A Study on the Capital Budgeting Practices: Evidences from Bhutan

Hita Nath Dhakal^{1*} Dr Rajnish Ratna² Budha Raj Kafley³ Ankit Bhujel⁴ Bhim Bdr. Subba⁵ Jamayang Chetsho⁶ Ugyen Tshering⁷

Abstract

This research aims at identifying the long-term investment decision practices prevailing amongst the Bhutanese firms. The capital budgeting tools and techniques used by the Bhutanese firms to evaluate new projects and then estimate their capital costs has been identified for this study. The data consists of listed companies under Royal Securities Exchange of Bhutan Limited and Druk Holding and Investment (DHI) owned companies. It is clear from this study that RSEBL listed companies and DHI owned companies mostly prefer profitability index in capital budgeting decision-making in Bhutan. The findings from this study also reveals that, the project risk assessment tools such as scenario analysis and real options are the dominant approaches. There was no statically significant relationship between capital budgeting techniques employed by the RSEBL listed companies and the DHI owned companies.

Key words: Capital Budgeting, Profitability Index, RSEBL, DHI, risk assessment.

1. Introduction

Capital budgeting is one of the most fundamental subjects in financial literature and plays a vital role in determining the long-term investment decision of a firm. Pandey (2015) described capital budgeting as the process of investing funds in long-term assets to generate an expected flow of benefits over a series of years. According to Gervais (2009), capital budgeting is the process through which firms determine the optimal allocation of their financial resources by way of reassessing their current commitments in existing projects, venturing into new projects, or even purchasing other firms through mergers, consolidations, and takeovers. The capital budgeting process is implicitly responsible for determining the nature and size of a firm's assets which generates cash flows that ultimately determine a firm's profitability, value, and viability.

Corresponding author Email id: hitanath.gcbc@rub.edu.bt

¹ Lecturer, Gedu College of Business Studies, Royal University of Bhutan

² Professor, FMS, Gopal Narayan Singh University Rohtas Bihar

³ Student, Gedu College of Business Studies, Royal University of Bhutan

⁴ Student, Gedu College of Business Studies, Royal University of Bhutan

⁵ Student, Gedu College of Business Studies, Royal University of Bhutan

⁶ Student, Gedu College of Business Studies, Royal University of Bhutan

⁷ Student, Gedu College of Business Studies, Royal University of Bhutan

The basic objective of financial management is to maximize shareholders' wealth through three key decisions which are capital budgeting decisions, capital structure decisions, and dividend decisions. Most scholars and practitioners opine that although three decisions are important, firm success and survival ultimately depend on the rightful investment decisions, because a good investment decision will remain profitable even if financial policies are suboptimal while a bad investment decision will be wrong even if the best finance policy is implemented (Brealey, 2015).

1.1 Significance of the Study

This study aims to provide empirical evidence on capital budgeting practices being utilized by Bhutanese firms. The findings of this study will contribute towards productive business by covering different aspects of investment assessment techniques used by companies functioning in different sectors. The present study is anticipated to provide significant contributions benefiting both practitioners and academicians. For the former, the use appropriate capital budgeting technique can help in making sound investment decision while, for the latter, it will provide insights into the use of valuation techniques to capital budgeting enabling experts to identify problems (Al-Mutairi, 2018). Similarly, the findings of this work are also expected to help increase the knowledge about capital budgeting techniques and their importance in investing.

The study is also expected to highlight and enlighten on which capital budgeting techniques are mostly adopted, preferred, and frequently used by Bhutanese firms and for what purposes the Bhutanese firms use capital budgeting techniques. Hence, the findings of this study is likely to contribute to the limited literature on capital budgeting appraisal techniques in Bhutan.

2. Review of literature

In one of study conducted by Graham and Harvey (2001), they have initiated a survey in USA and asked 392 Chief Finance Officers (CFOs) about capital budgeting, cost of capital and capital structure and with the response rate of 9%, they concluded that most of the large firms adopt Net Present Value (NPV) and Capital Asset Pricing Model (CAPM) as compared to small firms who were moreover dependent on Payback Period (PBP) technique. Bennouna et al. (2010) studied on the capital budgeting practices for 88 large Canadian firms and with the response rate of 18.4%, it was found that the Canadian firms frequently uses Time Value of Money based Discounted Cash Flows (DCF) and adopts real options, Monte Carlo simulation, decision trees and game theory while evaluating the project risks. However, 17%

of large Canadian firms are using traditional capital budgeting tools and hence the use of real options in these firms stands to just 8%.

