

## Practices of Capital Budgeting Techniques: Evidence from the Corporate Sector of Pakistan

Muhammad Tariq<sup>1</sup>

Sajid Rahman Khattak<sup>2</sup>

### Abstract

*The main purpose of the current research was to examine the practices of Capital Budgeting Techniques (CBT) in the corporate sector of Pakistan, and to identify the factors that affect CBT's selection during the capital budgeting decision process in Pakistan. In developing countries, researchers have not shown much interest in this regard. Under the Positivist philosophical approach, this study has adopted the quantitative survey method of research. Data was collected through convenient sampling from 173 CFOs/Finance Directors. For analysis, ordinal logistic and binary logistic regression was used. This study found that Pakistan's corporate sector practices are different in some respects from the developed economies. Surprisingly, in Pakistan, in the corporate sector, the traditional Payback Period (PP) is still a dominant CBT, rather than the Net Present Value (NPV) and Internal Rate of Return (IRR). However, NPV is more popular than IRR. Publically listed, and large firms pay more attention to sophisticated CBTs than private and small firms. A positive discovery was that publicly listed firms have started incorporating Real Option (RO) and Sensitivity Analysis (SA) in their practice. Project duration and project size has a significant relationship in the selection of sophisticated CBTs.*

**Keywords:** Capital Budgeting Techniques, Internal Rate of Return, Net Present Value, Payback Period, Real Option, Sensitivity Analysis

### Introduction

Capital investment decisions are important at two levels – the firm level, and the national level. At the firm level, survival, profitability, and growth depends on these decisions, and at the national level, capital investments are essentials to achieve the target outcomes at a broader level (Northcott, 1992). CBTs identify the best projects for investment funds, based on the risk-return relationship (Graham & Smart, 2012). Capital budgeting methods facilitate the top managers in identifying the risks and returns associated with the investments. Profitable projects are accepted, while the unprofitable ones are rejected. In practice, the process is complicated (Hartwig, 2012a).

Peterson and Fabozzi (2002) stated that investment in a particular asset is not an easy job; it is the responsibility of managers to properly appraise the investments through different CBTs before selecting a project. Capital budgeting is a long-term investment, producing benefits for more than a year, as capital investments maximize shareholders

---

<sup>1</sup> PhD Scholar Qurtuba University, Dera Ismail Khan, E-mail: [tariqmaju11@gmail.com](mailto:tariqmaju11@gmail.com)

<sup>2</sup> IBMS, The University of Agriculture, Peshawar, E-mail: [srkhattak@aup.edu.pk](mailto:srkhattak@aup.edu.pk)

wealth. The success of a corporation's development plan depends on its capital budgeting decisions. Therefore, the firm's management is required to practice due diligence (Kiget, 2014). Finance theories recommend that managers should focus only on the addition to the firm's value; managers should identify and accept those projects that add value to the firm. This should be done only through the Discounted Cash Flow (DCF) techniques, preferably the NPV, after establishing the expected value of the project by the managers (Daunfeldt & Hartwig, 2014). A progressive firm in today's world continuously needs investment in fixed assets/projects for its long term survival (Kiget, 2014).

Researchers in the early 1960s paid attention to highlight CFOs practices regarding investment opportunities (de Andrés, de Fuente, & San Martín, 2015). Since the 1970s, a shift had occurred in the CBTs used by the companies. Not only developed countries companies but also other developing countries such as Africa started evaluation of projects by using sophisticated CBTs (Yasmin, 2015). A survey was conducted in 1976 to identify the superiority among the CBTs by Gitman and Forrester in Texas. The results of the survey proposed that firms focused on the adoption of sophisticated CBTs. A larger survey was conducted by Graham and Harvey (2001) in the USA. They collected a questionnaire from 392 CFOs on the Cost of Capital, Capital Budgeting and Capital Structure. The researchers in highly developed countries paid greater attention to capital budgeting practices (Mbabazize & Daniel, 2014; Wnuk-Pel, 2015), especially in North America, Australia and Western Europe (Wnuk-Pel, 2015).

Discussion is available mostly from developed economies on how companies evaluate projects. Answers to such questions are difficult to evaluate from secondary data. The researcher has used the survey method for fulfilling the research objectives. The managers also focus on DCF techniques (Bennouna, Meredith, & Marchant, 2010). In this study, the factors that are important in the selection of CBTs for project/new investment evaluation in Pakistan, are highlighted. The study addresses the theory and the practice gap of CBTs in Pakistan.

