Online ISSN: 2053-4094(Online)

The Effects of the Budgetary Process on the Financial Performance of Commercial Banks in Tanzania: A Case of CRDB, NMB AND NBC

Halima Edmud Mligo

Student of Master of Science (Finance and Investment) at the Institute of Accountancy Arusha, Dodoma Campus

Fadhili Ephraim Maseko

Lecturer at the Institute of Accountancy Arusha, Dodoma Campus

Citation: Mligo H.E. and Maseko F.E (2022) The Effects of the Budgetary Process on the Financial Performance of Commercial Banks in Tanzania: A Case of CRDB, NMB AND NBC, *European Journal of Accounting, Auditing and Finance Research*, Vol.10, No. 11, pp.69-86

ABSTRACT: The objective of the study was to investigate the effect of budgetary process on the Financial Performance of Commercial Banks which were NBC, NMB and CRDB in Dodoma Tanzania. The mixed method was used as both qualitative and quantitative data were used. The descriptive survey was used whereas randomly sampling was used to secure 95 respondents. Survey, interview and documentary review were used to collect data meanwhile descriptive and multiple regressions were used in data analysis. There was grounded on Resources allocation theory and structure efficiency theory. The results showed that budgetary process had positive and significant effect of Financial Performance of Commercial Banks. This is because $R^2 = 58.6\%$ while at F(8, 87) = 28.86, p < 0.000 implied that budget process had positive and Financial Researcher recommended that budgetary process should be enhanced through an increased participation and enhance on internal controls.

KEYWORDS: budgetary process, financial performance, commercial banks

INTRODUCTION

Performance of the organisation illustrates the magnitude of the results in a process that has been achieved compared with the organisation goals (Ertiro and Mohammed, 2022). According to Abummar,(2019) performance of the organisation can be evaluated in three dimensions which includes company productivity or efficiency dimension, profitability dimension and market premium dimension. On the other hand the performance of banks has been categorized into four components: financial and market performance, human resource performance, organizational efficiency, and customer concentrated performance. It has been noted that the reliability of bank performance is crucial for the reason that the performance dimensions can be compared with other banks' or with the prior period. But it is claimed that various factors are associated with banks' performance. Financial performance is one of performance measure where the performance of the company is expressed in monetary terms and in the simplest way to determine the performance of the company is based on the financial statements of the company, (Ashebir, 2017).

@ECRTD-UK: <u>https://www.eajournals.org/</u> Publication of the European Centre for Research Training and Development -UK

European Journal of Accounting, Auditing and Finance Research Vol.10, No. 11, pp.69-86, 2022 Print ISSN: 2053-4086(Print), Online ISSN: 2053-4094(Online)

In Canada, Akhigbe and McNulty (2021) established a link between bank monitoring and bank profit efficiency in order to strengthen the business management model in this industry. Saerz-Fernandez et al. (2021) investigated the performance and risk in 124 Brazilian commercial banks for the period of 2014-2019. It was observed that management was important in accelerating the performance of commercial banks. It was further noted in Australia by Athaley et al. (2020), that factors impacting a bank performance are categorized into four groups depending on the specificity of bank aspect affected such as, profitability, efficiency, non-performing assets and governance practices. Choudhary (2022) studied the performance of banks in India during the covid-19 pandemic for the period of 2020-21 found that the credit growth declined during the pandemic period. Similarly, Kumar (2021) in India points out that the covid-19 pandemic has negatively affected the Indian economy and the banking sector and that it will not be possible to measure the exact span and depth of the impact of this virus. Furthermore, Nair et al. (2020) linked the budgetary process and the financial performance of 200 SME's in Yemen. In Kenya, Kirimi et al. (2022) noted that linked the ownership and financial performance among 39 Kenyan commercial banks using regression. It was noted that there is a negative association between state ownership and net interest margin, negative association between management ownership and both net interest margin and earnings per share, negative association between institutional ownership and return on assets and a negative association between foreign ownership and earnings per share. It was recommended that commercial banks should vary. Different previous studies have linked the commercial bank's performance with customer service, effective commitment and brand response (Schwepker & Schultz, 2015, Brunner et al., 2019, and Shin & Larson, 2020).

In Tanzania, Lyimo and Hussein (2022) studied the impact of macroeconomic variables on performance of banks and noted that money supply has insignificant relationship with commercial banks performance. Similarly; Magoma *et al.* (2022) in Tanzania dealt with financial performance of listed commercial banks in Tanzania from 2016 to 2020 using CAMEL model approach. It was found that commercial banks listed at the DSE in Tanzania are mostly affected by management efficiency and capital adequacy. It could be related to budgetary process as it is the task of managers, yet the study was not directly linking the financial performance and budgetary process. Jilenga and Luanda (2021) noted the factors influencing profitability of commercial banks in Tanzania as bank deposit, NPLs and bank expense meanwhile found that macroeconomic factors were insignificant on the bank profitability. It appears most of the studies done internationally and locally have not considered the issue of the effect of budgetary process on the financial performance of commercial banks in this case Tanzania.

Despite the vitality of the budgetary process with regard to the financial performance of banks still banks face many problems including poor financial performance (Nwanyanwu and Ogbonnaya, 2018; Oladipupo and Adesola, 2019). Table1.1appended at the end of the paper has summarized profit trend in billion shilling for banks of choice for the year of 2016 to 2020.

From the profitability trend in Table 1.1 appended it clearly showed that the financial performance of CRDB declined, this may be due to poor budgeting process. For instance in 2016 the profit was 63 billion and declined to 30 billion in 2017. Meanwhile, the NMB underwent financial distress from 2016 (153 billion) through 2017(93 billion), 2018 (97 billion) and 2019 (143) before a little rise in profit in 2020

@ECRTD-UK: https://www.eajournals.org/

(205 billion). On the other hand, NBC recorded the lowest profit of about 10 billion in 2018 before sluggish growth in profit. The researcher was prompted by both the fact that there is no research done elsewhere linking the budgetary process with the financial performance of commercial banks, and the plain truth revealed in table 1.1 appended that the financial performance of big commercial banks in Tanzania is falling. The researcher was of the opinion that if no research is done to find out the cause of the fall in financial performance, there was a possibility to affect the total banking industry.

