

Research Article

Assessment of Materials Management Practices in the Selected Public Service Sectors in the Case of Debre Markos City Administration Bureau

Mekuanint Temesgen^{*} , Mekonnen Dibu 

Department of Management, College of Business and Economics, Dire Dawa University, Dire Dawa, Ethiopia

Abstract

One of the main life bloods for operating every institutional task are materials. As a result, the objective of this study was to assess materials management practices in the selected public service institution in the case of DMSCAB. The researcher employed mixed research approach with a descriptive and explanatory research design to achieve the objective. The data was obtained from primary and secondary sources of data. the primary data was obtained via prepared closed ended questionnaire and interview. The researcher has used various statistical tests to measure whether the entered variables are explaining the dependent variable or not. Among various tests validity and reliability, normality, autocorrelation, and multi collinearity tests have been employed in this study. The main finding of the study indicated that planning activity, specialized or professional expert, integration activity and policy environment was statistically significant at 5% level of significance in explaining the materials management practices and discovered that there is poor materials management practice in their sector. Finally, the researcher concluded that effective materials management practices is still infant. Therefore, the researcher has extended some recommendations to the targeted sectors. Sectors should form a new structure for introducing and recognizing the basic necessity of materials management practices in their operation.

Keywords

Planning Activity, Specialized or Professional Expert, Integration Activity, Policy Environment

1. Introduction

The practice of materials management in the United States of America (USA) currently lead to the adoption of a sustainable as a regulatory framework for managing materials [12]. The practice of MM in USA it to serve human needs by using or reusing resources productively and sustainably throughout their life cycles. Generally minimizing the amounts of materials involved and all associated environmental impact [12] Material management is concerned with

the planning, identification, procuring, storage, receiving and distribution of material. The responsibility of Material management department for the flow of material from the time the material is ordered, received, and stored until they are used is the basic responsibility of material management. The main goal of material management is to ensure that the materials are available at their point of use when needed hence, efficient procurement of material represents a key role in the

^{*}Corresponding author: mekiyou19@gmail.com (Mekuanint Temesgen)

Received: 25 July 2024; **Accepted:** 4 September 2024; **Published:** 20 September 2024



Copyright: © The Author(s), 2024. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

successful completion of the work. In order to make materials management on site effective for fast-track projects there needs to be an integrated material handling process from the design stage to the usage of materials. International Federation of Purchasing and Materials Management (IFPMM) defined it as a total concept having its definite organization to plan and control all types of materials, its supply, and its flow from raw stage to finished stage so as to deliver the product to customer as per his requirements in time. These definitions provide the scope of materials management which includes Materials Requirements Planning (MRP), decision on purchasing, procurement of materials, inventory management, staffing, stores and warehouse management, production, and distribution of finished goods at minimum cost at due time Monday [17].

Furthermore, in the past time the development of professionals in the areas of materials management was not given proper emphasis in Ethiopia. The “MM” activities were considered as ordinary activity and they devoid of serious attention. However, currently MM is recognized as distinct area of organizations management and play a vital role to achieve the internal goals of the organization MOFED, [16]. The limited studies in Ethiopia are to reveal underutilization who conducted study on MM of resources and the problem are not only the presence of shortage of supply but also the inefficient utilization of what is already notified by Monday, [17]. Hence exhaustive utilization of materials resources is essential. Thus, materials management should no longer be viewed as a drain-pipe, but as a serious stabilizing and economic growth potential factor. Hence the success of any organization rests on the optimum utilization of its key resources such as human beings, materials and financial resources. Here MM is focus on acquiring, storing, distributing and replenishing materials and supplies Langabeer, [14]. According to Arnold, J. R. and Chapman [2], MM is an organizing function responsible for planning and controlling the materials flow. MM brings in the total system approach managing the entire flow of information, materials and service from raw materials supplier through factories and ware house to end user Chase et al. [8] Therefore, effective materials management is fundamental to the survival of business, industry and economy. To bring productivity, profitability and smooth operation in various units a sound management of materials with particular attention to purchasing, storage, inventory control and disposal of materials are needed to be studied. Prudent management of materials reduces depreciation, pilferage and wastages and ensures availability of materials.

