

**MANAGEMENT EFFICIENCY AND PRODUCTIVITY RELATIONSHIP  
OF PRIVATE UNIVERSITIES IN SOMALIA  
(on the Example of the University of Amud)**

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**ЭФФЕКТИВНОСТЬ УПРАВЛЕНИЯ И ПРОДУКТИВНОСТЬ ВЗАИМООТНОШЕНИЙ  
ЧАСТНЫХ УНИВЕРСИТЕТОВ В СОМАЛИ (на примере университета Амуд)**

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**Abstract**

The study investigated the relationship between management efficiency and productivity of private universities in Somaliland/Somalia, by taking the case of Amoud University, Boroma. It is the source for higher level manpower for specialized sectors of a country. For this, it requires management efficiency: But productivity of private universities in Somaliland had been low. For example in Amoud University, no research was recorded since 2010 and the quality of graduates has been rated at about 48.96% while learning at the university is largely by rote. This called to question of the management efficiency. Guided by Max Weber Bureaucratic Theory. The study adopted quantitative research paradigm, using a cross sectional survey research design, on a stratified sample of 544 respondents of students, managers, administrators and teachers. Data was analyzed using regression. The study found that (a) management efficiency of Amoud University was poor, (b) productivity of Amoud University was low. The researcher recommends that (a) Amoud University develops clear control and guidelines for the minimum and maximum management efficiency (time, money, material and effort) (b) Amoud University reviews its curriculum and make more relevant teaching and learning methods (c) that Amoud University improves the emphasis and weight put on research and innovation.

**Keywords:** management, efficiency, productivity, private universities.

**Аннотация**

Изучены взаимосвязи между управлением эффективностью и продуктивностью частных университетов в Сомалиленде/Сомали на примере университета Амуд (г.Борама). Он является источником рабочих кадров наиболее высокого уровня для специализированных секторов страны, однако нуждается в эффективном управлении. Продуктивность университетов Сомалиленда находится на очень низком уровне. К примеру, в университете Амуд с 2010 г. не было зарегистрировано ни одного исследования, а квалификация выпускников оценивается в 48,96%. Так возник вопрос эффективности управления. В исследовании использована теория бюрократии Макса Вебера. В обучении была применена квантитативная исследовательская парадигма, в которой используется поперечное сечение по стратифицированной выборке респондентов из 544 студентов, менеджеров, администраторов и учителей. Данные были проанализированы на основе регрессии. Обнаружено: (а) эффективность управления в университете Амуд была довольно низкой, (б) продуктивность университета также невысокая. Университету рекомендовано: (а) разработать систему контроля и рекомендации для минимальной и максимальной эффективности управления (время, деньги, материал и усилия); (б) пересмотреть учебную

программу и методы обучения, для того чтобы сделать процесс обучения и изучения актуальным и современным; (в) акцентироваться на проведении новых исследований и внедрении инноваций в свою деятельность.

**Ключевые слова:** управление, эффективность, продуктивность, частные университеты.

## **Introduction**

Education, and higher education in particular, has more or less similar origin in Africa. Higher education is an optional final stage of formal learning that occurs after completion of secondary education, often delivered at universities, and other institutions of higher learning (Anselin, 1977).

The idea of university started in Europe in 10th century. The first university was Bologna established in 1088 in Italy (Nuria & Bergan, 2006). Most universities were founded from pre-existing schools (Anselin, 1997). The oldest institutions of higher learning founded in the mid-12th century were Paris, Oxford and Cambridge in Europe (LFHE, 2013). The first university outside Europe was the Ponticia in Mexico which is today the National University of Mexico founded in 1551 (Gonzalez, 2009).

According to Jibril (2015), Africans began their first universities in the 19th century. The first one was Sierraleon University started in Sierraleone in 1827 (Baker, 1964). Since then so many universities come into the market every year (Chadwick, 2003). In Somalia, the first university was Somali National University in Mogadishu which was established in 1954 (Hayde, 1991). Somaliland a self-declared state from the larger Somalia has more or less similar history to Somalia. Amoud University was established in 1997 as community based or non-profit seeking university.