Statement of the Problem

Commercial banks are very crucial financial institutions that play very important functions to keep the economy of the country abreast. Banks are very important institutions in the economy of a particular country because through their services and products they impact the growth of the economy. For instance bank services have an impact on investment, employment and poverty reduction. Indeed banks play a vital role in the economic development of nations, and in most cases economists relate a healthy economy to the soundness of the country's banking system (Maseko, 2013). However, recently Tanzania has experienced a remarkable decline in profit among big commercial banks. BOT (2020) report shows that for a period of 2016-2020 where NMB had experienced a decline in its profit by 60 billion, while CRDB dropped its profit by 33 billion meanwhile, the NMB recorded the lowest profit of about 10 billion in 2018. This is such a tremendous economic shock to the country despite the budgetary process routinely practice by banks in Tanzania. This is such a big decline in profit, however, no conclusive studies have been addressed the problem at stake. Besides, many studies have established some factors associated with the decline of profit in commercial banks to be such as capitalization, bank size, poor governance, natural calamities, level of CSR engagement, customer service and asset quality (Chang *et al.*, 2022; Michael and Enang, 2022; Athaley *et al.*, 2020 and Shin & Larson, 2020).

The performance of commercial banks is claimed to be linked with budgetary process. Affirming this sentiment is still difficult as different previous studies have ignored commercial banks. For example, Matsoso *et al.* (2021) evaluated effects of budgeting and budgetary process on manufacturing SMEs in South Africa, Meanwhile, Schubert & Kirsten (2021) dealt SMEs in German, Asumani (2019) studied related topic with respect to the local authorities in Zambia. Mandela (2014) researched on the same topic on public enterprises in Kenya. Thus, it is unclear to what extent does budgetary process affect the financial performance in commercial banks in Tanzania, since these studies have not covered budgetary process on commercial banks and this is the knowledge gap of this study. The researchers have the opinion that opinion that neglecting budgetary process may result in perilous distortion of the country's economy due to the role played by commercial banks, and that unless the budgetary process with regard to the financial performance of commercial banks. Therefore, there is a need to conduct a research on the effect of the budgetary process on the financial performance of financial performance of the study.

The purpose of the study was to investigate the effects of the budgetary process on the financial performance of the commercial banks in Tanzania. Specifically, the study intended to examine the influence of budget planning and preparation on the financial performance of commercial banks; evaluate

@ECRTD-UK: https://www.eajournals.org/

the effect of budget implementation and control on the financial performance of commercial banks, and analyze the effect of budget monitoring and evaluation on the financial performance of commercial banks. The study is significant because its findings were crucial to the policy executors on commercial banks, and at the same time vital to the managers in enhancing preparations, implementation, control and evaluation with respect to the financial performance.

LITERATURE REVIEW

According to Mbabazize and Twesige (2014) a budget is a financial plan summarizing the financial experience of the past, stating the current plan and projecting it over a specified period of time in the future period. This definition will be considered as a road map for an organization as suggested by Ng`wasa (2017). The budgetary process is the means by which the executive and legislative branches together formulate a coherent set of taxing and spending proposals. The mechanics of this process, and the relative roles of the two parts of government, differ considerably among countries. Budgeting for the national government involves four (4) distinct process or phases: - budget preparation, budget authorization (implantation), budget control and budget monitoring (Des-Wosu, 2018). Financial performance of a business organization refers to the extent at which the financial objectives are met; it also refers to the act of performing a financial activity (Pimpong & Laryea, 2016). It is normally measured through their profitability aspects such as Return on Assets (ROA), Return on Equity (ROE).

Theoretical Review

According to Bhattacherjee, (2012) a theory is a set of systematically inter-related constructs and propositions intended to explain and predict a phenomenon or behavior of interest, within certain boundary conditions and assumptions. Essentially, a theory is a systemic collection of related theoretical propositions. The study is guided by two theories namely, Resource Allocation Theory and Efficiency Structure theory.

Resource Allocation Theory

The resource allocation theory was developed by Mbuthia and Omagwa (2019). It focuses on assessing the manner nations, companies and individuals allot financial resources via the process of budgeting so as to attain objectives (Peteraf and Barney, 2003). The theory further insists on the use of the budgetary process in attaining goals through financial resource allocation (Mbuthia and Omagwa, 2019). This theory is based on the assumption that when the budget is in place assures the acquisition of organizational goals through resource allocation. However, this claim has not been confirmed.

Efficiency Structure Theory

The efficiency structure theory is one of the theories explaining managerial efficiency in relation to the financial performance of organizations. According to this theory enhanced managerial and scale efficiency are the focal aspects that trigger higher concentration and performance. With this view it can be concluded that bank performance is linked to internal factors such as budgetary process. The efficiency structure hypothesis is the proposition that more efficient companies are better to compete, develop and grow in scale, thus resulting in an increase in the degree of market concentration (Mbuthia and Omagwa,

2019). The relevance of the theory is based on the way financial performance is triggered by variables which is in this case are management and efficiency which is related to budgetary process and further links them to higher profitability which is related to financial and operating performance of the banks. The theory assumes that budgetary process assures the profitability of the banks through efficiency in operation

Empirical Review

The Effect of Budget Planning and Preparation on the Financial Performance of Commercial Banks Mbuthia and Omagwa (2019) assessed effect of budgeting on financial performance of selected commercial banks in Kenya. The study employed a cross sectional descriptive design targeting the population from the employees in credit, accounting/finance and operations departments in three selected commercial banks. The study used both primary and secondary data in arriving to its conclusions. Collected data were analyzed through trend analysis, multiple regression analysis and descriptive analysis. The study results indicated that budget preparation has a positive and significant effect on financial performance. Moreover, Lambe (2014) assessed the effects of budgeting and planning on the performance of the Nigerian financial institutions. Findings of the study revealed that budget planning and preparation is one of the effective policy instruments used to improve the performance of the banking institutions. Also, a positive relationship was revealed between budget planning, preparation and performance of Nigerian financial institutions. Similarly, Ng`wasa (2017) evaluated the link between budgeting and financial performance in financial institutions. Results found that there is an existing significant relationship between budget preparation and financial performance. This implies that budget preparation has a great influence to the financial performance of the financial institution since having prior planning and preparing budgets for resource allocation optimizes its use and contributes to the financial performance of an institution. Also, Faith (2013) conducted a study to assess the effects of budgeting process on financial performance of commercial and manufacturing parastatals in Kenya. Findings of the study revealed that more formal budget planning and preparation enhance sales growth leading to higher profits in parastatals and commercial manufacturing organizations.