Statement of Problem

The establishment of functional organization of materials management become indispensable in order to serve the achievement of corporate goals and perform materials activities efficiently, fulfillment of materials program objectives, elimination of waste and reduction on materials cost. The various types of materials to be managed in any organization include either of purchased materials, work-in-progress (WIP)

materials or finished goods Banjoko, [3]. In addition to this, Bell, L et al, [4] have studied the profitability of organization can be achieved through giving attention for sourcing, storing and issuing of materials.

Furthermore, according to Adamu Garba [1], the effect of materials management practices on organizational performance is merely determined by stock valuation and lead time. Thus, standing from those articles the researcher has understood that the previous researchers had missed to incorporate/add most essential factors for enhancing organizational performance and proper utilization of materials. They missed fundamental factors that can ensure the good practice of materials management for instance, planning activity, integration system, facility location, cashflow system, information flow, proper usage of materials, policy environment and skilled manpower were not discussed. Therefore, the researcher has taken those basic issues as a gap that other researchers were not looking at. Thus, a detailed and thoroughly investigation on the various levels of materials management practices were not conducted by another researchers.

Therefore, the researcher has gotten gaps that no many studies have been conducted on the overall functions of materials management especially in the public service organizations and most of them have addressed the material management practices associating with the constraints of supply sides. However, the researcher found gaps that the selected sectors are facing absence of well qualified and experienced experts in the field of related materials management system, poor planning practices related to bringing effective materials management practices, low degree of awareness on the materials management practices, weak integration between levels of materials management, weak policy environment on the well focus and support of materials management practices to be introduced and recognized in their institutions. These factors can interrupt the whole operation of the sectors. Because of ill consideration on the above all factors; distorted information flow, poor inventory controlling practices, improper facility location, improper materials disposal, forecasting problem and bureaucratic in nature, inefficiency, retarding the development of the national economy and so on effects are created. Even though many problems are surrounding Debre Markos Administration public service institutions no researches have been conducted in the area of materials resource management practices.

According to the annual budget plan of Debre Markos Sub city administration huge budget are allocated for purchasing of material resources. Like any other aspects of organizational activities, material resource management practices could be prone to a number of problems, since acquiring material resources is consuming substantially large amount of money. Thus, its management and utilization require considerable attention. So, having investing significant amount of money, Debre Markos Sub city administration need to know if its material resource management and utilization practices are properly implemented or not. Therefore, the

intention of the researcher right now is to address these problems which are the bottleneck of institutional development and enough equipped to give desirable recommendations to the selected public service sectors.

2. Review of Related Literature

2.1. Theoretical Review of Literature

Materials Management

According to Carter et al [7] the term materials can be said to be any physical substance used by the business or enterprise to processes or manufacture its products or goods for sale. It includes raw materials, spare parts, components factory supplies, packaging and human beings etc. Materials constitute a major cost component for any Industry. The total cost of installed materials or Value of Materials) may be 60% or more of the total cost Bell. L & Stukhart, L. Bernold et al [4, 15] even though the factory cost may be a minor part of the total, probably less than 20-30%. This is because the manufactured item must be stored, transported, and restored before it is put in place or "consumed" at the site. Poor planning and control of materials, lack of materials when needed, poor identification of materials, re-handling and inadequate storage cause losses in labor productivity and overall delays that can indirectly increase total project costs. Effective management of materials can reduce these costs and contribute significantly to the success of the project.

Individuals might understand materials management (MM) in various ways. Chase et al [8] stated that the adoption of MM concept largely grew out of problems in the airframe industry during WWII, production of air craft requires a large number individuals of vendors in this case, the objective of MM was to solve materials problems from a total view point. Materials management can be defined as an organizing function responsible for the planning and controlling the materials flow; this mean that the materials management is a planned procedure that involves from the initial purchasing, delivery handling and minimization of waste of materials with the purpose of ensuring the quality quantity and time of requirement should meet accordingly Arnold, J. R. & Chapman [2].