### **Literature Review**

Competition, firms' strategy, firms' age and production technology are the key factors for firms to use sophisticated capital investments appraisal methods in the 500 largest, non-financial companies of Portugal (Afonso & Cunha, 2009). In a corporation, the central review committee decides which project is to be accepted, or rejected, on the basis of the CBT results. The IRR is considered as the primary CBT, followed by the PP for secondary analysis (de Andrés *et al.*, 2015; Gitman & Forrester, 1977).

### **Factors Influencing the Selection of CBTs**

According to the study of Graham and Harvey (2001), the firms' CEOs who have done Masters in Business Administration (MBA), give more preference to NPV in the

analysis of projects, as compared to non-MBA managers. The firms' CEOs with higher education utilized IRR frequently and tried to decrease the use of the payback method than others (Hartwig, 2012). The ownership of firms has a minor effect on the selection of capital budgeting methods of firms in the Swedish market (Hartwig, 2012). Publically listed firms are paying significant attention to sophisticated CBTs, as compared to the private firms (Graham & Harvey, 2001).

The large firms in Swedish markets give more value to the IRR, NPV, PP, and SA during the capital budgeting decision, as compared to the small firms (Hartwig, 2012). As per Graham and Harvey (2001), smaller firms rely on the PP, while larger firms depend upon present value techniques. NPV is the most significant method for small and large firms, as well as the traditional payback method, as used by the business sector in the Nelson Mandela Metropole (Bester, 2006). There may be insignificant association among the capital budgeting tools and the firm size in the textile sector in Pakistan (Arslan, Zaman, & Siddiqui, 2014). Organizations that pay dividends regularly, give more emphasis to the IRR and NPV, when compared with companies which do not pay dividends regularly (Graham & Harvey, 2001). Those firms which have higher dividend payout, give less importance to the Profitability Index (PI) as the high dividend payout ratios ascertain the business's liquidity, making capital rationing unlikely (Daunfeldt & Hartwig, 2014). For short-term investments, the firms' managers always select the PP, while for long-term projects, managers desire to use the RO and NPV (Shinoda, 2010).

Most executives select the IRR due to the convenience of the percentage value, which allows for easy comparison of projects across the board, as well as with financial indicators such as the interest rate, inflation, risk payments, financial cost levels, etc. (Brunzell, Liljebloom, & Vaihekoski, 2013). Lee, Cheng, and Chong (2016), in their study, came to the conclusion that the PP is selected due to its simple procedural calculation, and ease of understanding, to bring forth the risk involved. When executives of organization gather models and results, they feel that their evaluation is enhanced and obligation reduced (de Andres et al., 2015).

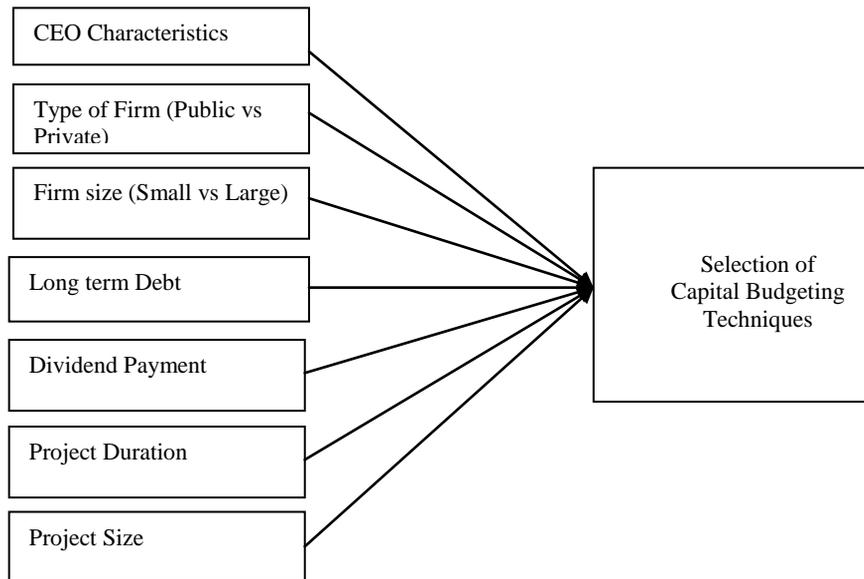


Fig. 1: *Conceptual Model of the Study*

### **Hypotheses of the Study**

*H<sub>1</sub>: There is a significant relationship between firm size and the probability of the selection of CBTs*

*H<sub>2</sub>: Public firms are significantly more likely to select CBTs than the private firms*

*H<sub>3</sub>: There is a significant relationship of CEOs' characteristics and the selection of CBTs*

*H<sub>4</sub>: Firms paying dividend are significantly more likely to select CBTs than firms which do not pay dividend*

*H<sub>5</sub>: There is a significant relationship between project duration and probability of selection of CBTs*

*H<sub>6</sub>: There is a significant relationship between project size and probability of selection of CBTs*

### **Population of the Study**

All firms, public and private, listed on the Pakistan Stock Exchange (PSE) and Securities and Exchange Commission (SECP), and were selected as the population of the study. There are 576 companies listed on the PSE, and 73,207 firms registered with the SECP. Thus, the total population of the study was 73,783 firms.

