compare tangible and intangible criteria (Ang & Tang, 1984 as cited in Stewart and Mohamed (2002). Stewart and Mohamed (2002) state that decisions typically involve choosing one or a few alternatives from a list of several with each alternative assessed for desirability on several scored criteria. The utility function connects the criteria scores with desirability. According to Stewart and Mohamed (2002), the most common formulation of a multi-criteria utility function was the additive model (Keeney and Raiffa, 1993). MCUT generally combines the main advantages of simple scoring techniques and optimization models. According to Stewart and Mohamed (2002) business unit managers typically proposed projects they wished to implement in the upcoming financial year. These projects were supported by business cases in which costs were detailed. As cost is only one criterion related to project selection, other criteria would be based on business value, risk, organization needs that the project proposes to meet, and also other benefits to the organization like product longevity and the likelihood of delivering the product. Each criterion is made up of many factors that contribute to the measurement of that criterion. For example, to determine the value that a PPM investment delivers, organizations need to go beyond the traditional NPV (Net Present Value) and ROI (Return on Investment) analysis methods. Value can be defined as the contribution of technology to enable the success of the business unit.

Control theory was invented by Ouchi (1979) and Eisenhardt (1985) who originally developed this widely recognized theory to apply to the field of management science. Control theory uses the notion modes of control to describe all attempts to ensure that individuals in organizations act in a way that is consistent with organizational goals and objectives (Kirsch, 2004). Control theory has proven useful to describe the mechanisms of managing complex tasks in organizations such as project portfolios. Control plays an important role in managing projects by integrating the participants (Kirsch, 2004). The concept of control is based on the premise that the controller and the controlee have different interests. These different interests will be overcome by the controller's modes of control (Tiwana and Keil, 2009). Modes of control may distinguish between formal and informal mechanisms. Formal modes of control are defined as Behavior control and Outcome control. Behavior control consists of articulated roles and procedures and rewards based upon those rules. Outcome control is a mechanism for assigning rewards based on articulated goals and outcomes. The informal modes of control are carried out by the control modes labeled as Clan and self. The clan is the mechanisms of a group sharing common values, beliefs, problems, and these mechanisms work through activities like hiring and training of staff and socialization. The control mode of the Self is about individually defined goals and can be carried through the mechanisms of individual empowerment, self-management, self-set goals (Kirsch, 2004).

## III. Conceptual Framework

The conceptual framework of this study can be presented diagrammatically as shown in Figure 1 below.

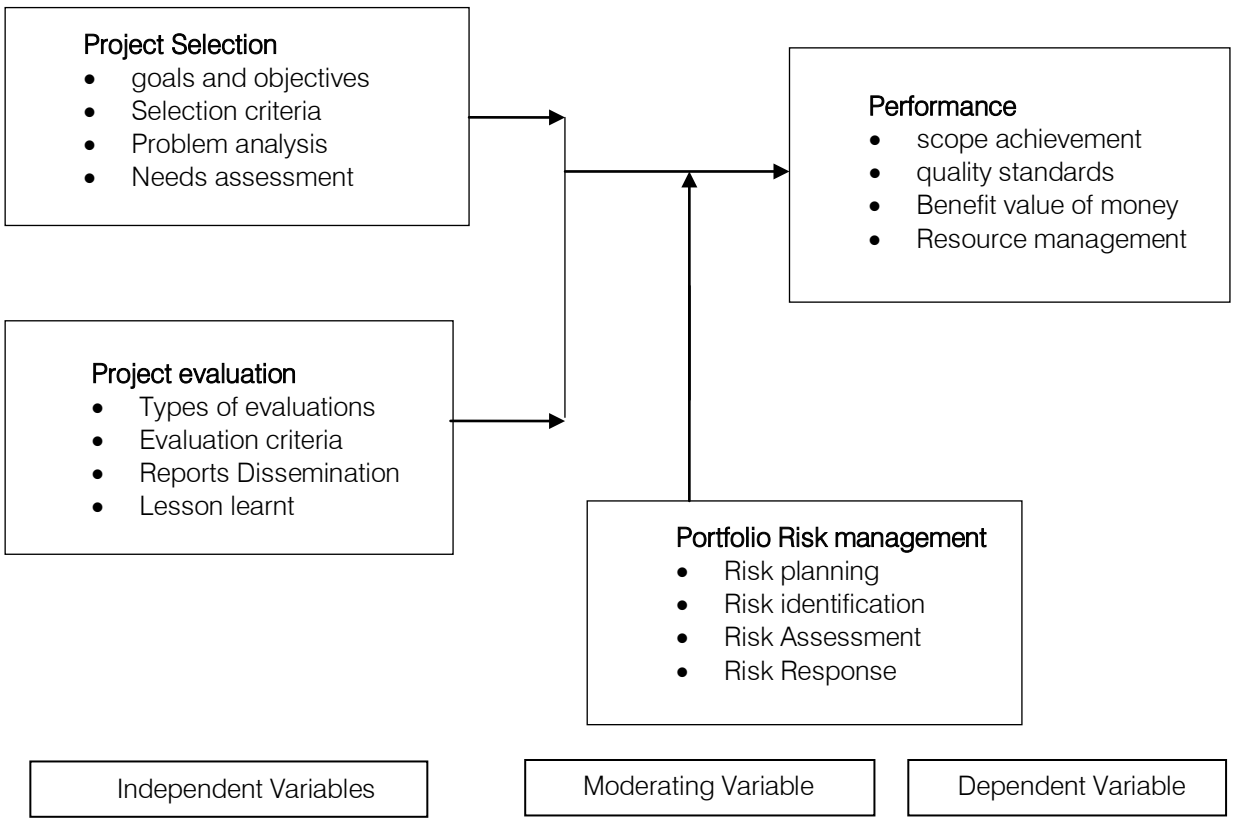


*Figure 1:* Conceptual Framework

## IV. Review of Variables

*a) Project Portfolio Management Practices*

In this study Project, portfolio management practices include project selection, resource allocation, and portfolio control, and project evaluation. This section will look at a review of literature on the study variables but as for this publication, the will be specific to two independent variables, the independent and moderating variables.

*b) Project selection*

According to PMI (2013) project selection aims at a balanced project portfolio, considering the mission, vision, and strategy of the organization. It prioritizes the projects in an orderly manner in each strategic or financial category and establishes an organizational focus. This practice ensures that projects and programs are reviewed to prioritize resource allocation and that the management of the portfolio is consistent with and aligned to organizational strategies. Different types of criteria are used to evaluate and prioritize the portfolio components, such as financial criteria, technical criteria, risk-related criteria, resources-related criteria (human resources, equipment), contractual conditions criteria and experience, and other qualitative criteria. Examples of financial criteria include benefit-cost ratio, net present value, payback period, internal rate of return (IRR), the weighted average cost of capital, and terminal value (Rocha *et al.* 2009).

Rocha *et al.* (2009), suggest the following elements should be taken into consideration while conducting project selection, ad hoc selection techniques, scoring models, the analytic hierarchy process (AHP) method, sensibility matrix, and analysis, mission/vision/strategy operationalization, commercial success probability, technical success probability, bubble chart, indicators of success, the establishment of a prioritized list of projects, the involvement of senior management, analysis of selection criteria (subjective, objective, quantitative, or intuitive), determination of the cost of each project, and urgency and seriousness. Gutierrez and Magnusson (2014) argue that the main criteria adopted for selecting projects is the appreciation that members attach to the association's lines of action. Based on the survey results, project expectations and priorities are assessed, as well as the need for investment in realization and communication. Projects are not placed in strict categories (strategic, financial, or organizational focus), allowing further analysis. Financial analysis is done only by project budgets. Run-time is considered in the selection and final prioritization, but not consistently since projects that are at risk of not being completed in the specified period (annually) are also prioritized. A few empirical, qualitative studies give

partial support to the potential linkage between portfolio selection and portfolio management performance.

According to Golini, Kalchschmidt, and Landoni (2015), for portfolio success and organizational performance, selection and prioritization practices should consider the history of projects within portfolios, performing individual analysis of projects, but does not verify the complex interaction among projects. Therefore, even if projects are deemed urgent and serious, they should consider the project's commercial success probability, the establishment of a prioritized list of projects, the involvement of senior management, analysis of selection criteria (subjective, objective, quantitative, or intuitive. This practice is very important to water service boards in Kenya because companies put a lot of money into their investments and some do not succeed.

*c) Project Evaluation Practices*

The use of project evaluation practices depends on the needs of each organization and may involve evaluating different attributes (Castro and Carvalho, 2010). In this practice, a prioritized list of projects is established (Rabechini, Maximiano, and Martins, 2005). Some researchers add to this dimension, citing the criteria of qualitative and quantitative analysis to assist decision-making around strategic adequacy (Rocha *et al.* 2009; Castro and Carvalho, 2010). According to Castro and Carvalho (2010), they found that analysis of this practice can take into consideration the following elements: relevance and risk assessment, adherence to strategic focus, feasibility study, criteria definition, quantitative analysis criteria (return on investment, net present value, internal rate of return, discounted cash flow, and decision tree), productivity index, qualitative analysis criteria (technical, cost, term, quality, safety, legality, human resources, and economic), scoring models, alignment with the third sector, and market research.

According to Unger (2015), the success of the project portfolio depends on the project evaluation practice which is always discussed by the executive board. He further stated that in the evaluation stage, the list of candidate projects should be prepared annually. The list should include information about the goals, deadlines, technical specifications, quality, and running costs. However, there is no interest in the direct participation of other areas of the organization in the evaluation of these projects. Xavier (2008), found that project evaluation practice is usually analyzed using the element of qualitative analysis criteria, both in the evaluation of individual projects and in the annual definition of the project portfolio.

According to Moxham (2014), the project evaluation dimension for project portfolio management is applicable through six elements: relevance and risk assessment, adherence to strategic focus, feasibility study, criteria definition, qualitative analysis criteria, and market research. A careful analysis of the feasibility study element indicates that its applicability also occurs through the qualitative analysis criteria element. Therefore, it is important to note that project evaluation practice plays a significant role in determining the success of a portfolio which this study seeks to determine in real estate investment companies.

*d) Portfolio Risk Management*

PMBOK-(PMI), (2013) defined portfolio risk as an uncertain event or condition that, if it occurs, has positive or negative effects on the project's objectives, thus the likelihood that a project will fail to meet its objectives. Thus project risk management is laid down project management activities for controlling and as such mitigate these risks (Amugsi & Muindi, 2017). Project risks are, therefore, various and diverse, where, Luis (2017) argued that projects attract a lot of interests from various stakeholders, resulting in wrangles that are risky to project's success and performance. Technically and economically, therefore, well-planned projects may fail to achieve its goal, due to stakeholders conflicting interests. This, thus, calls for stakeholder's analysis that, must be rigorously and systematically done, to control unexpected problems from arising and harm project continuity and subsequent performance (Eshna, 2017). On the other hand, projects employ computerized project management software technology as a tool for project planning, scheduling, resource allocation, and change management. This besides, ensures a seamless understanding of the project's management team and stakeholders and thus allowing a common understanding of costs and quality management for the projects being undertaken (Kuria, 2016).

Projects technology is however at times are prone to risks, among which are information hacking, unauthorized information access, the risk to viruses, and rerouting transactions that may cause delays and consequential projects unsustainability (Kumar et al., 2017). Project managers should thus, be versed in ways and procedures of managing these risks. Further, Sabihah, Intan, Siti, and Ahmad (2017) argued that projects often experience execution risks especially when financial assistance is offered by outside vendors or sponsors who, at times stops such assistance without warning. This is because project sponsors are not directly controlled by the project management team. Thus, making projects to encounter risks of sustenance different from expected, making it difficult to merge their plans with those of the project's management team (Mwololo, 2016). Further, projects are also prone to a lack of continued support from both internal and external authorities. This may arise as a result of project management politics that in most cases occur when projects, are poorly scoped ending up to spills over to more additional time, leading to wastage of resources

(Gabriela & Agnieszka, 2017). It is, therefore, this research intends to study how proper project risk management should be aligned with project management practices to influence the performance of solid wastes projects in Kenya.

*e) Water service boards Portfolio Performance*

The project portfolio management objectives are well established in literature: the maximization of the portfolio value, the balance of the portfolio, and the project alignment to strategic goals Following the approaches of Cooper (2010), Martinsuo and Lehtonen (2013), Meskendahl (2010), and Müller *et al.* (2008), project portfolio success comprise the following dimensions: (1) average project success, (2) average product success, (3) strategic fit, (4) portfolio balance, (5) preparing for the future, and (6) economic success. Average project success includes the classical success criteria budget, schedule, and quality adherence, as well as customer satisfaction of all projects in the portfolio (Martinsuo and Lehtonen, 2013). Average product success encompasses commercial effects such as goal-achievement regarding market success, Return-on-Investment, break-even, or profit of all projects in the portfolio (Meskendahl, 2010). The strategic fit incorporates the extent to which all projects reflect the corporate business strategy. A regular reflection of the current project portfolio regarding strategy helps to align both the project goals and the resource allocation with the corporate business strategy (Martinsuo and Lehtonen, 2013).

A portfolio balance can be the balance of the project portfolio concerning risks and expected benefits. The objective is to have a project portfolio with a reasonable level of risk, as too many high-risk projects could be dangerous for the organization's future. Further criteria to balance project portfolios can be the duration of the projects (long vs. short term projects) or the use of technologies (mature vs. new). Preparing for the future deals with the long-term aspects and considers the ability to seize opportunities that arise after the projects have been brought to an end. Finally, economic success addresses the short-term economic effects at the corporate level, including overall market success and commercial success of the organization or business unit (Meskendahl, 2010). According to Ross, Wester field, Jafee, and Jordan (2008), performance measurement enables stakeholders to hold organizations accountable and to introduce consequences for performance. It also helps citizens, customers judge the value that the company creates for them, and it provides managers with the data they need to improve performance. Meskendahl, (2010) asserts that the key to ensuring a profitable cash flow in real estate investment is predicated first and foremost upon buyers' ability to select lucrative properties for purchase. Before deciding to buy, he suggests gathering data from as many sources as possible, including current leases, recent property tax bills, recent utility bills, and even pertinent sections of the seller's tax returns.

Rental income has been the most preferred measure by investors (Kohnstamm, 1995), Gallinelli offers the Profitability Index calculation as an alternate means of assessing investment return. It is closely related to Net Present Value, although it is expressed in a ratio format. Thus, on review of the financial performance measures of Real Estate investment, return on assets, return on equity, profitability, market share, competitiveness, customers' satisfaction, and loyalty will be considered as a general measure of real estate investment companies' performance.

## V. Empirical Review

Maizlish and Handler (2005) found that, the practical aspects of PPM were not widely accepted in the majority of companies, and that few companies maintained an active PPM practice. They added, however, that there were elements of PPM that existed in all companies and that most companies utilized simple and straightforward financial models to make investment decisions. Levine (2005) offered a practical guide to PPM recognizing that the project portfolio lifespan extends well beyond that of a project and includes identification of needs and opportunities and the realization of benefits. Jeroz (2007) in his study of investment companies recommended that portfolios should be reviewed and adjusted from time to time with the market conditions. He pointed out that the evaluation of the portfolio is to be done in terms of targets set for risk and return. The changes in the portfolio are to be effected to meet the changing conditions. Martinsuo and Lehtonen (2013) discussed the role of single-project management in achieving portfolio management efficiency. The results of their research imply that "an understanding of portfolio-level issues needs to be considered as part of a project manager's capabilities through proper evaluation rather than remain only a top management concern"

Blichfeldt and Eskerod (2008) found that although organizations manage project portfolios using project portfolio theory, they still experience problems such as delayed projects, resource issues, and a lack of overview of the projects. They found that a key reason was that PPM was only applied to a subset of on-going projects. Projects that were not part of the portfolio utilize the same resources as projects that were part of the portfolio, resulting in an impact on the portfolio. They assessed that the practice of PPM was therefore deficient. Cooper (2011), found that effective portfolio management practices improved time to market and improved quality in execution which are among the main goals of PPM and the Idea-to-Launch process. The process is a cross-functional team approach, as an

effective cross-functional project team is needed to develop and launch a new product into a new market - new projects are bound to fail if functions are working in silos. Effective portfolio management practices must be an integral part of the process to keep the right projects in the pipeline, but most companies suffer from too many projects and not enough resources. Therefore, if proper resource allocation and project selection are done accordingly, there will be a successful project portfolio (Girotra, Terwiesch, and Ulrich, 2007).

## VI. Methodology

The choice of the research design was guided by the research question(s) and objective(s), existing knowledge, time, and resources (Kothari, 2004). This study adopted a cross-sectional survey research design that focused on the effect of project portfolio practices on the performance of water service boards in Kenya. The choice of research philosophy is based on the research hypothesis to be tested. In this regard, the study adopts a positivism research philosophy; since positivism reflects the belief that reality is stable that can be observed and described from an objective viewpoint without interfering with phenomena. The target population for this study wereemployees of eight water boards in Kenya which include coast water service board(CWSB), Rift valley water service board (RVSB), Lake Victoria North(LVNSB), Lake Victoria South, Tana water, Tana Athi water service board, Athi water service board, and Northern water service board. These water boards constitute all the legally mandated water service providers in Kenya. The unit target constituted Engineers, senior management, middle management, project team, and some senior management from water service providers comprising of 280 key people (WASREB report, 2018). A sample of 165 respondents was obtained using Yamane's 1967 formula.

A standardized questionnaire was used to collect primary data. A questionnaire is convenient and cost-effective. The quantitative data collected was analyzed by calculating the response rate with descriptive statistics such as mean, median, standard deviation. Qualitative data was analyzed through thematic analysis while multiple regression models were used to test the hypotheses. Diagnostic tests were taken to ensure there is no violation of critical assumptions. They include normality, multicollinearity, and heteroscedasticity tests. Multiple regression analysis was done to test the relationship between the independent variables and the dependent variable. A hypothetical multiple regression model based on conceptual relation was constructed to determine the influence of project portfolio management practices on the performance of water service boards in Kenya. The model shown below was used:

$$Y= \beta_0 +\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon_i$$

Contextualizing the above model to this study gives the following model:

$$OP= \beta_0 +\beta_1PE + \beta_2PS + \beta_3RA+ \beta_4PC + \varepsilon_i$$

Where

OP = Performance of Water service boards
PE = Project evaluation
PS = Project selection and prioritization
RA= Resource Allocation
PC= Portfolio control
$\beta_0$ = Intercept
$\varepsilon_i$ = Stochastic term (error term)

To test for moderating effect $H_{03,}$ the product of the coefficients approach was used as suggested by Fairchild and MacKinnon (2008).

## VII. Study Findings

*a) Descriptive Statistics*

The descriptive statistics for the variables: project selection, project evaluation, project risk management, and project performance are present as follows:

*b) Influence of Project Selection and Prioritization on Organizational Performance*

From the study results, the majority (77.8%) of the respondents agreed that project selection and prioritization influence organizational performance. Table 1 below shows the statistics on the influence of project selection on the performance of Water Service Boards in Kenya.

*Table 1:* Descriptive Statistics for Project Selection and Prioritization

| Statement | Mean | Std. Dev. |
|---|---|---|
| Provides the opportunity to compare different scenarios through creations of different versions. | 3.773 | 1.251 |
| Prioritizes the projects in an orderly manner in each strategic or financial category, and establishes an organizational focus. | 3.75 | 1.306 |
| Helps in the elimination of efforts on product/project redundancies. | 3.616 | 1.091 |
| Contributes tothe reduction of time to market | 3.598 | 1.391 |
| It helps to compare projects and measurably compare each project's contribution to the organizational strategy | 3.547 | 1.232 |
| It helps in aligning each project to the strategy formulation | 3.517 | 1.296 |
| Aggregate Score | 3.634 | 1.261 |

The findings presented in Table 1 show that the aggregate mean value was 3.634 and the standard deviation was small (1.261). This suggests that on average, the respondents agreed with the statements about the influence of project selection and prioritization on the performance of water service boards in Kenya. The study specifically established that the respondents agreed that it provides the opportunity to compare different scenarios through creations of different versions (M=3.773, SD=1.251); that this practice (project selection and prioritization) prioritizes the projects in an orderly manner in each strategic or financial category, and establishes an organizational focus (M=3.75, SD=1.306); and that project selection and prioritization helps in elimination of efforts on product/project redundancies (M=3.616, SD=1.091). Further, the respondents agreed that proper project selection and prioritization contributes to reducing time to market (M=3.598, SD=1.391); it helps to compare projects and measurably compare each project's contribution to the organizational strategy (M=3.547, SD=1.232); and that it helps in aligning each project to the strategy formulation (M=3.517, SD=1.296). The findings concur with PMI (2013) that project selection and prioritization ensures that projects and programs are reviewed to prioritize resource allocation and that the management of the portfolio is consistent with and aligned to organizational strategies. It also agrees with Chien, (2012) who reported prioritization as a success factor in multi-project environments. He further stated that resource allocation issues and lack of portfolio-level activities, including project overlaps and lack of prioritization, as problems with managing multi-project environments.

c) *Influence of Project Evaluation on Organizational Performance*

Regardingthe influence of project evaluation on the performance of water service boards in Kenyamajority (80.55%) of the respondents agreed that portfolio project evaluation influences organizational performance while 19.5% disagreed. Table 2 presents descriptive statistics.

*Table 2:* Descriptive Statistics for Project Evaluation

| Statement | Mean | Std. Dev. |
|---|---|---|
| This practice ensures the organization adheres to strategic focus | 3.846 | 1.423 |
| Project evaluation helps to appraise viable projects through qualitative and quantitative analysis/feasibility study. | 3.818 | 1.514 |
| Project evaluation improves the planning of projects and timelines are met. | 3.808 | 1.34 |
| This practice helps in eliminating plans of unyielding projects/risk assessment | 3.775 | 1.427 |
| Evaluation helps tracking and budgeting of projects to become much easier. | 3.719 | 1.271 |
| It aids the organization to zero in on the right product project/relevance | 3.669 | 1.347 |
| Aggregate Score | 3.773 | 1.387 |

In Table 2 above, the mean values are above 3.5 and the aggregate mean value is 3.773 with a standard deviation of 1.387(small). This suggests that on average, the respondents agreed with the statements on the influence of project evaluation on the performance of water service boards in Kenya. Specifically, the respondents agreed that this practice ensures the organization adheres to strategic focus (M=3.846, SD=1.423); project evaluation helps to appraise viable projects through qualitative and quantitative analysis/feasibility study (M=3.818, SD=1.514); and that project evaluation improves planning of projects and timelines are met (M=3.808, SD=1.340). The findings further showed that the respondents agreed that this practice (project evaluation) helps in eliminating plans of unyielding projects/risk assessment (M=3.775, SD=1.427); evaluation helps tracking and budgeting of projects to became much easier (M=3.719, SD=1.271); and that adoption of this practice aids the organization to zero in on the right product project/relevance (M=3.669, SD=1.347).

The study findings agree with Castro and Carvalho (2010) who explained that analysis of practice takes into consideration the relevance and risk assessment, adherence to strategic focus, feasibility study, criteria definition, quantitative analysis criteria (return on investment). It also concurs with Unger (2015) that the success of the project portfolio depends on the project evaluation practice which is always discussed by the executive board. He further stated that in the evaluation stage, the list of candidate projects should be prepared and the list should include information about the goals, deadlines, technical specifications, quality, and running costs.

d) *Moderating Effect of Portfolio Risk Management on Relationship between Project Portfolio Management and Organizational Performance*

Respondents gave their extent to which they agreed with each of the following statements regarding the influence of portfolio risk management on the relationship between project portfolio management on the performance of water service boards in Kenya. Table 3 presents the findings obtained.