2.2. Empirical Review of the Study

B. Okolo and Agu [5] Effects of Inventory Management on Organizational Effectiveness in selected organizations in Enugu, was carried out, to assess the impact of proper materials management on organizational performances in Yemenite, Hardis& Dromedas, and the Nigeria Bottling Company all in Enugu, Enugu State. Descriptive research method, especially survey, and case study were employed in carrying out the study. The population of the study is six hundred and fifty-eight (658). A sample size of two hundred and forty-eight (248), was derived using the Taro Yamane

formula for sample size determination from a finite population. Data were generated using questionnaire, oral interviews, observations, books, journals and the internet. Data were presented in tables and analyzed using simple percentages. Pearson product moment correlation coefficient and linear regression were used in the hypotheses testing. From the analyses, it was discovered that irrespective of the fact that the organizations studied, painted the picture that they were applying the tenets of good inventory management, they from time to time run into the problems of inventory inadequacy. This consequently affected their production, leading to the scarcity of one brand of their products or the other, thereby affecting their profitability and consequential effectiveness negatively. The Findings indicate that there is a significant relationship between good inventory management and organizational effectiveness.

According to Deepak, Md. [11] The International Federation of Purchasing and Materials Management accept the definition of materials management as "Materials management is a total concept having its definite organization to plan and control all types of materials, its supply, and its flow from raw stage to finished stage so as to deliver the product to customer as per his requirements in time." It involves different functions like materials planning and controlling, purchasing, stores and inventory control.

Kasim et al. [13] focused on ICT (Information and Communication Technology) Implementation of Materials Management in Construction Projects: Microsoft Excel Spreadsheet and handheld devices are found to be the common ICT tools adopted in the materials management processes. The main barrier is found to be the cost involvement at the initial stage or overall implementation of ICT in the materials management processes.

Empirical evidence supports the argument that by focusing on quality, an organization can substantially improve its performance Ogbadu, E. E [18]. Literature reviews Cohen, L.; Manion, L.; and Morrison, K [9] on studies conducted in different countries including Costa Rica, Thailand, Indonesia, Palestine, Singapore, Australia, China and Hong Kong indicated that there are 12 criteria for successful implementation of quality management system. These are quality data and reporting; customer satisfaction, human resource utilization; management and process quality; management commitment; continuous improvement; leadership; strategic quality planning; performance measurement; customers focus; and contact with suppliers and professional associates.

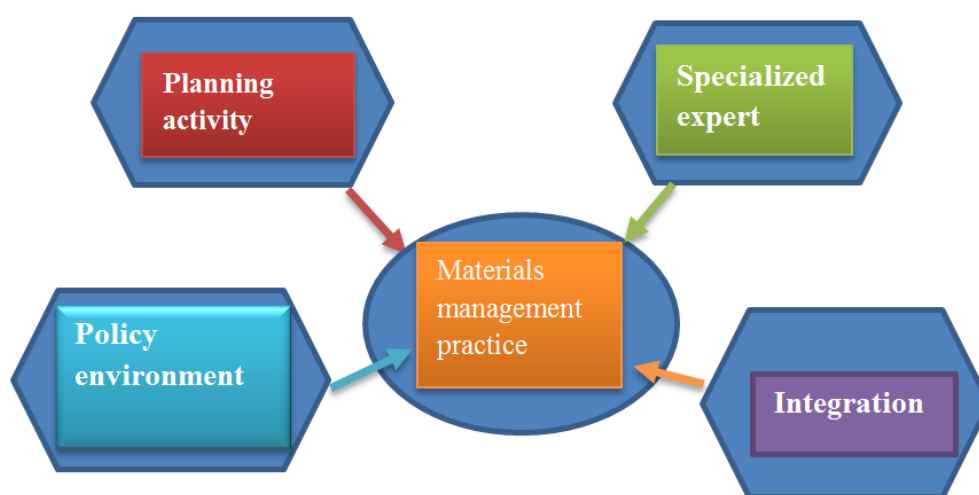
Calistus Ayegba [6] described that the material management brings the objectives are efficient material planning, buying or purchasing, procuring and receiving, storing and inventory control supply and distribution of material, quality and assurance, good supplier relationship. The material management brings the benefits are reducing the overall cost of material, better handling of material, reduction in duplicate orders, material is on site when needed and in the quantities required, improvements in labor productivity, improvements

in project schedule, quality control, better field material control, better relations with suppliers.