Traditional capital budgeting techniques which do not use the principle of time value of money was quite popular in the countries like Japan and Spain. Japanese firms were comfortable in using payback period technique in order to evaluate a long-term investment. NPV and IRR were hardly used by Japanese firms (Hanada, 2014). Another study conducted in Spain by Andres, Fuente & Martin (2015) revealed that most of the Spanish companies in prefer to use the payback period method followed by Net present value and internal rate of return. The special feature of liquidity and simplicity makes the Payback period technique more popular and hence, there is a very limited use of real options by the firms operating in Spain.

A research conducted in Kuwait by Alkulaib.et al.,(2016) concluded that the most commonly used capital budgeting techniques in order to evaluate the long-term investment projects is Net Present Value (NPV) in Kuwait. Basically, NPV and real option (RO) methods are largely used by investment heads compared to that of higher management. Likewise, the study also revealed that IRR is common amongst the middle management only. Project Risk assessment tools such as sensitivity analysis and variable discount rate (VDR) methods are used frequently by the higher-level managers and accountant. The study also revealed that the age, gender and educational qualification has significant effects on most of the long-term investment decisions. However, the capital techniques such as payback period, sensitivity analysis and real options Whereas, to those educational qualification, payback period, sensitivity analysis and real options are more popular amongst the professionals (AlKulaib et al., 2016).

Likewise, a detailed primary investigation was initiated which involved 46 CFOs from the manufacturing and trading companies listed on the Colombo Stock Exchange of Sri Lanka. The study revealed that NPV was the most preferred method over the payback period and IRR. Furthermore, the selection of capital budgeting techniques varied based on CFO's experience and qualifications. CFOs with higher educational qualifications basically prefer to use sophisticated capital budgeting techniques, whereas those with more experience leaned towards IRR and sensitivity analysis (Nurullah & Kengatharan, 2015).

Batra and Verma (2017) expressed that the Indian corporate sector are advancing more towards the modern approach of Capital Budgeting Techniques such as NPV, IRR, MIRR and Monte Carlo Simulation Analysis. Although, payback period was commonly used tool in India, yet, there are evidences of increased preference in the use of ARR, PI, cost of capital and adjusted

present values. Likewise, Pakistani listed firms frequently use Discounted Cash Flow(DCF) techniques with NPV occupying the top of the table priority list (Mubashar & Tariq, 2019).

A study was conducted in Brazil to analyse capital budgeting practices employed by 19 large super markets located in the State of Santa Catarina. It was discovered that regardless of the companies adopting dissimilar approaches for evaluating investments, companies often use investment appraisal techniques, and the Net Present Value and the Accounting Rate of Return were the predominant approaches (Paula de Souza Michelon, 2019). Also, it was observed that the participant companies frequently use scenario analysis method for analysing investment risk. However, this literature still lacks studies exploring companies in different countries mainly to compare the findings.

NPV and IRR gained the popularity in Korean firms regardless of whether the firms were Chaebol-affiliated or not, while in UK, Germany, and France, the most preferred capital budgeting tool was payback period (Kim, Lee, Park & Waggle, 2020). The study also revealed that the multiple capital budgeting tools were used by all types of firms in Korea. However, the specific findings about the larger firms did indicate the use of NPV and IRR over the traditional techniques.

EN (2020) found that Malaysian companies are using the modern capital budgeting techniques like DCF, probabilistic risk assessment and Real Options. The study also found the prevalence of payback period amongst many Malaysian firms.

The firms listed under Dhaka Stock Exchange are more inclined towards the use of Discounted Cash Flow (DCF) techniques such as NPV, IRR and WACC to evaluate the investment projects with expansion of existing business being the primary motivation for investment. Payback Period is also found to be one of the most practiced capital budgeting tools amongst the Bangladeshi firms (Mollah, et al., 2021).

Therefore, there exists a continuous trend towards the advanced capital budgeting techniques in both developing and emerging economies, with firms commonly using the multiple tools for the long-term investment.

3. Research Methodology

3.1 Research Objectives

- 1. To investigate the status of capital budgeting tools used by the Bhutanese firms in evaluation of long-term investments.
- 2. To examine the capital budgeting methods used to evaluate an investment decision.