*Table 3:* Descriptive Statistics on the Moderating Effect of Portfolio Risk Management

| | Mean | Std. Dev. |
|---|---|---|
| The success or failure of projects depend on portfolio risk | 3.845 | 1.459 |
| The company has laid down project management activities to control and mitigate portfolio risk | 3.802 | 1.461 |
| Wrangles arising from stakeholders interest causes risks to project success and performance | 3.793 | 1.408 |
| Adoption of project management software ensures a seamless understanding of projects management team | 3.778 | 1.321 |
| Aggregate Score | 3.805 | 1.412 |

On average, the respondents agreed with the various statements on the moderating effect of portfolio risk management on the relationship between project portfolio management on the performance of water service boards in Kenya as indicated by an aggregate mean value of 3.805 and standard deviation value of 1.412. The findings further showed that the respondents agreed that the success or failure of projects depends on portfolio risk (M=3.845, SD=1.459); the company has laid down project management activities to control and mitigate portfolio risk (M=3.802, SD=1.461); wrangles arising from stakeholders interest causes risks to project success and performance (M=3.793, SD=1.408); and that adoption of project management software ensures seamless understanding of projects management team (M=3.778; SD=1.321). The study findings agree with Eshna (2017) that well-planned projects may fail to achieve its goal, due to stakeholders conflicting interests. He added that it is important to have stakeholder's analysis that must be rigorously and systematically done, to control unexpected problems from arising and harm project continuity and subsequent performance. The study also concurs with Kuria (2016) that projects that employ computerized project management software technology as a tool for project planning, scheduling, resource allocation, and change management ensures seamless understanding of projects management team and stakeholders and thus allowing the common understanding of costs and quality management for the projects being undertaken.

*e) Project Portfolio Management and Organizational Performance*

The respondents agreed that project portfolio management influences performance. They specifically agreed that it influenced customer satisfaction and loyalty (M=3.869, SD=1.528); Return on Assets (M=3.813, SD=1.424); competitiveness (M=3.798, SD=1.445); market share (M=3.792, SD=1.426); Return on Equity (M=3.776, SD=1.337); and Profitability (M=3.757, SD=1.356). This agrees with Barney (2013) that today project portfolio management is considered to be one of the most important areas for organizational development and business success; it could improve business success. Respondents were also asked to rank their organization on the following project portfolio management success criteria. They used the scale 1= little to no importance, 2= some importance, 3= above average importance, 4= very important. The findings were as presented in Table 4.

*Table 4:* Descriptive Statistics for Organization Project Portfolio Management Success

| Statement | Mean | Std. Dev. |
|---|---|---|
| The average single project success – individual projects(within the portfolio) fulfilling their own set of success criteria such as cost, time, quality, and customer satisfaction | 3.97 | 1.209 |
| The use of synergies-making use of synergies between projects such as technical or market synergies. | 3.875 | 1.252 |
| The portfolio is aligned with the organizational strategy -the extent to which the portfolio reflects the board's strategy. | 3.818 | 1.514 |
| The portfolio is balanced -a portfolio that balances different criteria such as achieving the growth and profit objectives | 3.684 | 1.274 |
| Aggregate Score | 3.837 | 1.312 |

From the findings in Table 4, the aggregate mean value was 3.837 and the standard deviation was 1.312. This is an indication that on average, the respondents ranked their organization project portfolio management success criteria and being very important. Specifically, they indicated the following to be very important: the average single project success– individual projects (within the portfolio) fulfilling their own set of success criteria such as cost, time, quality, and customer satisfaction (M=3.97, SD=1.209). The use of synergies-making use of synergies between projects such as technical or market synergies (M=3.875, SD=1.252). The portfolio is aligned with the organizational strategy -the extent to which the portfolio

reflects the board's strategy (M=3.818, SD=1.514). The portfolio is balanced -a portfolio that balances different criteria such as achieving the growth and profit objectives (M=3.684, SD=1.274).

Finally, respondents were asked about their perception of organizational performance i.e. unsuccessful, slightly successful, mostly successful, and very successful. Based on the findings, project portfolio management was perceived differently by different respondents. Most 64 (48.5%) perceived it as slightly successful, 54(40.9%) indicated it was mostly successful, 10(7.6%) saw it as being unsuccessful, and 4(4%) considered it very successful These findings suggest that organization's project portfolio management still has room for improvement because only 3% considered it to be very successful.

*f) Inferential Statistics*

Inferential statistics were used to assess the association between dependent and independent variables. Inferential statistics computed in this study were correlation analysis and regression analysis.

*g) Correlation Analysis*

Pearson R correlation wad used to measure the strength and direction of the linear relationship between variables. The association was considered to be: small if $\pm 0.1 < r < \pm 0.29$; medium if $\pm 0.3 < r < \pm 0.49$; and strong if $r > \pm 0.5$. Table 5 below shows the results.

*Table 5:* Correlation Analysis

| | | Performance |
|---|---|---|
| Project Selection | Pearson Correlation | .811* |
| | Sig. (2-Tailed) | .017 |
| | N | 133 |
| Project evaluation | Pearson Correlation | .566** |
| | Sig. (2-Tailed) | .004 |
| | N | 133 |

The findings in Table 5 show that project selection and organization performance had a strong positive and significant relationship (r=0.811, p=0.017). Since the p-value was less than the selected level of significance, the relationship was considered to be significant. The findings also show that resource allocation has a strong relationship with organization performance (r=0.503). The p-value (0.027) was less than the selected level of significance (0.05) and therefore, the relationship was considered to be significant. The relationship between portfolio control and organization performance was also found to be strong (r=0.517). Since the p-value (0.035) was less than the selected level of significance (0.05), the relationship was considered to be significant. Finally, project evaluation is seen to have a strong positive, and significant relationship with organization performance (r=0.566, p=0.004). The p-value was less than the selected level of significance (0.05) this suggesting the relationship was significant. These findings suggest that there was a significant relationship between the independent variables (project selection, resource allocation, portfolio control, and project evaluation) and the dependent variable (performance).

*h) Diagnostic Tests*

Regression analysis was used to investigate the influence of project portfolio management practices on the performance of water service boards in Kenya. For regression analysis to be performed, the data must meet the assumptions of normality, multi-collinearity, heteroscedasticity, and autocorrelation.

*i) Multicollinearity*

Multicollinearity was done to find out where more than one predictor variables in a regression model have high correlations. Findings reveal that the independent variables showed minimal signs of multicollinearity because the VIF values were less than 10. This simply means that the variables were not highly correlated therefore Multicollinearity does not exist. The variables were thus suitable for multiple regressions. Table 6 below shows the results.

*Table 6:* Multicollinearity Test Statistics

| Model | | Collinearity Statistics | |
|---|---|---|---|
| | | Tolerance | VIF |
| | Project Selection | 0.246 | 4.065 |
| | Resource Allocation | 0.318 | 3.145 |
| | Portfolio Control | 0.303 | 3.300 |
| | Project evaluation | 0.412 | 2.427 |

*j) Heteroscedasticity Test*

Heteroscedasticity is a situation whereby there is equal variability across a range of values of the second factor predicting it (Vinod, 2018). The study performed Breuch-pagan/cook-Weisberg test intending to test Heteroscedasticity.

*Table 7:* Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

| Ho: Constant variance | | | |
|---|---|---|---|
| Statistics | df | Stat value | p-value |
| Chi-squared | 133 | 2.6874 | 0.5412 |

From the findings presented in Table 7 p-value is greater than the selected level of significance which was 0.05 therefore the null hypothesis was supported that the data did not suffer from heteroscedasticity.

*k) Autocorrelation Test*

The null hypothesis for the Durbin-Watson's d tests is that the residuals aren't linearly autocorrelated. The findings reveal that the d-value (1.618) lies between 1.5 and 2.5 therefore the assumption has been met and there is no serial correlation among the study variables. Table 8 presents the results.

*Table 8:* Autocorrelation Test

| Model | Durbin-Watson |
|---|---|
| 1 | 1.618 |
| a. Predictors: (Constant), project selection, resource allocation, portfolio control, project evaluation | |
| Depbendent Variable: Performance | |

*l) Regression Analysis*

Multiple regression models were fitted to the data to investigate the influence of project portfolio management practices on the performance of water service boards in Kenya. It was also used to test the research hypothesis.

*m) Influence of Project Selection and Prioritization on Organizational Performance*

Univariate analysis was computed to determine the influence of project evaluation on the performance of water service boards in Kenya. The hypothesis tested was:

$H_{01}$: There is no significant influence of project selection and prioritization as a project portfolio management practice on the performance of water service boards in Kenya.

*Table 9:* Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .811[a] | 0.794 | 0.781 | 1.258 |

a. Predictors: (Constant), project prioritization

Adjusted R squared is the coefficient of determination that shows the variation in the dependent variable due to changes in the independent variable. From the findings in Table 4.16, the value of adjusted R squared was 0.781, indicating that there was a variation of 78.1% on the performance of water service boards in Kenya dueto project prioritization, at 95 percent confidence interval. This shows that 78.1% of changes in the performance of water service boards in Kenya could be accounted for by project prioritization. R is the correlation coefficient which shows the relationship between the study variables. There was a strong positive relationship between the study variable as shown by 0.811.

*Table 10:* ANOVA

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.247 | 1 | 1.247 | 7.470 | .019[b] |
| | Residual | 21.877 | 131 | 0.167 | | |
| | Total | 23.124 | 132 | | | |

a. Dependent Variable: performance
b. Predictors: (Constant), project prioritization

From the analysis of variance (ANOVA), the study found out that the regression model was significant at 0.019 which is less than the value of significance (p-value) which is 0.05, thus indicating that the data was ideal for concluding the population parameters. The calculated value was greater than the critical value (7.470>3.913), an indication that project prioritization significantly influences the performance of water service boards in Kenya. The significance value was less than 0.05 indicating that the model was significant.

*Table 11:* Regression Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.412 | 0.412 | | 3.427 | 0.013 |
| | Project Prioritization | 0.319 | 0.106 | 0.811 | 3.009 | 0.004 |
| a. Dependent Variable: Financial performance | | | | | | |

The regression equation was:

$$Y = 1.412 + 0.319\ X_1$$

From the above regression equation, it was revealed that holding project prioritization to a constant zero, the performance of water service boards in Kenyawould be 1.412. A unit increase in project prioritization would lead to an increase in the performance of water service boards in Kenya by 0.319. The p-value obtained (0.0004) was less than the selected level f significance, an indication that the influence was significant. We, therefore, reject the null hypothesis that "there is no significant influence of project selection and prioritization as a project portfolio management practice on the performance of water service boards in Kenya".

*n) Influence of Project Evaluation on Organizational Performance*

The study conducted a univariate analysis to determine the influence of project evaluation on the performance of water service boards in Kenya. The hypothesis tested was:

$H_{02}$: There is no significant influence of project evaluation as a project portfolio management practice on the performance of water service boards in Kenya.

*Table 12:* Model Summary (project evaluation)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .566[a] | .320 | .319 | 1.73348 |

a. Predictors: (Constant), project evaluation

From the regression results, $R^2$ was found to be 0.566 suggesting that project evaluation and performance of water service boards in Kenya were strongly related. The value of adjusted $R^2$ was 0.319 suggesting that a 31.9% change in performance of water service boards in Kenya, can be explained by project evaluation. The remaining 68.1% suggests that there were other factors other than project evaluation that influences the performance of water service boards in Kenya that were not discussed in this model.

*Table 13:* ANOVA (project evaluation)

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 9.002 | 1 | 9.002 | 19.635 | .000[b] |
| | Residual | 39.955 | 131 | 0.305 | | |
| | Total | 48.957 | 132 | | | |

a. Dependent Variable: performance

b. Predictors: (Constant), project evaluation

From the ANOVA table, the p-value was 0.000, which was less than the selected significance level (0.05), implying the significance of the model. Besides, the F value (19.635) was significant as shown by the p-value of 0.000. The f-calculated value was greater than the f-critical value from the f-distribution tables (3.913). This implies that the model was reliable in predicting the performance of water service boards in Kenya.

*Table 14:* Regression Coefficients (project evaluation)

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.154 | 0.248 | | 8.685 | 0.006 |
| | Project evaluation | 0.712 | 0.099 | 0.566 | 7.192 | 0.000 |
| a. Dependent Variable: Performance | | | | | | |

From the coefficients, the regression model obtained was;

$$Y = 2.154 + 0.712X_4 + \varepsilon.$$

This is an indication that a unit increase in project evaluation results in an increase in the performance of water service boards in Kenya by 0.712 units. The p-value (0.000) was less than the selected level of significance (0.05) indicating significance. We, therefore, reject the null hypothesis: "There is no significant influence of project evaluation as a project

portfolio management practice on the performance of water service boards in Kenya."

Moderating Effect of Portfolio Risk Management on Relationship between Project Portfolio Management and Organizational Performance Step-wise multiple regression analysis was conducted to establish the moderating effect of portfolio risk management on the relationship between project portfolio management practices and performance of water service boards in Kenya. The hypothesis tested was:

$H_{05}$: Portfolio risk management does not moderate the relationships between project portfolio management practice and performance of water service boards in Kenya

*Table 15:* Model Summary for Moderated Regression Analysis

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .881[a] | .776 | .772 | 0.13919 |
| 2 | .884[b] | .781 | .780 | 1.15021 |
| a. Predictors: (Constant), project selection, resource allocation, portfolio control, and project evaluation | | | | |
| b. Predictors: (Constant), project selection, resource allocation, portfolio control, and project evaluation, X1*M, X2*M, X3*M, X4*M, | | | | |

From the second model, the moderated model (model 2), the findings show that the value of the adjusted R square is 0.780. This indicates that 78% of variations in the performance of water service boards in Kenya can be explained by changes in moderated independent variables. The findings show that after the introduction of the moderating variable (portfolio risk management) the amount of variation in the dependent variable that can be explained by changes in independent variables increased; from 0.772 to 0.780. The moderated variables are also seen to have strong positive relations with the performance of water service boards in Kenya as indicated by the correlation coefficient value of (R) 0.884.

*Table 16:* ANOVA for Moderated Regression Analysis

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 111.24 | 4 | 27.81 | 21.515 | .000[b] |
| | Residual | 165.504 | 128 | 1.293 | | |
| | Total | 276.744 | 132 | | | |
| 2 | Regression | 102.232 | 8 | 12.779 | 9.659 | .000[c] |
| | Residual | 164.052 | 124 | 1.323 | | |
| | Total | 266.284 | 132 | | | |
| a. Dependent Variable: Performance | | | | | | |
| b. Predictors: (Constant), project selection, resource allocation, portfolio control, and project evaluation | | | | | | |
| c. Predictors: (Constant), project selection, resource allocation, portfolio control, and project evaluation, X1*M, X2*M, X3*M, X4*M, | | | | | | |

This tested the significance of the moderated model. The significance was tested at a 5% level of significance. The findings presented in Table 16 show that the models had a significance level of 0.000; both models the un-moderated and the moderated models. From the findings, the F-calculated for the first model was 21.515 and the second model was 9.659. Since the F-calculated for the two models were more than the F-critical, 2.442 (first model) and 2.014 (second model), the two models were a good fit for the data and hence they could be used in predicting the moderating effect of portfolio risk management on relationship between project portfolio management practices and performance of water service boards in Kenya.

*Table 17:* Coefficients for Moderated Regression Analysis

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0.920 | 0.081 | | 11.358 | 0.000 |
| | Project Selection | 0.388 | 0.084 | 0.032 | 4.619 | 0.029 |
| | Resource Allocation | 0.784 | 0.127 | 0.429 | 6.173 | 0.007 |
| | Portfolio Control | 0.335 | 0.073 | 0.231 | 4.589 | 0.021 |
| | Project evaluation | 0.205 | 0.049 | 0.209 | 4.184 | 0.030 |
| 2 | (Constant) | 0.625 | 0.085 | | 7.353 | 0.001 |
| | Project Selection | 0.272 | 0.074 | 0.099 | 3.676 | 0.029 |
| | Resource Allocation | 0.664 | 0.178 | 0.363 | 3.730 | 0.025 |
| | Portfolio Control | 0.671 | 0.184 | 0.5 | 3.647 | 0.030 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Project evaluation | 0.149 | 0.048 | 0.507 | 3.104 | 0.033 |
| | $X_1$*M | 0.346 | 0.032 | 0.094 | 10.813 | 0.000 |
| | $X_2$*M | 0.235 | 0.033 | 0.087 | 7.121 | 0.003 |
| | $X_3$*M | 0.379 | 0.068 | 0.807 | 5.574 | 0.019 |
| | $X_4$*M | 0.226 | 0.048 | 0.592 | 4.708 | 0.020 |
| a. Dependent Variable: Performance | | | | | | |

From the coefficients table, the following model was fitted;

$$Y= 0.625 + 0.346X_1*M+ 0.235X_2*M + 0.379X_3*M + 0.226X_4*M + \varepsilon$$

The findings also show that moderated project selection ($X_1$ *M) has a positive significant influence on the performance of water service boards in Kenya ($\beta$=0.346, p=0.000). This suggests that the moderated variable has a significant influence on the performance of water service boards. The p-value was less than the selected level of significance (0.05) suggesting significance. We, therefore, reject the null hypothesis: "*Portfolio risk management does not moderate the relationships between project selection and performance of water service boards in Kenya"*.

The findings also show that moderated project evaluation ($X_4$ *M) has a positive significant influence on the performance of water service boards in Kenya ($\beta$=0.226, p=0.020). This suggests that the moderated variable has a significant influence on the performance of water service boards. The p-value was less than the selected level of significance (0.05) suggesting significance. We, therefore, reject the null hypothesis: "*Portfolio risk management does not moderate the relationships between project evaluation and performance of water service boards in Kenya"*.

*o) Summary of Findings*

i. *Influence of Project Selection and Prioritization on Organizational Performance*

The study found that project selection and prioritization provides the opportunity to compare different scenarios through creations of different versions; it also prioritizes the projects in an orderly manner in each strategic or financial category and establishes an organizational focus, and it helps in elimination of efforts on product/project redundancies. Further, the study established that proper project selection and prioritization contributes to reducing time to market; it helps to compare projects and measurably compare each project's contribution to the organizational strategy; and that it helps in aligning each project to the strategy formulation. The study also established that project selection and prioritization influence organizational performance. Prioritization of projects gives the first-mover advantage, enabling them to reach customers before competition. It also helps in the successfully delivery of projects. Through project selection, the company can increase its Return on Investment because it enables it to weigh its projects based on their returns. It also helps enhance efficiency; this is because the company can invest effort upfront in the project pool and thus weed out any inefficiency that might arise in the future due to lack of sufficient capacity. Project selection and prioritization enhance strategic alignment with improves organization performance. Proper selection helps a company to remain on track with their goals. A standard selection approach helps the company to benchmark projects against well-defined criteria rather than use ad-hoc processes that lead to inconsistent approvals. This results in transparent downstream communication, as project managers get clarity on why a certain project was approved or rejected. The result is that performance of the company and project is enhanced.

*p) Influence of Project Evaluation on Organizational Performance*

This finding suggests that portfolio project evaluation influences organizational performance. The study established that project evaluation ensures the organization adheres to strategic focus; project evaluation helps to appraise viable projects through qualitative and quantitative analysis/feasibility study, and that project evaluation improves planning of projects and timelines are met. The study further established that project evaluation practice helps in eliminating plans of unyielding projects/risk assessment; evaluation helps tracking and budgeting of projects to become much easier; and that adoption of this practice aids the organization to zero in on the right product project/relevance. Project evaluation helps the organization to identify whether or not the objectives and goals originally established are being achieved, as well as their expected effects and impact. It also guides in determining whether the organization is adapting to new environments, changing technology, and changes in other external variables to efficiently utilize the available resources. Evaluation is also helpful to the organization because it identifies areas that need to be improved, modified, or strengthened; and different modes to better fulfill the needs of the clients of the institute. Besides, through organization assessment, the financial data in the organization is furnished to justify the need for additional resources. Also, it helps keep the key activities on the right track and offers information that allows the setting of minimum standards to promote compliance with the organizational research process objectives.

q) *Moderating Effect of Portfolio Risk Management on Relationship between Project Portfolio Management and Organizational Performance*

The study established that the success or failure of projects depends on portfolio risk; the company has laid down project management activities to control and mitigate portfolio risk; wrangles arising from stakeholders interest causes risks to project success and performance, and that adoption of project management software ensures seamless understanding of projects management team. The study findings agree with Eshna (2017) that well-planned projects may fail to achieve its goal, due to stakeholders conflicting interests. He added that it is important to have stakeholder's analysis that must be rigorously and systematically done, to control unexpected problems from arising and harm project continuity and subsequent performance. The study also concurs with Kuria (2016) that projects that employ computerized project management software technology as a tool for project planning, scheduling, resource allocation, and change management ensures seamless understanding of projects management team and stakeholders and thus allowing the common understanding of costs and quality management for the projects being undertaken.

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# An Exploration of Unethical Behavior Attitude of Tertiary Level Students of Bangladesh

By Sirajul Arefeen, Muhammad Khairi Bin Mohyuddin & Mohammad Aktaruzzaman Khan

*University Sains Islam*

*Abstract-* In this competitive world highly skilled manpower is considered to play key role in developing a nation. On the other hand, highly educated people are blamed for recent business and financial scandals. Moreover, studies established that pupils who deceive in their student life are found to be engaged in immoral workplace conduct. The Student today is the future leader of the country. Hence, the combination of quality with morality is emphasized in the universities of in many developed counties like the USA, China, and moral education is being imparted at all stages of academic organizations and training centers from kindergarten to national academia. Therefore, the goal of the research is to explore the origins of the unethical behavior of University students of Bangladesh and recommend the means to improve the situation.

*Keywords: students' unethical behavior; tertiary level education; unethical workplace behavior.*

*GJMBR-A Classification: JEL Code: M19*

*Strictly as per the compliance and regulations of:*

# An Exploration of Unethical Behavior Attitude of Tertiary Level Students of Bangladesh

Sirajul Arefeen [α], Muhammad Khairi Bin Mohyuddin [σ] & Mohammad Aktaruzzaman Khan [ρ]

*Abstract-* In this competitive world highly skilled manpower is considered to play key role in developing a nation. On the other hand, highly educated people are blamed for recent business and financial scandals. Moreover, studies established that pupils who deceive in their student life are found to be engaged in immoral workplace conduct. The Student today is the future leader of the country. Hence, the combination of quality with morality is emphasized in the universities of in many developed counties like the USA, China, and moral education is being imparted at all stages of academic organizations and training centers from kindergarten to national academia. Therefore, the goal of the research is to explore the origins of the unethical behavior of University students of Bangladesh and recommend the means to improve the situation.

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## I. Introduction

The growth of the country and civilization is exceedingly conditional to the quality of the education of the country. Therefore, advanced-level education is for producing able, conversant and visionary citizens for shouldering several innovative obligations. In this extremely competitive global society, the need of up-to-date knowledge and expertise is increasing rapidly. Specially, higher education plays the vital role for the progress of emerging economy and the society (UGC, 2006). The necessity of remarkably competent and experienced persons is recognized for sustainable development and poverty mitigation from the preceding era. A student today will be the future leader of the country. Hence, educational institutions contribute to society by providing professionals in every sphere of society as need be, like doctors, engineers, academics, intellectuals, etc. By which integrated development of a country and personnel management as well as improvement is accomplished. It is only possible by the efforts of skilled personnel of the nation. Through research and extensive investigation, educational and training institutions also provide up-to-date and well equipped general and technical equipments for every sector of the state as per the requirements of the research and development division of the country and the corporations (UGC, 2005).