To sum up fundamental factors which can significantly affect the effective practice of materials management were not mentioned in their study. For instance, planning activity, integration system, policy environment, specialized personnel, relationship among materials managements components and system that are used to handle materials were not thoroughly discussed. Therefore, the researcher has picked up these gaps to be studied in my paper. Calistus Ayegba [6] carried out an empirical study on materials management using chi square as a statistical tool and found efficient Materials Management is positively related to firm success. Thus, through a well-organized organization of production materials, cost effectiveness can be achieved in an organization.

2.3. Conceptual Framework of the Study

Conceptual framework is a visual presentation that the explains the variables studied and the relation among them. The conceptual framework of this study consists of the dependent variable and independent variables. In this study there are four independent variables which affects the values of a dependent variable in this study. Planning activity, specialized expert, integration system, and policy environment are the fundamental predictors variables that needed to be studied to know their effect in the response variable. Materials management practices is the response or dependent variable. To clearly articulate the conceptual framework of the study, the researcher puts the variables as shown below.



Source: Literature (conceptual framework)

Figure 1. Conceptual framework for the study.

3. Methodology

3.1. Research Design and Approach

The researcher has used the descriptive and explanatory research design method. Since the study is describing the existing practice of MM which involves the purchasing practices up to the utilization of resources. For this study descriptive type of research design is best matched to clearly know what intentions and practices are existed in their sectors because it tries to describe the state of affairs as it exists at present as well as it can includes fact finding enquiries of different kinds. The descriptive research method is one of the methods which aids to obtain large amount of data usually in a statistics form. As well the explanatory research design helps the researcher to easily identify the fundamental factors which affect the effective practice of materials management.

The presence of effective materials management practices can minimize the existence of wastage of materials and reduction of cost. Therefore, to analyze its effect explanatory research design would be used in well manner.

The researcher has also used mixed research approach which are qualitative and quantitative data approach. The qualitative data approach is used to describe the events which is obtained from the prepared questionnaires and interview along with the true source of data to generate in-depth information about the study. A quantitative research technique will be aimed to use a statistical analysis and an intention to measure the existing practices materials management in the selected public institutions.

The relevant data in order to address the objective of the study, the researcher would focus on obtaining data from primary and secondary data. Here the primary data was the data collected directly and analyzed by the researcher. In this study, the primary data has been gathered via questionnaire and interview.

3.2. Sample Size and Determination Model

The target population for this study are the top-level workers, middle level workers and ordinary employees who are working in the selected public service sectors in Debre Markos Administration bureau. The total numbers of populations for the selected public service institutions are 679. To determine the total sample size from the total population of 679 the researcher used the formula of Kothari [10]. Therefore, the number of samples that will be taken from each pool would give one hundred seventy-one (171) target respondents for the study.

$$n = \frac{Z^2 p(1-p) N}{(e)^2 (N-1) + Z^2 p(1-p)}$$

Where:

n= The total number of samples required; Sample size

N= Total population

e= The maximum allowed error at 5% from 100%

Z= The critical table value at 95% confidence level

P = The population proportion

1-p = The probability of the population not to be covered

$$n = \frac{1.96^2 \times 0.18 \times (1-0.18) \times 679}{(0.05)^2 (679-1) + 1.96^2 \times 0.18 (1-0.18)} = \frac{385.0067}{2.262} = 171$$

3.3. Sampling Technique

At the first stage the researcher used a purposive sampling technique to select the target study area and to select the target public service institutions from this study area purposive sampling technique has been applied. After the target sectors have been identified the researcher had put them in the stratum form. Therefore, the researcher has used a stratified sampling technique to classify the target pool in the stratum. The reason behind employing a purposive non probability and a stratified probability sampling techniques is that because of utilizing enormous or massive materials and high number of customers along with high number of employees.