### Sampling and Sample Size

In the current study, initially, a questionnaire was distributed among 500 CFOs/ Finance Directors. These included 200 public firms and 300 private firms. But only 175 firms returned the questionnaire. Among the returned questionnaires, two were not properly filled, therefore, were removed from the analysis. The final sample that remained included 173 completely filled questionnaires; 91 from the publicly listed firms on the PSE, and 82 from the private firms registered with the SECP.

### Capital Budgeting Techniques

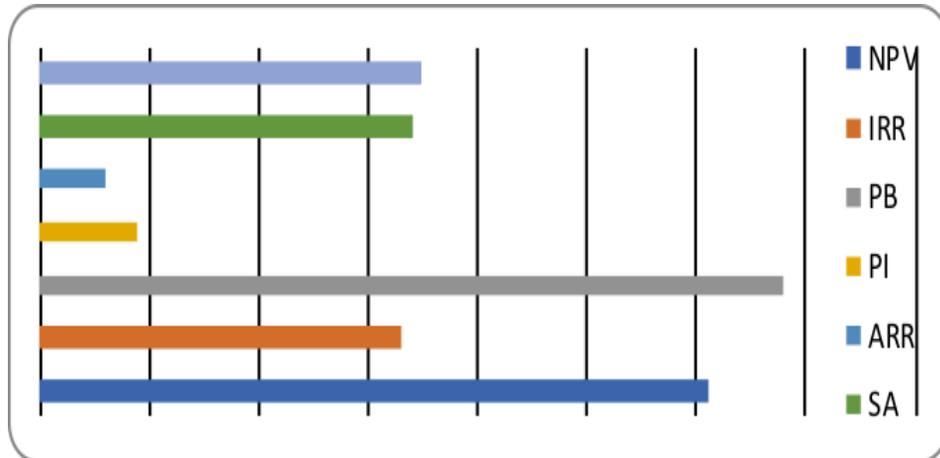


Fig. 2: Percent of CFOs/Director Finance who always or almost used the CBT

Figure 2 shows the popularity of the different CBTs. The figure highlights the percentage of CFOs who always or almost use a particular technique. The survey is based on convenient sampling, and the responses were collected from 173 CFOs/Finance Directors. Surprisingly, the PP method is the most popular CBT in the corporate sector of Pakistan, during a project acquisition or a new investment. NPV is a more dominant technique than the IRR. SA and RO have the same and reasonable importance for CFOs/Finance Directors. Practically, the ARR and PI are given very low weightage during the capital budgeting decisions.

Table 1: Correlation of CBTs with Sales, Assets, CEO Characteristics, Ownership and Dividend Payment

|               | NPV                  | IRR                  | Payback              | PI                   | ARR                  | SA                   | RO                   |
|---------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Sales         | .325 <sup>(**)</sup> | .387 <sup>(**)</sup> | .206 <sup>(**)</sup> | .189 <sup>(*)</sup>  | .219 <sup>(**)</sup> | .243 <sup>(**)</sup> | .174 <sup>(*)</sup>  |
| Assets        | .609 <sup>(**)</sup> | .480 <sup>(**)</sup> | .270 <sup>(**)</sup> | .477 <sup>(**)</sup> | .465 <sup>(**)</sup> | .474 <sup>(**)</sup> | .471 <sup>(**)</sup> |
| CEO Education | .503 <sup>(**)</sup> | .390 <sup>(**)</sup> | .292 <sup>(**)</sup> | .582 <sup>(**)</sup> | .574 <sup>(**)</sup> | .507 <sup>(**)</sup> | .554 <sup>(**)</sup> |
| Age of CEO    | .360 <sup>(**)</sup> | .211 <sup>(**)</sup> | .169 <sup>(*)</sup>  | .308 <sup>(**)</sup> | .356 <sup>(**)</sup> | .329 <sup>(**)</sup> | .351 <sup>(**)</sup> |
| CEO tenure    | -.041                | -.192 <sup>(*)</sup> | -.012                | .014                 | .053                 | .163 <sup>(*)</sup>  | .169 <sup>(*)</sup>  |
| Ownership     | .626 <sup>(**)</sup> | .435 <sup>(**)</sup> | .340 <sup>(**)</sup> | .537 <sup>(**)</sup> | .456 <sup>(**)</sup> | .456 <sup>(**)</sup> | .557 <sup>(**)</sup> |
| Pay Dividend  | .574 <sup>(**)</sup> | .410 <sup>(**)</sup> | .270 <sup>(**)</sup> | .531 <sup>(**)</sup> | .471 <sup>(**)</sup> | .382 <sup>(**)</sup> | .556 <sup>(**)</sup> |