Higher education institutes are established to introduce new concepts, methods, techniques, and principles through experimentations, investigations and other study procedures. These are established to generate highly trained and proficient manpower with the expected level of morality and know-how to work for the society and the nation as a whole (Momen & Baniamin, 2010).

On the other hand, in the last few decades, many commercial and financial outrages have drawn the public attention particularly the duties of the responsible persons of the community. So, morality has been considered as the key factor in the business arena as for planned policy making. Otherwise, it will lead to financial loss, and the reputation of the company may affect negatively. Immoral performance of the companies was highly accountable for the current financial disasters (Sedmak & Nastav, 2010).

The reputation of a nation to a great extent depends on its educated and talented citizens. In other words, the products or services offered by an organization, especially a university is the prime to reflect the quality of its future products, the students on which the nation has been looking to.

In current ages, many reputed business enterprises like Tyco, WorldCom, Enron, and Hewlett-Packard are blamed to be involved in immoral business practices. These indecencies appear to be increased day by day and need to be addressed immediately. Academic institutions are not free from these types of unethical practices, too (Raguz & Matic, 2015).

The economic growth and overall achievement of China are commendable. But moral degradation of the mass people of China is a great concern for the country (Shafer et al., 2007). Therefore, moral education is being taught at every level of academic institutions from kindergarten to national academia. (Bettignies & Tan, 2007).

It is reported that 50% of fresh teachers in the USA are resigning from their jobs before being served

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for five years (Lambert & McCarthy, 2006). It is also affirmed that nearly 25% of them are leaving their jobs due to students' misconduct or immoral behavior (Ingersoll, 2003). Therefore, it will not be shocking if academics relate students' unethical behavior to teacher emotional exhaustion (Abel & Sewell, 1999; Betoret, 2009; Gelman, 2008; Kokkinos, 2007).

Several studies endorse the Josephson (2012) report that almost 50% students confess to a certain forms of unfair means in the examinations. As per the Report Card of American Youth conducted by the Institute of Josephson in 2012, more than 50% students over 23,000 admitted to adopt unfair means in the examinations in the previous year. Cheating in the tests spoils the fundamental purpose of the educational institute, misrepresents the reliability of grades awarded to the students as a level of subject knowledge. This grade may not speak about the factual aptitude of the student. (Fendler & Godbey, 2016).

Asian countries are not free from this extensive cheating incidence like as Taiwan. As per the study of 2,068 college students of Taiwan cheating rate was reported 61.7 % (Lin & Wen, 2007). It is important to comment that unethical academic behavior misleads the main purpose of the educational institutes to impart and create knowledge, damages the honesty in awarding proper grading method, and weakens total societal justice (Whitley & Keith-Spiegel, 2002).

As per previous studies, students who violate school regulations during their student life are found to be involved in immoral workplace activities (Harding et al., 2004; Nonis & Swift, 2001). Hence it may be treated as rounded crisis. Felton and Sims (2005, p.377) have identified that past commerce students have remained at the ''focus of the corporate outrages of the previous years''. Weisul and Merritt (2002, p.8) have emphasized addressing the youths of the country "morality should be inculcated to the mind of the young society, transform them as the asset and strength of the country rather than the criminals of the future''.

It is inscribed in the main entrance of the University of South Africa that it is not necessary to attack by missiles or nuclear weapons to destroy a nation, rather allow the students of the nation to cheat in the exam.

According to Anitsal and Elmore (2009), involvement with duplicitous behavior in student life may guide him to immoral conduct at the workplace. In consultation with the above literature, the author found no such prior research investigating this topic in Bangladesh, which is urgently felt now.

## II. Methodology

Systematic data collecting and analyzing process have been followed in this investigation. It is stated by Tranfield, Denyer, and Smart (2003) that the objective of the literature review is to determine the gap in the prevailing literature. According to Seuring and Muller (2008), the literature review categorizes existing literature on the basis of the main points. Saunders (2011) opined that perfect review process of literature should initiate with ascertaining suitable keywords by which researchers finds their necessary articles from the databases. As Scopus and Web of Science database were considered as dependable and representative by the former researchers (Fahimnia, Sarkis, and Davarzani, 2015; Seuring & Müller, 2008; Tseng et al., 2019, Apriliyanti & Alon, 2017; Tian et al., 2018). Therefore, both databases were selected for the study.

This study followed two well established theories to describe the ethical behavior attitude of the university students: these are Kohlberg's Theory on Moral Development (Kohlberg, 1976) and of Planned Behavior Theory (Ajzen, 1991). This article aims to find out the prime causes of the unethical behavior of the tertiary level of students in Bangladesh and to recommend possible solutions to overcome the situation. The following questions are addressed in this study: What are the causes of unethical behavior of tertiary level students? Is there relation between students unethical behavior and unethical workplace behavior?

### *a) Review Method*

The Web of Science and Scopus databases are considered as the main sources for articles. The study used three terms, students' unethical behavior—tertiary level education, and unethical workplace behavior as keywords to explore research articles. On the mentioned databases, articles are categorized into many kinds. The study chooses two categories Educational Research, and Ethics where articles were searched from these two disciplines only.

Articles are then taken out under the disciplines, which contain unethical behavior, tertiary level students, and unethical workplace behavior terms. Altogether only 65 articles were found on the Web of Science database. Nevertheless, after going through all articles, 54 are chosen for systematic review and the remaining 11 articles were not studied for their unsuitability. To catch additional articles, Scopus databases also explored and found additional 5 articles. Finally, 59 research articles were selected for this study.

On the basis of methodologies, research articles are classified into qualitative, quantitative, conceptual, and mixed-mode categories. Conceptual articles emphases basically on theory development. It does not present and analyzes data to test a theory (Yadav, 2010).

## III. Review of Literature

The very term 'ethics' develops after the Greek term 'ethos' sense 'character' or 'tradition'. Ethics can

be designated formally as "the discipline dealing with what is good and bad concerning moral duty and obligation" Merriam-Webster Dictionary (2015). Ethics may be outlined as "the interpretation of moral philosophies or principles that govern whether activities are correct or incorrect, and consequences are decent or corrupt (McShane & Glinow, 2008).

Ethics may also be defined as "a set of principles and standards by which one's actions are judged as right or wrong, honest or dishonest, fair or not fair" (Ryan & Bisson, 2011; Weygandt et al., 2003, p. 8 ). Desplaces, Beauvais, Melchar, and Bosco (2007) stated that appropriate moral teaching can motivate the aptitude of a person to take essential moral decisions in their workplace.

Numerous components lead and guide a university student towards practicing academic ethics. The following are the few elements of many which affect in the conduct of the university student; this area; institutional values, personal inclinations and concepts of ethics, outer factors, and pressure of associates (Saini, 2012).

*a) Ethical and unethical behavior*

The conduct of a person is the manifestation of his ethical belief. It speaks about the individual's way of dealings with others. The conduct of a person is well biased by societal culture and standard, family rules and norms, religion, peer-pressure, and surroundings (Sauser, 2005).

Arens et al. (2008) stated that morality works as a paste to retain the society under the same umbrella and thus, every member of the society is ethically benefitted. Therefore, society should take the responsibility to promote value and ethics to the young generation of the community who will be future professionals. Lying, fabricating, and deceiving are the root of all sorts of immoral behavior (Nga & Lum, 2013).

Aquino and Reed (2002: 1424) termed moral character as "a self-conception organized around a set of moral traits." They listed nine moral character themes (supportive, honest, caring, diligent, compassionate, kind, just, sociable, and generous) followed by a sequence of messages.

Prophet of Islam Mohammad (saw) says: "You cannot treat people by means of your wealth; hence, you should treat them by means of your moral conduct" (Al-Bukhari, Al-Muslim). "You should restrain yourself from doing wrong to people because it (serves as) charity which you bestow upon yourself" (Al-Bukhari and Al-Muslim). "Do not belittle any good deed, even meeting your brother with a cheerful face"

"Every good deed is a charity" (Al-Bukhari). (Muslim).

Almighty Allah (swt) says "You are the best of the nations raised for (the benefit of) men; you enjoin what is right and forbid the wrong and believe in God, and if the followers of the Book had believed it would have been better for them; of them (some) are believers and most of them are transgressors." (The Holy Quran: 3:110)

Prophet Mohammad (saw) says "Give up what is doubtful to you for that which is not doubtful; for truth is peace of mind and falsehood is doubt". (At-Tirmidhi). ……. 'Hazrat Abd Allah Ibn 'Amr stated, "There are four characteristics that, if you possess them, will prevent you from being affected if you are deprived of certain worldly benefits. They are good character, chaste outlook, honesty, and trustworthiness." (A-Bukhari)

How a person treats his action and conduct, whether moral or immoral and the degree of measurement of the behavior is the ethical judgment as explained by (Sparks and Pan, 2010). Consequently, the ethical decision governs the behavior and way of enactment of a person.

*b) Foundation of behavior (ethical/unethical)*

Learning is a continuous process. Man does not learn from the womb of his/her mother. From boyhood, he is very much curious. He follows, observes his surroundings. As per Kohlberg Moral Development Theory, Theory of Planned Behavior, and existing literature, human being learn ethics from the following sources:

i. Parents and family
ii. Society
iii. Teachers and educational institutions
iv. Religious institutions (mosque, madrasha, temple, church, etc.)
v. Friends (clubs, social network) and
vi. Media (Electronic, social, and print)
vii. Course content

*c) Higher Education in Bangladesh: The Present Scenario*

Since liberation in 1971, the education system of Bangladesh has experienced many amendments'' (Middlehurst & Woodfield, 2004:3). Its education system is three-tiered and highly subsidized. There are four levels and stages in the education structure of Bangladesh; levels are primary, secondary, higher secondary, and tertiary education level education. Educational instructions are termed as school, college, madrasha and University. Islamic religious education is imparted in the madras has. There are public and private educational institutions at all levels of education. A proper expected educational environment does not prevail in Bangladesh. Universities of Bangladesh are not running as per University Act, all public universities except Jahangirn agar University are running without elected Vice-Chancellor. Many irregularities are in

teachers' recruitment, The Daily Prothom Alo (28/05/2013). Many more problems are as follows:

i. *Leak out of Question Paper*

Leaking out of question paper has become a common phenomenon in Bangladesh since independence (i. e, 1972) except during 2001 – 2006. According to the statement of The Daily Naya Diganhta (23/11/2013), The Daily Dinkal (18/02/17), The Daily Manab Zamin (19/02/17) published reports on leaking out of question paper.

ii. *Cheating in the examination*

The Daily Dinkal (18/02/17), The Daily Prothom Alo, sub editorial (24/05/2014) reported that a mere higher grade or GPA would not play any role in the educational development of the country until cheating in the exam is not strictly controlled.

iii. *Student politic-Campus Violence*

Campus violence is a common incident in almost all public Universities and Colleges of Bangladesh. Reported by the Daily Naya Diganta (09/01/2014), The Daily Jugantor (25/01/17), and (18.02.2017), The Daily Ittefaq (18/02/17).

iv. *Recruitment of teachers on political consideration*

The Daily Prothom Alo (06/07/13), The Daily Naya Diganta (18/04/2014), The Daily Dinkal & The Daily Ittefaq (18/02/17) cited that teachers are recruited in the universities of Bangladesh with political consideration. They blamed that less qualified teachers were recruited on political consideration.

v. *Complain about the teachers of the Public University Teachers*

Keeping aside their prime academic responsibilities and research, teachers of public universities are involved in politics for their material gains. As per report of The Daily Naya Diganta (14/10/2014), The Daily Prothom Alo on 25/04/2014, Prof. Abdul Mannan, Chairman of UGC, said that teachers were not found in the class room now. There is a serious lack of accountability of the University teachers. Therefore, students are deprived of proper education and guidance. Hence, the total education system is damaging day by day.

## IV. Corruption

Bangladesh is a developing country. University and higher education institutions are growing day by day. The rate of education is also increasing noticeably. But corruption is not decreasing in Bangladesh. Unfortunately, Bangladesh is in the low-ranked positioned in the list of countries of corruption by the world community. The score of Bangladesh was 26 out of 100 and positioned 14th from the lowermost and ranked 146th from the uppermost among 180 countries in the world as per report of Transparency International's (TI), 2019. Transparency International Bangladesh (TIB) revealed in its graft perception index at a meet the press session in Dhaka held in January 23, 2020. While Bangladesh scored a meager 26, was positioned in 13th in 2018 from the bottom, down from 17th in 2017.Therefore, it is proved that higher education does not play any noteworthy role in resisting corruption in Bangladesh.

*a) Causes of poor ethical practice in Bangladesh*

As we talked, intentions of immoral behavior are lured by hedonism and selfishness. It has become a burning question for Bangladesh. As far as ethical behavior concern, we are far behind from the expected level. Following reasons may be cited for the crisis:

i. Moral behavior is given less importance at family level. Money making or career building is considered as the main objective of their children.
ii. Value free society or poor ethical practice in society.
iii. Ethics free education.
iv. Selfishness.
v. Poor practice of religious rules.
vi. Following trends of the life style of developed countries,

*b) Types of unethical behavior of University Students*

University students repeatedly violate the ethical codes of the institutions. To define violation of academic decency, the words 'academic corruption,' 'academic dishonesty,' and academic misconduct' are used alternately, 'dishonesty' denotes an intangible thought where 'cheating' and 'misconduct' denotes behavior. On the other hand, 'academic cheating' is usually used for tests and unethical behaviors are termed 'academic misconduct' (McCrink, 2010).

Violation of university rules refers to undesirable activities listed by the institutions, such as unlawful use of academic belongings and misbehavior with teachers (Zopiatis & Krambia-Kapardis, 2008).

West et al. (2004) claimed that cheating is responsible for abuse and harm many rules and customs but most importantly, justice. By cheating, a student enjoys unjustified benefit over his classmates that he does not deserve and it happens mainly for self-centeredness, and attainment inspiration.

Siegfried (2004) opined that the propensity of students to (a) dishonesty, (b) violation of school regulation, (c) copy software or use of computer in an unlawful way, indicates that they are concerned with their benefit and are motivated by self-centeredness.

Among different types of academic corruption, cheating on examinations is considered as a severe and

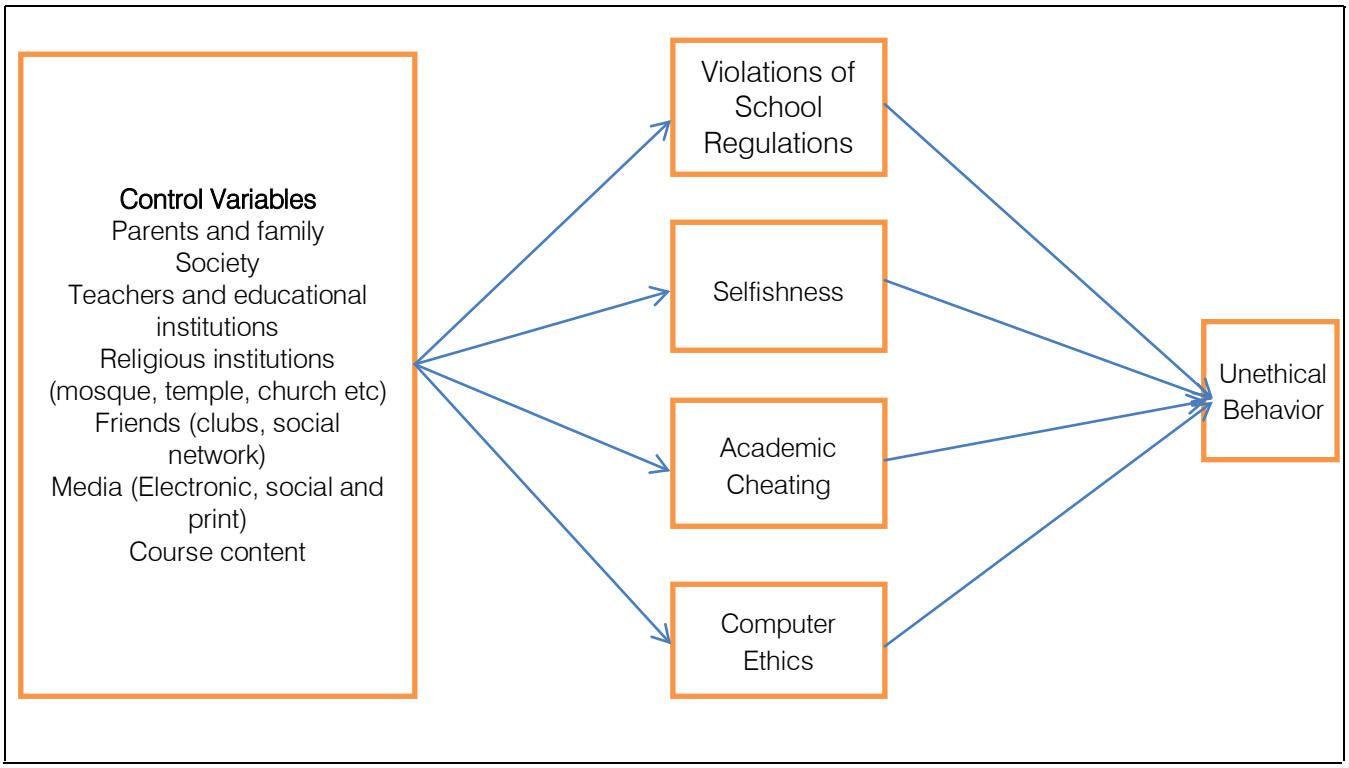
immoral form of behavior (Hrabak et al., 2004; Hsiao & Yang, 2011).

Plagiarism is recognized to cover a big percentage of academic misbehavior. Recently a study was done by the alumni of higher education about their perception on cheating, 19 dishonest conducts were explored, the utmost common practices were itemized as letting other students to copy, duplicating from existing works, repeating articles, and copying (Plagiarism) (Yardley et al., 2009).

The persistent problem of copying and plagiarism are named under many terms like-wise: fraud, faulty quotation, patent encroachment, literary burglary, borrowing, cheating, copying, and pilfering (Marsh, 2007). Irrespective of the difference of term, name, and grade, cheating is illegal and prohibited. Hence, there is no choice to educational institutions to admit it (Fendler & Godbey, 2016).

Paulhus et al. (2005) stated that academic cheating has become simple and stress-free now. One can have the required information and text from the computers within micro second by using the internet. Therefore, misuse of computers and the internet can also be treated as unethical behavior.

Model




*c) Reasons behind adopting unethical means by students*

It appears that involvement with immoral works, and these conducts are accomplished knowingly as accustomed culture in their everyday life. These conducts may be considered as usual in the days to come (Baack et al., 2000; Bernardi et al., 2004 a, b). So, immense importance should be given to detect these immoral practices without wasting time, and needed strategy and program have to be proposed to limit and control them

Jones (2011) attempted to explore the causes behind students' involvement in academic corruption. His study established that 92% of the learners are involved in academic cheating for attaining better results. Other causes are being occupied in supplementary works, not having enough time to finish homework or coursework for exams; more importantly academic cheating is not considered as a big fault since the maximum student is committing it, and lastly, friends' pressure.

Different variables, mostly neutralizing approaches and extraneous motivation, are grounds for more dishonest and cheating behavior. Information on others' acts of dishonesty and misconduct plays the vital role in enhanced violation of individuals' integrity (Rettinger & Kramer 2009).

Students really do not know what is plagiarism and the difference between academic and normal writing. The cause behind plagiarism may be the witlessness and lack of knowledge about academic writing (Devlin & Gray, 2007; Iyer, & Eastman, 2006; Park, 2003). Academic cheating may spread in educational institutions like an epidemic as it is hardly barred and penalized.

When there is less possibility of being accused and are hardly priced for their academic misdeeds, students are motivated to choose this dishonest behavior (Bennett, 2005; Pickard, 2005; Selwyn, 2008; Sileo & Sileo 2008; Stephens et al., 2007; Walker, 2010).

Paulhus et al., (2005) paid credits to computers and the internet for students' inclination in cheating as anybody can have required information and writings within a moment with the help of the internet. The internet has now become surpassingly modern mode of copying (Milliron & Sandoe 2008; Stephens, et al., 2007).

## V. Conclusion and Policy Implication

As stated by Williams et at., (2014), like the universities of UAE, an honor code needs to be introduced. Every student, teacher, and staff member has to sign to the bond. It is obligatory for everybody to follow the honor code. If students fail to comply with the signed rules will have to face penal action like punishment or expulsion from the university.

In line with Ma, McCabe, & Liu (2013), knowledge of ethical and unethical behaviors should be imparted to the students first. Then the consequences for several types of unethical academic behaviors should be declared openly, and it is applied regularly. Finally, communication of academic Integrity guidelines needs to be emphasized to all students and inspiring teachers to contribute in teaching academic integrity.

In riposte to emerging trends of ethics, the National Association of State Boards of Accountancy (NASBA, 2005) primarily recommended three topics to address ethics related issues (i.e., principal of ethics, business ethics, and ethics course for accounting). Reflecting on previous studies ethic course has a significant impact on ethical behavior.

Mosalanejad, Dehghani, and Abdolahifard (2014) specified that various philosophers and social scientists have given stress the connection between religion, morals, and technology and stated that religion could be functional to limit the adverse effect of technology.

Conroy and Emerson (2004) and Albaum and Peterson (2006) established by their survey that religiosity is meaningfully interrelated with moral understandings. Religious students were found to behave more rationally and ethically.

Above all, students have a great impact on teachers' attitudes and behavior in their life. Teachers are the role model, guides, and philosophers for the students. Therefore, teachers should also be concerned about dishonesty and well- mannered and behaved in their personal life. The role of faculty members is high in making students familiar with the prime purpose of education and academic decency. Faculty members have to motivate and guide the students to uphold the defined academic behavior as well as the make conscious of the disadvantages and penalties of unanticipated actions.

Even though, it is not that much easy to resolve the issue, a planned means and technique should be set-up to refrain the students form this academic corruption, teachers of the institutions, researchers, guardians, and elites of the societies should shoulder the responsibility and consider it as a burning issue of the country. Faculty members' liability is to make aware students about the consequence of it. Awareness development programs needs to be developed by the researchers. University administration has to introduce ethics courses as university requirement courses apart from the compulsory core courses.

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# Study to Assess the Knowledge, Awareness, Perception and Practices of Nurses who Tested Positive after Working in COVID-19 Units

By Lad Mugdha, Parab Shalaka, Olivera Marilyn & Dongarkar Prajakta

*Introduction-* The rapid spread of the COVID 19 pandemic has become a major cause of concern for all and especially healthcare organizations globally as healthcare workers working in COVID units are definitely at an increased risk of developing infection due to increased exposure.

Hospitals and researchers are focusing all their resources on trying to understand the factors responsible for the spread of infection and those responsible for causing infection in an individual. We were faced with a novel virus, the dynamic properties of which are being slowly discovered.