## **Statement of the Problem**

Productivity of private universities in Somaliland has been low. In the case of Amoud University, there is no recorded research since 2010. While there have been a series of innovations, they have been intended to specific problems for the departments and the university rather than as academic advancements. The quality of graduates has been rated at about 48.96% while learning at the university is largely by rote. Absence of key laboratories and demonstration fields means that students can only memorize facts and reproduce in examinations.

## **1. Theory**

Guided by the Theory of Bureaucracy developed by Max Weber in (1920), this study takes the position that universities are purposeful collective action structures, made up of multiple individuals working together to accomplish a goal. How they work together to achieve a goal depends on organizational structure; which are the patterns of relations between these individuals. This structure is related to organizational rationality, efficiency, effectiveness and control systems (Howard, 2012).

### **1.1. Conceptual Framework**

This study was guided on bureaucratic theory of management and based on the framework in Figure 1.

Figure 1 presents the hypothesised relationship between management efficiency (IV) and productivity (DV) in private universities in Somaliland. Management efficiency is conceptualized as the proportion of time, money, material and effort that contribute to productivity. Productivity was conceptualized as graduates, learning, research and innovations in private universities. Graduates were operationalized as number and quality of students released by the university; learning was conceptualised as knowledge, skills and attitudes acquired by graduates and research as volume and quality of research produced between 2012-2016. Innovations were operationalized as the quality and number of new ideas generated between 2012-2016. Anchored on the Bureaucratic Theory of Max Weber, the framework holds that productivity of private university as a function of management efficiency: the better the management efficiency, the higher the productivity.

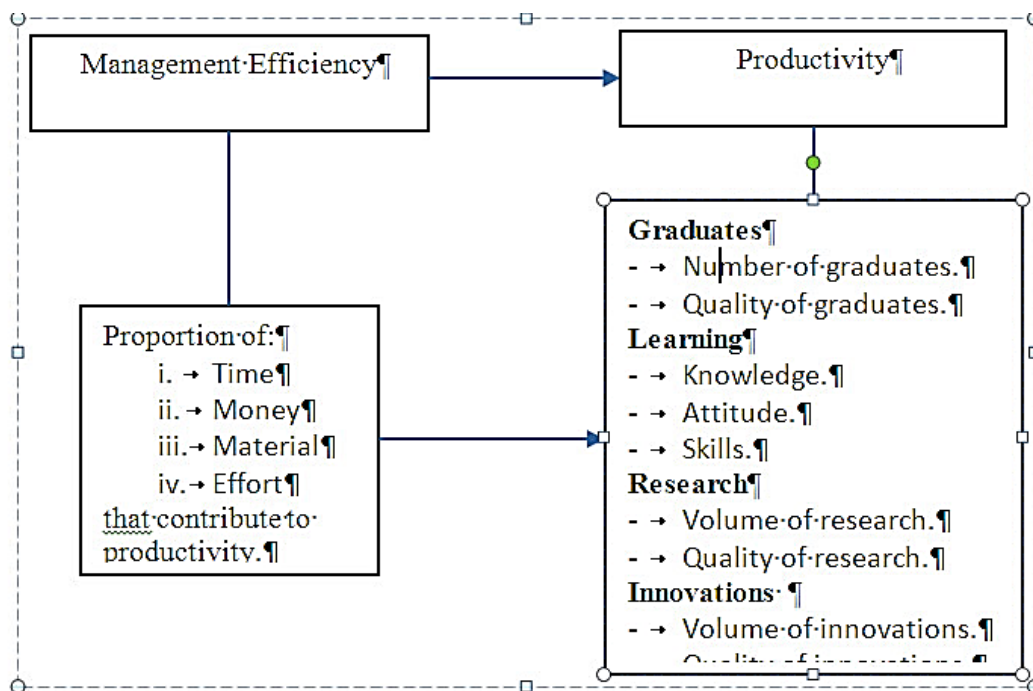


Fig. 1. Conceptual framework for management efficiency and productivity relationship