Table 1 shows the Spearman rho correlation of CBTs with sales, assets, CEO characteristics, type of firm, paying and non-paying dividend firms. Total sales indicate the size of the firm in terms of sales. Total assets mean the size of the firm in terms of assets. CEO characteristics consist of CEO Education, Age of CEO and CEO tenure in current job. Ownership refers to public and private firms. From the table above, it is clear that there is a moderate positive significant relationship of Sales with CBTs, except for the PI, which has a low r value (.189\*). The r values of assets with NPV .609(\*\*), IRR .480(\*\*), PP .270(\*\*), PI .477(\*\*), ARR .465(\*\*), SA .474(\*\*) and RO .471(\*\*) indicate that there is a strong significant correlation of CBTs with assets. CEO education and CEO age have significant correlation with CBTs. CEO Tenure has an insignificant correlation with CBTs. There is a high positive, significant correlation of ownership with CBTs and there is also a positive significant correlation of paying and non-paying dividend firms in the selection of CBTs.

Table 2: Correlation of CBTs with Project Duration and Project Size

|                          | Use of NPV in latest project | Use of IRR in latest project | Use of PP in latest project | Use of PI in latest project | Use of ARR in latest project | Use of SA in latest project | Use of RO in latest project |
|--------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|
| Duration of last project | .486**                       | .504**                       | .347**                      | -.039                       | -.001                        | .620**                      | .619**                      |
| Cost of latest project   | .362**                       | .359**                       | .137                        | .128                        | .329**                       | .390**                      | .405**                      |

Table 2 shows the use of the Pearson correlation to show the relationship of the project duration and the project size with CBTs. Project duration has a positive significant correlation with NPV, IRR, and PP, and an insignificant relationship with PI and ARR. The SA's and RO's r values, .620\*\* and .619\*\* respectively, indicate that there is a strong positive correlation of SA and RO with the project duration, in the case of new investments. Project cost has a positive, significant relationship with NPV, IRR, ARR, SA and RO, while project cost has an insignificant correlation with the PP and PI.

Table 3: Determinants of NPV and IRR using Ordinal Logistic Regression

|                |                   | NPV      |      | IRR      |      |
|----------------|-------------------|----------|------|----------|------|
|                |                   | Estimate | Sig. | Estimate | Sig. |
| Dividend       | Non-paying        | -3.083   | .001 | -1.936   | .008 |
|                | Paying            | 0(a)     |      | 0(a)     |      |
| CEO Education  | Non-MBA CEO       | -1.971   | .000 | -.679    | .115 |
|                | MBA/CA/ICMA CEO   | 0(a)     |      | 0(a)     |      |
| AGE of CEO     | Young CEO         | .665     | .450 | .436     | .522 |
|                | Senior CEO        | .085     | .879 | .241     | .568 |
|                | Most Senior CEO   | 0(a)     |      | 0(a)     |      |
| CEO Experience | Less than 5 years | 2.517    | .000 | 2.183    | .000 |
|                | More than 5 years | 0(a)     |      | 0(a)     |      |

|              |            |                         |      |                         |      |
|--------------|------------|-------------------------|------|-------------------------|------|
| Type of Firm | Private    | -.091                   | .927 | .797                    | .341 |
|              | Public     | 0(a)                    |      | 0(a)                    |      |
| Total Sales  | Small Firm | -2.283                  | .000 | -1.148                  | .001 |
|              | Large Firm | 0(a)                    |      | 0(a)                    |      |
| Total Assets | Small Firm | -.856                   | .208 | -.670                   | .159 |
|              | Large Firm | 0(a)                    |      | 0(a)                    |      |
|              |            | Nagelkerke $R^2 = .672$ |      | Nagelkerke $R^2 = .375$ |      |