The Influence of Budget Implementation and Control on the Financial Performance of Commercial Banks

Schubert & Kirsten (2021) examined the effect of budgeting control on the financial performance of SMEs in Germany using the quantitative technique and surveys technique where both questionnaires and the interview guide. The study found that budgetary control helps interpret budgets and performance measurements as communication tools and finally helps to think proactively beyond budgeting. Moreover, it was revealed that budgetary control economizes management time by using the management by exceptional principle. Generally, it was noted that budgetary control has a significant and positive relationship with financial performance. Despite of its relevance, still it focused on the SMEs contrary to the current study and also it was not conducted in Tanzania but rather in Germany with different economic, social, demographic and technological aspects.

Matsoso *et al.* (2021) assessed the effect of budgeting and budgetary controls among SMEs focusing on the developing countries in South Africa. It was found that budgetary control is associated with SMEs

@ECRTD-UK: https://www.eajournals.org/

financial performance. Impliedly, since the budget preparation comes first before the control then, a wellprepared budget and well controlled is likely to significantly affect the financial performance of business firms. However, Matsoso *et al.* (2021) dealt with manufacturing SMEs in South Africa and not financial institutions like commercial banks as per our current study. This study was also conducted in South Africa Cape town and not Tanzania. Within in view, it is impractical to generalize the study findings in Tanzanian context and the banking industry as it is with case of current study.

Imo and Des-Wosu (2018) conducted an assessment on the effect of budgetary control on return on assets and net profit of government-owned companies in Nigeria using descriptive survey research design where questionnaires were employed and Pearson product moment correlation coefficient and descriptive statistic was used with help of SPSS version 20. The study reveals positive significant relationship between budgetary control and financial performance of government-owned companies in River's state on the basis of net profit and returns on assets. Since, the budget to be controlled must has been prepared, thus, it can arguably be concluded that preparation of budget affects the financial performance of business firms.Based on the findings, the study concludes that budgetary control system can be used as a control mechanism to strengthen performance measurement systems. Imo and Des-Wosu (2018) dealt with public owned entities, thus it is not clear whether these findings will be applicable to commercial banks which are private owned companies. Similarly, Imo and Des-Wosu (2018) was supported by Matsoso *et al.* (2021) in South Africa, but both did not confine themselves to the commercial banks as per the current study focus.

The Effects of Budget Monitoring on the Financial Performance of Commercial Banks

Akintoye (2008) assessed the relationship between budget monitoring and firm performance; findings established a positive correlation between the two variables. The independent variable in this study representing budget monitoring was the turnover whereas firm performance was measured in terms of net asset per share, dividend per share and earnings per share. Similarly, Yucel and Gunluk (2007) in their study on the relationship between budget monitoring and firm performance had findings showing positive correlation between the two. However, performance was negatively correlated with rigid budget monitoring practices. Furthermore, according to the study by Nickson and Mears (2012) which aimed in assessing the role played by budget monitoring to enhance financial performance of commercial banks in Boston Massachusetts, revealed that budget monitoring plays a significant role to enhance the financial performance of the commercial banks linked the budgeting control and the financial performance of SMEs in Germany. It was noted that budgetary control was a key aspect of the interpretation of the budgets; thereby it was linked with the performance of SMEs. This study used quantitative technique and surveys technique and employed questionnaires and interview guide. Similarly, the study concluded that budgetary control has the capacity to economize management time based on the management by exceptional (MBE) principle. This implies that budgetary control is one among factors with significant and positive effects on business firms 'financial performance. While, the current study seeks to understand how the budgetary process affect the financial performance, Schubert & Kirsten (2021) dealt with similar topic, however, SMEs was considered instead of commercial banks in Tanzania. Contrastingly, Schubert & Kirsten (2021) studied in Germany while the current study will be done in Tanzania.

Online ISSN: 2053-4094(Online)

Matsoso *et al.* (2021) did similar study in South Africa but it was focused on manufacturing industry and not on financial institutions as it was in the case of Schubert & Kirsten (2021) in German. Given the fact that this study had different research vicinity which is South Africa Cape town thus, its findings cannot be conclusive to the Tanzanian context.

The Effects of Budget Evaluation on Financial Performance of Commercial Banks

Agbenyo, Danquah and Shuangshuang (2018) assessed the budgeting process and its effect on the financial performance of listed manufacturing firms. The manufacturing firms listed on Ghana Stock Exchange were used as evidence. Findings of the study concluded that budget evaluation plays a vital role and has a positive effect on the financial performance of manufacturing firms. Also, Mandela (2014) sought to identify the link between the budgeting process and the performance of the public enterprises in Kenya. One of the study objectives was to establish the effect of budgetary feedback on performance targets. The findings indicated that there is no significant relationship (p = 0.448) between the budget feedback and the financial performance.

Moreover, Asumani (2019) did a study on budgeting and budgetary control as management tools for improving financial performance in local authorities in Zambia. Findings of the study revealed that performance evaluation through budgets is a significant toll towards improving financial performance of companies. Also, Silva & Jayamaha (2012) on the study on the effects of budgetary process on the performance of business. After a careful analysis of the collected data, findings revealed that organizations make performance evaluations through budgets and the process has a significant effect on the financial performance of the companies. Unlike, Asumani (2019) who did closely related study in Zambia in local authorities in Zambia with respect to local authorities. Matsoso *et al.* (2021) evaluated effects of budgeting and budgetary process on manufacturing SMEs in South Africa. Notwithstanding, the clarity of this study result, has weak applicability to the current study SMEs was involve instead of commercial banks. Additionally, the fact that South Africa is different from Tanzania makes such finding less relevant to the current study.

Mahroqi & Matriano (2021) examined the effect of budgetary controls on the financial performance of Oman Telecommunication Company using the survey method based on questionnaires and interviews where data were analyzed using frequency distribution, correlations, and regression analysis. The results indicated that there is a positive relationship between budgetary control and the financial performance of the company. The study findings are in line with that of Matsoso *et al.* (2021) as both studies used similar methods, yet, they did not deal with commercial banks in Tanzania. Likewise, it is unclear upon changing sampling and data analysis methods will the findings be the same. Thus, it is unclear to what extent does budgetary process affect the financial performance in commercial banks in Tanzania, and this is the main knowledge gap of this study.