*GJMBR-A Classification: JEL Code: N30*

# Study to Assess the Knowledge, Awareness, Perception and Practices of Nurses who Tested Positive after Working in COVID-19 Units

Lad Mugdha [α], Parab Shalaka [σ], Olivera Marilyn [ρ] & Dongarkar Prajakta [ω]

## I. Introduction

The rapid spread of the COVID 19 pandemic has become a major cause of concern for all and especially healthcare organizations globally as healthcare workers working in COVID units are definitely at an increased risk of developing infection due to increased exposure.

Hospitals and researchers are focusing all their resources on trying to understand the factors responsible for the spread of infection and those responsible for causing infection in an individual. We were faced with a novel virus, the dynamic properties of which are being slowly discovered.

Though a lot of research has been done in this regard, there are yet a lot more discoveries to be made. Several intrinsic factors specific to different individuals are responsible for causation in a healthy individual.

According to Phan T. L. Maita D., et al (2019) who observed doffing practices of healthcare workers who cared for patient with viral respiratory infection in a 460 bedded acute care hospital showed that PPE of healthcare workers are contaminated with pathogen surrogates and improper PPE doffing practices may result in contamination of skin and clothing of healthcare workers.

*Aim:* To develop strategies for prevention of spread of COVID 19 infection among nurses working in COVID 19 units.

*Objectives:*

- To find out the knowledge among nurses regarding COVID 19
- To find out the perception of risk among nurses during COVID 19
- To identify the practices of donning and doffing of Personal Protective Equipment (PPE)
- To correlate certain demographic variables with practice

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*Author σ: Assistant Nursing Superintendent).*
*Author ρ: Nurse Manager.*
*Author ω: Assistant Nurse Manager.*

*Study Design:* Descriptive study design.
*Study Sample:* Nursing Staff tested COVID 19 positive

*Criteria*

- *Inclusion Criteria:* Nursing staffs tested positive during or after working in COVID 19 unit
- *Exclusion criteria:* Nursing staffs tested positive but not worked in COVID 19 unit

*Sample size:* 70 staff nurses

*Sampling Technique:* Purposive sampling

*Tool:* Questionnaire (Google form) https://docs.google.com/forms/d/e/1FAIpQLSe5isfITOTGVLaecvNo9zZ5hJQJgKhAON7nDqdO71Vwzmwrhw/viewform

*Duration:* 1 month (20th August till 20th September 2020)

*a) Findings*

*Demographic data*

It is seen that 38% staff were between 21- 24 years, 40% of staff were between 25-30 years 6% of staff were in 31-35 years while 16% of staff were above 35 years of age, among those who became COVID positive.

It was seen that 93% of the staff who got COVID 19 were females while 7% were male staff.

Out of 48 times male staff were posted in COVID unit, 5 brothers came positive.

72% of the staff were unmarried while 28% were married.

39% of samples had less than 2 years of experience, 34% of samples had 2-5 years of experience, while 10% of samples had 6-9 years of experience. Also, 17% of the staff had more than 10 years of experience

*b) Knowledge*

It is seen that 96% of staff are aware about the PPE required for aerosol generating procedures while 89% of staff are aware about details regarding the incubation period of Corona virus. The knowledge of staff regarding other infection control protocols is between 94- 97%.

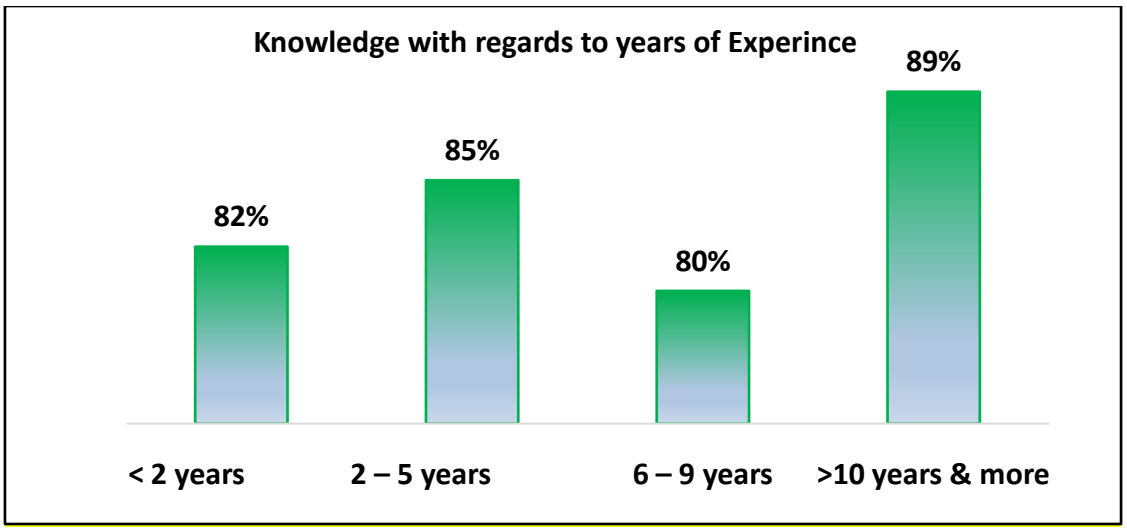



*Figure 1*

In Figure No. 1,it is seen that staff with more than 10 years of experience had 89% knowledge regarding COVID 19 while those between 6-9 years had 80% knowledge.

*c) Perception*

It was seen that 21 % of the staff were scared to work in COVID unit, while 65% agreed that by following proper steps of donning and doffing one can prevent getting infected. 92% of staff agreed that it is difficult to work in PPE.

*d) Practices followed for control of infection*

i. *Practice related to Donning*

It is evidenced that 76% of staff were wearing 3 pairs of gloves at the end of donning while only 54 % of staff were washing hands with soap and water before and after wearing scrub suit.

ii. *Practice related to Doffing*

It is seen that 29% of staff removed sterile gloves after removing shoe cover, only 36% followed correct sequence of doffing while 70% removed mask in correct method. 99% of the staff were wearing mask in quarantine period and 100% of the staff were using hand rub after each step of doffing.

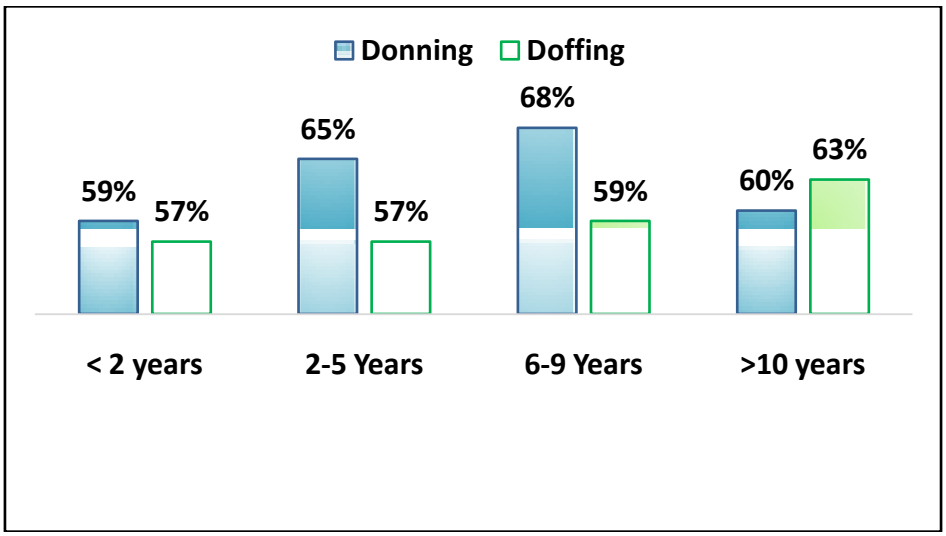



*Figure 2*

In Figure No. 2, it is seen that donning practice were better with better compliance between 59-68% while the doffing practice compliance ranges between 57-63%. Sixty three (63%) of staff complied with doffing from >10 years & above group while 68% of staff complied with donning in the 6-9 years group.

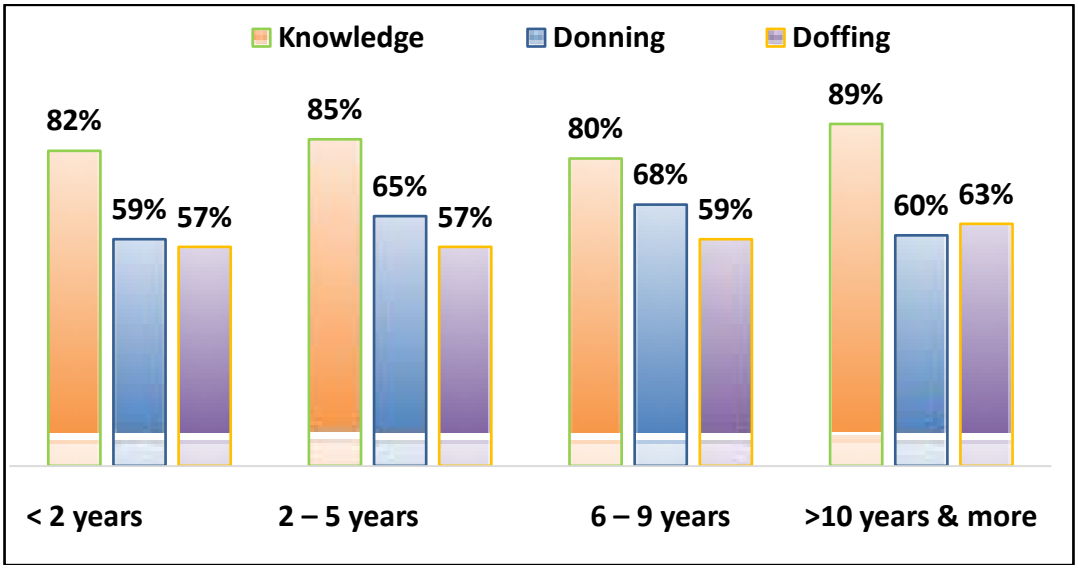



*Figure 3*

In Figure No. 3, it is seen that in spite of increase in knowledge (82-89%) the compliance to donning & doffing practices is between 59-68% & 59-63% respectively.

*Challenges:* Some challenges faced by nurses during donning and doffing of PPE were as follows:

*During Donning*

- 10% of the staff were facing challenges related to inadequate place during donning. (There was a dedicated area for donning, but two or more staff couldn't donn at a time, we instructed only one staff to wear PPE at a time).
- 34% of staff were uncomfortable to work in PPE kit due to inappropriate size of PPE & gloves.
- 4% of the staff were feeling suffocated and irritable in PPE kit.
- 52% of staff had no challenges in donning.

*During Doffing*

- 16% of staff were facing challenges to remove shoe cover, use of hand rub after each step of doffing, difficulty in adhering to sequence of removal of PPE according to protocol & leaving COVID ward without mask.
- 16% of staff stated that there was inadequate place for doffing & the area is close to patient care unit.
- 8% of staff were scared of getting infected from doffing.
- 7% of staff mentioned that presence of one chair in doffing area instead of recommended number two.
- 4% cleaning of doffing room not done adequately, dustbins overflowing in doffing area and no Hypochlorite mat to clean shoes.
- 3% of staff did not have an observer.
- 46% no problem

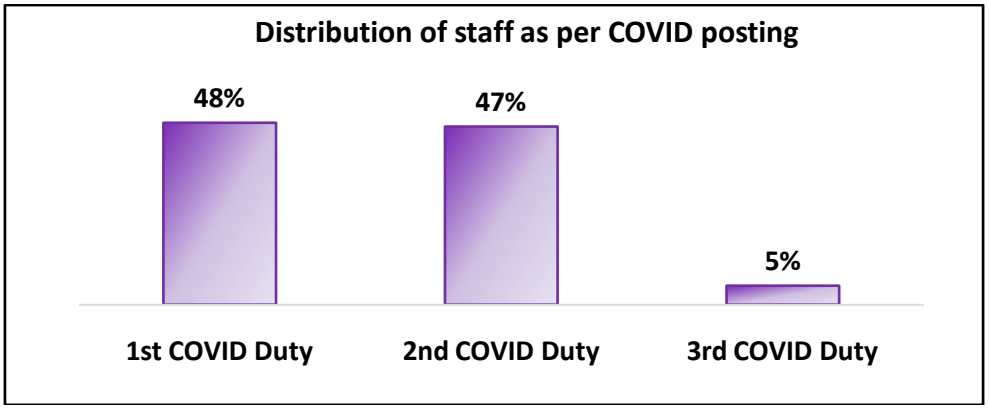



*Figure 4*

In Figure No. 4, it is seen that the incidence of COVID infection after 1st posting was 48%, which eventually improved and reduced to 5% after 3rd posting.

e) *Overall compliance of Knowledge & Practices*

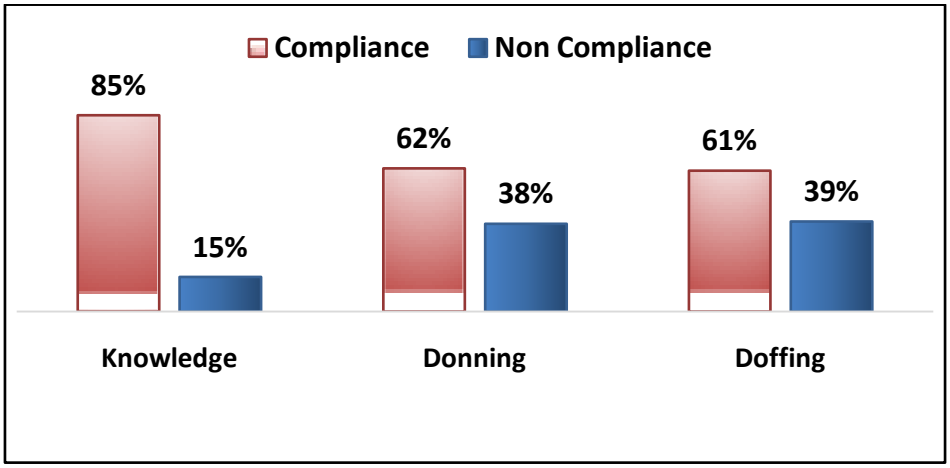
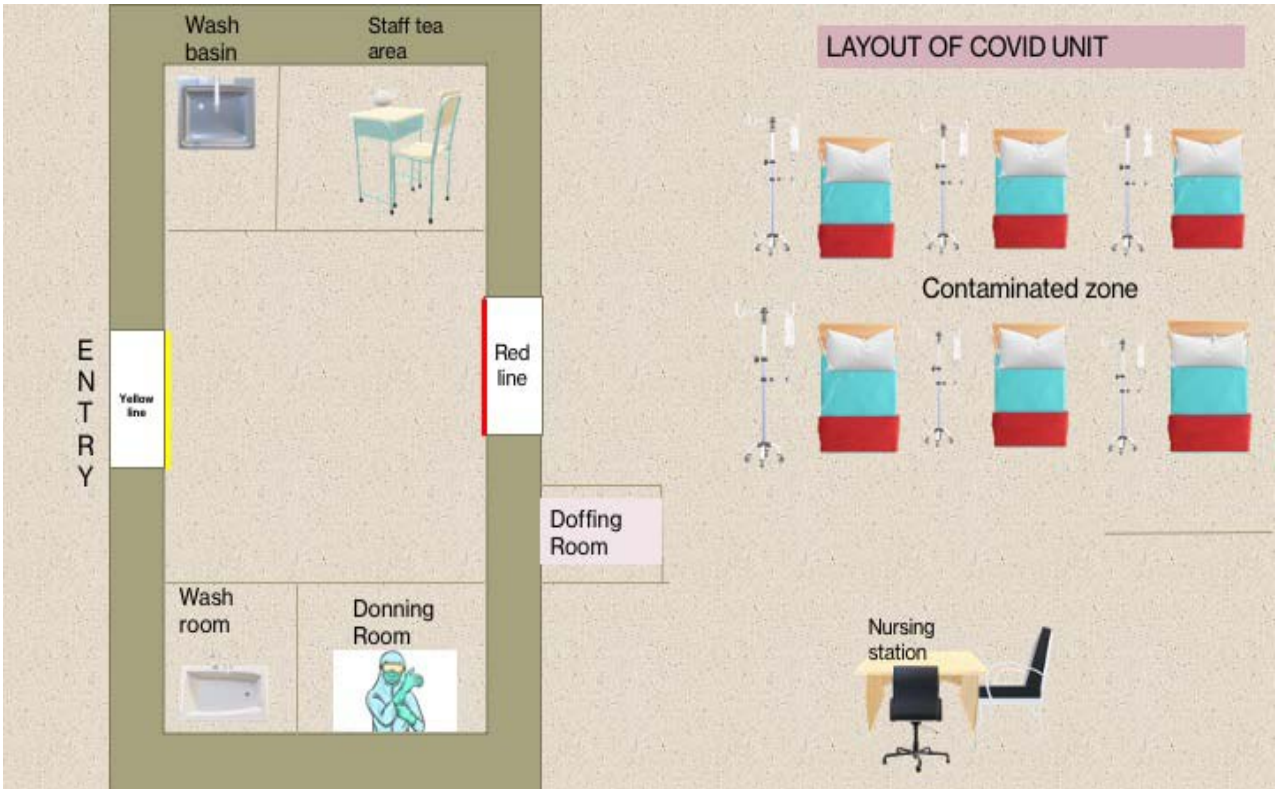



*Figure 5*

In Figure No. 5 it is seen that staff had good knowledge 85% which may be attributed to the structured training before the posting. But the compliance to practice was between 61- 62%. There is a need to sensitize on appropriate practice.

f) *Pictures of our donning doffing area*





## II. Recommendations

- Retraining on sequence of Donning & especially Doffing.
- Supervision of staffs regarding infection control practices.
- Infection control surveillance in COVID units to understand real time compliance and challenges faced.
- Feedback after every COVID duty to improve current practice.

## III. Conclusion

- The staff had good knowledge (85%) regarding COVID 19 which may be attributed to the structured training before the posting.
- The compliance to practice was between 61-62%. It is a behavioral change that will come with change in

attitude and may need time. Need to sensitize on practice.

- To conclude the majority of staff may have got infected with COVID 19 due to improper doffing practice, as 64% of staff did not comply to the correct sequence of doffing.
- The remaining 36% may have got infected due to some unknown intrinsic factors.

## IV. Summary and the Way Forward

- The COVID 19 pandemic has overwhelmed healthcare services globally. It's a learning curve, we are trying to understand the virus, the treatment, the prevention and causation. Healthcare organisations have devised standard protocols, training modules and methods with the help of knowledge available, guidelines provided by government bodies like Ministry of Health and Family Welfare which are being updated daily from the experience of other countries and hospitals. This knowledge sharing is probably the key to innovate better practices to protect our healthcare staff. There are several ways which could help us provide better safety practices and work environment some of which we implemented after the study, such as CCTV surveillance of COVID unit doffing areas, taking online feedback of staff post COVID duty using Google form. We plan to have a virtual refresher training of all nursing staff to sensitize regarding donning & doffing practice.

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# Moderating Role of Stakeholders Attributes on Implementation of Rural Electrification Projects in Kenya

By Enock Kiage Nyaboga, Prof. Mike A. Iravo & Dr. Muchelule Yusuf Wanjala
*Jomo Kenyatta University*

*Abstract-* Stakeholders strongly influence the outcome of projects especially in complex projects with heterogeneous stakeholders, thus understanding their influence is essential to ensure project success and attainment of objectives. The benefits of rural electrification range from lighting, access to information, improved study environment for school children as well as improved businesses which in turn create employment opportunities and contribute to development and poverty reduction. This study sought to examine the role of stakeholders in the implementation of rural electrification projects in Kenya. The study focused on project risk management, planning, leadership, monitoring, and control roles with a moderating role of stakeholders' attributes in the implementation of rural electrification projects in Kenya. The research targeted rural electrification projects implemented by the Kenya government in public primary school. The key respondents of the study were project managers of all the implemented projects.

*Keywords: project risk management; project planning; project leadership, stakeholders' management, implementation of projects.*

*GJMBR-A Classification: JEL Code: M19*

*Strictly as per the compliance and regulations of:*

# Moderating Role of Stakeholders Attributes on Implementation of Rural Electrification Projects in Kenya

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*Abstract-* Stakeholders strongly influence the outcome of projects especially in complex projects with heterogeneous stakeholders, thus understanding their influence is essential to ensure project success and attainment of objectives. The benefits of rural electrification range from lighting, access to information, improved study environment for school children as well as improved businesses which in turn create employment opportunities and contribute to development and poverty reduction. This study sought to examine the role of stakeholders in the implementation of rural electrification projects in Kenya. The study focused on project risk management, planning, leadership, monitoring, and control roles with a moderating role of stakeholders' attributes in the implementation of rural electrification projects in Kenya. The research targeted rural electrification projects implemented by the Kenya government in public primary school. The key respondents of the study were project managers of all the implemented projects. A descriptive research design was adopted as well as a simple random sampling method was applied to select a representative sample of the study. The study found that project risk management; project planning; Project leadership has a significant role; and that project monitoring and control has no significant role in the implementation of rural electrification project in Kenya. Besides, the study found that Stakeholder attributes have a significant moderating role of stakeholders' management on the implementation of rural electrification projects in Kenya. The study thus recommends project managers to consider following the SMART rules for goal setting this helps to deal with the challenge of unclear goals. It is also important for projects to ensure communication is timely and transparent. Besides, the involvement of the right people in the planning process can help ensure that the planning process is carried out and is implemented completely.

*Keywords: project risk management; project planning; project leadership, stakeholders' management, implementation of projects.*

## I. Introduction

Stakeholders can be divided into primary and secondary, which are further subdivided into social and non-social stakeholders. The shareholders and investors (owners), employees and managers, customers, local communities, suppliers, and other business partners are primary social stakeholders (Carroll & Buchholtz 3list, 2015). Their interests is an issue that can be monetary, professional, personal, or cultural, or can arise from a host of other motivations. They play a key role in project and programme activities and serve as key links with the general beneficiary population and also with donors and project facilitators. Project or programme stakeholders are those who have an interest in or are affected by a project or programme decisions (Donaldson & Preston, 2009). The identification of stakeholders is critical and when the level of their power and influence are mapped, their impact on the project can be better understood. Stakeholders' engagement is measured by four indicators which include Level of engagement, Stakeholders' consultation, stakeholders' support, and stakeholder feedback.

There are two types of stakeholders: Primary stakeholders and secondary stakeholders. Primary stakeholders have a vested interest in how the organizations perform and the actions it engages into conduct business. On the other hand, secondary stakeholders can influence both positively and negatively, the actions of the organization. They indirectly affect the organization by taking actions to make it difficult for the organization to succeed or by supporting the organization's efforts (Herevi, Coffey & Trigunarsyah, 2015). Giving attention to project stakeholders is important to ensure the satisfaction of those involved or affected, which requires that procedural justice, legitimacy, and rationality have been met (Alexander, 2000). This does not mean that all possible stakeholders must be involved, but the key stakeholders must be engaged. The choice of the key stakeholders in a project is inherently political, involves judgment, and usually has ethical consequences. In their study, Charles, Antoine and Haarman (2006), argue that stakeholder participation enhances an organization's competitive advantage. Stakeholder participation improves ownership and support that can lead to a high up-take of project services, increased sustainability of benefits, and greater satisfaction. In such projects, the project manager needs to ensure the flow of information from the different organizations involved in the project (Pinton & Ndovic-Budic, 2007).