- 3. To compare the capital budgeting techniques used in Bhutan with that of adopted literature which are latest from Pakistan and Korea for relevancy check.
- 4. To investigate the purposes for which Bhutanese firms use capital budgeting techniques.
- 5. To identify if there is a significant relationship between capital budgeting practices employed by RSEBL-listed companies and DHI-owned companies.

3.2 Population

All listed companies under the Royal Securities Exchange of Bhutan Limited and DHIowned companies were selected and close-ended questionnaires were administered to generate data. The questionnaire that was adopted has been originally used and developed in a previous similar study conducted by Mubashar &Tariq (2019) for Pakistani listed firms. The structured questionnaire included demographics and survey questions on capital budgeting techniques on a Likert scale of 1 to 5.

We sent e-mails to the CEOs/CFOs/FOs/Company Secretary, whichever was available on the respective websites of RSEBL-listed and DHI-owned companies. The e-mails requested for participation of their company's finance officer and/or invited the respondents to follow a designated questionnaire link and participate in our survey. CEOs/CFOs/FOs/Company Secretary were subsequently followed up by phone to encourage them to respond to our survey requests.

Of the 29 e-mails sent, 24 were responded to, with a response rate of 82.76%. This response rate is higher than the 15.5% and 35% rates obtained by Kim, Lee, Park &Waggle (2020) and Mubashar &Tariq (2019) in their research on Capital Budgeting Practices: Evidence from Korea and Capital Budgeting Decision-Making Practices: Evidence from Pakistan respectively.

Totally, 19 companies are listed in RSEBL and 10 companies are DHI-owned companies in Bhutan as at March 29th, 2022.

Table 3.1: Sources and Companies

| Source | Total Companies |
|----------------------------|-----------------|
| RSEBL Listed Companies | 19 |
| DHI Owned Companies | 10 |
| Total Sample Size | 29 |

3.3 Data Analysis Methods

The collected survey data has been analysed and presented using inferential statistics (t-test) and descriptive analysis as used by Mubashar &Tariq (2019) in his research titled Capital Budgeting Decision-Making Practices: Evidence from Pakistan. To examine the data SPSS software was used.

4. Data Analysis and interpretation.

In this section data analysis and interpretation is conducted.

4.1 Reliability Analysis

Reliability analysis is conducted to test internal consistency of instrument used for study variables.

Table 4.1: Reliability Test

Cronbach's Alpha is a convenient test used to estimate the reliability, or internal consistency

| Sl. No | Variables | Number of Items | Cronbach's Alpha |
|--------|----------------------------------|-----------------|------------------|
| 1 | Capital Budgeting Techniques | 7 | 0.919 |
| 2 | Determination of cost of equity | 5 | 0.844 |
| 3 | Technique to assess project risk | 5 | 0.815 |

of a composite score. The general rule of thumb is that a Cronbach's Alpha of 0.70 and above is good, 0.80 and above is better and 0.90 and above is best (Statistics solutions, 2022).

The reliability test in Table 1 represents the three main domains with Likert Scale for which reliability test has been conducted. The reliability test reveals that for domain one, two and three are 0.919, 0.844 and 0.815 respectively, which is more than 0.70. This indicates that the instruments used for this study was reliable.

4.2 Capital Budgeting techniques used

Bhutanese CFOs/FOs were asked how frequently they use different capital budgeting decision tools by scoring them on a scale of one to five, with one meaning "never" and five meaning "always." The survey includes discounted cash flow approaches (NPV, IRR, discounted payback period, profitability index), earnings-based methods (accounting rate of return) and the unsophisticated payback period.

Table 4.2: Frequency of capital budgeting techniques used

| | Never (1) | Rarely (2) | Someti mes (3) | Almost Always (4) | Always (5) |
|----------------------|-------------|------------|-------------------|-------------------------|--------------|
| 1. Net Present Value | 4.2% (1) | 12.5% (3) | 25% (6) | 41.7% (10) | 16.7% (4) |