## 1.2. The Concept of Management Efficiency

Efficiency generally signifies a level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs. In this context, efficiency relates to the use of all inputs in producing any given output, including personal time and energy (Rosenberg, 2013). As Gary (2009) points out, efficiency is a measurable concept that can be determined by determining the ratio of useful output to total input. The idea is to minimize the waste of resources such as physical materials, energy and time, while successfully achieving the desired output (Thomas, William & Carl, 2001). In economic terms, efficiency is the optimization of resources in order to best serve each person in that economic state. While there is no specific threshold that determines the efficiency of an economy, but indications include goods being produced at the lowest possible cost and labor being performed with the greatest possible output (John & James, 2000).

Further, based on the practice view of management activity, the order degree of any organization depends on the synergic condition and degree of all staffs realizing organization's goal in their organization, whereas, the synergic degree depends on knowing and identifying degree of all staffs to goal of organization (Mettler & Rohner, 2009). In this context, knowing degree relevant to propagandizing goal of organization, and identifying degree intimately relevant to authority, benefit and truth condition of goal of organization is important. Identifying degree of the organization staff depend on (i) whether or not the goal of the organization accords with social and economic development goal of country or region; (ii) whether or not realization of the organization goal can bring real benefit for organization staff; and (iii) how the immanent truth degree of the organization goal (Head, 2005).

## 1.3. The Concept of Productivity

Productivity describes various measures of the efficiency of production. A productivity measure is expressed as the ratio of output to inputs used in a production process, such as output per unit of input. Productivity is a crucial factor in production performance of firms (Gibson & Shrader, 2014). It should be understood that there are many different definitions of productivity and the choice among them depends on the purpose of the productivity measurement and/or data availability.

Productivity measures that use one class of inputs or factors, instead of multiple factors, are called partial productivities. Generally, measurement in production means measures of partial productivity. Interpreted correctly, these components are indicative of productivity development, and approximate the efficiency with which inputs are used in an economy to produce goods and services (Benoit, 2011). At the organizational level, typical partial productivity measures are such things as worker hours, materials or energy used per unit of production (Bitting, 2011).

So in the answer to “What is 'Productivity’”, productivity is an economic measure of output per unit of input. Productivity gains are vital to the economy, as they mean that more is being accomplished with less. Capital and labor are both scarce resources, so maximizing their impact is a core concern of modern business. Productivity enhancements come from technology advances, such as computers and the internet, supply chain and logistics improvements, and increased skill levels within the workforce.

#### **1.4. Productivity in Higher Education**

The importance of productivity growth to an economy is widely recognized because the extent to which living standards can be improved over time depends almost entirely on the ability to raise the output of its workers. From the perspectives of individual industries and enterprises, gains in productivity are a primary means of offsetting increases in the costs of inputs, such as hourly wages or raw materials. Likewise, in higher education, productivity improvement is seen as the most promising strategy for containing costs in the continuing effort to keep college education as affordable as possible. Without technology-driven and other production process improvements in the delivery of service, either the price of a college degree will be beyond the reach of a growing proportion of potential students or the quality of education will erode under pressures to reduce costs.

Secondly, their output or their prices are not determined within a fully competitive market, and thus their revenues or prices (essentially tuition) are not indicative of the value of the industry’s output to society (Freeman 2008). The inputs to education are substantially similar to those of other productive sectors: labor, capital, and purchased inputs. Higher education is distinct, however, in the nature of its outputs and their prices. The student arrives at a university with some knowledge and capacities that are enhanced on the way to graduation. In this instance, the consumer collaborates in producing the product (OECD 2008). Moreover, higher education is a typically multi-product firm, producing a mixture of instructional programs and research as well as entertainment, medical care, community services, and so on.