Stakeholders' management is paramount in the success of projects and organizations (Evan, William & Edward, 2013). Even though minor decisions and

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emergencies are generally not appropriate for stakeholder participation, a complex situation with far-reaching impacts warrant stakeholder involvement and when done proactively, rather than in response to a problem, helps to avoid problems in the future (Maina, 2013). The focus of stakeholder participation is usually to share information with and gather input from, members of the public who may have an interest in a project. Eight components are the building blocks of stakeholders' engagement which include: stakeholder identification and analysis; information disclosure; stakeholder consultation; negotiation and partnerships; grievance management; stakeholder involvement in project monitoring; reporting to stakeholders; and management functions (PMI, 2014).

Project success has been measured in a variety of ways. While the measurement of project success has focused on tangibles, current thinking is that ultimately, project success is best judged by the stakeholders, especially the primary sponsor, (Turner & Zolin, 2012). Shenhar and Dvir (2007) suggested a model of success based on five dimensions, judged over different timescales. Turner and Zolin (2012) further suggested that at the end of the project you judge implementation by whether the scope is completed within the constraints of time and cost, and the project's output is delivered to specification, in the months following the project implementation is judged by whether the output performs as required and gives the desired benefit; and in the years following the project, implementation is judged by whether the organization achieves higher-order strategic objectives that improve organizational performance.

Proper implementation is key to the successful completion of all projects. Therefore it is important to apply the correct strategy depending on the type of project being implemented. The type of implementation strategy to be used on any project is supposed to be identified, developed, and tested before it is applied to ensure its success. However, these efforts have always been complicated by the use of inconsistent language and inadequate descriptions of implementation strategies in many works of literature. The expert recommendation for the best implementation strategy to use for any specific project is selected by systematically gathering input from a wide range of stakeholders with expertise in implementation science and clinical practice (Powell, et al, 2015). Another important factor in the successful implementation of projects is ensuring collective responsibility among project stakeholders. This can be achieved through the generation of accurate designs by project professionals and proper estimation of costs and time which will in turn minimize the negative effects of economic instability on successful project delivery. Another necessary condition for successful project implementation is a commitment by clients to project financing obligations which motivates the contractors to commit themselves to project plans (Amade, Ogbonna, & Kaduru, 2012).

*a) Rural Electrification Projects in Kenya*

Globally, 1,456 billion people have no access to electricity of which 83% are in rural areas. This is no exception in Kenya where the majority of people in rural areas have no access to electricity and rely heavily on wood for cooking, which has adverse effects related to indoor pollution and health complications. Collecting firewood too takes a lot of time which mainly affects girl education as girls are the ones who usually collect firewood. In Sub-Saharan Africa, 12% of the rural population have electricity which is far less than the 35.4% average access to developing countries worldwide (Kenya national energy policy 2012). Kenya's efforts towards rural electrification are stipulated in the Government's Sessional Paper Number 4 on Energy (May 2004). This is the paper that laid the foundation for the formation of the Rural Electrification Authority (REA), which was charged with the responsibility of accelerating the pace of rural electrification in the country and ensure that affordable, cost-effective, and adequate quality energy sources are made available on a sustainable basis. REA was established in 2007 under Section 66 of the Energy Act of 2006 with the principal mandate of extending electricity supply to rural areas, managing the rural electrification fund, mobilizing resources for rural electrification, and promoting the development and use of renewable energy (MoE, 2013). In Kenya, therefore, rural electrification projects are mainly undertaken by the REA, though some works are carried out by Kenya Power Company (KPC), which also connects customers and operates and maintains the national grid. The objective of the REP, which is financed by the government, is to provide electricity in areas that are far from the national grid, and where electricity supply projects are not commercially viable, to improve the social and economic lives of Kenyans in those areas.

*b) Statement of the Problem*

Implementation of rural electricity programs has been a challenge to the government with only 36% of the rural population having access to electricity (the Republic of Kenya, 2013). Electrification in Kenya is below the SSA average with 15.8% overall access and only 3.8% access in rural areas. This is despite the establishment of the REA and the significant financing it receives, and other initiatives such as the Umeme Pamoja, a program launched in 2006/07 to get groups of rural households collectively connected to the grid. This low coverage is also in contrast with Vision 2030 where the government recognizes that the vision can only be achieved if citizens have access to electricity, including the rural areas. However, high connection costs and low incomes among rural households are some of the challenges facing rural electrification (KPC,

2006). All electricity consumers pay a 5% levy that goes towards the Rural Electrification Programme (REP).

However, despite this substantial source of income, the REP has not been able to increase the total electricity coverage proportionately with a total population of over 41million in Kenya, has a significantly low level of electricity supply, standing at 1500 Megawatt hour (MWh) compared to Finland with a population of around 5.5M but with energy supply of 400,000 MW (Abdulla and Markandya, 2007). Another comparison can be made with California which has a population of 38 million that is comparable to that of Kenya. But the comparison ends there because California has 41MW installed for every 1MW of Kenya's electricity power. Dufe (2015) focused on accessibility to rural electrification in Naivasha, whereas Mwiti (2014) focused on the influence of rural electrification on poverty eradication. According to REA (2014), despite access to electricity in Kieni standing at 46.7% the connectivity level was less than 20%. According to KPC in 2017, there was a challenge with customers' inability to load tokens in their meters where over 940,668 customers were affected. To add to that, the project has also been marred by procurement challenges that have affected the implementation a good example is the tender awarded to Bajaj Electricals and Wayne Homes that for the building and installation of electricity to seven counties that were contested.

*c) The objective of the study*

The purpose of this study was to establish the role of stakeholders' management on the implementation of rural electrification projects in Kenya.

To achieve the objective of the study, the researcher used the following hypothesis.

$Ho_1$: Project risk management has no significant role in the implementation of rural electrification projects in Kenya.

$Ho_2$: Project planning has no significant role in the implementation of rural electrification projects in Kenya.

$Ho_3$: Project leadership has no significant role in the implementation of rural electrification projects in Kenya.

$Ho_5$: Stakeholder attributes do not have a significant moderating role in the implementation of rural electrification projects in Kenya.

## II. Literature Review

The theoretical framework in this study consisted of theories and models that relate to stakeholders management which include: Complexity and Chaos Theories; Principal-Agent Theory, Culture Theory, and Stakeholders Theory. Complexity theory was originally an invention of Los Alamos nuclear laboratory, in Santa Fe Institute in Mexico in the USA starting in the early 1980s, where the scientists claimed that through the study of theory one can see both laws of chaos and that of order, through which an explanation for how any collection of components will organize itself can be generated. This theory stipulates that systems are best regarded as wholes and studied as such thus rejecting the traditional emphasis on simplification and reduction as inadequate techniques. The complexity theory was founded on an attempt to rationalize the behavior of large and complex systems, believing they cannot be explained by usual rules of nature (Sherman & Ralph, 1998). Complexity theory states that critically interacting components self-organize to form potentially evolving structures exhibiting a hierarchy of emergent system properties (Lucas, 2009). Complexity theory is concerned with the study of how order, structure, pattern, and novelty arise from extremely complicated, apparently chaotic systems and conversely, how complex behavior and structure emerge from simple underlying rules. Complexity theory describes states varying from comparative order to complete disorder, or chaos, or where the system defies prediction or control. It is the recognition that projects or processes do not behave predictably, even when under the guidance of experienced teams or groups, whereas some parts will be very stable and behave predictable manner that has sustained continued interest in complexity theory (Remington & Zolin, 2011).

The Principal-Agent theory was propounded by Stephen Ross (1972) where he tried to explain how best to organize the relationship of the owner of resources in a project (Principal) and the person appointed or contracted to work on behalf of the principal (Agent). The success of any given project is heavily dependent on the relationship and understanding of the major stakeholders or the major parties in a contract. The theory has three assumptions; the agent is always self-interested, risk-averse, and possesses knowledge that most of the time isn't available to the Principal. For the project to be successful, the assumption is that the stakeholders cooperate and exchange vital information to ensure the project goals are achieved. Thus communication is key to any success of the project else it becomes a major risk (Ceric, 2003). According to Schieg (2008), the agent mostly tries to maximize his/her benefit even if it means having higher damage to the client. The principal-agent theory explains this problem by characterizing three issues in the relationship which are: adverse selection, hold up, and moral hazard.

Stakeholder's theory can be traced back when Freeman (1984) defined a stakeholder as any group or individual who can affect or is affected by the achievement of an organization's objectives. The origin of the theory is strategic management but Cleland (1986) introduced stakeholder thinking in project management that projects have diverse stakeholders with their objectives, interests, and expectations which result in conflicts. According to PMI (2014), stakeholders are critical in projects, and the project management

process is an adaptation of specifications, plans, and various approaches and techniques following the expectations of various stakeholders. Stakeholders' theory provides a framework for understanding and categorizing project stakeholders as a strategy to easily manage them to provide the necessary influence in a given project. In project management, stakeholders can be categorized based on their roles in a given project, their involvement and the nature of their relationship within the project, and finally based on the degree of risk they pose to the project (PMI, 2014). According to Mitchell, et al (1997) the importance of stakeholders can be determined by their legitimacy, power, and their influence on a project outcome.

## III. Conceptual Framework

The conceptual framework of the study is presented in figure 1 below.

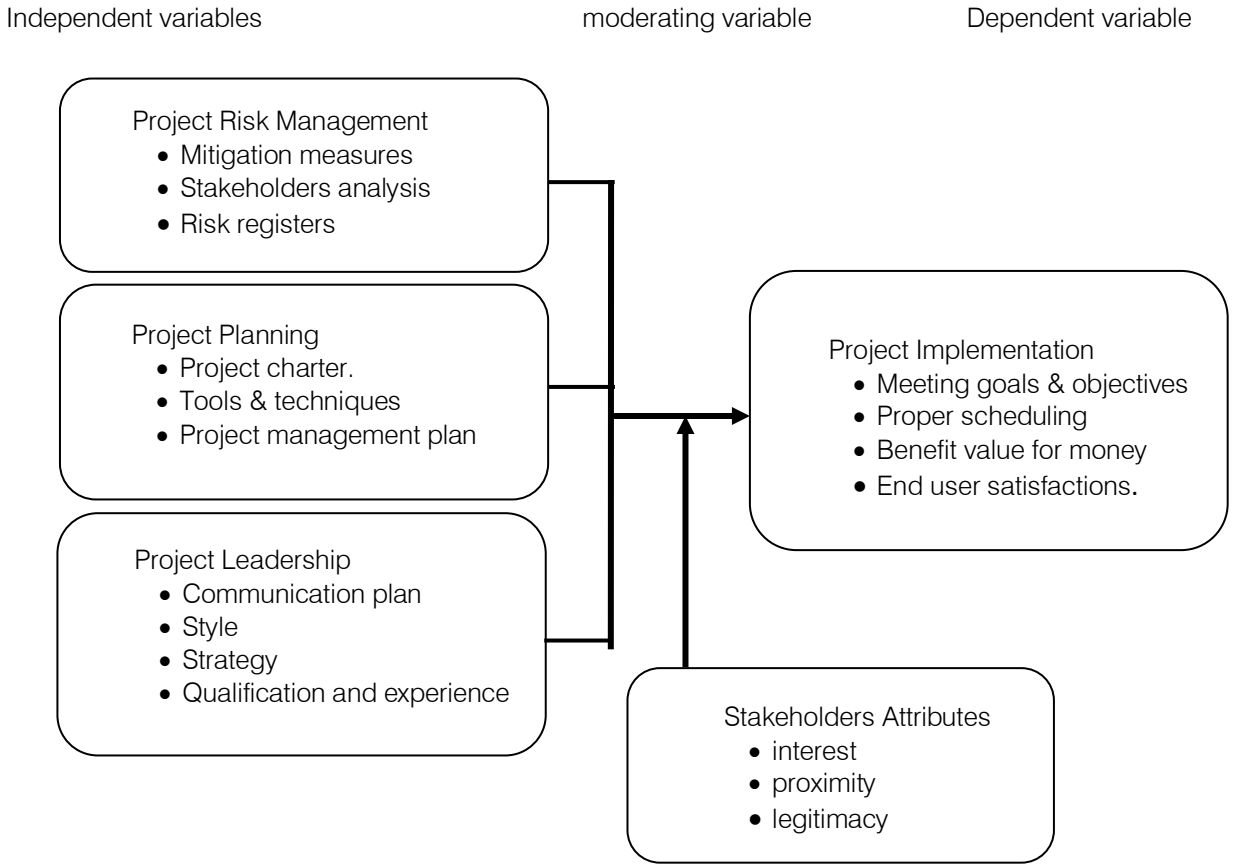


*Figure 5:* Conceptual framework

## IV. Empirical Review

The empirical literature on the relationship between project leadership, project risk management, project planning, and project implementation is as follows:

a) *Project Risk Management and Project implementation*

According to Nocco and Stulz (2006), Risk management involves the identification, measurement, monitoring, and controlling of risk to ensure that the individual responsible for the risk clearly understands it and the organization's exposure is within the limits established by management; the appropriate risk-taking decisions are in line with business strategy and objectives set by management; the expected payoffs compensate for the risk taken are clear; the risk-taking decision is explicit and clear; sufficient capital as a buffer is available to take the risk. The goal of risk management is to optimize risk-reward trade-off. Financial institutions should have in place a risk management framework that encompasses the scope of risks to be managed, the processes/systems and procedures to manage risk, the roles and responsibilities of individuals involved in risk management. The framework should be comprehensive enough to capture all risks a bank is exposed to and have the flexibility to accommodate any change in business activities (Nocco & Stulz, 2006).

Vaněk et al, (2013) explained that risk assessment is an important part of the assessment of an investment project as underestimating the risks leads to an erroneous decision with negative consequences on the economy of the project. However, they argued that due to the level of investment and time factor related to company conditions, risk gains it's important and most of the time managers of companies approach risk assessment based on suspicion rather than the use of required methods. Further, Vaněk et al (2013) concluded that there are four basics phases to the risk assessment process: asset identification; threats identification and their relationships; determination of significance; and risk determination based on nature or purpose. the result from the process is a recommended decision with the consideration of accurate risk assessment. Organizations are focusing on is increasing their employees' awareness of risk management and making better risk-based decisions. This is implemented through education and training at the appropriate levels in the organization.

*b) Project Planning and Project implementation*

According to Harold (2003) and Rosario (2000), stakeholder involvement in planning entails the involvement of stakeholders on how to plan, development of scope, team selection planning, and identification of deliverables, developing the work breakdown structure (WBS) resource requirement estimates, cost estimation, schedule development, risk planning, budgeting and approval of project commencement. Dvir, Raz and Shenhar (2003) in their study of the relationship between project planning and project success, revealed that project success was insensitive to the implementation level of management processes. Project success is correlated to project planning specifically requirements definition planning and technical specifications development. They believe that through planning does not guarantee the success of the project, a minimum level of planning is necessary with an emphasis on the planning tools and procedures. The project manager has the responsibility of the formal planning while requirements development and specifications are dependent on the overall cooperation with the end-user of the project. Since projects are unique, the precise initial stage of planning where all the activities needed to be carried out for the completion of projects, their cost is duration are difficult or even sometimes impossible to be known. To aggravate the issue is where activities are dependent on other activities for the outcome. It with such reason that some authors believe that planning isn't crucial and helpful for the overall project success (Dvir, Raz, & Shenhar, 2003).

*c) Project leadership and project implementation*

Limsila & Ogunlana(2008) examined the relationship between the project manager's leadership style, subordinates' commitment, and work performance in Thailand's construction industry. The study found out that the project managers switch styles based on the project needs. Transformational leadership was found to be the dominant style in Thailand and influence a higher subordinates' commitment to giving higher leadership outcomes in terms of effectiveness, satisfaction, and extra efforts. This is because the culture of Thailand is more democratic that encourages subordinates to be participative. Muller and Turner (2007) investigated the impact of the project manager's style on project success. The study found out that the project manager's leadership competencies influenced project success. Emotional competence was found to be a significant contributor to project success in all projects, whereas managerial competence was a significant contributor to some projects, and intellectual competence was negatively correlated with project success. Emotional resilience and communication were found to be key teamwork aspects important for projects of medium complexity while for high complexity projects sensitivity was found to be key concluding that transformational leadership as the appropriate style for projects which concurs with Keegan and Den Hartog (2004).

*d) Stakeholders attributes and project implementation*

Stakeholder buy-in is very essential as it guarantees the successful implementation of projects. Any project that is implemented without the blessing of the key stakeholders like the sponsors is a waste of time and money. It is therefore essential that stakeholders are identified before the start of any project to allow for buy-in into project activities and its intended objectives (Duncan, 2018). Well-aligned stakeholders will support the project activities, provide support and resources during challenging times. During the implementation of any project, many stakeholders are involved. Along the process aiming at completing the project, stakeholders can be partners, resources, or roadblocks but potentially they are all the three rolled into one. Stakeholder buy-in, the cooperation, or the positive participation of a stakeholder, is the preferred condition for any successful project *(*May, 2016).Alexander, (2018) noted that since there are quite a variety of stakeholders who are involved in projects buy-in becomes a difficult task to quantify. Projects may seem to be advancing well, but without full buy-in from key stakeholders, it might suddenly take a sharp turn for the worst, risking the final deliverables and customer satisfaction. The stakeholder buy-in can be increased by identifying what motivates stakeholders, focusing on telling the truth, even when it isn't what stakeholders want to hear, making sure stakeholders understand their contribution to a project, reaffirming goals and communicating progress throughout execution, remaining consistent, and providing positive feedback after the project ends (Alexander, 2018).

Across all organizations within different industries, projects and programs of different sizes succeed or fail mostly due to having the right levels of team commitment, stakeholder buy-in, and executive support. Project managers will always strangle to manage the project successfully so long as these key components are absent (Aziz, 2014). Even if proper project management principals and best practices are applied thoroughly the risk of project failure is imminent if 360° Stakeholder Buy-in is inadequate, or fluctuates throughout the project (PMBOK, 2017). Stakeholder's influential attributes, their understanding, and effective utilization and management of resources are some of the reasons that affect project outcomes (Rajabluet al., 2015). Beringer et al. (2013) claimed that the success of a key project portfolio depends on stakeholder behavior and management of such behavior. The importance of stakeholder involvement in the development of a new curriculum in the department of health and science (MIT) proves itself during a study by Keogh, Fourie, Watson, and Gay (2010). Toor and Ogunlana (2010) research findings on large public sector development projects moved the topic beyond the traditional iron triangle and concluded that stakeholders' perception and satisfaction is the key to project success. From the base organization's (project owner) viewpoint, Eskerod and Jepsen (2013) reconfirmed the importance of stakeholders by stating that a project can only be successful if stakeholders are first motivated and in return have contributed to the project.

## V. Methodology

This study used a descriptive research design that deals with the what, where, and how of a phenomenon, which was guided by hypothesis and focused on the frequency with which something occurs and the relationship between the variables (Bernard, 2012). The study also used an explanatory research design that looks for explanations on the nature of certain relationships and investigates the cause-effect relationship between variables (Saunders, 2009).The positivism research philosophy was used for this study since the choice depends on the research hypothesis to be tested. This was based on the fact that positivism reflects the belief that reality is stable and that it can be observed and described from an objective viewpoint without interfering with phenomena (Matta, 2015). The target population for this study comprised of 20,299 REA projects implemented in Kenya public primary schools. The sample size was determined by the adoption of Yamane sample size determination (Yamane, 1967) where 392 projects were selected. In this study, the data collected was analyzed using both descriptive and inferential statistics. Descriptive statistical techniques which are frequency distributions, means, and standard deviations were used to analyze the data to be collected. Inferential statistical analysis was undertaken which included hypothesis testing. Independent variables will be subjected to the following tests: linearity, multicollinearity, normality, homoscedasticity to satisfy ordinary least square (OLS) assumptions. The relationship between the dependent variable and independent variables was done by the use of univariate and multiple regressions to establish a relationship. The linear predictor function will be as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

$$Y = \beta_0 + \beta_1 X_1 * M + \beta_2 X_2 * M + \beta_3 X_3 * M + \beta_4 X_4 * M + \varepsilon \quad .$$

Where:
Y = project implementation
$\beta_0$ = Constant
$\beta_1$ = regression coefficient of educational diversity
$\beta_2$ = regression coefficient of socio-cognitive diversity
$\beta_3$ = regression coefficient of gender diversity
$\beta_4$ = regression coefficient of physical disability diversity
$X_1$ =risk management
$X_2$ =project planning
$X_3$ =project leadership
$X_4$ =monitoring and controlling
M = Moderator (stakeholders attributes)
e = error terms/residual

The study tested the hypotheses using regression analysis to establish the role of stakeholders in the implementation of the rural electrification project in Kenya by using a P-value approach at 0.05 level of significance.

## VI. Results

### a) *Response Rate*

The study selected a sample of 392project managers representing an implemented school project. All selected respondents were issued with questionnaires for data collection but the researcher was able to receive back only 347 questionnaires. The returned questionnaires formed a response rate of 88.5% According to Mugenda and Mugenda (2013), a response rate of 50% and above is good for analysis and reporting, that of 60% is sufficient while 70% and above is excellent.

### b) *Descriptive Statistics*

In this section, the study presents findings on Likert scale questions where respondents were asked to indicate their level of agreement or disagreement with various statements that relate to the role of stakeholders' management on the implementation of rural electrification projects in Kenya. The article focused on project risk management, project leadership, project planning, and the moderating effect of stakeholders

c) *Project Risk Management*

The study showed that project risk management influenced the implementation of the project as indicated by the mean of 3.8. Specifically, the findings showed that the respondents agreed that project stakeholders are involved in the risk identification process (M=3.982, SD=1.370); the risk registers are available and accessible to all stakeholders of the project (M=3.948. SD=1.263); and that problem analysis is done to identify the role and contribution of various stakeholders towards the success of the project (M=3.889, SD=1.381). The study also established that the respondents agreed that the stakeholders are involved in monitoring the project risks (M=3.863, SD=1.326); that stakeholder analysis is done to identify the extent of decision making (M=3.777, SD=1.275); once risks are identified mitigation measures are documented (M=3.738, SD=1.320); and that mitigation measures and strategies are communicated to the various stakeholders (M=3.698, SD=1.331).The study findings agree with Nocco and Stulz (2006), that risk management involves the identification, measurement, monitoring, and controlling of risk to ensure that the individual responsible for the risk clearly understands it and the organization's exposure is within the limits established by management; the appropriate risk-taking decisions are in line with business strategy and objectives set by management; the expected payoffs compensate for the risk taken are clear; risk-taking the decision is explicit and clear. The respondents also suggested other methods to deal with risk which include; planning, effective communication, and keeping records of all the risks. The respondents also identified some challenges related to the handling of project risks. Failure in monitoring and managing risks, lack of clear goals, and inadequate communications.

d) *Project Planning*

The study found that project planning influenced the implementation of projects as indicated with a mean of 3.920 an indication that the respondents agreed with the statements about stakeholders' role in project planning on implementation of rural electrification projects in Kenya. The findings specifically showed that the respondent agreed that planning of new projects is a collective responsibility that involves all the stakeholders of the project (M=3.994, SD=1.476); planning tools like PERT, CPM, GANTT CHARTS, WBS are used (M=3.961, SD=1.476); and that the project charter is the overall project reference document used (M=3.955, SD=1.546). The study further showed that respondents agreed that they estimate the resources for the project activities (M=3.915, SD=1.343); the stakeholders participate in the development of the project management plan (M=3.856, SD=1.525); and that stakeholders are involved in the identification of the activities needed to complete deliverables (M=3.836, SD=1.220). These study findings concur with Harold (2003) and Rosario (2000) that stakeholder involvement in planning entails the involvement of stakeholders on how to plan, development of scope, team selection planning, and identification of deliverables, developing the work breakdown structure (WBS) resource requirement estimates, cost estimation, schedule development, risk planning, budgeting and approval of project commencement. It also agrees with Dvir, Razand Shenhar (2003) that planning reduces uncertainty and increases the likelihood of project success. Project success is correlated to project planning specifically requirements definition planning and technical specifications development. The study also suggested other methods applicable to the planning process in the organization. During the planning process, they first establish their objectives; evaluating their current and expected financial situation, and then determine whether the available resources met the objective; and finally, conduct an environmental scan. The study also identified some of the challenges in planning which include: not implementing the plan; involvement of the right people in the planning process; regular feedback from participants; and finally building of accountability.

e) *Project Leadership*

The study proved that project leadership influenced the implementation of projects as shown by a mean of 3.919 an indication that on average, the respondents agreed with the various statements on stakeholders' role in project leadership on the implementation of rural electrification projects in Kenya. The findings also show that the respondents were in strong agreement that all projects relevant stakeholder is provided by the projects updates information (M=4.007, SD=1.251). Also, the respondents agreed that: the project manager has put in place a clear and effective communication plan with the project stakeholders' (M=3.994, SD=1.343); stakeholders believe the project manager has the necessary knowledge and skills needed to attain the success of the project (M=3.988, SD=1.475); and that there is the proper social interaction among stakeholders depending on their influence in the project (M=3.961, SD=1.674). Furthermore, the study found the respondents agreed that stakeholders are involved in the processes of the entire project decision making concerning appointing the project leader (M=3.836, SD=1.426); the project leader has developed a Stakeholders register that shows all the project stakeholders (M=3.830, SD=1.441); and that in dealing with project stakeholders' the project manager applies different leadership styles (M=3.817, SD=1.142). The study findings agree with the findings of Muller and Turner (2007) that the project manager's leadership competencies influenced project success. Emotional competence is a significant contributor to project

success in all projects. Therefore, managerial competence is a significant contributor to some project success. It also agrees with the findings of Limsila and Ogunlana (2008) that transformational leadership was found to be the dominant style and influence a higher subordinates' commitment to giving higher leadership outcomes in terms of effectiveness, satisfaction, and extra efforts. The challenges incurred by leadership in the project include too few team members; lack of morale and motivation; lackluster bucking from key partners; unclear expectations; and lack of training.