METHODOLOGY

The study analysis is based on primary and secondary data which were collected from commercial banks in Dodoma city in Tanzania. The study is a survey design adopted to cope with a number of respondents

across the commercial banks of choice consistent with the suggestion of Saunders *et al.* (2014). The study employed mixed research approach which consists of a combination of quantitative and qualitative analysis (Kumar 2019). In this approach, the relationship between independent variables (budget preparation, budget implementation, budget monitoring and budget evaluation) and the dependent variable financial performance were established in mixed terms. The population of the study is about 152 respondents from selected commercial banks in Dodoma city. This study applied both convenient sampling and purposive sampling techniques to select about one hundred and ten (110) respondents which in other words considered a sample size of the study, computed in accordance with the sample size formula by Cochran (1963) as follows: -

 $n = N/(1+Ne^2)$: Where; N = Population Size = 152; n = Sample Size; e = Error term = 5% (0.05); Substituting in the Formula; $n = 152/\{1 + (152 \times 0.05^2)\} = 152/1.38 = 110$

Reliability was analyzed using Cronbach's alpha (α) as it predicts the variables. The usefulness of this technique lies in the capacity to ensure internal consistency and group homogeneity (Kumar, 2019). This is given Cronbach's alpha, once you get from 0.7 and above it is considered reliable. The Cronbach alpha has been computed for the purpose of measuring the reliability of the administered questionnaire. This was achieved through the subjection of five questionnaires to randomly selected employees in the commercial banks in Tanzania. The conclusion reached is that all the variables could be relied upon as the Cronbach alpha achieved was above 0.7 which is what has been used as the hurdle rate of reliability for the study. The validity of the study refers to the quality and instruments of the study are accurate, correct, and truly meaningful and right (Kothari, 2014). To ensure validity, questionnaires were pre-tested by distributing them to statisticians and colleagues for piloting, their opinions. This is important as it tests functionality of data collection instruments prior official usage so that whatever valuable correction gets incorporated before administering to the respondents for use. The validity of the study was measured by the use of Kaiser-Meyer-Olkin (KMO) test was performed to test for validity. Interpretive adjectives for the KMO Measure of Sampling Adequacy are: in the 0.90's as marvelous, in the 0.80's as meritorious, in the 0.70's as middling, in the 0.60's as mediocre, in the 0.50's as miserable, and below 0.50 as unacceptable. The value of the KMO Measure of Sampling Adequacy for this set of variables was 0.771, which would be labeled as 'middling'. Since the KMO Measure of Sampling Adequacy met the minimum criteria, examining the Anti-Image Correlation Matrix was not required

Data Analysis Techniques

Descriptive statistics was used to analyze data and summarize the study results with regard to the respondents' characteristics in form of tables and frequencies. This method was chosen as it displays data the manner which is clearly understood (Kumar, 2019).

Research model setting

The study has set model specification to examine the relationship between budget process and financial performance of commercial banks in Tanzania taking CRDB, NMB, and NBC, as a case study in Dodoma city in Tanzania. On the basis of the empirical model specification below; furthermore, the study used the multiple regressions as shown in the equation below:

 $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ Where: Y = Financial Performance, $\alpha = Constant$, $B = the slope/gradient of the regression line, <math>X_1 =$ Budget Planning and Preparation, $X_2 =$ Budget Implementation and control, $X_3 =$ Budget Monitoring and Evaluation, $\varepsilon = Error term$

The choice of this data analysis method was based on the fact that multiple regression method has capacity to establish correlation among variables of the study.

FINDINGS AND ANALYSIS

The study examined the effects of the budgetary process on the financial performance of Commercial banks in Tanzania, taking CRDB, NMB AND NBC operating in Dodoma as a case study. Definitely, effects of budget planning and preparation, budget implementation and control, budget monitoring and evaluation on the financial performance of commercial banks of NMB, CRDB and NBC banks were investigated. The analysis done basing on the following specific objectives (i) to examine the influence of budget planning and preparation on the financial performance of commercial banks (ii) to evaluate the effect of budget implementation and control on the financial performance of commercial banks and (iii) to analyze the effect of budget monitoring and evaluation on the financial performance of commercial banks and (iii) to analyze the effect of budget monitoring and evaluation on the financial performance of commercial banks.

On addressing the above objectives, the study used both primary and secondary data. Primary data were collected from the respondents whereas secondary data were collected from relevant documents with regard to budgetary process in commercial banks performance. Besides, the financial statements of the selected banks were used to provide secondary data on performance in terms of return on equity (ROE) of the commercial banks of choice. Descriptive statistics and inferential statistics were used in analyzing data regarding the demographic characteristics of respondents whereas multiple regressions was used to establish the correlation of the variables based on the study objectives in question. Presentation of findings of demographic characteristics of respondents was done prior to study findings with regard to study objectives.

Demographic data Analysis

The study examined the demographic characteristics of respondents where items such as age, sex, and education level were considered and analysed. The gender of the respondents were analysed in that both male and female respondents were considered. The respondents were composed of fifty (50) males equivalent to fifty two point six (52.6%) and forty five (45) females equivalent to forty seven point four percent (47.4%). This scattering was due to fact that men were slightly larger in number compared to female bankers. Furthermore, there was no gender biasness as the number of gender was fair distributed such that male exceeded female by five point two percent (5.2%) only, which statistically cannot affect the study result. The study finding is supported by the suggestions of Kumar (2019) on the importance of getting rid of any sort of sample biasness.

The age of the respondents was analysed and the results showed that the majority that is eighty eight point four percent (88.4%) of respondents had the age 30 years and above, implying that this age group is comprised of people with a prudent and sound mind and able to react to various questions posed to them through both interview and questionnaire as they were matured enough to understand and make analysis of issues. The study observations are supported by those in the study of Creswell (2014) which affirmed that biasness in terms of age, level of education, income level and experience be avoided in favour of valid and reliable study findings. The study revealed that over eight four percent (84%) of the respondents had a diploma level of education and above so the diploma and above qualifications were expected to provide right responses to facilitate the completion of the study objectives whereas fifteen point eight percent (15.80%) of the respondents sufficed to give them confidence and exposure to sufficiently responses to the questionnaire and interviews. This was of paramount importance to ensure that biasness or wrong information is avoided. The study findings were in harmony with proposition of Kumar (2019) on emphasis on the consideration of biasness in research.