Table 3 indicates the effect of dividend, CEO characteristics, type of firm and firm size on NPV selection. The model for NPV (as a dependent variable) is statistically significant ( $p=.000$ ). The Nagelkerke R-Square value (.672) is high. It indicates that the independent variables explain a 67% chance of selecting NPV during a new investment. It is observed that dividend, CEO education, CEO tenure, and sales, have a significant impact on the selection of NPV. On the other hand, total assets, type of firm, and age of CEO have an insignificant effect on the NPV selection. The Nagelkerke R-Square value (.375) is at a moderate level. It indicates that the independent variables explain a 37% chance of selecting IRR during a new investment. It is observed that dividend, CEO experience, and sales have a significant impact on the selection of IRR, while total assets, type of firm, age of CEO, CEO tenure and CEO education have an insignificant effect on the IRR selection. The results of the current research are consistent with Daunfeldt and Hartwig (2014), and Graham and Harvey (2001).

Table 4: *Determinants of PP and PI using Ordinal Logistic Regression*

|                |                   | PBP                     |      | PI                      |      |
|----------------|-------------------|-------------------------|------|-------------------------|------|
|                |                   | Estimate                | Sig. | Estimate                | Sig. |
| Dividend       | Non-paying        | -3.980                  | .217 | -1.959                  | .146 |
|                | Paying            | -2.828                  |      | 1.691                   |      |
| CEO Education  | Non-MBA CEO       | 1.006                   | .029 | -1.337                  | .001 |
|                | MBA/CA/ICMA CEO   | 0(a)                    |      | 0(a)                    |      |
| AGE of CEO     | Young CEO         | .454                    | .419 | -1.903                  | .280 |
|                | Senior CEO        | 0(a)                    |      | 0(a)                    | .214 |
|                | Most Senior CEO   | -1.623                  | .014 | .796                    |      |
| CEO Experience | Less than 5 years | .631                    | .188 | -.603                   | .000 |
|                | More than 5 years | 0(a)                    |      | 0(a)                    |      |
| Type of Firm   | Private           | -.272                   | .012 | 1.939                   | .507 |
|                | Public            | 0(a)                    |      | 0(a)                    |      |
| Total Sales    | Small Firm        | -2.751                  | .010 | .709                    | .205 |
|                | Large Firm        | 0(a)                    |      | 0(a)                    |      |
| Total Assets   | Small Firm        | -1.258                  | .443 | .495                    | .000 |
|                | Large Firm        | 0(a)                    |      | 0(a)                    |      |
|                |                   | Nagelkerke $R^2 = .363$ |      | Nagelkerke $R^2 = .495$ |      |

Table 4 indicates the effect of Dividend, CEO characteristics, Type of Firm and Firm size on Payback Period (PP) selection. The model for PP (as a dependent variable)

is statistically significant ( $p=.000$ ). The Nagelkerke R-Square value (.363) is at a moderate level. It indicates that the independent variables explain a 36% chance of selecting PP during a new investment. It is observed that Sales, CEO Education, and Type of Firm have a significant impact on the selection of PP. CEO Age and Tenure, Dividend and Assets have an insignificant effect on the PP selection. The Nagelkerke R-Square value (.495) is at a high level. It indicates that the independent variables explain a 50% chance of selecting PI during a new investment. It is observed that Assets and CEO Education have a significant impact on the selection of PI. Type of Firm, Dividend and CEO Characteristics has an insignificant effect on the PI's selection. The results are different in the case of traditional CBTs, when compared to Gupta, Mahakud, and Debata (2018), while consistent with the findings of Hanaeda and Serita (2014).

Table 5: *Determinants of PP using Ordinal Logistic Regression*

|                |                   | ARR                     |      |
|----------------|-------------------|-------------------------|------|
|                |                   | Estimate                | Sig. |
| Dividend       | Non-paying        | -1.434                  | .089 |
|                | Paying            | 1.954                   |      |
| CEO Education  | Non-MBA CEO       | -2.119                  | .000 |
|                | MBA/CA/ICMA CEO   | 0(a)                    |      |
| AGE of CEO     | Young CEO         | -2.871                  | .190 |
|                | Senior CEO        | 0(a)                    |      |
|                | Most Senior CEO   | 1.067                   |      |
| CEO Experience | Less than 5 years | -1.852                  | .001 |
|                | More than 5 years | 0(a)                    |      |
| Type of Firm   | Private           | 2.366                   | .000 |
|                | Public            | 0(a)                    |      |
| Total Sales    | Small Firm        | 3.226                   | .863 |
|                | Large Firm        | 0(a)                    |      |
| Total Assets   | Small Firm        |                         |      |
|                | Large Firm        | -.069                   | .000 |
|                |                   | Nagelkerke $R^2 = .513$ |      |

Table 5 indicates the effect of dividend, CEO characteristics, type of firm and firm size on ARR's selection. The model for ARR (as a dependent variable) is statistically significant ( $p=.000$ ). The Nagelkerke R-Square value (.513) is at a high level. It indicates that the independent variables explain a 51% chance of selecting ARR during a new investment. It is observed that assets, type of firm, CEO education and CEO experience have a significant impact on the selection of ARR. Sales, dividend and CEO age have an insignificant effect on ARR selection.