##### **1.4.1. Management Efficiency and Graduates**

Higher education qualifies graduates for jobs or additional training as well as increasing their knowledge and analytic capacities. These benefits of undergraduate, graduate and professional education manifest as direct income effects, increased social mobility, and health and other indirect effects. There are measures to monitor changes in these outputs, narrowly defined: numbers of degrees, time to degree, degree mix, and the like. Attempts have also been made to estimate the benefits of education using broader concepts such as the accumulation of human capital. For estimating the economic returns to education, a starting point is to examine income differentials across educational attainment categories and institution types, attempting to correct for other student characteristics. Researchers since at least Griliches (1977), Griliches and Mason (1972), and Weisbrod and Karpoff (1968) have estimated the returns to education, controlling for students’ cognitive ability by including test score variables in their wage regressions.

While their role is accepted, the measures identified above should not be confused with productivity as defined in this report. Used as accountability tools, one-dimensional measures such as graduation rates and time-to-degree statistics can be abused to support misleading conclusions (e.g., in making comparisons between institutions with very different missions). Also, as Bowen (2009) indicates, because graduation rates are strongly affected by incoming student ability, using them in a high-stakes context may induce institutions to abandon an assigned and appropriate

mission of broad access. The ability to distinguish among these outcomes is crucial both for interpreting student-faculty ratios and for policy making (both inside and outside an institution). Time to degree, graduation rate, and similar statistics can be improved and their misuse reduced when institutional heterogeneity - the mix of full- and part-time students, the numbers of students who enter at times other than the fall semester, and the proportion of transfer students - is taken into account. Additional refinements involve things like adjusting for systemic time-frame differences among classes of institutions or students.

#### **1.4.2. Management Efficiency and Students' Learning**

A fully specified production function for higher education must include student time as an input. The student time input, if defined as the number of hours spent in school-related activities multiplied by an opportunity cost wage rate, would be substantial (National Research Council, 2005). Traditionally, unpaid student time is a relevant input to the production function (Babcock & Marks, 2011).

Schools may attempt to artificially boost standardized test scores (Frensch, 2010) or even manipulate test scores through outright cheating (Jacob and Levitt, 2003). These types of behaviors may be the reason that the recent National Research Council (2011) panel on school accountability expressed a skeptical view about accountability while recognizing the positive gains associated with these policies. To sum up, many proxy measures of productivity have been constructed over the years. They have some utility in comparing institutions and programs, if used cautiously and with knowledge of their drawbacks. But experience has shown that they can result in major misunderstandings and the creation of perverse incentives if applied indiscriminately. As with productivity measurement itself, these proxies are significantly affected by context. Among the most important contextual variables that must be controlled for are institutional selectivity, program mix, size, and student demographics.

#### **1.4.3. Management Efficiency and Research and Innovation**

Research refers to any new science or thinking that will result in a new product or new features for an existing product. Research can be broken down into either basic research or applied research. Basic research seeks to delve into scientific principles from an academic standpoint, while applied research seeks to use that basic research in a real-world setting (Frascati, 2002). Research is a creative and systematic work undertaken in order to increase the stock of knowledge - including knowledge of humankind, culture and society - and to devise new applications of available knowledge (Edqvist, 2006). But for a research to qualify for a research and innovation, it must be (i) aimed at new findings (novel); (ii) based on original, not obvious, concepts and hypotheses (creative); (iii) uncertain about the final outcomes (uncertain); (iv) planned and budgeted (systemic), and (v) lead to results that could be possibly reproduced (transferable and/or reproducible (El Kaffass, 2007).

Governments pursue reforms to build world-class systems of higher education, which assure quality in both research and teaching. In contrast, the term "World-Class University" tends to denote research-oriented institutions, although this should also recognize those who achieve excellence through innovative approaches to learning (Frascati, 2002). As Ramirez (2008) points out, major challenges for research current issues facing the research function and its environment include equity; quality; relevance; ownership; and international networking. An ever-growing number of nations of varying size have now given priority to developing their knowledge base through higher education, research and innovation, and to commit the necessary resources to this goal (Salmi, 2003).