The Influence of Budget Planning and Preparation on the Financial Performance of Commercial Banks

The study analysed different issues pertaining to budgetary process in commercial banks in Tanzania, taking branches of CRDB, NMB, and NBC operating in Dodoma city as a case study. It should be noted that when we talk of budgetary process we consider the following (i) Budgetary Planning and Preparation (ii) Budget Implementation and Control and (iii) Budget Monitoring and Evaluation. Thus the analysis is based on these aspects of interest. The study investigated or rather to test the extent to which budget planning and preparation influenced the financial performance of commercial banks. The study used multiple regression method to test the above objective and the results revealed that budget planning and preparation in commercial banks has a significant effect on the financial performance of commercial banks in Tanzania. It has been established from Table 4.1 appended at the end of the paper in particular, that an adjusted R² for the overall model was 58.6%. Therefore, this implies that in total variables of choice (budget planning and preparation, budget implementation and control, and budget monitoring and evaluation) which are endogenous have involved in affecting the financial performance of commercial banks in Tanzania by 58.6 % meanwhile, the remaining part (41.4%) accounts for the effect of exogenous variables which are beyond this study.

The conclusion was based on the adjusted R square and not R square consistent with Potters (2021) who holds that adjusted R-squared is a modified version of R-squared that has been adjusted for the number of predictors in the model. Thus, it is expressive to use adjusted R square as the use of unadjusted R squared is misleading as it does not take into consideration of all predictors. Furthermore, results from the Table 4.2 appended which is relating to analysis of ANOVA above where the model in holistic proved that all variables had significant effect on the financial performance of commercial banks in Tanzania as confirmed by having, F (8, 87) = 28.86, p < 0.000 as pursuant Table 4.2 analysis of ANOVA. Moreover, standardized beta coefficients from Table 4.2 were crucial in explaining the effect of each individual endogenous variable (budget planning and preparation, budget implementation and control, and

@ECRTD-UK: https://www.eajournals.org/

budget monitoring and evaluation) on the overall effect on the financial performance of commercial banks of selected banks in Dodoma Tanzania.

Similarly, the results have been further shown in Table 4.2 analysis of ANOVA where the model as a whole proved to be significant to predict the financial performance of commercial banks as F(8,87) = 28.886, p<0.000 as shown in ANOVA of Table 4.1. Since the probability (p) is less than 0.05 (5%) in showing significance of variables. Thus, the researcher concluded that budget planning and preparation on the financial performance of commercial banks. From these observations, the equation summarizes the individual effect of each variable as shown: -

Y = .144 + 0.0422 (budget planning and preparation) + 0.2341 (budget implementation and control) + 0.6461 (budget monitoring and evaluation).

From the modeled equation, it is can be deduced that the unit increase of budget planning and preparation had resulted into 0.042 increase of the financial performance of the selected commercial banks, similarly, unit increase in budget implementation and control had independently led to rise of the of the selected commercial banks by 0.234 and finally, the unit increase of the budget monitoring and evaluation had led to increase of financial performance of the selected commercial banks by 0.646. Generally, all independent variables (budget planning and preparation, budget implementation and control, and budget monitoring and evaluation) had significantly affected the dependent variable (financial performance of the selected commercial banks). However, budget monitoring and evaluation had been a variable which had exerted the largest effect on the dependent variable followed by budget implementation and control and budget planning and preparation.

These findings were in harmony with the findings of Mbuthia and Omagwa (2019) who dealt with assessment of effect of budgeting on financial performance of selected commercial banks in Kenya. Upon using a cross sectional descriptive design it was noted that budget preparation and planning had a positive and significant effect on financial performance of selected banks. Additionally, Lambe (2014) assessed the effects of budgeting and planning on the performance of the Nigerian financial institutions. Findings of the study revealed that budget planning and preparation is one of the effective policy instruments used to improve the performance of the banking institutions. Moreover, Ng`wasa (2017) evaluated the link between budgeting and financial performance in financial institutions. Results found that there is an existing significant relationship between budget preparation and financial performance.

Similarly, in affirming the study findings, participant stated that: -

".....Budget planning and preparation are very crucial in performance of the commercial banks as this is the first stage in the guide formation..... Therefore, the planning is very essential as it creates the roadmap from the managers to be guided.....I am convinced that planning and preparation is essential for the commercial banks to perform.......(Interview held with bank manager A1 from CRDB bank on 25th July 2022)".

It was further affirmed by the study findings, through a respondent who stated that:

@ECRTD-UK: https://www.eajournals.org/

European Journal of Accounting, Auditing and Finance Research Vol.10, No. 11, pp.69-86, 2022 Print ISSN: 2053-4086(Print), Online ISSN: 2053-4094(Online)

"......I have learnt that budget planning and preparation are very crucial in performance of the commercial banks in Tanzania as this is very vital for any business Therefore, the planning and pave the way through which the operations can be guided for easy performance measurement......" (Interview held with bank manager B2 from NBC, bank on 22nd July 2022).

Based on these sentiment it is evidenced that the participant supported empirical studies. As such it is sensible to conclude that budget planning and preparation are crucial in influencing the financial performance of commercial banks in Tanzania and elsewhere in the global. It therefore prudently agreed that there is convincing evidence that both study findings from results of regression and interview converge that planning and preparation significantly affect the financial performance of commercial banks in Dodoma Tanzania.

The effect of Budget Implementation and Control on the Financial Performance of Commercial Banks

The purpose of this research objective was to examine or the test effect of budget implementation and control on the financial performance of commercial banks in Tanzania. The multiple regression technique was used to test the above objective and revealed that budget implementation and control affect the financial performance of Tanzanian commercial banks. This means budget implementation and control in commercial banks has a significant effect on the financial performance of commercial banks in Tanzania. From Table 4.1 appended,(model summary of multiple regression) in particular, has been established that an adjusted R² for the overall model was 58.6%. Therefore, this implies that in total variables of choice (budget planning and preparation, budget implementation and control, and budget monitoring and evaluation) which are endogenous have involved in affecting the financial performance of commercial banks in Tanzania by 58.6 % meanwhile, the remaining part (41.4%) accounts for the effect of exogenous variables which are beyond this study.