3.4. Methods of Data Analysis

After the relevant data have been collected by the help of interview and questionnaire, the data which were obtained from questionnaire and interview were edited, classified, examined and it have been finally analyzed through the use

of tabulations, charts and percentages. Descriptive analysis using measures of central tendency will be used such as; mean, as well as measures of variability such as the standard deviation and variance to determine the proportions and frequency of the variables. Data analysis will be done by using a tool SPSS; the so called: Statistical Package for Social Scientist (SPSS version 20).

3.5. Model Specification

The researcher would use descriptive statistics and inferential statistics to fit what the research objective is stated about. The descriptive statistics is just calculating the mean, standard deviation, variance of the data while inferential statistics helps to calculate the regression analysis of the data. Regression analysis is the statistical measure of the dependent variable and independent variables. The dependent variable is the variable in which the researcher is want to explain and its value is depending on the values of the independent variable. It is denoted by "y" and the independent variable is the variable that the researcher explains the dependent variable. It is the predictor of the dependent variable and it is denoted by "x". In this paper the researcher identified the basic independent variables and the dependent variable and decides to use a Multiple Linear Regression Model (MLRM). Therefore, the researcher computes the regression as shown below:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \epsilon \dots \dots \dots$$

multiple linear regression model

$$MMp = f(\text{planning, specialized expert, integration, policy environment}) \dots \dots \text{multiple linear regression equation}$$

The explicit forms of the above formula are depicted as below

$$MMp = \beta_0 + \beta_1 \text{ planning} + \beta_2 \text{ specialized expert} + \beta_3 \text{ integration system} + \beta_4 \text{ policy environment}$$

Where; MMp(Y) = dependent variable

β_0 = the intercept value of dependent variable

$\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4$ = regression coefficient of independent variables

ϵ = the random error term

x_1, x_2, x_3, x_4 and x_5 = independent variables

4. Results and Discussion

Table 1. Test For Reliability of The Study: Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.872	.873	4

Source: SPSS Version 20, Output. Aug, 2022

The above table shows that the reliability statistics which indicates that the Cronbach Alpha value is 0.872. Reliability Cronbach Alpha statistics of 0.70 is considered as adequate and reliable for social Science study according to most authors suggestion. Thus, in this study the Cronbach alpha is

between 0.80 and 0.90 which is 0.872 or 87.2%% that tells us the study is highly reliable. Hence, the variable of this study falls above the limit of a reliable instrument for this study.

Table 2. Model summary, Model Summaryb Model Summaryb.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.812 ^a	.660	.652	.48258	.660	80.488	4	166	.000	1.854

Source: SPSS Version 20. Outputs. Aug, 2022

Predictors: (Constant), policies, planning activity, integration activity, professional expert

Dependent Variable: materials management

The coefficient of determination R² for the study is 0.66 or 66.0%. This indicates that 66.0% of the variations in the model can be explained by the explanatory variables of the model while 34% of the variation can be attributed to unexplained variation captured by the stochastic term. Therefore, in the above table the researcher understood that the total output of R Square (coefficient determination) which is 66.6% indicates that the independent variables (planning activity, professional expert, integration and policy environment) are highly explaining the dependent variable (materials management practices) more than half percent. Such a test could be accomplished using an ANOVA test called the F test which tests the significance of R-square. The p-value of the f test was 0.000 which less than the significant value.

4.1. Normality Test

There are numerous tests for normality assumption, like the histogram of residuals, normal probability plot (NPP). If the residuals are normally distributed, the histogram should be bell-shaped. This is mean that not to reject the null of the normality hypothesis that the data is normally distributed. The hypothesis of the normality test was formulated as follows:

H₀: the data are normally distributed

H₁: The data are not normally distributed

Therefore, to support the above justification the following normality test screen would be presented at below.