| 2. Internal Rate of Return | 4.2% | 12.5% | 29.2% | 29.2% | 25% (6) |
|----------------------------|-------------|---------------|--------------|----------|---------|
| 3. Modified Internal Rate | (1) 4.2% | (3) 20.85% | (7) 41.7% | (7) | 8.3% |
| of Return | (1) | (5) | (10) | 25% (6) | (2) |
| 4. Profitability Index | 4.2% | 8.3% | 28.0 (5) | 41.7% | 25% (6) |
| 4. Fromability fidex | (1) | (2) | 26.0 (3) | (10) | 23% (0) |
| 5. Payback Period | 4.2% | 8.3% | 20.8% | 33.3% | 33.3% |
| 3. I ayback I chod | (1) | (2) | (5) | (8) | (8) |
| 6. Accounting Rate of | 4.2% | 25% (6) | 29.27% | 29.27% | 12.53% |
| Return | (1) | 2370 (0) | (7) | (7) | (3) |
| 7. Discounted Payback | 4.2% | 16.7% | 41.7% | 25% (6) | 12.5% |
| Period | (1) | (4) | (10) | 2370 (0) | (3) |

Table 4.2 displays the usage of various capital budgeting techniques across Bhutanese firms. The most popular capital budgeting methods among Bhutanese firms are PI, NPV and the payback period. Of the Bhutanese CFOs/FOs surveyed, 66.7% always or almost always (scores of 5 or 4 on the survey) use PI and 12.5% never or rarely (scores of 1 or 2 on the survey) use PI, and 66.6% always or almost always use payback period and 12.5% never or rarely uses payback period, and 58.4% always or almost always use NPV and 16.7% never or rarely use NPV. Most firms obviously use more than one capital budgeting technique at a time.

Table 4.3 Country wise comparison of capital budgeting techniques

| | Bhutan | Pakistan | Korea |
|-------------------------------------|------------|------------|------------|
| | Percent as | Percent as | Percent as |
| | Always or | Always or | Always or |
| | Almost | Almost | Almost |
| | Always | Always | Always |
| 1. Net Present Value | 58.40% | 90% | 85.25% |
| 2. Internal Rate of Return | 54.20% | 100% | 76.67% |
| 3. Modified Internal Rate of Return | 33.60% | 18.60% | N/A |
| 4. Profitability Index | 66.70% | 95.70% | 25% |
| 5. Payback Period | 66.60% | 67.10% | 67.24% |
| 6. Accounting Rate of Return | 41.70% | 17.10% | 34.62% |
| 7. Discounted Payback Period | 37.50% | 64.30% | 26.92% |

Sources: Pakistani data are from Mubashar & Tariq (2019); and Korean data are from Kim, Lee, Park & Waggle (2020).

While NPV, PI and payback period are also highly utilized capital budgeting tools in Pakistan Mubashar & Tariq (2019) and Korea (Kim, Lee, Park & Waggle, 2020), Table 4.3 shows that the usage differ considerably from what is seen in Bhutan. The preferred capital budgeting tools in Pakistan, based on the percentage of firm that always or almost always use the technique, are IRR (100%), PI (95.7%), NPV (90%) and payback period (67.1%) (Mubashar & Tariq, 2019). Whereas, the preferred capital budgeting tools in Korea, based on the percentage of firm that always or almost always use the technique, are NPV (85.25%),

IRR (76.67%), payback period (67.24%) and PI (25%) (Kim, Lee, Park &Waggle, 2020). The use of IRR for capital budgeting decisions contrasts with the findings of Mubashar &Tariq (2019) and Kim, Lee, Park & Waggle (2020) that discounted cash flow techniques such as IRR are preferable. The survey results also show that respondent firms frequently use payback period in addition to DCF capital budgeting methods such as NPV and IRR.

Table 4.4: Computation of IRR or NPV

| | Frequency | Percent |
|-------------------|-----------|---------|
| Cash Flows | 10 | 41.70% |
| Accounting Income | 1 | 4.20% |
| Both | 13 | 54.20% |
| Total | 24 | 100% |

Furthermore, respondents were asked whether they use "Cash flows", "Accounting income", or both while calculating DCF techniques such as NPV and IRR. The results in table 4.4, 13 respondents (54.2%) said that they use both cash flows and accounting income, 10 respondents (41.7%) said they use only cash flows, and only 1 respondent (4.2%) said they use only accounting income while calculating DCF techniques such as NPV and IRR. Previously, studies of Mubashar &Tariq (2019) reported that 100% of responding firms uses "Cash flows" respectively.