The conclusion was based on the adjusted R square and not R square consistent with Potters (2021) who holds that adjusted R-squared is a modified version of R-squared that has been adjusted for the number of predictors in the model. Thus, it is expressive to use adjusted R square as the use of unadjusted R squared is misleading as it does not take into consideration of all predictors. Furthermore, results from the Table 4.2 of ANOVA where the model in holistic proved that all variables had significant effect on the financial performance of commercial banks in Tanzania as confirmed by having F(8, 87) = 28.86, p < 0.000 as provided in Table 4.2 of ANOVA. The study findings were in harmony with the findings of Okumu (2021) in Kenya who studied the impact of budgetary controls on the financial performance. Similarly, such study findings resemble that of Mohammed and Ali (2013) while Mohamed (2022) linked the budgetary process on the financial performance of businesses. The impact of budgetary control on manufacturing firms' financial performance. Additionally, in affirming the study findings, participant upon interviewing stated that:-

".....While budgeting process as a whole is important, yet budget implementation and control ensure that the planning and preparation are observed formerly plannedso as the financial performance of commercial banks gets informed.....through this stage the comparison between planning and

@ECRTD-UK: https://www.eajournals.org/

European Journal of Accounting, Auditing and Finance Research Vol.10, No. 11, pp.69-86, 2022 Print ISSN: 2053-4086(Print), Online ISSN: 2053-4094(Online)

preparation and budget implementation and control are matched......." (Interview held with bank branch manager C1 of NMB bank on 17th July 2022).

From this interview, implies that budget implementation and control are vital for the commercial banks' performance. Therefore, there is undoubted evidence that both study findings from results of regression and participants' interview that budget implementation and control suggestively affect the financial performance of commercial banks of choice in Dodoma Tanzania.

The impact of Budget Monitoring and Evaluation on the Financial Performance of Commercial Banks.

The aim of this research objective was to investigate the impact of budget monitoring and evaluation on the financial performance of commercial banks. Multiple regression method was used to test the above objective and study results indicated that budget monitoring and evaluation impact the financial performance of commercial banks. This implies that budget monitoring and evaluation in commercial banks has a significant effect on the financial performance of commercial banks in Tanzania. From the Table 4.1 (model summary of multiple regressions) in particular, has been established that an adjusted R^2 for the overall model was 58.6%. Therefore, this implies that in total variables of choice (budget planning and preparation, budget implementation and control, and budget monitoring and evaluation) which are endogenous have involved in affecting the financial performance of commercial banks in Tanzania by 58.6% meanwhile, the remaining part (41.4%) accounts for the effect of exogenous variables which are beyond this study.

The conclusion was based on the adjusted R square and not R square consistent with Potters (2021) who holds that adjusted R-squared is a modified version of R-squared that has been adjusted for the number of predictors in the model. Thus, it is expressive to use adjusted R square as the use of unadjusted R squared is misleading as it does not take into consideration of all independent variables. Furthermore, results from the Table 4.2 of ANOVA where the model in holistic proved that all variables had significant effect on the financial performance of commercial banks in Tanzania as confirmed by having F (8, 87) = 28.86, p < 0.000 as pursuant Table 4.2 of ANOVA.

The findings were in harmony with the study findings of Schubert & Kirsten (2021) in German who found that budgetary process affects commercial banks. Furthermore, Matsoso *et al.* (2021) in South Africa noted that budget monitoring and evaluation on the financial performance of commercial banks. Budget monitoring and evaluation stage is important as it compares the planning and implementation of the plan. With this regard, the comparison gives the measure of the financial performance of commercial banks. Likewise, upon the interview with selected respondents stated that:-

".....Budget monitoring and evaluation is an important phase of the budgetary process which helps to compare what was planned and how implementation is done which is translated into the performance of banks.....thus every organization is required to undertake the budgetary process so that manager's performance are guided, so as to measure the performance......(Interview held with bank manager A2 of NBC bank on 17th July 2022).

@ECRTD-UK: https://www.eajournals.org/

Meanwhile, another respondent on similar objective stated that: -

".....I always experience that budget monitoring and evaluation phase is crucial to the commercial banks so that actions are guided......with this in view, budgetary process is linked to the financial performance measurement among banks......The importance of the budgetary process like budget monitoring and evaluation phase applies to all organizations therefore it cannot be undermined......" (Interview held with branch manager B2 of NMB bank on 17th July 2022).

Conclusively, budget monitoring and evaluation phase is very crucial as it sums the other budgetary process stages and enables comparison between the plan and implementation where preparation and controls are also incorporated. Thus, budget monitoring and evaluation significantly affect the financial performance of commercial banks in Tanzania.

CONCLUSION AND RECOMMENDATIONS

Based on the study results with regard to the effect of budget planning and preparation on financial performance of the commercial banks one can conclude that budget planning and preparation had significantly affected the financial performance of selected commercial banks in Tanzania. Thus, budget planning and preparation have significant effect on the financial performance of commercial banks. Based on the study findings attained with respect to effect of budget implementation and control on the selected commercial banks in Dodoma city, it is evident that budget implementation and control had a positive and significant effect on financial performance of the selected commercial banks in Tanzania. Therefore, budget implementation and control processes as part of the budgetary process has positive and significant effect of the financial performance of the commercial banks. The research results showed that monitoring and evaluation activities had positive and significant effect on the financial performance of selected of commercial banks in Dodoma city. Conclusively, monitoring and evaluation as aspect of budgetary process have positive and significant effect on the financial performance of selected of commercial banks in Dodoma city.

Recommendations

Based on the findings disclosed, it is obvious that budgetary process affects financial performance of commercial banks in Tanzania. In this regard, the researcher provided recommendations as under here;-Based on the study findings with respect to this objective, the researcher recommends that bank managers should ensure that the budget planning and preparation phase are consistently and timely done. This can be achieved by ensuring the full participation of all staff at each department, section and unit.

It is further recommended that commercial bank managers should to ensure the budget implementation and control stage is precisely done in so doing it is possible to ensure all resources and corresponding activities are implemented and controlled. This is purposely done to curb inefficiencies. It is necessary to note that effective implementation and control require timely completion of budget planning and preparation.