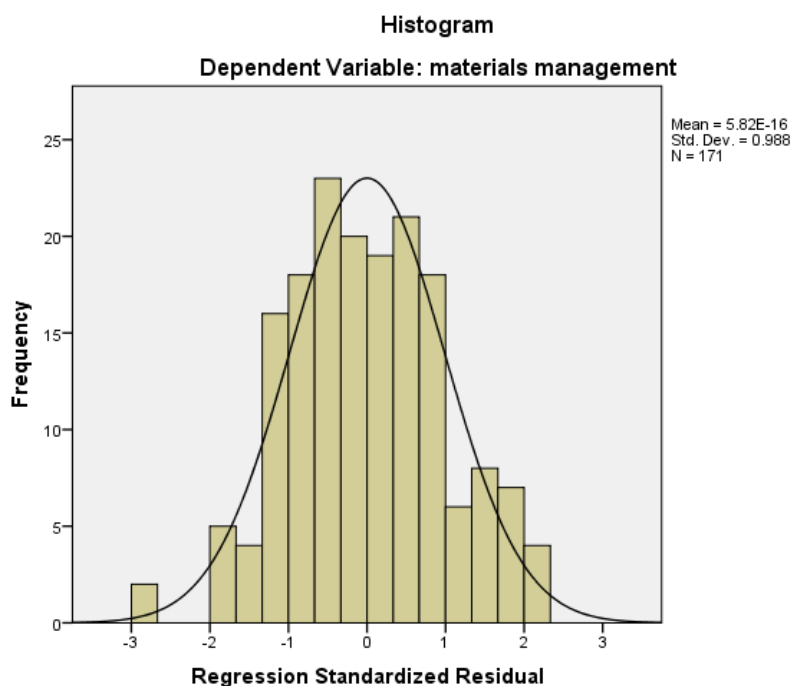


Figure 2. Regression Standardized Residual (Source SPSS version 20, Output Aug, 2022).

The figure above shows a histogram of the residuals with a normal curve superimposed. The residuals look close to normal, implying a normal distribution of data. Here is a plot of the residuals versus predicted dependent variable of mate-

rials management practices (MMP). The pattern shown above indicates no problems with the assumption that the residuals are normally distributed at each level of the dependent variable and constant in variance across levels of Y.

Table 3. Test of Autocorrelation by Durbin -Watson Test.

Model	R	R Square	Adjusted R Square	Durbin-Watson
1	.812 ^a	.660	.652	1.854

Source: SPSS version 20, Outputs. Aug, 2022

4.2. Multi-Collinearity Test

The other test which was conducted in this study is the Multicollinearity test. This helps to identify the correlation between explanatory variables and to avoid the double effect of independent variables. (VIF) this test indicates that when the mean-variance is excess than 10 concluded that there is multicollinearity among independent variables.

Table 4. Test of multicollinearity under the rule of VIF.

Model		T	Sig.	Collinearity Statistics	
				Tolerance	VIF
1	(Constant)	.658	.512		
	planning activity	4.949	.000	.490	2.041
	professional expert	1.900	.009	.406	2.465

Model	T	Sig.	Collinearity Statistics	
			Tolerance	VIF
integration activity	5.403	.000	.501	1.998
Policy environment	2.251	.026	.460	2.175
Mean of VIF	2.169	<10		

Source: SPSS Version 20, Output. Aug, 2022

Predictors: (Constant), policy environment, professional expert, planning activity, integration.

Dependent Variable: Materials management

Since the mean of Variance Inflation Factor (VIF) is less than 10, the study has no a problem of multicollinearity

4.3. Discussion of Findings

Most of the respondents were agreed in the importance of planning in their sectors, but adequate planning practices were not implemented at all organizational structure to bring effective materials management practices in the selected sectors. Furthermore, to enhance the practices of materials management in their sector research and development activity is not recognized at well. Therefore, the researcher concluded that no effective planning activity is exhibited in the sectors for paying attention and bringing good materials management practices in their institutions. In the presence of professional expert for enhancing materials management practices in the selected sector was scared. The result shows that there is no adequately trained manpower that can actively engaged in to improve the materials management practices. However, employees are assessed based on the true source of their credentials document, the sectors are not considering the specialized personnel in the related materials management disciplines. The sectors are not also engaged in inviting skilled experts from outside to get training service for workers how to manage and handle institutional materials for the sake of increasing productivity and national economy in general. Therefore, leaving to pay attention for bringing effective materials management practices in the sector can leads to the occurrence of interrupted service flow and deteriorating the growth of state economy. Managers or administrators are not highly working for proper usage of materials in their sector.