Table 6: *Determinants of SA and RO using Ordinal Logistic Regression*

|                |                    | SA       |      | RO       |      |
|----------------|--------------------|----------|------|----------|------|
|                |                    | Estimate | Sig. | Estimate | Sig. |
| Dividend       | Non-paying         | -1.409   | .059 | -1.966   | .248 |
|                | Paying             | -.549    |      | -1.000   |      |
| CEO Education  | Non-MBA CEO        | 18.832   | .000 | -1.048   | .029 |
|                | MBA/CA/ICMA<br>CEO | 0(a)     |      | 0(a)     |      |
| AGE of CEO     | Young CEO          | -2.518   | .000 | -1.090   | .160 |
|                | Senior CEO         | 0(a)     |      | 0(a)     |      |
|                | Most Senior CEO    | .199     | .778 | 1.046    |      |
| CEO Experience | Less than 5 years  | -1.080   | .385 | -.300    | .128 |
|                | More than 5 years  | 0(a)     |      | 0(a)     |      |
| Type of Firm   | Private            | .383     | .000 | .702     | .596 |
|                | Public             | 0(a)     |      | 0(a)     |      |
| Total Sales    | Small Firm         | -18.393  | .972 | -.528    | .604 |
|                | Large Firm         | 0(a)     |      | 0(a)     |      |
| Total Assets   | Small Firm         | .013     | .21  | .203     | .001 |
|                | Large Firm         | 0(a)     |      | 0(a)     |      |

Nagelkerke  $R^2 = .414$ , Model Fit Sig.= .000 Nagelkerke  $R^2 = .472$ , Model Fit Sig = .000

Table 6 indicates the effect of dividend, CEO characteristics, type of firm and firm size on SA’s selection. The model for SA (as a dependent variable) is statistically significant ( $p=.000$ ). The Nagelkerke R-Square value (.40) is at a moderate level. It indicates that the independent variables explain a 40% chance of selecting SA during a new investment. It is observed that CEO education, CEO age, and type of firm have a significant impact on the selection of SA. Assets, sales, CEO tenure and dividend have an insignificant effect on SA’s selection. The Nagelkerke R-Square value (.47) is at a moderate level. It indicates that the independent variables explain a 40% chance of selecting RO during a new investment. It is observed that CEO education, and assets have a significant impact on the selection of RO. Sales, CEO tenure, age, and type of firm have an insignificant effect on the RO selection. In the case of RO and SA, the results are consistent with de Andrés *et al.* (2015).

### Discussion

The models used in investments and corporate finance have been developed under the theory of at-least more or less efficient/developed markets, but these theories/models are objectionable when applied to less developed, rising markets which are not well-organized (Batra & Verma, 2017; Maquieira, Preve, & Sarria-Allende, 2012). In recent years, some researchers have devoted attention to understand the market features of developing markets, but there has not yet been a comprehensive study showcasing how practitioners actually make investing/financing decisions. Rising

markets are characterized as having advanced information asymmetries, high transaction costs, more determined ownership, are short of market development and have low market liquidity (Maquieira *et al.*, 2012).

Large firms (sales-wise and assets-wise) give more preference to CBTs (NPV, IRR, PP, PI, ARR, SA and RO) than small firms in project evaluation. From the discussion above, it is recommended that the hypothesis  $H_1$  was accepted. Small firms evaluate projects in a way to accomplish sound effects linked to direct market actions, while large firms mainly focus on the company's goals, quality improvement, and internal control systems in the case of new investments. Large firms are significantly more likely to use the NPV, IRR, hurdle rate, SA, and RO than small firms (Graham & Harvey, 2001; Kozlowski & Matejun, 2016). There are significant differences in the use of typical corporate finance techniques in the perspective of small and large enterprises (Maquieira *et al.*, 2012). Publically listed firms on the PSE give more preference to sophisticated CBTs than private limited. Due to lack of resources (financial and human), small, private firms rely only on traditional methods to evaluate projects, as compared to large, public firms (Danielson & Scott, 2006; Kozlowski & Matejun, 2016). From the results, hypothesis  $H_2$  was accepted partially. Large firms, having the experience of mergers and acquisitions, prefer evaluating their investment opportunities using the NPV technique. It might be because they have experts in their organization, who collect and examine the necessary data for the evaluation of the proposed investment (Hanaeda & Serita, 2014).