Table 4.5: *Approaches used to determine the minimum acceptable rate.*

| | Frequency | Percent |
|------------------------------------|-----------|---------|
| WACC | 12 | 50% |
| Cost of debt | 8 | 33.30% |
| Cost of equity capital | 1 | 4.20% |
| An arbitrary chosen figure is used | 3 | 12.50% |
| Total | 24 | 100% |

The minimum acceptable rate of return, that is, the cost of capital or discount rate is essential for methods using DCF calculations which involve time value of money. The respondents were asked what methods they used while determining the cost of capital or discount rate. 12 respondents (50%) are using WACC to determine their potential

investment projects, while the least popular method is "Cost of equity capital" with frequency of only 1 (4.2%). Our finding coincides with that of the findings of Mubashar &Tariq (2019) where maximum (80%) of Pakistani listed companies also uses WACC to determine the cost of capital or discount rate.

Table 4.6 *Estimation of cost of equity capital*

| | Frequency | Percent |
|-------|-----------|---------|
| Yes | 13 | 54.20% |
| No | 11 | 45.80% |
| Total | 24 | 100% |

Respondents were asked whether the firms estimate their cost of equity capital. In total, 54.2% of the respondents said that they estimate their cost of equity capital.

Table 4.7 Techniques for estimation of cost of equity

| | Never (1) | Rarely (2) | Sometime s (3) | Almost Always (4) | Always (5) |
|-------------------------|-----------|------------|----------------|-------------------------|------------|
| | 12.5% | 20.8% | | | |
| CAPM | (3) | (5) | 29.2% (7) | 12.5% (3) | 25% (6) |
| | 12.5% | 29.2% | | 41.7% | |
| Investors Tell | (3) | (7) | 16.7% (4) | (10) | 0 |
| | | 16.7% | 45.8% | | 12.5% |
| Historical Return | 4.2% (1) | (4) | (11) | 20.8% (5) | (3) |
| Regulatory Authority | | 12.5% | | | |
| Decision | 4.2% (1) | (3) | 50% (12) | 8.3% (2) | 25% (6) |
| | 20.8% | | | | |
| Dividend Discount Model | (5) | 25% (6) | 29.2% (7) | 16.7% (4) | 8.3% (2) |

In connection with the previous question, respondents were also asked about the most frequent method used to calculate the cost of equity capital. In response, 41% of the respondents said they almost always use "investors tell". "CAPM" is the second most favored approach with 37.5% firms always or almost always using this option. The least popular method is dividend discount model with 25%. These results are similar with the study of Mubashar &Tariq (2019) and Graham and Harvey (2001).

Table 4.8 Assessment of project's risk

| | Never (1) | Rarely (2) | Sometimes (3) | Almost Always (4) | Always (5) |
|-------------------------------|-----------|------------|---------------|----------------------|------------|
| Scenario Analysis | 8.3% (2) | 4.2% (1) | 20.8% (5) | 41.7% (10) | 25% (6) |
| Sensitivity Analysis | 4.2% (1) | 12.5% (3) | 45.8% (11) | 12.5% (3) | 25% (6) |
| Simulation Analysis | 16.7% (4) | 25% (6) | 37.5% (9) | 4.2% (1) | 16.7% (4) |
| Decision Tree Analysis | 12.5% (3) | 33.3% (8) | 33.3% (8) | 16.7% (4) | 4.2% (1) |
| Real Options | 4.2% (1) | 25% (6) | 20.8% (5) | 29.2% (7) | 20.8% (5) |

Respondents were asked about the techniques used by their firms to assess a project's risk. The results in table 4.8 suggests that the most used technique to assess a project's risk is scenario analysis with 66.7% respondents always or almost always using this method. The next most popular technique is Real option with 50% respondents always or almost always using this method. The least opted technique is simulation analysis and decision tree analysis

with only 20.9% respondents using these two techniques. With this we can say, with theoretical advantage in today's rapidly changing environment, the use of real option in Bhutanese firms are second most popular technique to measure risk in investment decision. Our finding is similar with that of study conducted among Pakistani firm by Mubashar &Tariq (2019), that is, scenario analysis being most popular technique for project's risk assessment.