5. Conclusion

In the presence of professional expert for enhancing materials management practices in the selected sector was scared. The result shows that there is no adequately trained manpower that can actively engaged in to improve the materials management practices. However, employees are assessed based on the true source of their credentials document, the sectors are not considering the specialized personnel in the related materials management disciplines. The sectors are not

also engaged in inviting skilled experts from outside to get training service for workers how to manage and handle institutional materials for the sake of increasing productivity and national economy in general. Therefore, leaving to pay attention for bringing effective materials management practices in the sector can leads to the occurrence of interrupted service flow and deteriorating the growth of state economy. Managers or administrators are not highly working for proper usage of materials in their sector.

According to the data obtained from the respondent's response the policy environment which is emphasize on the practices of materials management is poor in implementation. Even if accountability in the case of loss and damage of property arisen from individual negligence would be applied, the sectors are not equipping enough on the providing brief understanding on the regulations and directives related to materials management practices. This is not just a good policy on this century because now we are on the very unforgiving business environment, what best is that qualify the workers on the issue of how to utilize and manage the available materials for sake increasing organizational productivity. The sectors are not enforcing the policy of materials management practices for the proper usage and handling of purchased materials in their institutions. Therefore, the researcher concluded that policies on the practices of materials management is not properly enforced and executed this is due to ill management and lack of knowledge on the greater contribution of management in the sector.

The researcher has concluded that the study is highly reliable according to the calculated Cronbach alpha coefficient. In addition, to this the study is free from multicollinearity, autocorrelation and data abnormality problem. The explanatory variables (planning activity, professional expert, integration and policy environment) are significantly explaining the explained variable (materials management practices in the selected public service sectors).

6. Recommendations

The researcher gave some recommendation by standing

from the information and data that the researcher has found.

- 1) The targeted sectors should establish a platform which helps to develop a sound planning activity for the sake of managing materials. For instance, exercising planning at all levels of organizational structure, developing forecasting capacity, enhancing capacity building and so on.
- 2) The sectors should work integrately work internally and externally to bring effective materials management practices in their sector. Because according to the theory synergy the whole is greater the sum of its parts. This mean that the outcome of working together of those functional units purchasing unit, quality assurance, property administration, warehousing, inventory controlling, marketing, finance, human resource, materials disposal unit, distribution unit, technical service providence and so on have a result of astonished impact on the practices of materials management. This enables the sectors to recognize the overall functions of materials management practices easily as a serious social and economic growth factor.
- 3) The sectors should hire professional or specialized personnel who they are skilled and specialized in the area of related materials management discipline. This is great for sectors to identify regularly when, what type of and how much materials are going to be purchased, used and disposed of.
- 4) The institutions should make provisions for training and retraining of management and property administration personnel in order to improve their efficiency for effective material management and should ensure the use of skilled manpower for their works and provide efficient supervision with professionals to ensure effective material management in their entire operation. Which mean that the sectors are expected to enhance a training program for their members in the area that how materials management is essential to handle materials wisely.
- 5) Still the sectors are utilizing manual materials recording system, indicating that materials management gets less attention in the administration bureau. Therefore, sectors should use enriched technological software's to do its operation accordingly. For instance, EDI technology is advisable in the purchasing. The selected public sectors should learn from water and sewerage bureau to access technologized machines.
- 6) The researcher advises that the sector should build and enhance the culture of research and development center in their administrative pool. Because the presence of research and development center can pave the way for looking at the basic problems and helps the institutions to be equipped with a sound solution for identified problems. Exercising research and development is taking after as looking a little light on the horrific dark place. Since research and development serve as an eye-glass of institutions.