## **2. Methodology**

### **2.1. Research Design**

This study adopted quantitative research paradigm. To unearth more facts and better explain the concept about the management efficiency and productivity relationships of private universities in

Somaliland. Quantitative paradigm is the philosophy that knowledge is observable, measurable and independence of research (Oso, 2016). This approach guided the researcher through objectives, data collection and analysis. This study adopted a descriptive design (Young, 1975). According to Kumar Ranjit (1999) this design is best suited to studies aimed at finding out the prevalence of a phenomenon, situation, problem, attitude or issue by taking a cross- section of the population. They are useful in obtaining an overall picture as it stands at the time of the study (Leedy, 1997). They are designed to study a phenomenon by taking a cross- section of it at one time. Study was descriptive employing triangulation qualitative, quantitative & cross-section (Amin, 2004).

Cross-sectional survey is one form of the general survey research design. Surveys provide numeric description of the trends, attitudes, perception or opinion within a given population (Thomas, 2003). The main purpose of survey is to assess the prevalence of an outcome of interest for the population or subgroups within the population at a given time point (Levin, 2006). Survey was adopted in this study because it does not involve manipulation (Oso, 2013). Manipulation exists when the researcher directly determines the level of variables in a study (Abdisalan, 2015).

## **2.2. Research Hypothesis**

### **General Research Hypothesis**

The general research hypothesis of this study was – management efficiency has a significant relationship with productivity of private universities in Somaliland.

### **Specific Research Hypothesis**

This study was guided by the following research hypothesis:

- Management efficiency has a significant relationship with graduates in Amoud University.
- Management efficiency has a significant relationship with learning in Amoud University.
- Management efficiency has a significant relationship with research and innovation in Amoud University.

## **2.3. Data Analysis**

Both quantitative and qualitative methods were used for data analysis. At the end of each section data was summarized into major events and results noticeable points and answers were grouped where by the interpretations and analysis of data findings were shown (Shirley, 2004). Variables were examined in every section to find out whether they were affecting with each other or reflecting answers given by respondents. A descriptive analysis of data was used; according to (Oso & Onen, 2008), descriptive analysis is the use of measures of central tendencies such as means, median, and mode etc. Some of the commonly used descriptive analysis techniques are summarised in table and use percentage. Inferential analysis is used to draw conclusions concerning about the relationship and difference found in research results particularly correlation.

Content analysis of the information obtained from literature review. Manual analysis of qualitative data from questionnaire were coded and analyzed long major variables. Quantitative data from questionnaire were coded and analyzed using the statistical package particularly SPSS program for social science where frequency tables were generated to illustrate the findings. So the researcher used both descriptive and inferential statistics especially percentage and correlation.

Quantitative data was analyzed using simple regression analysis method. Regression is usually used to predict unknown variables from known ones (Seber, 2012). It is usually the best design where several factors are suspected to individually or collectively influence another variable (Altman, 1990). In this study, the researcher investigated the relationship between management efficiency and the productivity at Amoud University on the assumption that management efficiency is associated with productivity of the Amoud University. This study assumed the general model of the simple regression which is:  $Y^1 = aX + b \dots$  Eq 1

where  $Y^1$  is the predicted or dependent variable,  $X$  is predictor or independent variable,  $a$  is regression coefficient, and  $b$  is constant term (Rosenberg, 2013). The researcher investigated these coefficients and;

- i. R which is the correlation between a factor (management efficiency) and productivity of Amoud University both in terms of strength and direction;
- ii.  $R^2$  which was the variance in productivity of Amoud University explained from the knowledge of management efficiency; and
- iii. F which was the overall significance of the regression model.

Regression was preferred because several factors were suspected to individually and collectively influence the productivity of Amoud University. A simple regression was adopted based on the assumption that:

The relationship between the predictor variable and the dependent variable is linear in nature.

For each population denoted by value of X, the distribution of Y values are normal.