*f) Stakeholder Attributes*

The findings proved that stakeholders' attributes have a moderating effect on the implementation of rural electrification projects in Kenya as indicated by a mean of 3.878. The study also established that the interest of all key stakeholders has always been taken into consideration during the implementation of rural electrification projects in Kenya (M=3.961, SD=1.149); the assessment of the proximity of all stakeholders is key to the implementation of rural electrification projects in Kenya (M=3.955, SD=1.199); and that stakeholders legitimacy has been considered during the implementation of rural electrification projects in Kenya (M=3.836. SD=1.234). The study further found that the respondents agreed that stakeholders participate in key decisions of the project (M=3.836, SD=1.313); and that the main objective of any project is to meet or exceed the expectations of its stake-holders due to their influence (M=3.803, SD=1.248). These findings are in agreement with Duncan (2018) that stakeholders must be identified before the start of any project to allow for buy-in into project activities and its intended objectives. He added that well-aligned stakeholders will support the project activities, provide support and resources during challenging times. The finding also concurs with Alexander, (2018) that without full buy-in from key stakeholders, projects might suddenly take a sharp turn for the worst, risking the final deliverables and customer satisfaction. Financial stakeholders, such as unions and materials suppliers, can use their influence and production to demand greater financial benefit. Contractors can negatively affect the project through time and cost overruns. When a delay is caused by a special-interest group, it can increase the cost of the project by adding the expense of legal proceedings. Political stakeholders can also use the project to ingratiate themselves to voting blocks and political donors.

*g) Project Implementation*

The findings gave an aggregate mean score of 3.894. This is an indication that on average, the respondent's greed with the statements about the rate of project implementation. The study found that the respondents agreed that the major stakeholders determine the standards of the project (M=4.021, SD=1.265); end-user satisfaction is the overall criteria for the success of a project (M=3.988, SD=1.182); and that the project records show that the project was according to budget (M=3.902, SD=1.235). The findings further showed that the respondents agreed that the majority of the projects are completed on time and successfully (M=3.902, SD=1.235); the project satisfies the End-user operational needs (M=3.896, SD=1.21); that stakeholders believe that project resources were well utilized as scope, schedule (M=3.81, SD=1.142) and that concluded projects normally meet the required quality/standard (M=3.738, SD=1.168). The findings agree with Flanagan and Norman (2003) that project implementation is important as it helps ensure that a given project is implemented within its desired budget, schedule, the accepted quality standards, functionality, as well as the fitness of purpose. It also concurs with Kululanga and Kuotcha (2010) that project implementation ensures that enterprises maximize profitability, minimize the consequences of risky and uncertain events in terms of achieving the project's objectives, and seizes the chances of the risky events from arising.

## VII. Inferential Analysis

*a) Correlation Analysis*

Pearson R correlation wad used to measure the strength and direction of the linear relationship between variables. The association was considered to be: small if $\pm 0.1 < r < \pm 0.29$; medium if $\pm 0.3 < r < \pm 0.49$; and strong if $r > \pm 0.5$.

*Table 1:* Correlation Analysis

| | | Project Implementation |
|---|---|---|
| Project Implementation | Pearson Correlation | 1 |
| | Sig. (2-tailed) | |
| Project Risk Management | Pearson Correlation | .793** |
| | Sig. (2-tailed) | .000 |
| Project Planning | Pearson Correlation | .743** |
| | Sig. (2-tailed) | .000 |
| Project Leadership | Pearson Correlation | .846** |
| | Sig. (2-tailed) | .000 |

The findings in Table 1 show that project risk management had a strong positive and significant relationship with project implementation (r=0.793, p=000). The p-value was less than the significance level 0.05) an indication that the relationship was significant. The findings also show that project planning ad project implementation has a strong positive relationship (r=0.743). The relationship was considered significant since the p-value (0.000) was less than the selected level of significance. Besides, project leadership is seen to have a strong positive, and significant relationship with project implementation (r=0.846). The relationship between these variables was significant since the p-value (0.000) was less than the selected level of significance (0.05). Finally, the relationship between project monitoring and control project implementation is seen to be strong and positive (r=0.808). The relationship is also considered to be significant as indicated by a p-value (0000) less than the significance level (0.05). These findings, therefore, suggest that the independent variables (project risk management, project planning, project leadership, and project monitoring and control) have a significant relationship with project implementation. To further understand the relationship between these variables, the study computed regression analysis.

*b) Testing Multiple Linear Regression Assumptions*

Diagnostic tests were performed to test the assumptions of linear regression. The assumptions tested were normality, multicollinearity, and Homoscedasticity.

*c) Normality Test*

Normality was tested by the use of the Shapiro Wilk Test. The nullhypothes is for this test is that the population is normally distributed. Thus if the p-value is less than the chosen alpha level (0.05), then the null hypothesis is rejected and there is evidence that the data tested are not from a normally distributed population.

*Table 2:* Tests of Normality

| | Shapiro-Wilk | | |
|---|---|---|---|
| | Statistic | Df | Sig. |
| Project Risk Management | .856 | 347 | .247 |
| Project Planning | .874 | 347 | .179 |
| Project Leadership | .971 | 347 | .127 |
| Project Implementation | .947 | 347 | .142 |

From the findings, all variables had p-values greater than 0.05. This shows that they were all normally distributed and hence the data meets the regression analysis assumption of normality.

*d) Multicollinearity*

Variance Inflation Factor (VIF) was used, which measures multicollinearity in the regression model.

*Table 3:* Multicollinearity Test Statistics

| | Tolerance | VIF |
|---|---|---|
| Project Risk Management | 0.373 | 2.681 |
| Project Planning | 0.251 | 3.984 |
| Project Leadership | 0.573 | 1.745 |

The VIF values found in Table 3 show that there was minimal multicollinearity among the independent variables since all the values are below 5. This implies that the results of the multiple regression equation are not misleading, since the independent variables in the multiple regression equation are not highly correlated among themselves.

*e) Homoscedasticity*

In this study, Heteroscedasticity was tested by performing the Breuch-pagan / cook-Weisberg test. Breusch-Pagan / Cook-Weisberg test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables (Vinod, 2008).

*Table 4:* Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

| Ho: Constant variance | | | |
|---|---|---|---|
| Statistics | df | Stat value | p-value |
| Chi-squared | 347 | 2.6874 | 0.5412 |

Table 4 above shows that the constant variance ($Chi^2$= 2.6874) is insignificant (P = 0.541). Therefore, there is no instance of heteroscedasticity in the data and therefore multiple regression findings were not misleading.

*f) Regression Analysis*

The study computed regression analysis to establish the role of stakeholders' management in the implementation of rural electrification projects in Kenya.

Univariate analysis was computed to test the relationship between each independent variable on the dependent variable. The findings were also used to test the study research hypothesis.

*g) The Role of Project Risk Management on the Implementation of Rural Electrification Project*

The study computed univariate analysis to assess the role of project risk management on the The findings were discussed in three tables.

implementation of rural electrification projects. The hypothesis tested was:

*$Ho_1$:* Project risk management has no significant role in the implementation of rural electrification projects in Kenya.

*Table 5:* Model Summary for Project Risk Management and Project Implementation

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .793[a] | .629 | .601 | .11517 |
| a. Predictors: (Constant), Project Risk Management | | | | |

Adjusted $R^2$ shows the variation in the dependent variable due to changes in the independent variable. Table 5 shows that adjusted R squared was 0.601; this is an indication that at a 95% confidence interval, 60.1% variation in project implementation can be attributed to project risk management. The remaining 39.9% suggest that other factors can explain changes in project implementation that were not discussed in this model. R is the correlation coefficient which shows the relationship between the study variables. There was a strong positive relationship between project risk management and project implementation as shown by 0.793.

*Table 6:* Analysis of Variance for Project Risk Management and Project Implementation

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.79 | 1 | 1.79 | 13.769 | .000[b] |
| | Residual | 344.87 | 345 | 0.13 | | |
| | Total | 346.66 | 346 | | | |
| a. Dependent Variable: Project Implementation | | | | | | |
| b. Predictors: (Constant), Project Risk Management | | | | | | |

From the ANOVA table 6, the p-value obtained was 0.000 which is less than the selected significance level of 0.05 which suggests that the model was significant and therefore the data was ideal for concluding the population parameters. F-critical value (3.868), obtained from F-distribution tables, was less than the F-calculated value (13.769) i.e. 3.868<1349.598. Since the F-calculated value was greater than the F-critical value, it suggests that project risk management significantly influences project implementation.

*Table 7:* Model Coefficients for Project Risk Management and Project Implementation

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 0.670 | 0.101 | | 6.634 | .000 |
| | Project Risk Management | 0.646 | 0.126 | 0.793 | 5.127 | .000 |
| a. Dependent Variable Project Implementation | | | | | | |

The regression equation was:

$$Y = 0.670 + 0.646\ X_1$$

The above regression equation shows that holding project risk management to a constant zero, project implementation will be at a constant value of 0.670 units. The influence of project risk management on project implementation was significant. This is because the p-value obtained (0.000) was less than the selected level of significance (0.05). Therefore, a unit increase in project risk management would lead to an increase in project implementation of rural electrification projects in Kenya by 0.646. Therefore we reject the null hypothesis that "Project risk management has no significant role in the implementation of rural electrification project in Kenya".

*h) The Role of Project Planning on the Implementation of Rural Electrification Project*

The study computed univariate analysis to determine the role of project planning on the implementation of rural electrification projects in Kenya. The hypothesis tested was:

*$Ho_2$:* Project planning has no significant role in the implementation of rural electrification projects in Kenya.

*Table 8:* Model Summary for Project Planning and Project Implementation

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .743[a] | .552 | .527 | .22923 |
| a. Predictors: (Constant), Project Planning | | | | |

From the model summary, the value of adjusted $R^2$ was found to be 0.527 which suggests that 52.7% variation in project implementation can be explained by changes in project planning. The remaining 47.3% suggest that other factors can be attributed to changes in project implementation of rural electrification projects in Kenya. The findings further reveal that the variables in this model (project planning and project implementation) are strongly and positively related as indicated by the correlation coefficient (R) value of 0.727.

*Table 9:* Analysis of Variance for Project Planning and Project Implementation

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2.251 | 1 | 2.251 | 4.247 | .000[b] |
| | Residual | 182.85 | 345 | 0.53 | | |
| | Total | 185.101 | 346 | | | |
| a. Dependent Variable: Project Implementation | | | | | | |
| b. Predictors: (Constant), Project Planning | | | | | | |

From the ANOVA table, the F-calculated value was 4.247 and was significant at a p-value of 0.000. The F-critical value obtained from the F-distribution tables was 3.868. The findings showed that the f critical value was less than the f calculated value (3.868<4.247). This, therefore, suggests that project planning influences project implementation of rural electrification projects in Kenya. Since the p-value (0.000) was less than the selected level of significance (0.05), it suggests that the model was significant and therefore the data was the idea for concluding the population parameters.

*Table 10:* Model Coefficients for Project Planning and Project Implementation

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.102 | 0.137 | | 8.044 | .000 |
| | Project Planning | 0.602 | 0.055 | 0.743 | 10.945 | .000 |
| a. Dependent Variable: Project Implementation | | | | | | |

The regression equation was:

$$Y = 1.102 + 0.602\,X_2$$

The above regression equation revealed that holding project planning to a constant zero, project implementation will be at a constant value of 1.102 units. The influence of project panning on project implementation was significant as indicated by a p-value (0.00), less than the sleeted level of significance (0.05). Therefore, a unit increase in project planning would lead to an increase in project implementation of rural electrification projects in Kenya by 0.602 units. Therefore we reject the null hypothesis that "Project planning has no significant role in the implementation of rural electrification project in Kenya".

*i) The Role of Project Leadership on the Implementation of Rural Electrification Project*

The study computed univariate analysis to establish the role of project leadership in the implementation of rural electrification projects in Kenya. The hypothesis tested was:

*$Ho_3$:* Project leadership has no significant role in the implementation of rural electrification projects in Kenya.

*Table 11:* Model Summary for Project Leadership and Project Implementation

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .846[a] | .716 | .674 | .11803 |
| a. Predictors: (Constant), Project Leadership | | | | |

From the model summary, the value of adjusted $R^2$ was found to be 0.674 which suggests that 67.4% variation in project implementation can be explained by changes in project leadership. The remaining 32.6% suggest that other factors can be attributed to the implementation of the rural electrification project in Kenya. The correlation coefficient denoted by R usually shows the relationship existing between the study variables. The findings show that the variables were strongly and positively related as indicated by 0.846.

*Table 12:* ANOVA for Project Leadership and Project Implementation

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.778 | 1 | 1.778 | 12.700 | .000[b] |
| | Residual | 48.3 | 345 | 0.14 | | |
| | Total | 50.078 | 346 | | | |
| a. Dependent Variable: Project Implementation | | | | | | |
| b. Predictors: (Constant), Project Leadership | | | | | | |

From the ANOVA table, the study found a p-value of 0.000 which is less than the selected level of significance which is 0.05. This, therefore, suggests that the model is significant and that the data used is suitable for concluding the population parameters. The findings further showed that the value of f-calculated was 12.700. The f-critical value obtained from the f critical tables was 3.868. From the findings, the f-calculated value is greater than the f-critical value (12.7>3.868). This, therefore, suggests that project leadership influences the implementation of rural electrification projects in Kenya.

*Table 13:* Model Coefficients for Project Leadership and Project Implementation

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.36 | 0.123 | | 11.057 | .000 |
| | Project Leadership | 0.695 | 0.091 | 0.846 | 7.637 | .000 |
| a. Dependent Variable: Project Implementation | | | | | | |

The regression equation was:

$$Y = 1.360 + 0.695\ X_3$$

The above regression equation shows that holding project leadership to a constant zero, project implementation will be at a constant value of 1.360 units. The findings also show that project leadership has a significant influence on project implementation. The influence was significant since the p-value (0.000) was less than the selected level of significance (0.05). Therefore, a unit increase in project leadership would lead to a decrease in the implementation of rural electrification projects in Kenya by 0.695 units. Therefore we reject the null hypothesis that "Project leadership has no significant role in the implementation of rural electrification project in Kenya".

*j) The Moderating Role of Stakeholder Attributes on the Implementation of Rural Electrification Project*

A stepwise regression analysis was conducted to establish the moderating role of stakeholder attributes on the implementation of rural electrification projects in Kenya. The hypothesis tested was:

*$Ho_5$:* Stakeholder attributes do not have a significant moderating role in the implementation of rural electrification projects in Kenya.

*Table 14:* Model Summary for Stakeholder Attributes, Role of Stakeholders' Management, and Project Implementation

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .876[a] | .767 | .762 | .08495 |
| 2 | .884[b] | .781 | .780 | .07073 |
| a. Predictors: (Constant), Project Risk Management, Project Planning, Project Leadership, Project Monitoring, And Control | | | | |
| b. Predictors: (Constant), Project Risk Management, Project Planning, Project Leadership, Project Monitoring And Control, Project Risk Management*Stakeholder Attributes, Project Planning*Stakeholder Attributes, Project Leadership*Stakeholder Attributes, Project Monitoring, And Control*Stakeholder Attributes | | | | |

The model summary for the moderated equation was used to show the amount of variation in the dependent variable that could be explained by the moderated variables. The findings show that after the introduction of stakeholders attributes as the moderating variable, the value of adjusted R square increased from 0.762 to 0.780 an indication that the moderated variable explains 78% variations in project implementation. The remaining 22% suggest that other factors can be used to explain variations in the performance of affordable housing programs in Kenya that were not included in the model.

*Table 15:* Moderated ANOVA for Stakeholder Attributes, Role of Stakeholders' Management, and Project Implementation

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 0.436 | 4 | 0.109 | 15.585 | .000[b] |
| | Residual | 2.394 | 342 | 0.007 | | |
| | Total | 2.83 | 346 | | | |
| 2 | Regression | 0.704 | 8 | 0.088 | 17.579 | .000[c] |
| | Residual | 1.69 | 338 | 0.005 | | |
| | Total | 2.394 | 346 | | | |
| a. Dependent Variable: Project Implementation | | | | | | |
| b. Predictors: (Constant), Project Risk Management, Project Planning, Project Leadership, Project Monitoring, and Control | | | | | | |
| c. Predictors: (Constant), Project Risk Management, Project Planning, Project Leadership, Project Monitoring And Control, Project Risk Management*Stakeholder Attributes, Project Planning*Stakeholder Attributes, Project Leadership*Stakeholder Attributes, Project Monitoring and Control*Stakeholder Attributes | | | | | | |

This tested the significance of the moderated model. The significance was tested at a 5% level of significance. The findings presented in Table 15 show that the models had a significance level of 0.000; both models the un-moderated and the moderated models. From the findings, the F-calculated for the first model was 15.585and the second model was 17.579. Since the F-calculated for the two models were more than the F-critical, 2.398 (first model) and 1.966 (second model), the two models were a good fit for the data and hence they could be used in predicting the moderating role of stakeholder attributes on the implementation of rural electrification project in Kenya.

*Table 16:* Moderated Coefficients for Stakeholder Attributes, Role of Stakeholders' Management, and Project Implementation

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.534 | .154 | | 9.961 | .000 |
| | Project Risk Management | .264 | .050 | .237 | 2.280 | .019 |
| | Project Planning | .258 | .041 | .175 | 6.359 | .000 |
| | Project Leadership | .271 | .044 | .195 | 6.159 | .004 |
| | Project Monitoring and Control | .774 | .064 | .779 | 12.188 | .000 |
| 2 | (Constant) | 1.348 | 0.212 | | 6.358 | .001 |
| | Project Risk Management | 0.346 | 0.077 | 1.214 | 4.494 | .040 |
| | Project Planning | 0.309 | 0.045 | 0.074 | 6.867 | .002 |
| | Project Leadership | 0.367 | 0.081 | 0.695 | 4.531 | .034 |
| | Project Monitoring and Control | 0.311 | 0.048 | 4.135 | 6.479 | .006 |
| | Project Risk Management* Stakeholders Attributes | 0.259 | 0.028 | 0.639 | 9.250 | .000 |
| | Project Planning* Stakeholders Attributes | 0.414 | 0.067 | 0.008 | 6.179 | .007 |
| | Project Leadership* Stakeholders Attributes | 0.428 | 0.078 | 0.674 | 5.487 | .023 |
| | Project Monitoring and Control* Stakeholders Attributes | 0.885 | 0.082 | 1.107 | 10.793 | .000 |
| a. Dependent Variable: Project Implementation | | | | | | |

From the findings presented in Table 16 after the introduction of the moderating variable, Stakeholders Attributes, the following moderated regression model was fitted;

$$Y=1.348+0.346X_1+0.309\ X_2+0.364\ X_3+0.311\ X_4+0.259\ X_1*M+0.414\ X_2*M+0.428\ X_3*M+0.855X_4*M$$

The findings showed that Project Risk Management* Stakeholders Attributes had a significant influence on the implementation of rural electrification projects in Kenya (β=0.259, p=0.000). Since the p-value was less than the selected level of significance (0.05), the study concluded that the influence was

significant. The study, therefore, rejected the null hypothesis $H_{051}$ *Stakeholder attributes do not have a significant moderating role of project risk management on the implementation of rural electrification project in Kenya.*

Project Planning* Stakeholders Attributes were seen to have a positive influence on the implementation of the rural electrification project in Kenya ($\beta=0.414$, $p=0.007$). The influence was considered significant since the p-value obtained (0.007) was less than the selected level of significance (0.05). The study thus rejects the null hypothesis $H_{052}$ *Stakeholder attributes do not have a significant moderating role of project planning on the implementation of rural electrification project in Kenya.*

Project Leadership* Stakeholders Attributes had a positive influence on the implementation of the rural electrification project in Kenya ($\beta=0.428$, $p=0.023$). The p-value obtained (0.023) was less than the selected level of significance (0.05) therefore suggesting a significant influence. The study thus rejects the null hypothesis $H_{053}$ *Stakeholder attributes do not have a significant moderating role of project leadership on the implementation of rural electrification project in Kenya.*

*k) Summary of Findings*

The study was guided by the following specific objectives: To assess the role of project risk management on the implementation of rural electrification project in Kenya; to determine the role of project planning on the implementation of rural electrification project in Kenya; to establish the role of project leadership on the implementation of rural electrification project in Kenya, and to establish the moderating role of stakeholder attributes on the implementation of rural electrification project in Kenya.

*l) The Role of Project Risk Management on the Implementation of Rural Electrification Project*

The study found that project stakeholders are involved in the risk identification process; the risk registers are available and accessible to all stakeholders of the project, and that problem analysis is done to identify the role and contribution of various stakeholders towards the success of the project. The study also established that the stakeholders are involved in monitoring the project risks; that stakeholder analysis is done to identify the extent of decision making; once risks are identified mitigation measures are documented, and that mitigation measures and strategies are communicated to the various stakeholders. The study findings agree with Nocco and Stulz (2006), that risk management involves the identification, measurement, monitoring, and controlling of risk to ensure that the individual responsible for the risk clearly understands it and the organization's exposure is within the limits established by management; the appropriate risk-taking decisions are in line with business strategy and objectives set by management; the expected payoffs compensate for the risk taken are clear; the risk-taking decision is explicit and clear; sufficient capital as a buffer is available to take the risk. The goal of risk management is to optimize risk-reward trade-off.