Companies paying dividends have a greater propensity to use the NPV, IRR, SA, simulation models and even PP (de Andrés *et al.*, 2015). There exists an insignificant relationship between the size of the firm as measured by the asset value, sales volume, and the number of employees, and the type of CBT used, as in the Nelson Mandela Metro-pole (Bester, 2006).

CEOs with finance education depend more on sophisticated CBTs than non-MBA CEOs. The mean values regarding the usage of NPV and IRR are observed to be greater amongst the CEOs holding professional degrees (Chartered Accountancy, and MBA Finance) over those possessing other Masters degrees (Batra & Verma, 2017). MBA CEOs are significantly more likely to use sophisticated CBTs in practice than their counterparts (Graham & Harvey, 2001; Ryan & Ryan, 2002). In Pakistan, corporate sector, young CEOs pay less importance to CBTs during project acquisition than senior CEOs. There is an insignificant difference between the mean values of CEOs with less experience, as compared to the CEOs with more experience. From the above discussion, hypothesis  $H_3$  was rejected. CEO tenure has very little effect on the use of CBTs in the corporate sector of Sweden (Hartwig, 2012b). CEO tenure has an insignificant

relationship with the selection of capital investment appraisal techniques (Gupta et al., 2018).

In Pakistan, dividend paying firms give significantly more preference to NPV, IRR, SA, and RO than non-paying dividend firms, during capital budgeting decisions. Previous researchers highlight several differences between dividend-paying and non-dividend paying firms. Hypothesis H<sub>4</sub> was accepted. Jones and Smith (2016) concluded that non-dividend paying firms face a high-risk environment. They have high return volatility, high profit volatility and high book to market ratios, as compared to dividend paying firms (Pastor & Veronesi, 2003). Project size and project duration has a significant impact on the selection of CBT in the case of public listed firms. It is concluded from the above results that hypothesis H<sub>5</sub> and H<sub>6</sub> are both partially accepted.

Traditional PP method is the most popular CBT in the corporate sector of Pakistan. In this case, the results are consistent with the study of Hanaeda and Serita (2014), that Japanese firms give importance to the PP method than the NPV and IRR. Conversely, the results of Graham and Harvey (2001) are different from the results of this study, as they conducted a survey on the US firms and highlighted that US firms paid more attention to NPV and IRR than other CBTs.

### **Conclusion**

Surprisingly, in Pakistan's corporate sector, the PP is the most popular method, in comparison to the NPV and the IRR. International comparison indicates that the capital budgeting decision practices of Pakistani firms are different to the developed countries firms' in some aspects. Currently, Pakistan is facing political instability, as well as energy crises and corruption. In such a scenario, Pakistani CFOs prefer short term projects, and therefore, depend more on the PP than other CBTs. The other reason is that in Pakistan, investment opportunities are inadequate, as compared to developed countries.

Publically listed firms have started the use of sophisticated CBTs. NPV is preferred over IRR in Pakistan's corporate sector, as opposed to the findings in the developed countries. Other than the IRR and NPV, the PP is the most popular method for US companies (Graham & Harvey, 2001). The results of the current study, in respect of the most popular CBT, are also in line with the findings of Hanaeda and Serita (2014). They found that Japanese firms paid more attention to PP over the NPV and IRR.

CFOs in Pakistan are recommended the use of more sophisticated CBTs, mainly NPV, IRR, SA, and RO while evaluating new investments, or in case of project acquisitions. The current survey on the theory/practice gap in the field of capital budgeting decision shows that gap exists between the practitioners and recommended theories by the finance experts. Moreover, executives are recommended to implement these updated financial techniques for better evaluation of the projects. On the basis of

the current research findings, it is recommended to the future researchers to conduct a qualitative or mixed method research on capital budgeting practices. Additionally, to further enhance the relationship, future researchers may add possible moderators (firm's age, ownership structure, etc.) to the existing model. Researchers may include the cost of capital calculation approaches and adjust discount rate for different risk factors in their studies.