For each population denoted by values of X, the variances of these populations are equal.

A linear relationship is one that can be expressed in a graphical format where the variable and the constant are connected via a straight line or in a mathematical format where the independent variable is multiplied by the slope coefficient, added by a constant, which determines the dependent variable (Cohen, 2008). Normal means that the sampling distribution of the mean is unbiased (Escobar, 1994), and variances are equal when the scatter plots are evenly distributed about the line of best fit (Oso, 2013).

Regression was used to determine if there was significant relationship between management efficiency and each element of productivity of Amoud University, at 95% level of confidence, .05 level of significance and 5% margin of error. These values were selected because they are commonly used in social science research (Schady, 2000). The 95% level of confidence means that if the same population is sampled on numerous occasions and interval estimates are made on each occasion, the resulting intervals would bracket the true population parameter in approximately 95% of the cases (Katragadda, 2008). The significance level (alpha-level) of a statistical test is the pre-selected probability of (incorrectly) rejecting the null hypothesis when it is in fact true, there was only 5% chances of rejecting a true null hypothesis (Salter, 2014). The 5% margin of error indicates that the maximum expected differences between the true population parameters and the sample estimate of that parameter is  $\pm 5$  (Oso, 2013).

### 3. Results

#### 3.1. Management Efficiency and Productivity Relationship

Having described management efficiency and productivity individually, this section now describes the relationship between the two variables as was envisaged in the objectives. Management efficiency was obtained from the sum of all elements of management efficiency (Time + Money + Materials + Effort) as described in 3.2.1. Management efficiency is now related to each element of productivity.

##### 3.1.1. Management Efficiency and Graduates at Amoud University

The first element of productivity investigated is graduates. Graduates were measured from the proportion of students admitted who actually graduated, and from the GPAs, and coded as described in Table 1. The results of all students in the faculty were pooled together and an average obtained as the average score of graduates for the faculty. The results were tested using a linear regression method to test the hypothesis that:

There is no significant relationship between management efficiency and graduates at Amoud University.

$H_{01}$ :  $R_{MGE,GRD} = 0$ ; where MGE is management efficiency and GRD is graduates.

The results of regression of graduates on management efficiency at Amoud University are summarized in Table 1.

Table 1 summarizes the regression of graduates on management efficiency at Amoud University. The R statistics is a measure of the association between management efficiency and graduates. It shows that there is a very weak positive association between management efficiency and

graduates at Amoud University. The graduates tend to increase in (quality and quantity) with improvement in management efficiency at the university. The  $R^2$  is the coefficient of determination and shows how much of the variance in the graduates can be explained by management efficiency. But  $R^2_{adj}$  is an improved  $R^2$  and shows that about  $(.079*100 = 7.9\%)$  of the variance in graduates can be explained from management efficiency.

Table 1 – Summary of Regression of Graduates on Management Efficiency at Amoud University

Variable	B	R	$R^2$	$R^2_{adj}$	$\epsilon$	F	t	Sig.
Constant	42.984				23.309		1.844	
MGE	-.343				1.600		-.214	
Model summary		.062	.004	-.079		.046		.834

Note. Predictors: (Constant), Management Efficiency by Faculty. Dependent Variable: GPAs.  $F(1, 12) = 4.747$ ; MGE is management efficiency.

The F statistic is a measure of the overall significance of the regression model.  $F_o = .046 < F_c = 4.747$ , which led to the acceptance of the null hypothesis. Moreover,  $F(1, 12) = .046, p = .834$  also led to the same decision. Hence, the hypothesis that management efficiency has no significant association with graduates at Amoud University was therefore accepted. There is no significant difference in the number and quality of graduates from faculties that have poor and good management efficiency At Amoud University. Hence, there is no relationship between management efficiency and graduates at Amoud University.

### 3.1.2. Management Efficiency and Learning at Amoud University

The second element of productivity investigated is learning. Learning was measured from knowledge, skills and attitudes acquired by students admitted in the 14 faculties. The responses were pooled together and an average obtained as the average score of learning by students in a faculty. The results were tested using a linear regression method to test the hypothesis that:

There is no significant association between management efficiency and learning at Amoud University.