*m) The Role of Project Planning on the Implementation of Rural Electrification Project*

The study established that planning of new projects is a collective responsibility that involves all the stakeholders of the project; planning tools like PERT, CPM, GANTT CHARTS, WBS are used; and that the project charter is the overall project reference document used. The study further showed that project managers estimate the resources for the project activities; the stakeholders participate in the development of the project management plan; and that stakeholders are involved in the identification of the activities needed to complete deliverables. These study findings concur with Harold (2003) and Rosario (2000) that stakeholder involvement in planning entails the involvement of stakeholders on how to plan, development of scope, team selection planning, and identification of deliverables, developing the work breakdown structure (WBS) resource requirement estimates, cost estimation, schedule development, risk planning, budgeting and approval of project commencement. It also agrees with Dvir, Razand Shenhar (2003) that planning reduces uncertainty and increases the likelihood of project success. Project success is correlated to project planning specifically requirements definition planning and technical specifications development.

The study also established other methods applicable to the planning process in the organization. They explained that during the planning process, they first establish their objectives. They evaluate their current and expected financial situation and then determine whether the available resources met the objective. Also, they indicated that it is important to conduct an environmental scan. This scan usually involves considering various driving forces, or major influences, that might affect the organization. Analyzing the situation is also an important step; usually through SWOT analysis (strengths, weaknesses, opportunities, and threats) faced by the organization. Once the situation has been determined and the goals established, the strategies to be used to reach the goal are established. As a key stakeholder during the implementation of the projects in Kenya, the study obtained some of the challenges and solutions incurred in project planning. A common failure in many planning is that the plan is never really implemented. Instead, all focus is on writing a plan document. Another challenge is deviations from the intended plan.

*n) The Role of Project Leadership on the Implementation of Rural Electrification Project*

The study established that all projects relevant stakeholder is provided by the projects updates information. Also, the study found that: the project manager has put in place a clear and effective communication plan with the project stakeholders'; stakeholders believe the project manager has the necessary knowledge and skills needed to attain the success of the project; and that there is the proper social interaction among stakeholders depending on their influence in the project. Furthermore, the study found that stakeholders are involved in the processes of the entire project decision making concerning appointing the project leader; the project leader has developed a Stakeholders register that shows all the project stakeholders; and that in dealing with project stakeholders' the project manager applies different leadership styles. The study findings agree with the findings of Muller and Turner (2007) that the project manager's leadership competencies influenced project success. Emotional competence is a significant contributor to project success in all projects. Therefore, managerial competence is a significant contributor to some project success. It also agrees with the findings of Limsila and Ogunlana (2008) that transformational leadership was found to be the dominant style and influence a higher subordinates' commitment to giving higher leadership outcomes in terms of effectiveness, satisfaction, and extra efforts.

*o) The Moderating Role of Stakeholder Attributes on the Implementation of Rural Electrification Project*

The study established that the interest of all key stakeholders has always been taken into consideration during the implementation of rural electrification projects in Kenya; the assessment of the proximity of all stakeholders is key to the implementation of rural electrification projects in Kenya; and that stakeholder's legitimacy has been considered during the implementation of rural electrification projects in Kenya. The study further found that stakeholders participate in key decisions of the project; and that the main objective of any project is to meet or exceed the expectations of its stake-holders due to their influence. These findings are in agreement with Duncan (2018) that stakeholders must be identified before the start of any project to allow for buy-in into project activities and its intended objectives. He added that well-aligned stakeholders will support the project activities, provide support and resources during challenging times. The finding also concurs with Alexander, (2018) that without full buy-in from key stakeholders, projects might suddenly take a sharp turn for the worst, risking the final deliverables and customer satisfaction.

The study also identified other stakeholder attributes that can affect project implementation. Financial stakeholders, such as unions and materials suppliers, can use their influence and production to demand greater financial benefit. Contractors can negatively affect the project through time and cost overruns. When a delay is caused by a special-interest group, it can increase the cost of the project by adding the expense of legal proceedings. Political stakeholders can also use the project to ingratiate themselves to voting blocks and political donors. The study found other ways stakeholder attributes can assist during the implementation process. When stakeholders are adequately engaged, their influence spreads far and wide. They provide expertise. Stakeholders are a wealth of knowledge about current processes, historical information, and industry insight. It's important to involve all key stakeholders when gathering and documenting requirements to avoid missing major deliverables of the project. This is because stakeholders can provide requirements or constraints based on information from their industry that will be important to have when understanding project constraints and risks.

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# Influence of Supplier Training on Performance of Sugarcane Enterprises in Kenya

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*Abstract-* Manufacturing firms are increasingly using supplier development to address gaps in their supply base aimed at improving their performance. There has been a decline in sugarcane yield in Kenya yet, the demand for sugar has been increasing steadily over time. Drawing on the supplier training aspect of supplier development strategy, the study objective was to establish how supplier training impacts on performance improvement of sugarcane enterprises in Kenya. The study hypothesis was that there is a significant positive relationship between supplier training and the performance of sugarcane enterprises in Kenya. The study was premised on a descriptive research design and a sample size of 400 drawn from a population of 250,000 active farmers was used. A pre-test of 10% was done to check on the reliability and validity of the data collection instrument. 400 questionnaires were issued out and 293 were returned, achieving a 73.25% return rate. The results of simple linear regression show an r= .347, p value=0.000.

*Keywords: supplier development, supplier training, supply base, material flow, sugar millers and sugarcane enterprises.*

*GJMBR-A Classification: JEL Code: M00*


*Strictly as per the compliance and regulations of:*

# Influence of Supplier Training on Performance of Sugarcane Enterprises in Kenya

Fredrick A. Nasiche [α], Dr. P. Karanja Ngugi [σ], Dr. David Kiarie [ρ] & Prof. R. Odhiambo [ω]

*Abstract-* Manufacturing firms are increasingly using supplier development to address gaps in their supply base aimed at improving their performance. There has been a decline in sugarcane yield in Kenya yet, the demand for sugar has been increasing steadily over time. Drawing on the supplier training aspect of supplier development strategy, the study objective was to establish how supplier training impacts on performance improvement of sugarcane enterprises in Kenya. The study hypothesis was that there is a significant positive relationship between supplier training and the performance of sugarcane enterprises in Kenya. The study was premised on a descriptive research design and a sample size of 400 drawn from a population of 250,000 active farmers was used. A pre-test of 10% was done to check on the reliability and validity of the data collection instrument. 400 questionnaires were issued out and 293 were returned, achieving a 73.25% return rate. The results of simple linear regression show an r= .347, p value=0.000. It was inferred that there was a significant and positive correlation between supplier training and the performance of sugarcane enterprises in Kenya. Similarly, the result shows an R2 value of .121 implying that 12.1% in variation of performance of sugarcane enterprises in Kenya was accounted for by supplier training. The regression result β= 0.203, t value of 6.253. The results show that if the rest of the variables in the model were controlled, the sugarcane yield would be 2.415 units. The research hypothesis was supported and the study concluded that supplier training had a positive influence on sugarcane enterprises in Kenya. The study recommends that sugar millers should establish demonstration plots to train farmers in modern sugarcane farming; develop a policy that would facilitate the signing of contracts with farmers to facilitate material support to farmers and address the issues of technical inefficiencies in sugarcane farming in Kenya. Further studies are recommended to gain insights explore where sugarcane is grown under the contract regime as compared to sugarcane grown under the liberalized settings to provide empirical evidence on the constraints arising from the technical allocative inefficiencies that embed full exploitation of supplier development strategy in sugarcane farming in Kenya.

*Keywords: supplier development, supplier training, supply base, material flow, sugar millers and sugarcane enterprises.*

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## I. Introduction

Manufacturing firms try to achieve uninterrupted flows of material resources required for their conversion process into the organizations through the adoption of sourcing strategies that place their suppliers at the center of their operations. One of these sourcing strategies is supplier development, which is a strategy adopted to empower suppliers through the process of direct investment of resources in the supplier to augment and upgrade their operational abilities to enhance performance objectives. Joshi *et al*., (2017) opined that the buyer's supply base needs to be self-sufficient and could be realized through supplier development initiatives. Indeed the central role the strategy plays is supported by the available modeling and evaluation analysis that goes into assessing the effects of supplier development on performance improvement of both the buyer and supplier (Dou *et al*., 2014). Usually, there exist some shortcomings in the supplier's ability to meet buyer expectations concerning material flow (Busse *et al*., 2016).

The stream of supplier development research has provided empirical support and assertions that supplier development improves performance metrics such as delivery time, quality, cost reduction, quantity, and profit (Blome *et al*., 2014; Dalve & Kant, 2015; Dalve & Kant, 2018). Glock *et al*., (2017) are of the view that supplier development is one way of the manufacturer getting involves in shaping and influencing the supply base with a view of propelling the vocal company to gaining competitive advantage.

There has been a shift from the stand-alone strategies arising from the competitive pressure and production requirements, to more supplier collaborative and supportive strategies to access the needed resources by the manufacturing organizations (Bai & Sarkis, 2014). These collaborative and supportive strategies include supplier development which is described as a way of deriving financial and material resources to support the manufacturer's present and future operational needs. The adoption of supplier development strategy is informed by the prevailing uncertainties in the supply market dominated by various forms of supply risks and the attendant supply chains that result in material shortages (Scur & Kolososki, 2019). Besides, the realization that most buyers do not have the required raw material in the house and the

influence that suppliers exert on buyer performance have been a major driving force behind the adoption of supplier development.

The complex nature of organizational supply chains owing to the number of participants, stage in the development of each participant, and networks make it mandatory for a buyer to engage in a close working relationship with suppliers to secure sustainable flow material from outside sources (Trapp & Sarkis, 2016). Supplier development is defined as the "long-term investment relationship between the buying firm and the supply base intended to improve their capacity to meet the buying firms' resource needs sustainably (Routroy & Pradhan, 2014). The strategy is about ensuring that the buyer has access to the required resources that are domiciled outside its boundaries and are necessary for the manufacturer's operations and routines in meeting its marketing and customer objectives (Wang & Gunasekaran, 2017). The dependence by buyers on suppliers for raw material supplies reflects the relative importance both parties attach to the relationship and the value created by their actions in supplier development. Notably, the ability to achieve the intended goals is determined by the strategic importance each part attaches to the supplier development initiative. Roloff *et al*., (2015) opined that it is important to consider the interests and views of both the buyer and supplier before the implementation of supplier development programs.

In practice, supplier development may take the form of direct or indirect programs. The direct programs required a lot of capital input by the buyer whilst indirect programs require less capital input and involvement. Proch *et al*., 2017 and Lawson *et al*., 2015 emphasized that the direct supplier development paradigm requires substantial human, financial, and material deployment by the buyer to achieve desired results. Specifically, an initiative such as supplier training that is supported by the buyer to empower the supplier with the required skills and capabilities can go a long way in improving the performance of both the buyer and supplier (Lawson *et al*., 2015; Mohanty *et al*., 2014). Competition in the market has shifted the traditional areas based on cost leadership to supply chains, where the buyer is in the driving seat to influence the flow of material resources into the organization to supports its manufacturing activities in tandem with the customer satisfaction needs (Glavee-Geo, 2019).In most cases tradeoffs are required to balance the needs of the company and the customer, resulting in customer focus paradigm supported by reliable supply chains.

The direct supplier development aspect of training and education is an important factor in the transfer of skills and capabilities to a supplier at the cost of the buyer. Yawar & Seuring (2020) found that training and education of suppliers has a positive impact on the performance improvement of both the buyer and the supplier. The supplier dependency scenario and the need of the buyer to maintain its market share by striving to meet customer needs exceedingly may drive the buyer to invest in supplier training and education. Training and education of supplier firm employees have been a game-changer in the effort by manufacturing companies by viewing social and economic dimensions as the basis of competition derived from the market needs of their customers. This assertion is in line with that of Guo-Ciang (2017) that emphasized training and education aspects of suppliers in matters of socially responsible supplier development to improve the sustainable performance of small and medium enterprises. According to Marti *et al.,(*2015) where suppliers are trained in sustainable development issues relating to products and services, it results in economic, social, and environmental performance improvement, with benefits accruing to the supplier, buyer, and society.

Globally, supply chains have shaped and changed the dynamics of competition based on their value creation abilities among the market players. Tanskanen (2015) argued that since buyers depend on the supply chains of their suppliers to compete, they have no other option but to invest in the training of their suppliers to leverage their resources. Critical requirements to support value creation operation of the buyers usually reside with suppliers, hence buyers must go to great length to build collaborative relationships with suppliers that are aligned and support their overall corporate and functional strategies.

Reliable suppliers for sugarcane in the Kenyan sugar industry are rare to come by, necessitating sugar millers to identify and train sugarcane farmers in modern farming methods to argument sugarcane products to meet the demands of the millers. Training as a dual-action involving farmers and millers results in concurrence of farmers' and millers' strategic priorities in line with the overall view of the sugar industry policy anchored on the Government of Kenya vision 2030 strategy. An extensive literature review reveals that supplier training is an essential component of supply chain performance, particularly in regards to performance improvement of suppliers and buyers (Busse *et al*., 2016). Informed by the desire to improve sugarcane yield in Kenya to ensure a steady flow of raw material to support value addition activities of sugar millers, it is expected that training of suppliers (farmers) has a turnaround effect on sugarcane shortage in Kenya. Accordingly, informed by empirical evidence that training as a direct supplier development is essential for the smooth functioning of supply chain networks; it is considered a worth feature to explore concerning the performance of sugarcane enterprises in Kenya, drawing on the sugarcane farmers paradigm.

The Kenyan sugar industry has evolved from a single factory at inception to over ten factories to date.

The Government considers the sector as a reliable source of income arising from the sale of sugarcane and employment; and significantly impacts the national economy (Mwanga *et al*., 2017). Sugar manufacturers wholly depend on private farmers for the supply of cane for crushing as their nucleus farms produce less than 16% of the total cane crushed in Kenya (Mati & Thomas, 2019). The sugar industry suffers from many challenges that include dilapidated machinery, ineffective policy, lack of financial support, lack of spare parts for maintenance, completion from importers who hardly pay requisite taxes, and under capacity utilization (Mati & Thomas, 2019). Under -capacity utilization is a result of an acute shortage of sugarcane occasioned by lack of a clear policy by the millers to support sustainable sugarcane development programs (AFA, 2015; USDA, 2017). The sugarcane shortage has limited miller from exploring other viable but untapped revenue streams like cogeneration and ethanol production.

Cumulatively, under-capacity utilization leads to a shortage of sugar as demand outstrips supply. According to USDA (2018), importations to meet the shortage usually operate to distort the market in favour of the importers. Meeting the requirements of customers remains a critical factor that dictates the value addition process in pursuit of competitive advantage. The reliability of the raw material supply base determines the success and improved performance of a company in the market. The desire to have a reliable source of sugarcane supply provides a considered justification for millers to confer sugarcane farmers with requisite innovative skills in modern farming through training and education as a direct supplier development strategy.

The traditional performance paradigm in business is usually evaluated based on profit attained, market share, and improved shareholder value. Mishra *et al.,* (2018) indicated that performance measurement lays out variables that help to quantify the effects of actions already taken to justify the outcomes. Supply chain performance is about how well the supply base supports operations of the focal buyer based on specific attributes. Similarly, Mishra *et al*., (2018) assert that the supply chain supports the achieving efficiency, effectiveness, and goals of an organization .These actions are motivated by the urgency to grow the organization towards meeting their customer expectations measured in terms of economic dimensions of quality, delivery time, quantity, and cost (Jagan *et al*., 2019).

According to Busse *et al*., (2016) rise in globalization and an informed global consumer has led to the inclusion of non-economic attributes of products like the use of reusable materials, waste disposal, pollution, and recycling performance evaluation of supply chain actions. Sugarcane farming performance measures are in terms of yield per and the quality of the cane evaluated based on sucrose content that determines the amount of sugar produced per ton (AFA, 2015). Training of farmers in modern farming methods viewed from the supplier development perspective of the integrated supply chain improves sugarcane yields resulting in the availability of raw material to support millers' ability to produce sugar to meet the demand of the country.

## II. Statement of the Problem

Production of sugar has not kept pace with the demand. This is attributable to the idle capacity experienced by sugar millers due to shortage of sugarcane for crushing (Mati & Thomas, 2019). The average production yield per acre has declined leading to unscheduled production stoppages arising from sugarcane shortage (AFA, 2015). The shortage of sugarcane is attributable to poor cane husbandry, composition of plant population on the farms being predominantly of ratoon 2 and 3 crops, cost of inputs and unhealthy completion leading to harvesting of immature cane (AFA, 2015; Mati & Thomas, 2019). Mwanga, Ongala and Orwa (2017) developed a sugarcane yield prediction model that revealed a decline in sugarcane production from a high of 60 tons per hectare in 2016 to a low of 51.48 tons in 2018.

Demand for sugar has been on a steady rise due to increase in population and industrial activities (USDA 2018). However, the increased demand is not supported by corresponding increase in production in a drive for the country to attain self-sufficiency. Shortage of cane has been linked with changes in regulations governing the growing and sale of cane. Liberalization of the cane market has resulted in withdrawal and/or scaling down of services such as farmer training and extension outreach previously offered by the millers. Consquently, this resulted in under capacity utilization which creates a shortage in the market leading to importation of sugar to bridge the gap (AFA, 2015; USDA 2018). According to Dubb (2014) decline in sugarcane production by small scale farmers in KwaZulu-Natal province, South Africa was as a result of regulatory changes that limited sugar millers' support for farmers.

In Kenya, sugar millers supply less than 17% of sugarcane from their own nucleus estates, while 93% is supplied by farmers, thus suagcarne farmers are major stakeholders in the sugarcane supply chain (Mati & Thomas, 2019). The dependency of sugarcane millers on farmers as the source of raw materials provides a justification for millers to invest in farmers through provision of training and extension services to farmers. Investing in farmer training seeks to impart modern innovative farming techniques that would result in improved sugarcane yield and cane quality measured by the amount of sucrose content. Supplier (farmer) training is a proactive sourcing practice promised on

supplier development that is intended to influence and augment the supplier capacity to ensure uninterrupted flow of sugarcane to support operational and production needs of the miller to meet the market demand of sugar and competitive advantage (Hernandez-Espallardo *et al.*, 2010; AFA, 2015; Mati &Thomas, 2019).

*a) Objective of the study*

The objective of the study was to establish how direct supplier aspect of supplier training impacts on performance improvement of sugarcane enterprises in Kenya. Specifically, the study endeavoured to determine whether supplier training enhances the performance of sugarcane enterprises in Kenya.

## III. Literature Review

*a) Conceptual framework*

The conceptual framework depicted in Figure 1 shows how the variables Supplier training and performance of sugarcane enterprises in Kenya were hypothesized and operationali zed. The study tested the research hypothesis stated as- Ha1: There is a significant positive relationship between supplier training and performance of sugarcane enterprises in Kenya. The construct supplier training was examined based on inputs, planting, and weeding settings, complemented and supported by miller's field agricultural extension staff. Training of farmers on the correct use of the type, amount, and time of fertilizer application is crucial in the quantity and quality of cane yield. Training of farmers on the aspects of planting the right seed cane with proper spacing and prior land preparation enhances sugarcane yield per acre. Similarly, training of farmers on manual weeding and pest control using herbicide and pesticides are critical in enhancing sugarcane yield. When sugar millers use their agricultural extension staff to undertake farm visits, farmers open field days, and miller-owned demonstration plots, it helps to impart practical knowledge in modern farming techniques. Cumulatively, the training of farmers cultivates a positive relationship with the millers resulting in enhanced sugarcane production.

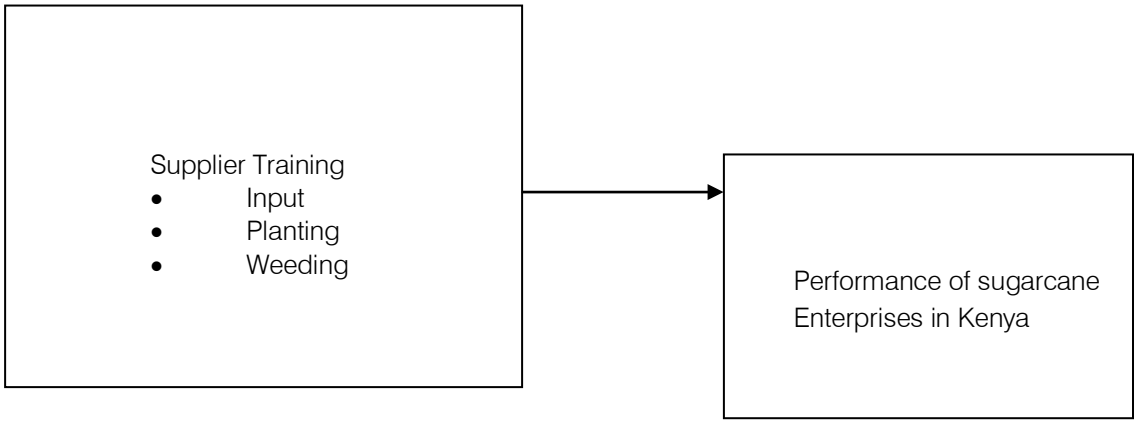


*Figure 1:* Conceptual framework

*b) Theoretical Review*

i. *Human Capital Theory*

Human Capital Theory has predominantly been used in the labour aspects of employees, especially in the drive for production improvement. The theory was formally introduced by Schultz in 1961. The theory has gained use by supply chain scholars to explain the phenomenon of supply chain resource requirements. Human capital is made up of assets of intangible resources owned by people as a result of training; education and work experience (Cooper *et al*., 2016). Consequently, the bundles of these acquired resources confer to the employer and the employees the leverage to use them in the enhancement of improved production that benefits both parties. According to Hohenste in *et al*., (2014) firms engage in many different activities that extend beyond their boundaries in search of resources that support their operations to ensure their competitiveness in the market. These activities are many and include supplier (farmer) training which would confer the necessary capabilities to enable the farmer to increase sugarcane production.

The resource-based view theory supports the human capital theory in that training of suppliers by the firms enables them to acquire skills that accrue for the benefit of competitive advantage (Huo *et al*., 2015). The complexity and dynamism in the supply chain emanating from the unstable environment makes it prudent for manufacturing firms to invest in training their suppliers who in turn guarantee consistent inflow of materials resources to support their material need. Training of farmers in modern sugarcane farming techniques is a direct supplier development sourcing strategy that would enhance the availability of raw material to support production. The human capital theory provides an appropriate basis to support the investment of millers in training farmers by imparting

appropriate skills and techniques to improve sugarcane production, which in turn will eliminate chronic sugarcane shortages being experienced in Kenya. The human capital in sugarcane sector consisting of farmers can help improve the availability of raw material which would minimize the possibility of production stoppages, thus enabling the industry to gain a competitive advantage (Gonzalez-Loureiro *et al*., 2014).

*c) Supplier Training*

Training and education of suppliers seek to upgrade the capabilities of suppliers that have gaps in their operations. Supplier development reinforces the reality that a reliable supplier is a foundation upon which firms compete; training provides the platform and conditions necessary to access to resources of the supplier (Vos *et al*., 2016). Still, buyers allocate their resources to the training of suppliers to transfer the skills and capabilities to the employees of the supplier to gain preferred customer status based on the reciprocity principle (Pulles *et al*., 2016). Supply chain scholars assert that buyers consider suppliers as enablers in achieving competitive advantage; they are the source of critical resources that support their operation, and buyers are willing to invest resources to build a long-lasting relationship with suppliers through supplier development.