### References

- Afonso, P., & Cunha, J. (2009). Determinants of the use of capital investment appraisal methods: evidence from the field. *European Applied Business Research Conference (EABR)*.
- Batra, R., & Verma, S. (2017). Capital budgeting practices in Indian companies. *IIMB Management Review*, 29(1), 29-44.
- Bennouna, K., Meredith, G. G., & Marchant, T. (2010). Improved capital budgeting decision making: evidence from Canada. *Management Decision*, 48(2), 225-247.
- Bester, L. (2006). An Empirical Study of Capital Budgeting Evaluation Techniques Used by Firms in the Nelson Mandela Metropole. *Cost and Management Accounting, Nelson Mandela Metropolitan University, Nelson Mandela Metropole*.
- Brunzell, T., Liljebloom, E., & Vaihekoski, M. (2013). Determinants of capital budgeting methods and hurdle rates in Nordic firms. *Accounting & Finance*, 53(1), 85-110.
- Danielson, M. G., & Scott, J. A. (2006). The Capital Budgeting Decisions of Small Businesses. *Journal of Applied Finance, Fall/Winter*, 16(2), 45-56.
- Daunfeldt, S.O., & Hartwig, F. (2014). What determines the use of capital budgeting methods? Evidence from Swedish listed companies. *Journal of Finance and Economics*, 2(4), 101-112.
- De Andrés, P., de Fuente, G., & San Martín, P. (2015). Capital budgeting practices in Spain. *BRQ Business Research Quarterly*, 18(1), 37-56.
- Gitman, L. J., & Forrester, J. R. (1977). A survey of capital budgeting techniques used by major US firms. *Financial Management*, 66-71.
- Graham, & Harvey. (2001). The Theory and Practice of Corporate Finance: Evidence from the field. *Journal of Financial Economics*, 60(2), 187-243.
- Graham, & Smart, S. B. (2012). *Introduction to Corporate Finance* (Vol. 3rd): Cengage Learning.
- Gupta, G., Mahakud, J., & Debata, B. (2018). Impact of CEO's characteristics on investment decisions of Indian listed firms: Does crisis make any difference? *Cogent Economics & Finance*, 6(1), 1439258.
- Hanaeda, H., & Serita, T. (2014). Capital Budgeting Practices: Evidence from Japan. *Available at SSRN 2312264*.
- Hartwig, F. (2012a). *Four Papers on Top Management's Capital Budgeting and Accounting Choices in Practice*. Företagsekonomiska institutionen.
- Hartwig, F. (2012b). The use of capital budgeting and cost of capital estimation methods in Swedish listed companies. *Journal of Applied Business Research*, 28(6), 1451-1476.
- Jones, T. W., & Smith, J. D. (2016). An Historical Perspective of Net Present Value and Equivalent Annual Cost. *Accounting Historian Journal*, 09(01), 103-110.
- Kiget, D. (2014). *Capital Budgeting Techniques Adopted By Companies Listed at the Nairobi Securities Exchange*. United States International University-Africa.
- Kozlowski, R., & Matejun, M. (2016). Characteristic features of project management in small and medium-sized enterprises. *E+ M Ekonomie a Management* (1), 33.

- Lee, H.-S., Cheng, F.-F., & Chong, S.-C. (2016). Markowitz portfolio theory and capital asset pricing model for Kuala Lumpur stock exchange: A case revisited. *International Journal of Economics and Financial Issues*, 6(3S).
- Maquieira, C. P., Preve, L. A., & Sarria-Allende, V. (2012). Theory and practice of corporate finance: Evidence and distinctive features in Latin America. *Emerging markets review*, 13(2), 118-148.
- Mbabazize, P. M., & Daniel, T. (2014). Capital Budgeting Practices In Developing Countries: A Case Of Rwanda. *Research Journal's Journal of Finance*, 2(3), 34- 38.
- Northcott, D. (1992). *Capital investment decision-making*: Cengage Learning EMEA.
- Pastor, L., & Veronesi, P. (2003). Stock valuation and learning about profitability *Journal of Finance*, 5(58), 1749-1789.
- Peterson, P. P., & Fabozzi, F. J. (2002). *Capital budgeting: theory and practice*. John Wiley & Sons.
- Ryan, P. A., & Ryan, G. P. (2002). Capital budgeting practices of the Fortune 1000: how have things changed? *Journal of Business and Management*, 8(4), 355-364.
- Wnuk-Pel, T. (2015). Factors determining the selection of capital budgeting methods in companies operating in Poland. *Zeszyty Teoretyczne Rachunkowosci*, (84), 217-240.
- Yasmin, S. (2015). Capital Budgeting in Practice: An Explorative Study on Bangladeshi Companies. *International Journal of Engineering, Business and Enterprise Applications*, 11(02), 158-163.