$H_{02}: R_{MGE,LRN} = 0$ ; where MGE is management efficiency and LRN is learning.

The results of regression of learning on management efficiency at Amoud University are summarized in Table 2.

Table 2 – Summary of Regression of Learning on Management Efficiency at Amoud University

Variable	B	R	$R^2$	$R^2_{adj}$	$\epsilon$	F	t	Sig.
Constant	77.360				11.111		6.963	
MGE	2.418				.763		3.170	
Model summary		.490	.240	.197		8.029		.036

Note. Predictors: (Constant), MGE by Faculty. Dependent Variable: Students' learning.  $F(1, 12) = 4.667$ ; MGE is management efficiency.

Table 2 summarizes the regression of learning on management efficiency at Amoud University. Like in Table 1, R statistics is a measure of the association between management efficiency and learning. It shows that there is a moderate positive association ( $R = .490$ ) between management efficiency and learning at Amoud University. The learning tends to increase in (knowledge, skills and attitude) with improvement in management efficiency at the university. The  $R^2$  is the coefficient of determination and shows how much of the variance in the learning can be explained by management efficiency. However,  $R^2_{adj}$ , which is an improved  $R^2$ , shows that about  $(.197*100 = 19.7\%)$  of the variance in learning can be explained from management efficiency. Thus,



management efficiency accounts for 19.7% of students learning at Amoud University and can be improved by this amount by improved management efficiency, other factors notwithstanding.

Like in Table 2, The F statistic is a measure of the overall significance of the regression model.  $F_o = 8.029 > F_c = 4.667$ , which led to the rejection of the null hypothesis. Further,  $F(1, 12) = .8.029$ ,  $p = .036$  also led to the same decision. Hence, the hypothesis that management efficiency has no significant association with learning at Amoud University was therefore rejected. There are significant differences in the learning of students from faculties with different status of management efficiency At Amoud University. Hence, management efficiency is associated with students' learning at Amoud University. Since the regression model is significant, a regression equation can be developed for predicting students' learning from management efficiency. Using the coefficient of regression ( $B = 2.418$ ) and the constant term ( $C = 77.360$ ), a regression model was developed as;

$$LRN = 77.63 + 2.41MGE \dots \text{Eq 1.}$$

This shows that about 2.41 units improvement in management efficiency, students learning improves by on unit so long as there are no other intervening factors.

### 3.1.3. Management Efficiency and Research and Innovation at Amoud University

The last element of productivity investigated is research and innovation. Research and Innovation was measured from volume and quality of research, and volume and quality of research from academic and administrative staff in the 14 faculties. The responses were pooled together and an average obtained as the average score of research and innovation by staff in a faculty. The results were tested using a linear regression method to test the hypothesis that:

There is no significant association between management efficiency and research and innovation at Amoud University.

$H_{03}: R_{MGE,LRN} = 0$ ; where MGE is management efficiency and LRN is research and innovation.

The results of regression of research and innovation on management efficiency at Amoud University are summarized in Table 3.

Table 3 summarizes the regression of research and innovation on management efficiency at Amoud University. R indicates the association between management efficiency and research and innovation. It shows that there is a low positive association ( $R = .173$ ) between management efficiency and research and innovation at Amoud University. The research and innovation vary on the same direction: an improvement in management efficiency is accompanied by an increase in research and innovation at the university. The  $R^2$  is the coefficient of determination and shows the variance in the research and innovation that can be explained from management efficiency. The improve  $R^2$  ( $R^2_{adj} = .051$ ), shows that about  $(.051 * 100 = 5.1\%)$  of the variance in research and innovation can be explained from management efficiency. Thus, management efficiency accounts for about 5.1% of research and innovation at Amoud University and research and innovation can be improved by this amount (5.1%) by improved management efficiency, other factors notwithstanding.