- 7) Sector should revise the existing policy that concern to materials management practices. because only being accountable on the loss or damaged property can't bring effective materials management practices in the sector. Other techniques should be incorporated for instance the sector should use 3R-D strategies for good materials handling practices 1R, stand to Recycling able to use the materials in the new form 2R, stand to Reuse it is lengthening the life of the materials, 3R stand to Reduction as much as possible reducing wasting materials improperly, and D stand to disposal. In most public sectors workers are not treating organizational materials as their part of personal property.

With these listed facts, successful materials management practices can be achieved in in those selected public service sectors.

7. Contribution to Knowledge

The study was able to discover that, the major factors that affects materials management practices for instance lack of proper planning activity, absence of specialized expert, weak integration and weak policy implementation or execution practices for materials utilization are the fundamental reasons for the existence of inefficient materials management practices. The study also identified very good major systems that are used to handle materials wisely.

Abbreviations

DMCAB	Debre Markos City Administration Bureau
MM	Materials Management
SPSS	Statistical Package for Social Science

Author Contributions

Mekuanint Temesgen: Conceptualization, Formal analysis, Investigation, Validation, Data curation, Methodology, Software, Writing review and Editing, Supervision, writing original draft, Funding acquisition

Mekonnen Dibu: Methodology, Software and Resources

Funding

This work is not supported by any external fundings. The authors had made the article by their personal budget.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Adamu garba. (2020). "Effect of material management on the performance of Benue brewery industry, Nigeria." international journal of research - Granthaalayah, Vol8, No2, 228-234.
- [2] Arnold J. R., Stephen N. Chapman and Lloyd M. Clive. (2008). Fleming College, North Carolina State University. Six editions.
- [3] Banjoko, S. A. (2000). Production and Operations Management, Lagos: Saban Publishers.
- [4] Bell, L., &Stukhart, G. (2007). Attributes of Materials Management Systems. Journal of Construction Engineering and Management, 112(1), 14-21.
- [5] BN. Okolo, RC Agu. (2013). The journal of solid waste management and technology 39(2), 149-156.
- [6] Calistus Ayegba. (2013). An assessment of materials management on building construction sites journal of civil and environmental research.
- [7] Carter et al (1993): Integrated materials management of materials, 7th edition, Wiley press.
- [8] Chase, R. B. Jacobs, R. F. Aquilano, N. J., & Agarwal, N. K. (2009). Operations Management for competitive Advantage, 11th Ed. New Delhi Tata Mc-Graw Hill.
- [9] Cohen, L.; Manion, L.; and Morrison, K. (2007). Research Methods in Education (6th Edition). London: Routledge - The Taylor & Francis Group.
- [10] CR Kothari. (2004). Sample size determination of research methodology: new age international publication.
- [11] Deepak M. D. (2015). National Institute of Construction Management and Research. An Empirical Case Study of Material Management. A Constituent College of Manipal University, Karnataka, India.
- [12] EPA (2009): The Environmental protection Agency in USA.
- [13] Kasim Narimah. (2011). "ICT Implementation for Materials Management in Construction Projects: Case studies", Journal of Construction Engineering and Project Management.
- [14] Langabeer. (2008): Introduction to materials management systems.
- [15] L. E. Bernold and J. F. Treseller, (1991). Journal of construction engineering and management 117(4), 645-658, 1991.
- [16] MOFED (2007): ministry of finance and economy development in Ethiopia.
- [17] Monday, J. U (2008). Effects of Efficient Materials Management on Performance of Firms in Food and Beverage Manufacturing Industry in Nigeria, MBA Dissertation, Nigeria: Obafemi Awolowo University.
- [18] Ogbadu, E. E. (2009). Profitability through Effective Management of Materials. Journal of Economics and International Finance, 1(4), 99-105.

Research Field

Mekuanint Temesgen has interested in the research areas of Materials Management Practices, effects of Change management on organizational performance, the role of women entrepreneur for economic development, effects of social media advertising in customer retention, organizational Learning culture to ensure customer satisfaction