From the of research findings regarding on the effect of budget monitoring and evaluation on the performance of commercial banks of choice from Dodoma city, it is recommended that, managers of

@ECRTD-UK: https://www.eajournals.org/

Online ISSN: 2053-4094(Online)

commercial banks should increase support in the internal controls in so doing the management will be in a position to ensure budget monitoring and evaluation is thoroughly conducted to discover any budget discrepancy. This can be done through involvement of profession auditors who may regularly perform auditing tasks.

REFERENCES

- Abbadi, S. M & Abu-Rub, N. (2012). The Effect of Capital Structure on the Performance of Palestinian Financial Institutions. *British Journal of Economics, Finance and Management Sciences*, 3(2), 92–101.
- Abummar, A. (2019). Factors affecting the financial performance of Oromia credit and saving share company. The case of the eastern hararghe branch. Catalog of Economics and Finance.
- Agbenyo W, Danquah F.O and Shuangshuang W. (2018). Budgeting and Its Effect on the Financial Performance of Listed Manufacturing Firms: Evidence from Manufacturing Firms Listed on Ghana Stock Exchange. *Research Journal of Finance and Accounting*. Vol.9, No.8. pp. 12 22.
- Akhigbe, A.; McNulty, J.E. (2021). Bank monitoring, profit efficiency and the commercial lending business model. J. Econ. Bus. 2011, 63, 531–551
- Ashebir, A. (2017). Determinants of Profitability: A study on Selected Microfinance Institution in Ethiopia.
- Asumani K. (2019). Budgeting and Budgetary Control as Management Tools for Improving Financial Performance in Local Authorities, Mpika District Council as A Case Study. A dissertation submitted in partial fulfilment of the requirement for the award of a Bachelor of Accountancy (BAC) Degree by Cavendish University.
- Athaley, C., Rastogi, S., Goel, A., and Bhimavarapu, V.M., (2020). Factors Impacting Bank's Performance: A Literature Review. ISSN: 0193-4120 Page No. 7379 7398 7379 Published by: The Mattingley Publishing Co., Inc.
- Bashuna, A. (2013). Factors Affecting Effective Management of the procurement Function at Nakuru North Sub-County. *World Academic Journal of Business & Applied Sciences*, 1(7), 262–291.
- Bhattacherjee, A. (2012). "Social Science Research: Principles, Methods, and Practices" *Textbooks Collection.* Book 3.http://scholarcommons.usf.edu/oa-textbooks/3
- Brunner, C. B., Ullrich, S., & De Oliveira, M. J. (2019). The most optimal way to deal with negative consumer review: Can positive brand and customer responses rebuild product purchase intentions? Internet Research: Electronic Networking Applications and Policy, 29(1), 104–122
- Chang, M. C.; Chen, C. P.; Lin, C. C.; Xu, Y. M. (2022). The Overall and Disaggregate China's Bank Efficiency from Sustainable Business Perspectives. Sustainability 2022, 14, 4366. https://doi.org/10.3390/ su14074366
- Choudhary, N. (2022). Performance of banks in India during the covid-19 pandemic. *International journal* of creative research thoughts. India 10(3) ISSN: 2320-2882
- Ertiro, M. A and Mohammed, L. J. (2022). Factors Affecting the Financial Performance: A Case of Microfinance Institutions in Ethiopia. Journal of Finance and Accounting 2022; 10(1): 64-77. doi: 10.11648/j.jfa.20221001.17
- Faith, M. C. (2013). The effects of budgeting process on financial performance of commercial and manufacturing Parastatals in Kenya. *Accounting, Organizations and society*.

@ECRTD-UK: https://www.eajournals.org/

European Journal of Accounting, Auditing and Finance Research

Vol.10, No. 11, pp.69-86, 2022

Print ISSN: 2053-4086(Print),

Online ISSN: 2053-4094(Online)

- Imo, O.T., Des-Wosu, C. (2018). An Assessment on the Effect of Budgetary Control on Return on Assets and Net Profit of Government-Owned Companies in Rivers State, International Journal of Academic Research in Accounting, Finance and Management Sciences 8 (3): 277-286.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jilenga, M. T. and Luanda, P. (2021). Factors influencing profitability of commercial banks in Tanzania: a case study of CRDB bank plc. 8(1), 61-69. DOI: 10.18488/journal.29.2021.81.61.69.
- Keng'ara, R. and Makina, I. (2020). Effect of Budgetary Processes on Organizational Performance: A Case of Marine State Agencies, Kenya. Universal Journal of Accounting and Finance, 8(4), 115 -130. DOI: 10.13189/ujaf.2020.080404.
- Kirimi, P. N, Kariuki, S. N, Ocharo, K. N. (2022). Ownership structure and financial performance: Evidence from Kenyan commercial banks. PLoS ONE 17(5): e0268301. <u>https://doi.org/10.1371/journal.pone.0268301</u>
- Kothari, C.R (2014). *Research Methodology and Techniques*, New Age International (p) ltd. Publishers, Daryaganj, New Delhi-India
- Kumar, F. (2019). *Research Methodology and Techniques for Social Science*, New Age International (p) ltd. Publishers, Daryaganj, New Delhi-India
- Lawa, E. Zogli, L. J and Bongani Innocent Dlamini, B. I. (2021). Investigating the Determinants of Bank Performance in South Africa: A Panel Data Analysis. Modern Perspectives in Economics, Business and Management. 8 (2), 12-29. DOI: 10.9734/bpi/mpebm/v8/3961F
- Lyimo, B. J and Hussein, M.A (2022). Impact of macroeconomic variables on performance of banks: a case of commercial banks in Tanzania. School of Researchers, Volume 4(1), 96 103.
- Magoma, A., Mbwambo, H. Sallwa, A. Mwasha, N. (2022). Financial performance of listed commercial banks in Tanzania: a CAMEL model approach. African Journal of Applied Research. 8(1), 228-239. http://doi.org/10.26437/ajar.03.2022
- Mahroqi, R. M. A. A., & Matriano, M. T. (2021). Examining the Effect of Budgetary Controls on the Financial Performance of Oman Telecommunication Company. Advances in Social Sciences Research Journal, 8(6). 83-95.
- Mahroqi, R. M. A. A., & Matriano, M. T. (2021). Examining the Effect of Budgetary Controls on the Financial Performance of Oman Telecommunication Company. Advances in Social Sciences Research Journal, 8(6). 83-95.
- Matsoso, M. and Nyathi, M. and Nakpodia, F. (2021) 'An assessment of budgeting and budgetary controls among SMEs: Evidence from a developing economy.', Journal of Accounting in Emerging Economies, 11 (4). pp. 552-577.
- Mbabazize, P., & Twesige, D. (2014). Capital Budgeting Practices in Developing Countries: A case of Rwanda. *Journal of Finance*, 2(3), 1–19.
- Mbuthia V.W and Omagwa J. (2019). Effect of Budgetary Control on Financial Performance of Selected Commercial Banks in Kenya. *IOSR Journal of Economics and Finance*. Volume 10, Issue 3. PP 34-42
- Mbuthia, V. W. (2019). Effect of Budgetary Control on Financial Performance of Selected Commercial Banks in Kenya. *IOSR Journal of Economics and Finance* (IOSR-JEF) e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 10 (3), 34-42.