Table 3 – Summary of Regression of Research and Innovation on Management Efficiency at Amoud University

Variable	B	R	$R^2$	$R^2_{adj}$	$\epsilon$	F	t	Sig.
Constant	5.817				4.437		1.311	
MGE	.185				.305		.607	
Model summary		.173	.030	-.051		.369		.555

Note. Predictors: (Constant), MGE by Faculty. Dependent Variable: research and innovation.  $F(1, 12) = 4.667$ ; MGE is management efficiency.

Like in Table 1 and Table 2, The F statistic measures the overall significance of the regression model.  $F_o = .369 < F_c = 4.667$ , which led to the acceptance of the null hypothesis. Further,  $F(1, 12) =$

= .369,  $p = .555$  also led to the same decision. Hence, the hypothesis that management efficiency has no significant association with research and innovation at Amoud University was therefore accepted. There are NO significant differences in the research and innovation by staff from faculties with different status of management efficiency at Amoud University. Hence, management efficiency is NOT associated with research and innovation at Amoud University. Since the regression model was NOT significant, a regression equation was not developed for predicting research and innovation from management efficiency.

### **Conclusion and discussion**

The main aim of this study was to establish the relationship between management efficiency and productivity in private universities in Somaliland, by taking the case of Amoud University. This is the question the conclusion must address. Data was collected 544 respondents and analyzed using chi square and regression. The study found that (i) management efficiency at Amoud University was poor management efficiency,  $\chi^2 (26, N = 182) = 25.434, p = .500$ ; (ii) productivity at Amoud University was low  $\chi^2 (24, N = 346) = 99.697, p = .000$ . Further the study found that there is no relationship between management efficiency (iii) graduates at Amoud University,  $F (1, 12) = .046, p = .834$ ; and (iv) research and innovation at Amoud University,  $F (1, 12) = .369, p = .555$ . But there was a significant association between management efficiency and students' learning at Amoud University,  $F (1, 12) = .8029, p = .036$ . The study therefore concludes that management efficiency is significantly related productivity at Amoud University. This means that graduates, learning, and research and innovation at Amoud University is significantly related to the time, money, materials and effort. But since the management efficiency at the university is low (or poor), then management efficiency contributes to lowering the quality of graduates, learning, and research and innovation at the University.

Based on the findings and conclusion drawn above, the study makes the following recommendations.

1. First the study found that management efficiency at Amoud University was poor management efficiency,  $\chi^2 (26, N = 182) = 25.434, p = .500$ . Amoud University, as the lead university in Somaliland cannot afford management inefficiency. It must show the way not only in knowledge generation and other functions of the university, but also in how such functions are carried out. The researcher therefore recommends that Amoud University develops clear control and guidelines for the minimum and maximum times, money, materials and effort that each staff and unit of the university must put in each day. Such plans must be monitored at various levels to ensure compliance.

2. The study also found that productivity at Amoud University was low  $\chi^2 (24, N = 346) = 99.697, p = .000$ . This means that the graduates of Amoud University are poor, research and innovation at Amoud University is low in volume and quality, and that students' learning at Amoud University is also poor. Based on these findings, the researcher makes the following specific recommendations. The researcher recommends that Amoud University should;

- Review its curriculum and make more relevant, important, urgent and adequate with respect to objectives, content, teaching and learning methods and evaluation of both teaching and learning. This should improve both students' learning and the quality of graduates;
- Improve the emphasis and weight put on research and innovation and makes an integral part of the university academic endeavour. It should hire competent staff and require them to array out research and publish as a condition for continued service and promotion;

3. The study concluded that management efficiency is significantly related productivity at Amoud University. Amoud University should therefore be guided by this theory, especially since both management efficiency and productivity at the university was found to be low (or poor). The researcher recommends Amoud University and other universities in Somaliland join accreditation bodies both locally and internationally. This will ensure that the whole university system is monitored closely from various quarters and that each unit is actively working efficiently towards the common local and international goals.

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