Training of suppliers is a valuable proactive and deliberate strategy of building long term business relationship that is beneficial to all the parties involved in the transactions. Accordingly, buyers implement supplier development strategies as part of supply chain management efforts of seeking and influencing their supply base as an avenue of accessing resources owned by the supplier but are critical in the operations of the buyer (Ellegaard *et al*., 2017). Moreover, putting efforts in training of suppliers is consistent with the social exchange theory based on the notion that training of suppliers is an investment by the buyer expecting the supplier to exchange resources with the buyer in a business transaction that results in mutual attraction and long-lasting business relationships (Bemelmans *et al*., 2015).

Training and education of suppliers may also be viewed as the process through which the buyer initiates actions that would provide resources for use by the buyer and supplier to improve in performance. Consistent with supplier development strategy as a building block to the buyer-supplier exchange relationship, each party must strive to convince the other party to invest in the relationship (Tanskanen & Aminoff, 2015). To this end, therefore, the quality of the expected relationship outcomes consisting of economic and non-economic must be capable of meeting the parties' present and future requirements. Consequently, the training of suppliers creates relational resources that provide a means through which there is a balanced exchange between the buyers and the sellers that results in mutual benefits and improved performance.

*d) Empirical Review*

The sourcing strategy adopted by a firm depends on the importance attached to the material. A critical material to support the operation of the buying firm and the spend on the material involved dictates that more attention is put in securing the source of supply. Training suppliers is a strategic avenue through which critical material required to support the operations of the buyer is controlled and managed. Glavee-Geo (2019) conducted a study on supplier development as a means to establish customer satisfaction and sustenance of the relationships. The study was undertaken in the Ghana cocoa production area. A sample size of 444 small scale cocoa growers was used as key informants. Six constructs were developed to evaluate the phenomenon. The supplier development construct had six-item sub-constructs that included training and education. Structured questions were used in face to face interview to collect data from the informants. All items under all the constructs had factor loadings of 0.7 and above. Structural model estimates and post- havoc analysis was used to analyze data and draw conclusions. The study established that supplier development activities had a significant and positive effect on supplier performance. Therefore it was concluded that establishing a reliable source of supply is critical to improving the performance of the buyer, hence investing in supplier training is justified.

Supply chain management is faced with many challenges both locally and globally. These challenges are risks to lead to interruptions of material flows. Supply chain practitioners implement different strategies aimed at minimizing the effects of such risks. Busse *et al*., (2016) undertook a case study on supplier development with the underlying issues of sustainability in the global supply chain barriers. Sustainability in supplies has become the focus of many scholars because of the immense benefits that accrue when the economic and noneconomic goals of the exchange partners are achieved. The design was an exploratory case study with a focus on WBF (Europe) that has a strong foothold in the packaging, diary, and aluminum industries in China. WBF has been hailed as a company that works closely with its customers and suppliers. Specifically, the company is known to offer training to farmers and education to consumers of their products. Items under this study included technical training and education of suppliers, communication, and knowledge transfer.

A sample size of 10 executives from WBF and 31 from six Chinese suppliers was drawn. Data were collected through interview and in some triangulation method was adopted. Data were analyzed by applying qualitative content analysis. The study findings indicated that in the context of global supply chain barriers, the

actor must be informed and assessed on economic, social, and environmental future consequences. Consequently, training, education, and knowledge transfer can improve performance sustainable supplier development goals of the buyer and supplier.

A study by Subramaniam *et al*., (2019) set out to establish the impact of global manufacturers from the socially responsible supplier development perspective. The purpose of the study was to test the impact of supplier development programs on the social outcomes of suppliers. Multinationals distribute their products beyond their operation domains and as such are likely to influence the adoption of suppliers' sustainable practices. Furthermore, multinationals because of their geographical reach are in a strong position to influence the formulation of policies and regulations by governments in developing countries that often suffer from a weak regulatory environment as opposed to developed countries (Akamp & Müller, 2013).

A sample size of 141 multinational operating in Malaysia was chosen. Nine constructs were developed; among them was the supplier development. This construct was measured by four items that included training and education of suppliers. The study used a questionnaire survey to gather data from 141 informants and data was analyzed by the use of partial least squares structural equation modeling method. The findings indicated that supplier development had a significant positive influence on suppliers' social performance. This is a demonstration that multinationals supplier support enhances the ability of suppliers to improve their social performance.

Manufacturing firms always strive to upgrade the skills, competencies, capacities, and capabilities of their supply base networks. This is achieved through structured training programs that facilitate relationship building. Similarly, relationship development is built along with the improvement of the operational performance of the parties involved. Shahzad *et al*., (2016) provided empirical evidence that firms that implement supplier development improve operationally, quality, and delivery performances. The assertion was in contrast to the findings of Chae *et al*., (2017) that buyers use power to gain commitment and compliance with the suppliers.

## IV. Research Methodology

A descriptive research design was adopted for this study supported by the cross-sectional survey. The design was considered suitable due to the geographical scope of the study area, the resources required, methods of data collection, and analysis involved in to generate useful information (Cooper & Schindler, (2012). The design offered a suitable avenue to collect data from several farmers in specific milling zones. It aided the study to empirically test direct supplier development as conceptualized through supplier training and performance of sugarcane enterprises in Kenya. This type of design has previously been used by Imbambi *et al*., (2017).

The population of 250,000 contracted and private small scale farmers spread across all public and private millers in Kenya was used for this study. A representative sample was selected considering ease of data collection, cost, geographical reach, sufficient statistical power, estimated measurement variability, significance criterion, and the level of precision (Singh & Masuku, 2014). Stratified sampling and simple random sampling techniques were used in the selection of informants since the population under consideration constituted different groups affiliated to different millers. The informants were stratified and distributed to each miller in proportion to acreage under sugarcane cultivation by the miller. The Yamane (1967) formula was applied to determine the sample size, where 95% confidence level and P-values 0.05 were assumed. This method was also used to calculate a sample size from a large population by Lusuli *et al*., (2017).

$$n = \frac{N}{1 + N\,(e)\,2} \quad \ldots\ldots\ldots\ldots \text{(Yamane, 1967).}$$

Where: n = sample size
N = population size
e = level of precision (0.05)

Therefore

$$n = \frac{250{,}000}{1 + 250{,}000(0.05)2} \quad 400.$$

The study established a representative sample of 400 farmers, distributed proportionally to each miller as shown in the table 1.

*Table 1:* The Sample Design

| Company | Acreage | Population | Proportion | Sample size |
|---|---|---|---|---|
| Chemelil | 14730 | 2008 | 8.0 % | 32 |
| Muhoroni | 16538 | 22464 | 9.0% | 36 |
| Kibos | 4394 | 5968 | 2.4% | 10 |
| Butali | 18538 | 25180 | 10.1% | 40 |
| West Kenya | 24871 | 33783 | 13.5% | 54 |
| Nzoia | 25124 | 34127 | 13.7% | 55 |

| | | | | |
|---|---|---|---|---|
| Mumias | 40608 | 57336 | 23.0% | 92 |
| Sony | 16123 | 21901 | 8.8% | 35 |
| TransMara | 12012 | 16314 | 6.5% | 26 |
| Sukari | 9511 | 12919 | 5.2% | 21 |
| Total | 184052 | 250,000 | 100% | 400 |

*Source: Kenya Sugar Board ( 2015)*

A questionnaire developed after a review of available literature was used as a tool to collect primary data and report the responses. It was considered cost-effective and easy to administer (Neuman, 2013). The questionnaire consisted of both closed and open-ended questions. To enhance the validity and reliability of the data collection tool, a 10% pre-test was undertaken involving randomly selected informants that would not constitute the main study. The study used a drop and pick strategy to distribute questionnaires. This approach was well suited for this study as it helped in improving the response rate. Secondary data was extracted from a five-year published company's records of farmers' payment statements. Data were cleaned, coded, processed, and analyzed using Statistical Package for Social Science (SPSS version 23). Inferential statistics viz. correlation and regression analysis were applied to determine how supplier training impacted the performance of sugarcane enterprises in Kenya.

## V. Results

### a) Demographic Supplier training

The respondents in the study consisted of both male and female farmers that supply all the established sugar factories in Kenya. The results in Table 2 show that sugarcane farming is dominated by male (63.5%) and women at (36.5%). The findings validate those of Dubb (2014) who established that sugarcane faming is labour intensive, thus male account for majority of farmers in South African Umfolozi region.

*Table 2:* Composition of Farmers (Respondents)

| | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Male | 186 | 63.5 | 63.5 |
| Female | 107 | 36.5 | 100.0 |
| Total | 293 | 100.0 | |

### b) Descriptive Statistics

The study sought to establish the extent to which millers provide supplier training among the sugarcane farmers. Table 3 shows that most of the respondents (42.8%) indicated that training on fertilizer application was to a less extent, 30.7% of the respondents showed that training on fertilizer application was to a moderate extent and 14.5% to a no extent at all. This implied sugarcane millers never attached any significant importance to fertilizer application on sugarcane, yet fertilizer has a substantial bearing on sugarcane productivity. On the other hand, farmers prioritized fertilizer application in the right quantities as having a positive impact on farm sugarcane production. The finding is in line with that of Zulu *et al*., (2019) in the study of factors affecting small-scale growers in Ndwende in South Africa found that the correct amount of fertilizer application had a significant increase on sugarcane production.

The capacity of the trainers to deliver the required knowledge to farmers on sugarcane farming was rated less extent, moderate extent, and large extent by 37.1%, 29.2%, and 17.2% of the respondents. Requisite technical know-how in sugarcane crop husbandry can have a positive impact on sugarcane production. The extent of training to farmers on land preparation was rated as to a moderate extent, to a less extent, and a large by 36.9%, 28.6%, and 16.9 % of the respondents. Training on cane planting was rated by 30% 0f the respondents as to a moderate extent an indication of the importance of prior preparation cane planting commences. Sugarcane production requires technical knowledge by the grower due to the many operations involved. The findings agree with the report of the South African Cane Growers Association (2011) that indicated the grower's labour must be resourced in technical know-how to produce a quality crop.

Training on weed and pest control was rated by (41.1%) of the respondents as to less extent. Weed and pest control can have a significant impact on crop yield. The use of either manual or chemical application should follow a planned schedule to ensure that weeds and pests do not affect crop production. The findings agree with those of (Owino *et al*., 2018; Hussain and Khattak, 2008) established that weed and pest control is a substantial overhead cost of sugarcane productivity in Kenya and South Africa. The results on training on intercropping also show that (32.9%) of the respondents indicated that the training was done to a moderate extent, while on the overall assessment of the extent to which farmers had received training on sugarcane farming, 29.4% of the respondents indicated that it was to a less extent and 28.7% indicated that it was to a moderate extent. The results imply that training on

various aspects such as fertilizer application, land preparation, cane planting, weed, and pest control, and methods of cropping was not very effective. The findings are supported by Cockburn *et al*., (2014) that concluded the high cost of inputs and weed control are the major constraints of sugarcane production. Training through revamped extension services is considered an important input through which smallholder farmers could be motivated to improve cane yield and profitability.

*Table 3:* Descriptive Results on Supplier Trainings

| Supplier Training Indicators | Not at all | Less extent | Moderate extent | Large extent | Very large extent | Mean | Median | Skewness |
|---|---|---|---|---|---|---|---|---|
| Extent to which training on fertilizer application has been done to farmers | 14.5% | 42.8% | 30.7% | 9.5% | 2.5% | 2.4 | 2 | 0.5 |
| Extent to which trainers had capacity to deliver the required knowledge on sugar cane farming | 13.4% | 37.1% | 29.2% | 17.2% | 3.1% | 2.6 | 2 | 0.3 |
| Extent to which farmers have been trained on land preparation | 13.8% | 28.6% | 36.9% | 16.9% | 3.8% | 2.7 | 3 | 0.1 |
| Extent to which the farmers have received training on cane planting | 16.2% | 26.6% | 30.0% | 17.9% | 9.3% | 2.8 | 3 | 0.2 |
| Extent to which farmers have received training on weeding and pest control | 23.0% | 41.1% | 18.8% | 13.1% | 3.9% | 2.3 | 2 | 0.6 |
| Extent to which farmers have received training on intercropping in their cane farms | 23.6% | 31.8% | 32.9% | 10.4% | 1.4% | 2.3 | 2 | 0.3 |
| Extent to which farmers receive trainings | 21.5% | 29.4% | 28.7% | 17.9% | 2.5% | 2.5 | 2 | 0.2 |

c) *Inferential Statistics*

i. *Hypothesis Testing using Correlation*

The objective of the study was to assess the impact of supplier training on the performance of sugarcane enterprises in Kenya. The research hypothesis to test the objective was stated in the alternative as Ha1: There is a significant positive relationship between supplier training and performance of sugarcane enterprises in Kenya. The Pearson correlation coefficient tested the strength of the relationship between the independent variable and the dependent variable. The results in Table 4 show a positive correlation of r= 0.347, p=000, which was significant at a 95% level of confidence. This result demonstrates that there is a positive association between supplier (farmer) training on all aspects of crop husbandry and the performance of sugarcane enterprises. It implies that as the level of farmer training increases, the level of performance of sugarcane enterprises also increases, resulting in improved farm sugarcane yield. The improved sugarcane yield supports the miller's operations and increases profitability for both the farmer and the miller.

*Table 4:* Correlation between Supplier training and performance of sugarcane

| Variables | Supplier Training | Performance |
|---|---|---|
| Supplier Training | 1.00 | |
| Performance | 0.347* | 1.00 |

*** p<0.01, * p<0.05*

d) *Simple Linear regression Tests*

i. *Relationship between Supplier Training and performance of sugarcane*

The objective of the study was to assess the impact of supplier training on the performance of sugarcane enterprises in Kenya. A simple linear regression test was run to assess the effect of supplier training on the performance of sugarcane enterprises. The results in table 5 show an R-value of .347, an indication that supplier training and performance of sugarcane enterprises were positively correlated. The R square value was 0.121. The result implied that the supplier (farmer) training accounted for 12.1% of the variation in the performance of sugarcane enterprises. The balance of 87.9% could be accounted for by other variables introduced in the model. Therefore the study concluded that the model was adequately explaining the relationship.

*Table 5:* Model Fitness Summary-Supplier Training

| Indicator | Coefficient |
|---|---|
| R | .347 |
| R Square | .121 |
| Adjusted R square | .118 |
| Std. Error of estimate | .46385 |

Table 6 shows the ANOVA results. The results show an F statistic of (1,285) =39.096, ($p<0.05$). The result demonstrates that the independent variable in the model had a significant effect on the dependent variable. Statistically, the results imply that the independent variable was a good predictor of the performance of sugarcane enterprise. The result returned an F value of 39.096 and $p=0.000$, which was less than 0.05. The results demonstrate that the training of farmers was statistically significant in the improvement of sugarcane production. The more the millers supported farmers through the more the increased sugarcane yields, and the opposite is also true.

*Table 6:* Analysis of Variance -Supplier Training

| | Sum of squares | df | Mean squares | F | Sig |
|---|---|---|---|---|---|
| Regression | 8.412 | 1 | 8.412 | 39.096 | .000 |
| Residual | 61.319 | 285 | .215 | | |
| Total | 69.731 | 286 | | | |

The coefficient test results in table 7 show that a change in supplier training by one unit increased the performance of sugarcane enterprises by 0.203units. The change was positive implying that an increase in the training positively contributed towards the improvement in the performance of sugarcane enterprises. The constant was significant ($p<0.05$) and t-values were found to be positive and higher than the stated 1.96, and calculated as 27.822 and 6.253 respectively, thus indicating that when all other variables were controlled in the model, the level of sugarcane production would be 2.415 units. The findings are consistent with those of Joshi *et al*., (2017) which found that supplier training and Education resulted in improved performance of suppliers and buyers

*Table 7:* Regression Coefficients-Supplier Training

| | Unstandardized Coefficient | | Standardized Coefficient | t | Sig |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| ( Constant ) | 2.415 | .087 | | 27.822 | .000 |
| Supplier Training | .203 | .033 | .347 | 6.253 | .000 |

## VI. Discussion of the Findings

The objective of the study was to determine whether supplier training enhances the performance of sugarcane enterprises in Kenya. The study found to support that there was a significant positive correlation between supplier training and performance of sugarcane enterprises in Kenya; hence, the hypothesis found support. The result demonstrates that when training of farmers in modern sugarcane farming is enhanced, it would result in improved sugarcane yield which would minimize the perennial shortage of raw material often experienced in the industry. The findings are supported by that of Njoroge & Mwangangi (2018) who concluded that supplier training in aspects like quality, production and management was responsible for improved procurement performance in Kenyan public universitie.

Training of farmers should be well structured with specific consideration of the target group and the interests of the miller. The action is informed by the understanding that developing a supplier in an industry where buyers are competing for the same supplier that produces the same product is difficult to achieve with certainty. Important issues like the level of education, age, the capacity of trainers, the content of the subject, and the method of delivery should be considered. The miller should put more effort into the selection of farmers to be developed and consider signing a contract with the farmer. This is intended to avoid the possibilities of a miller spending so much on training the farmer and later the farmer ends up selling the crop to another miller, resulting in the sugarcane poaching scenario currently being experienced in Kenya. Lawson *et al*., (2015) opined that buyer supported training programs that are well planned and extended to suppliers help suppliers in attaining capabilities that can increase the performance of suppliers and improve overall firm performance.

The Pearson correlation test R-347 found a significant positive relationship between the training and

performance of sugarcane enterprises. The level of the relationship though positive, was not very strong. The result attests to the fact that if the training were increased, the corresponding performance of cane farming would be significant. However, there has been a decline in sugarcane yield per acre. However, there has been a decline in sugarcane yield per acre over the years. This aspect can be explained based on contextual and structural issues in sugarcane farming, drawing on the concept of technical efficiencies and the law of diminishing returns.

The analysis of the response rate shows that majority of the farmers, 64.4% are private; 48.1% have been farmers for a period of between 5-10years and 30.7% have been farmers for more that10years. This is an indication that 78.8% of the farmers have been in the trade for a long time and must have received some training on sugarcane farming during that period. Obviously; some farmers may have developed apathy towards training as they feel that they have been growing cane for a longer period and therefore they do not need further training. The training content, and delivery methods and the prevailing conditions in the sugarcane subsector may have contributed to the results (Mati & Thomas, 2018). Training is a long term investment, and therefore, the results of training may not be felt in the short term. Sugarcane farming requires a lot of farm inputs and considering that the majority of the farmers are private; they may not afford to invest adequately in inputs to support sugarcane production. The use of the correct fertilizer input combination and cost has a significant influence on sugarcane production (Owino *et al*., (2018).

Land tenure policy in Kenya allows subdivision of land into smaller parcels that are uneconomical to carry out meaningful farming. The continued subdivision of land into smaller plots results in many diseconomies that affect technical efficiencies. The continued use of ammonia and urea-based fertilizers has made the land to be acidic. Without adequate liming, the soils remain acidic and unproductive; the periodic application of agricultural lime becomes necessary. Amolo *et al*., (2017) established that soils in the western Kenya sugar belt were acidic and was one of the major factors responsible for the decline in sugarcane yield in the area. Similarly, it is not clear if the correct type of fertilizer, in the specified quantity, is applied at the scheduled time during the correct crop period. The majority of seed cane planted consists of varieties that are of reduced yield since there has been a slow adoption of new seed cane varieties that possess improved yield attributes (Thuo *et al*., 2019).

Sugarcane has two types of crop period, the plant crop is the first crop; after the first harvest, and the next crop is the ratoon crop. Owing to the high prices of seed cane, most farmers opt to continue to cultivate the ratoon crop. In most cases, the ratoon crop has an inverse relationship with crop yields, and the prevailing on-farm stock of sugarcane in the country consists of ratoon crops (AFA, 2015).In aggregate, it can be inferred that these factors result in allocative inefficiency in sugarcane and other agricultural production that affect overall farm yield as opined by (Mulwa & Emrouznejad, 2013).

## VII. Conclusion

The study accessed the effect of supplier training on the performance of sugarcane enterprises in Kenya. The research hypothesis was supported based on the linear regression results that showed that supplier training had a positive influence on the performance of sugarcane enterprises in Kenya. The result confirms the view that buyer investment through the direct supplier development aspect of supplier training improves supplier capabilities that translates to improved performance of the buyer and supplier. The study, therefore, concluded that supplier training significantly contributes positively to improved performance of sugarcane enterprises in Kenya. Consequently, sugarcane millers should strive to train farmers in modern innovative methods to improve sugarcane yield and help to stem the recurring shortage in the country. This study validates similar results in other areas of the manufacturing sector in Kenya, specifically those concerned with the processing of agricultural-based raw materials that require a long gestation period as opposed to manufactured raw material. The study also provided the much-needed reference resource for similar future research spanning the less unexplored area of agricultural raw materials in Kenya.

Previous studies have mostly approached supplier development as a strategic sourcing strategy particularly concerned with the seamless inflow of manufactured raw material resources to support buyer operational needs. Few studies if any have been devoted to exploring agricultural raw materials aspects of supplier development, yet this is key to supporting the sugarcane manufacturing sector and the economy as a whole. This study contributes to the supply chain research stream of a supplier development initiative in the form of supplier training. This is an investment by the buyer but is also considered one aspect of resource seeking by the buyer to support its uninterrupted manufacturing process. Supplier training is a direct supplier development initiative that seeks to empower the supplier through the efforts of the buyer forming the wider resource exchange between the buyer and the supplier and is premised on the human capital theory. The found support for the hypothesis as there was a significant positive correlation between supplier training and sugarcane enterprises in Kenya. This provides support for human capital theory through direct supplier

development that training of farmers imparts knowledge, skills, and capabilities in the trainee. The study found that supplier training improves the performance of sugarcane enterprise performance in Kenya. The finding is supported by Overstree *et al*., (2019) who opined that supplier training can enable the buying firm to gain a competitive advantage.

To improve the training of sugarcane farmers on the practical aspects of cane farming the study recommends that each miller establish a demonstration plot to enhance the ability and capacity to deliver on training. The study also recommends that millers should develop a comprehensive policy to govern their engagement with the farmers. Such a policy should have a provision of entering into a contract with farmers to facilitate seamless engagement and minimize cane poaching. The study further recommends that millers together with other stakeholders should strive to address the issues of technical inefficiencies in sugarcane production both in the short and long term. This is likely to provide insights into the underlying dynamics affecting sugarcane production in Kenya. Further studies are recommended to explore areas where sugarcane is grown under the contract regime as compared to sugarcane grown under the liberalized settings to provide empirical evidence on the constraints arising from the technical allocative inefficiencies that embed full exploitation of supplier development strategy in sugarcane farming in Kenya.

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# Global Journals Guidelines Handbook 2020

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## Fellows/Associates of Management and Business Research Council

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**Acknowledgments**

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- The paragraph before spacing of 1 pt and after of 0 pt.
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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)

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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

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

*Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection*.

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

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

## Criterion for Grading a Research Paper (Compilation) by Global Journals

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

| Topics | Grades | | |
|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
| ***Abstract*** | Clear and concise with appropriate content, Correct format. 200 words or below | Unclear summary and no specific data, Incorrect form<br><br>Above 200 words | No specific data with ambiguous information<br><br>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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