@ECRTD-UK: https://www.eajournals.org/

European Journal of Accounting, Auditing and Finance Research

Vol.10, No. 11, pp.69-86, 2022

Print ISSN: 2053-4086(Print),

Online ISSN: 2053-4094(Online)

- Michael, E. I., and Enang, E. R (2022). Credit risk and performance of banks in Nigeria. International Journal of Research in Finance and Management 2022; 5(1): 16-24
- Mohamed, A. I. (2022). The impact of budgetary control on manufacturing firms' financial performance Mogadishu – Somalia. *NeuroQuantology*. 20(6), 4741-4755: doi: 10.14704/nq.2022.20.6.
- Mohamed, I. A., Evans, K., & Tirimba, O. I. (2015). Analysis of the Effectiveness of Budgetary Control Techniques on Organizational Performance at Dara- Salaam Bank Headquarters in Hargeisa Somaliland. International Journal of Business Management and Economic Research (IJBMER), 6(6), 327–340.
- Naira, S., AbdulFattah, O., Ahmed Radman, A., and Ahamad, S (2020). The Budgetary Process and its Effects on Financial Performance: A Study of Small and Medium-Sized Enterprises in Yemen. *International Journal of Innovation, Creativity and Change*. www.ijicc.net Volume 14, Issue 4, 2020
- Naira.S, Radman, O. A. A. and Ahamad, S. (2020). The Budgetary Process and its Effects on Financial Performance: A Study of Small and Medium-Sized Enterprises in Yemen. *International Journal* of Innovation, Creativity, and Change. 14(4), 816-834.
- Ng`wasa N.J (2017). The link between budgetary control and financial Performance in financial institutions. A case of national microfinance bank zonal office (central zone) Dodoma. Unpublished Research Report Submitted in Partial/Fulfillment of the Requirement for the Award of a Master's degree of Business Administration in Corporate Management (MBA-CM) of Mzumbe University.
- Okumu, N.O (2021). The impact of budgetary controls on the financial performance of parastatals in Kenya. A Research Submitted In Partial Fulfillment of the Requirements for a Master of Business Administration-Finance University of Nairobi.
- Olaoye, F. O & Ogunmakin, A. A. (2014). Budgetary Control and Performance in Public Corporations in Osun State. *Journal of Humanities and Social Science*, 19(7), 59–62.
- Pandey, P and Pandey, M. M. (2015: 19). Research Methodology: Tools and Techniques, 1st edition, Europe Romania
- Pimpong, S., & Laryea, H. (2016) Budgeting and Its Impact on Financial Performance: The Case of Non-Bank Financial Institutions in Ghana. *International Journal of Business and Management*
- Saerz- Fernandez, F. J., Picazo-Tadeo, A. J. and Hernandez, I. J. (2021). Performance and risk in Brazilian banking industry. Journal homepage. 7, e06524.
- Schubert, H., & Kirsten, S., M. (2021). Effect of Budgeting Control on the Financial Performance of SMEs in Germany. Journal of Finance and Accounting, 5(3), 1-9
- Schwepker, C. H., & Schultz, R. J. (2015). Infuence of the ethical servant leader and ethical climate on customer value enhancing sales performance. Journal of Personal Selling & Sales Management, 35(2), 93–107.
- Shin, H., & Larson, L. R. (2020). The bright and dark sides of humorous response to online customer complaint. European Journal of Marketing, 54, 2013.
- Vikash kumar, S. K. (2021). Impact of covid 19 on Indian economy with special reference to banking sector : An Indian Perspective. International Journal of Law Management & Humanities , 12-20.

European Journal of Accounting, Auditing and Finance Research

Vol.10, No. 11, pp.69-86, 2022

Print ISSN: 2053-4086(Print),

Online ISSN: 2053-4094(Online)

Yonas Nigussie Isayas. (2022) Determinants of banks' profitability: Empirical evidence from banks in Ethiopia, Cogent Economics & Finance, 10:1, 2031433,DOI: 10.1080/23322039.2022.2031433

APPENDICES

Table 1.1: Profitability Trends in Billion Shillings

Bank	2016	2017	2018	2019	2020
NBC	14	15	10	23	22
NMB	153	93	97	142	205
CRDB	63	30	69	122	152

Source: NBC, NMB and CRDB Financial Statements (2016 - 2020)

Table 4.1: Model Summary of Multiple regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson			
1	.789 ^a	.637	.596	.589	2.122			
a. Predictors: (Constant), influence of budget planning and preparation, budget implementation and control, and budget monitoring and								
evaluation								
b. Dependent Variable: The financial performance of commercial banks								

Source: Field Data 2022

Table 4.2: ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.		
1	Regression	27.073	8	9.024	28.860	.000 ^b		
	Residual	17.511	87	.313				
	Total	44.583	95					
a. Dependent Variable: The financial performance of commercial banks								

b. Predictors: (Constant): Influence of budget planning and preparation, budget implementation and control, and budget monitoring and evaluation

Source: Field Data 2022

Table 4.3: Coefficients

		Unstandardized Coefficients		Standardize d Coefficients			Collinearity Statistics		
Model		В	Std. Error	Beta	Т	Sig.	Zero- order	Tolerance	VIF
1	(Constant)	.144	.1851		.781	.002			
	budget planning and preparation	.037	.0832	.0421	.442	.001	.392	.771	1.297
	budget implementation and control	.217	.0832	.2341	2.620	.001	.464	.881	1.135
	budget monitoring and evaluation	.674	.104	.6462	6.458	.000	.747	.701	1.427

Source: Field data 2022

@ECRTD-UK: https://www.eajournals.org/