Table 4.9 Purpose for using Capital Budgeting Techniques

| | Frequency | Percent |
|---|-----------|---------|
| New business | 3 | 12.5 |
| New business, Expansion of business | 4 | 16.7 |
| New business, Expansion of business, Installation of new equipment | 2 | 8.3 |
| New business, Expansion of business, Installation of new equipment, Asset replacement | 6 | 25.0 |
| New business, Expansion of business, Asset replacement | 1 | 4.2 |
| Expansion of business, Installation of new equipment | 1 | 4.2 |
| Expansion of business, Asset replacement | 2 | 8.3 |
| Expansion of business, Installation of new equipment, Asset replacement | 1 | 4.2 |
| Installation of new equipment, Asset replacement | 4 | 16.7 |
| Total | 24 | 100.0 |

Respondents were asked the purpose for which their companies use capital budgeting techniques. The results in table 4.9 suggests that the dominant motivation for making investment is for given options (introduction of new business, expansion of existing business, investment in installation of new equipment, and asset replacement) with 25% of the respondents. 16% of the respondents reported that their main purpose for capital budgeting is for introduction of new business and expansion of existing business only while other 16.7% of the respondents reported that their main purpose for capital budgeting is for investment in installation of new equipment and asset replacement only. On contrary, 4.2% of the respondents reported that capital budgeting technique is used least for the purpose of expansion of existing business, asset replacement and installation of new equipment.

Table 4.10 Possession of Capital Investment Manual

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | Yes | 14 | 58.3 | 58.3 | 58.3 |
| vanu | No | 10 | 41.7 | 41.7 | 100.0 |

| TD 1 | 2.4 | 1000 | 100.0 | |
|-------|-------|-------|-------|--|
| Total | ') / | 100.0 | 100.0 | |
| 10141 | /.4 | 100.0 | 100.0 | |

Respondents were asked, "Does your firm possess a Capital Investment Manual (capital investment guidelines)?" The result in Table 10 reveals that majority of the responding firms (58.3%) have their capital investment guidelines. With the existence of individual company's investment guidelines, factors such as gender, age, experience, educational qualification, and investment size of the company are not related to the capital budgeting techniques opted by the firms.

Table 4.11 Group Statistics

| | | N | Mean | Std. Deviation | |
|------------|----------|----|-------|----------------|---|
| RS | SEBL | 14 | 3.316 | 1.05 | _ |
| Mean_B2 DI | HI owned | 10 | 3.686 | .57 | |
| Mean_B5 RS | SEBL | 14 | 3.214 | 1.02 | |
| Mean_b3 DI | HI owned | 10 | 2.840 | .77 | |
| Mean_B6 RS | SEBL | 14 | 3.343 | 1.00 | |
| DI | HI owned | 10 | 2.980 | .70 | |

An independent sample t-test was conducted to explore differences between frequency of capital budgeting used by RSEBL listed companies and DHI owned companies and it is denoted by Mean_B2. The mean of RSEBL listed companies and DHI owned companies reveal that DHI owned companies are using capital budgeting techniques more frequently (M=3.686, SD=0.57) as compared to RSEBL listed companies (M=3.316, SD=1.05) while deciding which projects to pursue.

Mean_B5 denotes techniques used to determine firm's cost of equity capital. The mean of RSEBL listed companies (M=3.214, SD=1.02) reveal that they more frequently determine their firm's cost of equity capital using aspects of capital budgeting techniques as compared to such techniques employed by DHI owned companies (M=2.840, SD=0.77).

Mean_B6 denotes techniques used to assess a project's risk. The mean of RSEBL listed companies (M=3.343, SD=1.00) reveal that they often use capital budgeting tools to assess project's risk. Whereas the mean of DHI owned companies (M=2.980, SD=0.70) reveal that they rarely use capital budgeting tools to assess project's risk however, the mean of 2.98 shows that the DHI owned companies are deviating towards frequent usage of such techniques to assess the project's risk.

Table 4.12 Independent Sample Test

| | | | - | ndepend | Independent Samples Test | ples Tes | it | | | |
|----------|---------------|----------------------------------|--------------------|---------|--------------------------|----------------|------------------------------|-------------|-------------------------------|----------------|
| | | Levene's Test for Equality of | s Test tlity of | | | t-te | t-test for Equality of Means | ty of Means | | |
| | • | Variances | seo | | | | | | | |
| | | L | Sig. | + | đ | Sig. | Mean | Std. Error | 95% Confidence | fidence |
| | | | | | | (2- tailed) | Difference | Difference | Interval of the Difference | of the ince |
| | | | | | | | | | Lower | Upper |
| | Equal | | | | | | | | | |
| | variances | 3.259 | .085 | -1.011 | 22 | .323 | 36939 | .36548 | -1.12734 | .38857 |
| Moon Bo | assumed | | | | | | | | | |
| Medil_D2 | Equal | | | | | | | | | |
| | variances not | | | -1.110 | 20.863 | .279 | 36939 | .33264 | -1.06142 | .32264 |
| | assumed | | | | | | | | | |
| | Equal | | | | | | | | | |
| | variances | .888 | .356 | .973 | 22 | .341 | .37429 | .38458 | 42329 | 1.17186 |
| Mean_B5 | assumed | | | | | | | | | |
| | variances not | | | 1.021 | 21.901 | .318 | .37429 | .36648 | 38594 | 1.13452 |
| | assumed | | | | | | | | | |
| | Equal | | | | | | | | | |
| | variances | .569 | .459 | 786. | 22 | .334 | .36286 | 36769 | 39969 | 1.12540 |
| | assumed | | | | | | | | | |
| Mean_bo | Equal | | | | | | | | | |
| | variances not | | | 1.046 | 22.000 | 307 | .36286 | .34677 | 35629 | 1.08201 |
| | assumed | | | | | | | | | |

The results from independent sample t-test reveals that there is no significant difference between RSEBL listed companies and DHI owned companies in terms of capital budgeting decision making practices because the p-values in frequency of capital budgeting techniques used, techniques used to determine firm's cost of equity capital and techniques used to assess a project's risk were above the cut-off of 0.05. Therefore, it was found that there was no statically significant relationship between capital budgeting techniques employed by RSEBL listed companies and DHI owned companies.

5. Findings of this study

- 1. With a response rate of 66.7 percent, it can be concluded that RSEBL listed companies and DHI owned companies mostly prefer profitability index in capital budgeting decision-making with 66.7 percent. This indicates the evidence of capital budgeting techniques is being widely used in Bhutan
- 2. In order to determine minimum acceptable rate of return, 50 percent Bhutanese firms follow weighted average cost of capital approach.
- 3. Investors tell is commonly used to determine the cost of equity capital by Bhutanese firms.
- 4. For risk assessment, scenario analysis and real options are the dominant approaches with 66.7 percent and 50 percent respectively.
- 5. There was no statically significant relationship between capital budgeting techniques employed by RSEBL listed companies and DHI owned companies.

6. Conclusions

The purpose of this paper was to investigate how Bhutanese firms evaluate new projects and estimate their capital costs, and also to scrutinize the current trends of capital budgeting practices among the Bhutanese firms. Importantly, to analyse capital budgeting practices a sampled 29 companies (19 listed companies under RICBL and 10 DHI owned companies) operating in Bhutan have been investigated. For this purpose, questionnaires were applied and the responses obtained were evaluated, aiming at identifying the capital budgeting practices implemented by these companies. The results revealed that PI is the most preferred capital budgeting method, followed closely by NPV and PB. Similarly, for incorporating risk, scenario analysis was considered as the dominant capital budgeting tool and the widely used method for calculating cost of capital was the WACC. This research exposed valuable insight about capital budgeting practices in Bhutan context. Since Bhutan is an unexplored country, this research is originally contributed to the literature. Furthermore, the practitioners should know the

prevailing capital budgeting practices and therefore, try to find out the best mechanism to maximize shareholders' wealth. In overall, the current study would serve as a springboard for future research.

6.1 Recommendations of the study

The survey's findings contain valuable recommendations for financial managers, academics, and business schools. Our survey results suggest the following advancements in capital budgeting decisions for improved "investment judgments" because advance capital budgeting systems aim to increase company value:

- Bhutanese businesses use IRR more often than MIRR, contrary to what is suggested
 in the financial literature, which favors MIRR (Graham and Harvey, 2001).

 Executives must value MIRR because it helps businesses overcome the issue of
 multiple IRR caused by non-traditional cash flows.
- 2. Bhutan being a developing nation with volatile and uncertain financial markets, Bhutanese firms should use real options more frequently than scenario analysis when evaluating projects to manage risk. Real options are more valuable in uncertain contexts because they provide management some freedom to alter the project's direction, for as by postponing, expanding, or abandoning it, depending on the situation.

6.2 Limitations of the Study

This study has the following limitations:

- 1. The study primarily took capital budgeting approaches into account.
- Only RSEBL-listed and DHI-owned businesses are included in this analysis. Therefore, not all companies, particularly privately held, DHI linked, and DHI controlled companies, may be affected by the findings.
- 3. The close-ended questionnaire was used in the study. If more time had been allotted, this investigation could have been conducted more thoroughly.

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